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ILLUSTRATED WITH FIVE HUNDRED AND FORTY-TWO COPPERPLATES.

VOL. III.

INDOCII DISCANT, ET AMENT MEMINISSE PARITI.

EDINBURGH.

PRINTED FOR A. BELL AND C. MACFARQUHAR.

MDCCLXVI.

Entered in Stationers Hall in Terms of the Act of Parliament.

ENCYCLOPÆDIA BRITANNICA.

B A R

Barbarus,
Barbary.

BARBARUS (Francis), a noble Venetian, was a man of great fame in the 15th century, not only for learning, but likewise for a skilful address in the management of public affairs. He is author of a book *De Re Uxoriz*, and some speeches.

BARBARUS (Hermolaus), grandson of the preceding, one of the most learned men in the 15th century. The public employments he was entrusted with early, did not prevent him from cultivating polite learning with great application. As he was very skilful in the Greek, he undertook the most difficult translations, and began with a famous paraphrase upon Aristotle. He then attempted Dioscorides, whose text he corrected, gave a translation of him, and added a commentary. But of all his works, there is none which has gained him so much reputation as that which he made upon Pliny; he corrected in him above 5000 passages, and occasionally restored 300 in Pomponius Mela. Pope Innocent VIII. to whom he was ambassador, conferred the patriarchate of Aquileia upon him. He was so imprudent as to accept of it without waiting for the consent of his superiors; though he could not be ignorant that the republic of Venice had made laws to forbid all the ministers they sent to the court of Rome to accept any benefice. His superiors were inflexible; and not being able to gain any thing upon them either by his flattery or his father's interest, the father died of grief, and the son soon followed him.

BARBARUS (Daniel), of the same family with the preceding, was patriarch of Aquileia, and famous for his learning. He was ambassador from Venice to England; and was one of the fathers of the council of Trent, where he acted with great zeal for the interest of the pope. He wrote, 1. A commentary upon Vitruvius. 2. *Cetera Græcorum Patrum in quinquaginta Psalmos Latine versa.* 3. *La Pratica della Perspectiva.* He died in 1569, at 41 years of age.

BARBARY, a kingdom of Africa, including the states of *Algiers, Morocco, Tripoli, and Tunis*; (see these articles). This country contain almost the whole of what the Romans possessed of the continent of Africa, excepting Egypt. It stretches itself in length from east to west, beginning at the southern limits of Egypt, to the straits of Gibraltar full 35 degrees of longitude; and from thence to Santa Cruz, the utmost western edge of it, about six more, in all 41 degrees; so that the utmost length of Barbary from east to west is computed at above 750 German leagues. On the south, indeed, it is confined within much narrower bounds, extending no farther than from 27 to 35½ degrees of north latitude; so that its utmost breadth from

B A R

Barbary.

north to south, does not exceed 128 German miles. More particularly, Barbary begins on the west of the famed mount Atlas, called by the Arabs *Ay Duacal*, or *Al Duacal*, inclosing the ancient kingdoms of Suez and Dela, now provinces of Morocco; thence stretching north-eastward along the Atlantic to the pillars of Hercules at Cape Finisterre, then along the coast of the Mediterranean, it is at last bounded by the city of Alexandria in Egypt.

Concerning the origin of the name *Barlary*, there are many conjectures. According to some, the Romans, after they had conquered this large country, gave it that name out of contempt and dislike to the barbarous manners of the natives, according to their custom of calling all other people but themselves *Barbarians*. Marmol, on the contrary, derives the word *Barbary* from *Berber*, a name which the Arabs gave to its ancient inhabitants, and which they retain to this day in many parts of the country, especially along the great ridge of the mountains of Atlas; and which name was given them on account of the barrenness of their country. According to Leo Africanus, the name of Barbary was given by the Arabs on account of the strange language of the natives, which appeared to them more like a murmur or grumbling of some brute animals than articulate sounds. Others, however, derive it from the Arabic word *bar*, signifying a desert, twice repeated; which was given by one *Isfic*, or *Afficus*, a king of Arabia, from whom the whole continent of Africa is pretended to have taken its name. According to them, this king being driven out of his own dominions, and closely pursued by his enemies, some of his retinue called out to him *Bar, bar*; that is, *To the desert, To the desert*; from which the country was afterwards called *Barbary*.

Among the Romans this country was divided into the provinces of Mauritania, Africa Propria, &c. and they continued absolute masters of it from the time of Julius Cæsar till the year of Christ 428. At that time Bonifacius the Roman governor of these provinces, having through the treachery of Ætius been forced to revolt, called in to his assistance Genferic king of the Vandals, who had been some time settled in Spain. The terms offered, according to Procopius, were, that Genferic should have two thirds, and Bonifacius one third, of Africa, provided they could maintain themselves against the Roman power; and to accomplish this they were to assist each other to the utmost.—This proposal was instantly complied with; and Genferic set sail from Spain in May 428, with an army of 80,000 men, according to some, or only 24,000 according to others,

Barbary. Barbary. others, together with their wives, children, and all their effects. In the mean time, however, the Empress Placidia having discovered the true cause of Bonifacius's revolt, wrote a most kind and obliging letter to him, in which she assured him of her favour and protection for the future, exhorting him to return to his duty, and exert his usual zeal for the welfare of the empire, by driving out the Barbarians whom the malice of his enemies had obliged him to call in for his own safety and preservation.

5 Endeavours unsuccessfully to persuade them to return. Bonifacius readily complied with this request, and offered the Vandals considerable sums if they would retire out of Africa and return to Spain. But Genferic, already master of the greatest part of the country, first returned a scoffing answer, and then, falling unexpectedly on him, cut most of his men in pieces, and obliged Bonifacius himself to fly to Hippo, which place he invested in May 430. The siege lasted till the month of July the following year; when the Vandals were forced, by a famine that began to rage in their camp, to drop the enterprize, and retire. Soon after, Bonifacius having received two reinforcements, one from Rome, and the other, under the conduct of the celebrated Aspar, from Constantinople, a resolution was taken by the Roman generals to offer the enemy battle. The Vandals readily accepting the challenge, a bloody engagement ensued, in which the Romans were utterly defeated, a prodigious number of them taken, and the rest obliged to shelter themselves among the rocks and mountains. Aspar, who commanded the eastern troops, escaped with difficulty to Constantinople, and Bonifacius was recalled to Italy. Upon their departure, the Vandals over-ran all Africa, committing every where the most terrible ravages; which struck the inhabitants of Hippo with such terror, that they abandoned their city, which was first plundered, and then set on fire by the victorious enemy; so that Cirtha and Carthage were now the only strong places possessed by the Romans.

6 Romans defeated by Genferic king of the Vandals. In 435, Genferic, probably being afraid of an attack by the united forces of the eastern and western empires, concluded a peace with the Romans, who yielded to him part of Numidia, the province of Proconsularis, and likewise Byzacene; for which, according to Prosper, he was to pay a yearly tribute to the emperor of the east. Genferic delivered up his son Hunneric by way of hostage; but so great was the confidence which the Romans placed in this Barbarian, that some time after they sent him back his son. Of this they soon had reason to repent; for in 439, the Romans being engaged in a war with the Goths in Gaul, Genferic laid hold of that opportunity to seize upon the city of Carthage; by which he considerably enlarged his African dominions. Valentinian, the Roman emperor, however, maintained as long as he lived, the two Mauritias, with Tripolitana, Tingitana, and that part of Numidia where Cirtha stood.

7 Peace concluded with the Vandals. 8 Genferic's treachery. On the taking of Carthage, Genferic made it the seat of his empire; and in 440 made a descent on the island of Sicily, where he ravaged the open country, and even laid siege to Palermo. Not being able, however, to reduce that place, he soon returned to Africa with an immense booty and a vast number of captives. Being now become formidable to both empires, Theodosius emperor of the east resolved to assist Valentinian

against so powerful an enemy. Accordingly, he fitted out a fleet consisting of 1100 large ships; and putting on board of it the flower of his army, under the conduct of Arcovindas, Ansilus, and Germanus, he ordered them to land in Africa, and, joining the western forces there, to drive Genferic out of the countries he had seized. But Genferic in the mean time pretending a desire to be reconciled with both empires, amused the Roman general with proposals of peace, till the season for action was over; and, next year, Theodosius being obliged to recall his forces to oppose the Huns, Valentinian found it necessary to conclude a peace with the Vandals; and this he could obtain on no other terms than yielding to them the quiet possession of the countries they had seized.

So powerful was Genferic now become, or rather so low was the Roman empire by this time reduced, that in 455, he took and plundered the city of Rome itself, as is fully related under the article 9 Rome; and, after his return to Africa, made himself master of the remaining countries held by the Romans in that part of the world. Hereupon Avitus, who had succeeded Valentinian in the empire, dispatched ambassadors to Genferic, putting him in mind of the treaty he had concluded with the empire in 442; and threatening, if he did not observe the articles at that time agreed upon, to make war upon him not only with his own forces, but with those of his allies the Visigoths, who were ready to pass over into Africa. To this Genferic was so far from paying any regard, that he immediately put to sea with a fleet of 60 ships; but being attacked by the Roman fleet under Ricimer, he was utterly defeated, and forced to fly back into Africa: he returned, however, soon after with a more powerful fleet, committing great ravages on the coast of Italy; but in a second expedition he was not attended with so good success; the Romans falling unexpectedly upon his men while busied in plundering the country, put great numbers of them to the sword, and among the rest the brother-in-law of Genferic himself. Not content with this small advantage, Majorianus, at that time emperor, resolved to pass over into Africa, and attempt the recovery of that country. For this purpose he made great preparations; but his fleet being surprised and defeated by the Vandals, through the treachery, it is said, of some of his commanders, the enterprize miscarried.

Notwithstanding this misfortune, however, Majorianus persisted in his resolution; and would in all likelihood have accomplished his purpose, had not he himself been murdered soon after by Ricimer. After his death, Genferic committed what ravages he pleased in the poor remains of the western empire, and even made descents on Peloponnesus and the islands belonging to the emperor of Constantinople. To revenge this affront, 10 Leo made vast preparations for the invasion of Africa, in so much, that, according to Procopius, he laid out 130,000 pounds weight of gold in the equipment of his army and navy. The forces employed on this occasion were sufficient for expelling the Vandals, had they been much more powerful than they were; but the command being given to Basiliscus a covetous and ambitious man, the fleet was utterly defeated through his treachery, and all the vast preparations came to nothing. By this last defeat the power of the Vandals in Africa

¹² **Barbary.** was fully established, and Genferic made himself master of Sicily, as well as of all the other islands between Italy and Africa, without opposition from the western emperors, whose power was entirely taken away in the year 476.

¹³ **Kingdom of the Vandals** founded. This was the Vandalic monarchy in Barbary founded by Genferic, between the years 428 and 468. If we take a view of that prince's government in his new dominions, it presents no very agreeable prospect. Being himself an absolute barbarian in the strictest sense of the word, and an utter stranger to every useful art, he did not fail to show his own prowess by the destruction of all the monuments of Roman greatness which were so numerous in the country he had conquered. Accordingly, instead of improving his country, he laid it waste, by demolishing all the stately structures both public and private, and all other valuable and sumptuous works with which those proud conquerors had adorned this part of their dominions. So that, whatever monuments the Romans had been at such an immense expence to erect, in order to eternize their own glory, the barbarous Vandals were now at no less pains to reduce into heaps of ruins. Besides this kind of devastation, Genferic made his dominions a scene of blood and slaughter, by persecuting the orthodox Christians; being himself, as well as most of his countrymen, a zealous Arian; and for this his long reign is chiefly remarkable. He died in 477, after a reign of 60 years; and was succeeded by his son Hunneric.

¹⁴ **Hunneric a bloody tyrant.** The new king proved yet a greater tyrant than his father, persecuting the orthodox with the utmost fury; and, during his short reign of seven years and an half, destroyed more of them than Genferic had done in all his lifetime. He is said to have died in the same manner as the heresiarch Arius; before which time his flesh had been rotting upon his bones, and crawling with worms, so that he looked more like a dead carcase than a living man. Concerning his successors Gutamund, Thrasamund, and Hilderic, we find nothing remarkable, except that they sometimes persecuted, and sometimes were favourable to, the orthodox; and by his favour for them the last king was ruined. For, having unadvisedly published, in the beginning of his reign, a manifesto, wherein he repealed all the acts of his predecessors against the orthodox, a rebellion was the immediate consequence. At the head of the malcontents was one Gilimer, or Gildemar, a prince of the blood-royal, who by degrees became so powerful,

¹⁵ **His terrible death.** * See Arius. as to depose Hilderic in the seventh year of his reign; after which he caused the unhappy monarch with all his family to be closely confined, and was himself crowned king of the Vandals at Carthage.

¹⁶ **Hilderic deposed by Gilimer.** Gilimer proved a greater tyrant than any that had gone before him. He not only cruelly persecuted the orthodox, but horribly oppressed all the rest, so that he was held in universal abhorrence and detestation when the Greek emperor Justinian projected an invasion of Africa. This expedition of Justinian's is said to have been occasioned by an apparition of Latus an African bishop, who had been murdered some time before, but now commanded the emperor to attempt the recovery of Africa, and assured him of success. Accordingly, this, or some other motive, prevailed upon Justinian so far, that, notwithstanding his being at that

time engaged in a war with Persia, he sent a powerful fleet and army to Africa, under the command of the celebrated general Belisarius, who was for that reason recalled from Persia.

¹⁷ **Barbary.** So much was Gilimer, all this time, taken up with his own pleasures, or with oppressing his subjects, that he knew little or nothing of the formidable preparations that were making against him. On the arrival of Belisarius, however, he was constrained to put himself into a posture of defence. The management of his army he committed to his two brothers Gundimer and Gelamund, who accordingly attacked the Romans at the head of a numerous force. The engagement was long and bloody; but at last the Vandals were defeated, and the two princes slain. Gilimer, grown desperate at this news, sallied out at the head of his corps de reserve, with full purpose to renew the attack with the utmost vigour; but by his own indiscretion lost a fair opportunity of defeating the Romans. For no sooner did they perceive Gilimer hastening after them at the head of a fresh army, than they betook themselves to flight; and the greatest part were dispersed in such a manner, that, had the king followed them close, they must have been totally cut off. Instead of this, however, stumbling unfortunately on the body of one of his slain brothers, the sight of it made him lose all thoughts about the enemy; and instead of pursuing them, he spent part of his time in idle lamentations, and part in burying the corpse with suitable pomp and dignity. By this means Belisarius had an opportunity of rallying his men; which he did so effectually, that, coming unexpectedly upon Gilimer, he easily gained a new and complete victory over him.

¹⁸ **Defeats the Vandals;** This defeat was followed by the loss of Carthage, which the barbarians had been at no pains to put into a posture of defence. After which Gilimer, having in vain endeavoured to obtain assistance from the Moors and Goths, was obliged to recal his brother Tzafon from Sardinia. The meeting between the two brothers was very mournful; but they soon came to a resolution of making one desperate attempt to regain the lost kingdom, or at least recover their captives out of the hands of the enemy. The consequence of this resolution was another engagement, in which Tzafon was killed with 800 of his choicest men, while the Romans lost no more than 50; after which Belisarius moving suddenly forward at the head of all his army, fell upon the camp of the Vandals. This Gilimer was no sooner apprised of, than, without staying to give any more orders to the rest of his army, he fled towards Numidia in the utmost consternation. His flight was not immediately known among his troops; but when it was, such an universal confusion ensued, that they abandoned their camp to the Romans, who had now nothing to do but plunder it; and not content with this, they massacred all the men found in it, carrying away the women captives.

¹⁹ **Takes Carthage;** Thus a total end was put to the power of the Vandals in Barbary, and the Romans once more became masters of this country. The Vandal inhabitants were permitted to remain as they were, on condition of exchanging the heresy of Arius for the orthodox faith. As for Gilimer, he fled with the utmost expedition to Medamus, a town situated on the top of the Pappun mountain, and almost inaccessible by reason of its

Barbary.

Barbary.

21
Gilimer's
extreme di-
strefs.

height and ruggedness. The siege of this place was committed to Pharas, an officer of great experience, who having shut up all avenues to the town, the unhappy Gilimer was reduced to the greatest straits for want of provisions. Pharas being soon apprised of the distress he was in, wrote him a most friendly and pathetic letter, earnestly exhorting him to put an end to the distress of himself and his friends by a surrender. This Gilimer declined; but at the same time concluded his answer with a most submissive request, that Pharas would so far pity his great distress as to send him a loaf of bread, a sponge, and a lute. This strange request greatly surprised Pharas; but at last it was explained by the messenger, who told him that the king had not tasted any baked bread since his arrival on that mountain, and earnestly longed to eat a morsel of it before he died: the sponge he wanted to allay a tumour that was fallen on one of his eyes; and the lute, on which he had learned to play, was to assist him in setting some elegiac verses he had composed on the subject of his misfortunes to a suitable tune. At this mournful report Pharas could not refrain from tears, and immediately dispatched the messenger with the things he wanted.

Gilimer had spent near three winter months on the summit of this inhospitable mountain, his misery hardening him still more against the thoughts of surrendering, when a melancholy scene in his own family at once reconciled him to it. This was a bloody struggle between two boys, one of them his sister's son, about a flat bit of dough, laid on the coals; which the one seized upon, burning hot as it was, and clapped it into his mouth; but the other by dint of blows forced it out, and eat it from him. This quarrel, which might have ended fatally had not Gilimer interposed, made so deep an impression upon him, that he immediately dispatched a messenger to Pharas, acquainting him that he was willing to surrender himself and all his effects upon the conditions he had offered, as soon as he was assured that they were embraced by Belisarius. Pharas lost no time to get them ratified and sent back to him; after which he was conducted to Belisarius, who gave him a very kind reception. Gilimer was afterwards brought before Justinian in golden chains, whom he besought in the most submissive manner to spare his life. This was readily granted by the emperor; who also allowed him a handsome yearly pension to live upon as a private gentleman. But his mind and heart were too much unsettled and broken to enjoy the sweets of a private state; so that Gilimer, oppressed with grief, died in the year 534, the first of his captivity, and five years after he had been raised to the throne.

22
Kindly
treated by
Justinian.

Barbary being thus again reduced under the power of the Romans, its history falls to be taken notice of under that of Rome. In the khalifat of Omar, this country was reduced by the Saracens, as we have already related under the article ARABIA. It continued subject to the khalifs of Arabia and Bagdad till the reign of Harun Al Rashid, who having appointed Ibrahim Ebn Aglab governor of the western parts of his empire, that prefect took the opportunity, first of assuming greater powers to himself than had been granted him, he khalif, and then erecting a principality altogether independent of the khalifs. The race of Aglab continued to enjoy their new principa-

23
Barbary
subdued by
the Sara-
cens.

24
Principal
city of the
Aglabites
founded.

lity peaceably till the year of the Hegira 297 or 298, during which time they made several descents on the island of Sicily, and conquered part of it. About this time, however, one Obeidallah rebelled against the house of Aglab, and assumed the title of khalif of Kairwan (the ancient Cyrene, and residence of the Aglabite princes). To give the greater weight to his pretensions he also took the surname of Al Mohdi, or Al Mahedi, the *director*. According to some, also, he pretended to be descended in a right line from Ali Ebn Abu Taleb, and Fatema the daughter of Mahomet; for which reason, say they, the Arabs called him and his descendants *Fatemites*. He likewise encouraged himself and his followers by a traditional prophecy of Mahomet, that at the end of 300 years the sun should rise out of the west. Having at length driven the Aglabites into Egypt, where they became known by the name of *Magrelians*, he extended his dominions in Africa and Sicily, making Kairwan the place of his residence.

25
Driven out
by Al Moh-
di the first
Fatemite
khalif.

In the 300th year of the Hegira, Habbafah, one of Al Mohdi's generals, overthrew the khalif Al Mokhtader's forces in the neighbourhood of Barca, and made himself master of that city. After which he reduced Alexandria itself; and was making great progress in the conquest of the whole country, when Al Mokhtader dispatched against him his two generals Takin and Al Kasem, with an army of 100,000 men. Habbafah being informed that the khalif's troops were in motion, advanced at the head of his army to give them battle, and at last came up with them in an island called by the Arabs *Ar Al Khanisim*. Here he attacked them with incredible bravery, notwithstanding their force was much superior to his; but the approach of night obliged both generals to found a retreat.—The action therefore was by no means decisive, tho' extremely bloody, the khalif's generals having lost 20,000, and Habbafah 10,000. The latter, however, durst not renew the fight next morning; but stole off in the night, and returned home, so that Al Mokhtader in effect gained a victory. In the 302d year of the Hegira, however, Habbafah returned, possessed himself of Alexandria a second time, defeated a body of the khalif's forces, and killed 7000 of them upon the spot. What further progress he made at that time we are not certainly told; but in the 307th year of the Hegira, Abul Kasem, son to the Fatemite khalif Al Mohdi, again entered Egypt with an army of 100,000 men. At first he met with extraordinary success, and over-ran a considerable part of that fine country. He made himself master of Alexandria, Al Tayum, Al Baknafa, and the isle of Al Ashmaryin, penetrating even to Al Jizah, where the khalif's army under the command of Munes was posted in order to oppose him. In this country he found means to maintain himself till the 308th year of the Hegira. This year, however, he was entirely defeated by Munes, who made himself master of all his baggage, as well as of the plunder he had acquired; and this blow obliged him to fly to Kairwan with the shattered remains of his army, where he remained without making any further attempt on Egypt.

26
His general
Habbafah
invades E-
gypt.

27
As does al-
to his son
Abul Ka-
sem,

28
Who is ut-
terly de-
feated by
Munes.

Al Mohdi, reigned 24 years; and was succeeded by his son Abul Kasem above-mentioned, who then took the surname of *Al Kayem Mohdi*. During his reign we read of nothing remarkable, except the revolt of

Barbary. one Yezid Ebn Condat, a man of mean extraction, but who, having been raised to the dignity of chancellor, found means to raise such a strong party, that the khalif was obliged to shut himself up in the castle of Mohedia. Yezid, being then at the head of a powerful army, soon reduced the capital of Kairwan, the cities of Al Rakkada and Tunis, and several other fortresses. He was no less successful in defeating a considerable number of troops which Al Kayem had raised and sent against him; after which he closely besieged the khalif himself in the castle where he had shut himself up. The siege continued seven months; during which time the place was reduced to such straits, that the khalif must either have surrendered it or been starved, when death put an end to his anxiety in the 12th year of his reign, and 334th of the Hegira.

Al Kayem was succeeded by his son Ishmael, who immediately took upon himself the title of *Al Mansur*. This khalif thought proper to conceal the death of his father till he had made the preparations necessary for reducing the rebels. In this he was so successful, that he obliged Yezid to raise the siege of Mohedia the same year; and in the following gave him two great overthrows, obliging him to shut himself up in the fortress of Kothama, or Cutama, where he besieged him in his turn. Yezid defended the place a long time with desperate bravery; but finding the garrison at last obliged to capitulate, he made shift to escape privately. Al Mansur immediately dispatched a body of forces in pursuit of him; who overtook, and brought him back in fetters; but not till after a vigorous defence, in which Yezid received several dangerous wounds, of which he died in prison. After his death, Al Mansur caused his body to be flayed, and his skin stuffed and exposed to public view. Of Al Mansur's exploits in SICILY an account is given under that article. Nothing farther remarkable happened in his African dominions; and he died after a reign of seven years and 16 days, in the 341st of the Hegira.

Al Mansur was succeeded by his son Abu Zaimin Moad, who assumed the surname of *Al Moez Ledinillah*. He proved a very warlike prince, and maintained a bloody contest with Abdalrahman, khalif of Andalusia; for a particular account of which see the article SPAIN. In the 347th year of the Hegira, beginning March 25th, 958, Al Moez sent a powerful army to the western extremity of Africa, under the command of Abul Hasan Jawhar, one of his slaves, whom he had advanced to the dignity of Vizir. Jawhar first advanced to a city called *Tahart*, which he besieged for some time ineffectually. From thence he marched to Fez, and made the proper dispositions for attacking that city. But finding that Ahmed Ebn Beer, the Emir of the place, was resolved to defend it to the last, he thought proper to abandon the enterprize. However, having traversed all the tract between that capital and the Atlantic ocean, he again sat down before Fez, and took it by storm the following year.

But the greatest achievement performed by this khalif was his conquest of Egypt, and the removal of the khalifat to that country. This conquest, though long projected, he did not attempt till the year of the Hegira 358. Having then made all necessary preparations for it, he committed the care of that expedition to a faithful and experienced general called *Giasur*, or *Jaa-*

far; but in the mean time, this enterprize did not divert Al Moez from the care of his other conquests, particularly those of Sicily and Sardinia: to the last of which he failed in the year of the Hegira 361, continuing a whole year in it, and leaving the care of his African dominions to an experienced officer named *Yusef Ben Zeiri*. He failed thence the following year for Tripoli in Barbary, where he had not staid long before he received the agreeable news that his general had made himself master of Alexandria. He staid no time, but immediately embarked for it, leaving the government of his old African dominions in the hands of his truly servant Yusef abovementioned, and arriving safely at that port was received with all the demonstrations of joy. Here he began to lay the foundations of his new Egyptian dynasty, which was to put a final end to the old one of Kairwan after it had continued about 65 years.

Al Moez preserved all his old dominions of Kairwan or Africa Proper. But the ambition or avarice of the governors whom he appointed suffered them to run quickly to a shameful decay; particularly the new and opulent metropolis of Mohedia, on which immense sums had been lavished, as well as labour and care, so as to render it not only one of the richest and stateliest, but one of the strongest, cities in the world: so that we may truly say, the wealth and splendor of this once famed, though short-lived state, took their final leave of it with the departure of the khalif Al Moez, seeing the whole maritime tract from the Egyptian confines to the Straits of Gibraltar hath since become the nest of the most odious piratical crew that can be imagined.

Under the article ALGIERS we have given a short account of the erection of a new kingdom in Barbary by Texefien; which, however, is there no farther continued than is necessary for the proper understanding the history of that country. A general history might here be given of the whole country of Barbary; but as that would necessarily occasion repetitions under the articles MOROCCO, TRIPOLI, TUNIS, &c. we must refer to those articles for the historical part, as well as for an account of the climate, inhabitants, &c.

BARBATELLI (Bernardino), otherwise called *Pochetti*, a painter of history, fruit, animals, and flowers, was born at Florence in 1542. He was the disciple of Ridolfo Ghirlandaio at Florence; from whose school he went to Rome, and studied there with such uncommon assiduity, that he was frequently so abstracted, and so absolutely engrossed by the objects of his contemplations, as to forget the necessary refreshments of sleep and food. He was excellent in painting every species of animals, fruit, or flowers; and in these subjects not only imitated, but equalled nature. His touch was free, light, and delicate, and the colouring of his objects inexpressibly true; and, beside his merit in his most usual style of painting, the historical subjects which he designed from sacred or profane authors were much esteemed and admired. He died in 1612.

BARBE, or BARB. See BARB.

BARBE, in the military art. To fire in barbe, means to fire the cannon over the parapet, instead of firing through the embrasures; in which case, the parapet must not be above three feet and a half high.

BARBE, or BARDE, is an old word, denoting the armour of the horses of the ancient knights and

Barbary
||
Barbe.

34
And trans-
fers the seat
of govern-
ment to
that coun-
try.

29
Rebellion
of Yezid.

30
Al Mansur
khalif.

31
Death of
Yezid.

32
Al Moez
Ledinillah
khalif.

33
He con-
quers E-
gypt.

Barbe
Barbet.

who were accoutred at all points. It is said to have been an armour of iron and leather, wherewith the neck, breast, and shoulders of the horse were covered.

BARBI (St), a town of Biscay in Mexico, near which are rich silver mines. W. Long. 109. 55. N. Lat. 26. 0.

BARBED, in a general sense, bearded like a fish-hook set with barbs; also shaved or trimmed.

BARBED and Crested, in heraldry, an appellation given to the combs and gills of a cock, when particularized for being of a different tincture from the body.

A *barbed cross*, is a cross the extremities whereof are like the barbed irons used for striking of fish.

BARBEL, in ichthyology. See CYPRINUS.

BARBELICOTÆ, an ancient sect of Gnostics, spoken of by Theodoret. Their doctrines were absurd, and their ceremonies too abominable to be repeated.

BARBER, one who makes a trade of shaving or trimming the beards of other men for money. Anciently, a lute or viol, or some such musical instrument, was part of the furniture of a barber's shop, which was used then to be frequented by persons above the ordinary level of the people, who resorted to the barber either for the cure of wounds, or to undergo some surgical operations, or, as it was then called, to be *trimmed*, a word that signified either shaving or cutting and curling the hair; these, together with letting blood, were the ancient occupations of the barber-surgeon. As to the other important branch of surgery, the setting of fractured limbs, that was practised by another class of men called *bone-setters*, of whom there are hardly any now remaining. The musical instruments in his shop were for the entertainment of waiting customers; and answered the end of a newspaper, with which at this day those who wait for their turn at the barber's amuse themselves. For the origin of the barber's *pole*, see the article APPELLATION.

BARBERINI (Francis), one of the most excellent poets of his age, was born at Barberino, in Tuscany, in the year 1264. As his mother was of Florence, he settled in that city; where his profession of the law, but especially the beauty of his poetry, raised him a very considerable character. The greatest part of his works are lost; but that which is intitled the *Precepts of Leo*, which is a moral poem calculated to instruct those in their duty who have a regard for glory, virtue, and eternity, has had a better fate. It was published at Rome, adorned with beautiful figures, in 1640, by Frederic Ubaldini: he prefixed the author's life; and, as there are in the poem many words which are grown obsolete, he added a glossary to explain them, which illustrates the sense by the authority of contemporary poets.

BARBERINO, a town of Tuscany in Italy, situated at the foot of the Apennine mountains, in E. Long. 12. 15. N. Lat. 43. 40.

BARBERRY, in botany. See BERBERIS.

BARBUSUL (anc. geog.), a town and river of Batica, and a colony in the resort of the Conventus Gaditanus in Spain: now *Marbella* in Grenada.

BARBET, in natural history, a name given by M. Reaumur, and other of the French writers, to a peculiar species of the worms which feed on the pupæ or aphides. See APHIS.

BARBETS, the name of the inhabitants of several valleys in Piedmont, particularly those of Lucern, Angiona, Perugia, and St Martin.

BARBEYRAC (John), was born in Beliers in Lower Languedoc in 1674. He was made professor of law and history at Lutanne in 1710; which he enjoyed for seven years, and during that time was three times rector: in 1717, he was professor of public and private law at Groningen. He translated into French the two celebrated works of Puffendorf, his *Law of Nature and Nations*, and his *Duties of a Man and a Citizen*; to both which he wrote excellent notes, and to the former an introductory preface. He translated also Grotius's treatise *De Jure Belli ac Pacis*, with large and excellent notes; and several of Tillotson's sermons. He wrote a work intitled *Traité de Jeur*, 2 vols 8vo.

BARBEZIEUX, a town of Saintonge in France, with the title of a marquisate. It hath a manufacture of linen cloth; and lies in W. Long. 0. 5. N. Lat 45. 23.

BARBICAN, or BARBACAN. See BARBACAN.

BARBIERI (Giovanni Francesco), otherwise called *Guercino da Cento*, an eminent historical painter, was born at Cento, a village not far from Bologna, in 1590. At first he was the disciple of Benedetto Genari; but he afterwards studied for some time in the school of the Caracci, though he did not adopt the manner of that famous academy. He seemed to prefer the style of Caravaggio to that of Guido or Albano, imagining it impossible to imitate nature truly, without the assistance of strong lights and strong shadows; and from that principle, his light was admitted into his painting room from above. In effect, by the opposition of his strong lights and shadows, he gave such force to his pictures, that few, except those of Caravaggio, can stand near them, and not seem feeble in their effect: however, that manner is censured as not being like nature, because it makes objects appear as if they were seen by candle light, or by the brightness of a sun-beam, which alone can justify the deepness of his shadowing. The principal attention of Guercino seems to have been fixed on arriving at perfection in colouring; he saw the astonishing effects produced by the colouring of the celebrated Venetian masters; and observed, that notwithstanding any imperfections in regard to grace, correctness, or elegance, the works of those masters were the objects of universal admiration. From which observation; he seems to have devoted his whole study to excel in colouring; as if he were convinced, that few are qualified to discern the elevation of thought, which constitutes the excellence of a composition; few may be touched with the grandeur or beauty of the design, or perhaps have a capacity to examine even the correctness of any part of a painting; and yet every eye, and even every imperfect judge of a picture, may be sensibly affected by the force and beauty of the colouring. His taste of design was natural, easy, and often grand, but without any extraordinary share of elevation, correctness, or elegance. The airs of his heads often want dignity, and his local colours want truth. However, there is great union and harmony in his colours, although his carnations are not very fresh; and in all his works there is a powerful and expressive imitation of life, which will

Barbets
Barbieri.

Barbieri
||
Barca.

for ever render them estimable. Towards the decline of his life, he observed that the clearer and brighter style of Guido and Albano had attracted the admiration of all Europe; and therefore he altered his manner, even against his own judgment. But he apologized for that conduct, by declaring, that in his former time he painted for fame, and to please the judicious; and he now painted to please the ignorant, and enrich himself. He died in 1666.—The most capital performance of Guercino, is the history of S. Petronilla, which is considered as one of the ornaments of S. Peter's at Rome.

BARBIERI (Paolo Antonio), da Cento, painter of still life and animals, was the brother of Guercino, and born at Cento in 1596. He chose for his subjects fruit, flowers, insects, and animals; which he painted after nature with a lively tint of colour, great tenderness of pencil, and a strong character of truth and life. He died in 1640.

BARBITOS, or **BARBITON**, an ancient instrument of music, mounted with three, others say seven, strings; much used by Sappho and Alceus, whence it is also denominated *Lesbium*.

BARBLES, or **BARBS**, in fariery, the knots or superfluous flesh that grow up in the channels of a horse's mouth; that is, in the intervals that separate the bars, and lie under the tongue. These, which are also called *barbes*, obtain in black cattle as well as horses, and obstruct their eating. For the cure, they east the beast, take out his tongue, and clip off the barbles with a pair of scissars, or cut them with a sharp knife; others choose to burn them off with a hot iron.

BARBOUR (John), archdeacon of Aberdeen, was esteemed an elegant poet in the reign of David I. He wrote the history of Robert the Bruce, in an heroic poem, which is still extant, and which contains many facts and anecdotes omitted by other historians. The latest edition of this book is that of Glasgow, 8vo, printed in the year 1672. It is intitled, "The acts and life of the most victorious conqueror Robert Bruce king of Scotland; wherein also are contained the martial deeds of the valiant princes Edward Bruce, Sir James Dowglass, Earl Thomas Randal, Walter Stewart, and sundry others." In one passage, he calls it a *romance*; but that word was then of good reputation: every body knows that the 'Romant of romaunts' has been innocently applied to true history; as well as the 'Ballad of ballads' to a sacred song.

BARBUDA, one of the British Caribbee islands, about 20 miles long and 12 broad. It is lowland, but fruitful and pretty populous. The inhabitants addict themselves to husbandry, and find always a ready market for their corn and cattle in the sugar islands. Barbuda is the property of the Codrington family, who have great numbers of negroes here as well as in Barbadoes. It lies in W. Long. 61. 3. N. Lat. 18. 5.

BARCA, a large country of Africa, lying on the coasts of the Mediterranean sea, between the kingdoms of Egypt and Tripoli, extending itself in length from east to west from the 39th to the 46th degree of east longitude, and in breadth from north to south about 30 leagues, as is generally supposed. It is for the most part, especially in the middle, a dry sandy desert; on which account the Arabs call it *Sabart*, or *Gezart*; *Barca*, that is, the desert or road of whirlwinds or

hurricanes. It labours almost every where under a great scarcity of water; and except in the neighbourhood of towns and villages, where the ground produces some small quantities of grain, such as millet, and some maize, the rest is in a manner quite barren and uncultivated, or to speak more properly, uncultivable: and even of that small quantity which those few spots produce, the poor inhabitants are obliged to exchange some part with their indigent neighbours, for dates, sheep, and camels, which they stand in greater need of than they, by reason of their great scarcity of grass and other proper food; for want of which, those that are brought to them seldom thrive or live long. In this country stood the famed temple of Jupiter Ammon; and notwithstanding the pleasantness of the spot where it stood, this part of the country is said to have been the most dangerous of any, being surrounded with such quick and burning sands as are very detrimental to travellers; not only as they sink under their feet, but being light, and heated by the rays of the sun, are easily raised by every breath of wind; which, if it chance to be in their faces, almost burns their eyes out, and stifles them for want of breath; or if vehement, often overwhelms whole caravans. Against this temple Cambyses king of Persia dispatched an army of 50,000 men. They set out from Thebes in upper Egypt, and under the conduct of proper guides reached the city of Oasis seven days journey from that place: but what was their fate afterwards is uncertain; for they never returned either to Egypt or to their own country. The Ammonians informed Herodotus, that, after the army had entered the sandy desert which lies beyond Oasis, a violent wind began to blow from the south at the time of their dinner, and raised the sand to such a degree, that the whole army was overwhelmed and buried alive.

Concerning the government or commerce of this country we know nothing certain. Most probably the maritime towns are under the protection of the Porte; but whether under the basha of Egypt or Tripoli, or whether they have formed themselves into independent states like those of Algiers and Tunis, we cannot say; only we are told that the inhabitants of the maritime towns are more civilized than those that dwell in the inland parts. The first profess Mahometanism, and have imbibed some notions of humanity and justice; whilst the latter, who have neither religion nor any sign of worship among them, are altogether savage and brutish. They are a sort of Arabs, and like them live entirely upon theft and plunder. By them this tract, which before was a continued desert, was first inhabited. At their first coming in, they settled themselves in one of the best places of the country; but as they multiplied, and had frequent wars with one another, the strongest drove the weakest out of the best spots, and sent them to wander in the desert parts, where they live in the most miserable manner, their country hardly affording one single necessary of life. Hence it is that they are said to be the ugliest of all the Arabs: their bodies having scarcely any thing but skin and bone, their faces meagre, with fierce ravenous looks; their gait, which is commonly what they take from the passengers who go through these parts, tattered with long wearing; while the poorest of them have scarce a rag to cover their nakedness. They are most expert and

Barcaion,
Barcelona.

resolute robbers; that being their chief employment and livelihood; but the travellers in these parts are so few, that the Barcaions are often necessitated to make distant excursions into Numidia, Libya, and other southern countries. Those that fall into their hands are made to drink plenty of warm milk: then they hang them up by the feet, and shake them, in order to make them vomit up any money they think they have swallowed; after which, they strip them of all their clothes, even to the last rag: but with all this inhumanity, they commonly spare their life, which is more than the other African robbers do. Yet notwithstanding every artifice they can use, the Barcaions are so poor, that they commonly let, pledge, or even sell, their children to the Sicilians and others from whom they have their corn, especially before they set out on any long excursion.

BARCALON, an appellation given to the prime minister of the king of Siam. The barcalon has in his department every thing relating to commerce, both at home and abroad. He is likewise superintendent of the king's magazines.

BARCELONA, a handsome, rich, and strong city of Spain, in the province of Catalonia, of which it is the capital. This city was originally founded by Hamilcar Barca, and from him called *Barcina*. It was reduced by the Romans, and continued subject to them till the kingdom of Spain was over-run by the Goths and Vandals, and afterwards by the Saracens or Moors. In the beginning of the 9th century, Barcelona was in the hands of the Moors, and under the government of one *Zade*. This governor having more than once abused the clemency of Charlemagne, at last irritated Lewis king of Aquitain, and son to Charles, to such a degree, that he gave orders to his generals to invest the city, and not to rise from before it till they had put *Zade* into his hands. The Moor made a most obstinate resistance, so that the siege lasted many months: at last, finding it impossible to preserve the city much longer, and being destitute of all hopes of relief, he determined, or rather was compelled by the inhabitants, to go to the Christian camp and implore the emperor's mercy; but here he was no sooner arrived than he was arrested and sent prisoner to Charlemagne, who condemned him to perpetual banishment. The people gaining nothing by this expedient, continued to hold out for six weeks longer, when the king of Aquitain himself took the command of the siege. To him they made a proposal, that if he would allow them to march out and go where they pleased, they would surrender the place. Lewis having agreed to this, made his public entry into Barcelona, where he formed a design of extending his father's dominions as far as the *Elro*; but being recalled before he could put his design in execution, he appointed one *Bera* count of Barcelona. The city continued subject to him and his successors, who still enjoyed the title of *counts of Barcelona*, from the year 802 to 1131; during which time we find nothing remarkable, except that the city was once taken by the Moors, but soon after retaken by the assistance of Lewis IV. king of France. In 1131 it was united to the crown of Arragon by the marriage of Don Raymond V. count of Barcelona with the daughter of Don Ramiro the Monk, king of Arragon. In 1465 the Catalonians revolted against Don Juan II. king of Ar-

ragon, out of hatred to his queen Donna Juanna; the consequence of which was, that Barcelona was besieged by that monarch in 1471. Various efforts were made by Lewis XI. of France and the duke of Lorraine in order to raise the siege, but without effect. Things at length were brought to the utmost extremity, when the king offered to pardon them all, without the smallest punishment either in person or property, provided they would submit: but these terms they rejected, chiefly through the influence of the count de Pailhars, who had been pardoned the year before. The army, on the other hand, was very earnest in being led on to the assault, in hopes of plunder. The king, however, wrote a letter to the citizens, dated the 6th of October, in terms as affectionate as if he had been writing to his children, bewailing the miseries they had brought on themselves, and concluding with a protestation that they, and not he, must be answerable for the consequences. Upon this, at the persuasion of a priest who had a reputation for sanctity, they sent deputies to the king, and made a capitulation on the 17th of the same month. In this the king acknowledged they had taken up arms on just motives; and forgave every body except Pailhars, who was, however, suffered to escape. On the 22d of October the king made his entry into the city, and confirmed all their ancient privileges. In 1697, Barcelona was taken by the French, after a bloody siege of 52 days; and the loss of this city had a considerable effect in disposing the Spaniards to agree to the treaty of Ryswick. In Queen Anne's time it was taken by the allies under the Earl of Peterborough; but being afterwards shamefully denied assistance by the English ministry, was obliged to submit to Philip II. by whom the whole province was deprived of its ancient privileges; for a particular account of which, see the article SPAIN.

Barcelona is situated by the sea-side, of a form between a square and an oval; it is surrounded with a good brick wall, round which is another, with 14 bastions, horn-works, ramparts, and ditches; the ramparts are high, broad, and spacious, insonuch that 100 coaches may be seen every evening driving thereon for pleasure. The city is divided into two parts, the Old and the New, which are separated from each other by a wall and a large ditch; the streets are handsome, well paved with large stones, wide, and very clean. It is the residence of a viceroy, is a bishop's see, has a fine university, a mint, a good port, and is adorned with handsome buildings. Here is a court of inquisition, which the inhabitants look upon as an advantage. The remarkable buildings are the cathedral, which is large, handsome, and adorned with two high towers, the church of the Virgin Mary, the palace of the bishop, that of the inquisition, and several religious houses: add to these the palace of the viceroy; the arsenal, which contains arms for 1000 men; the exchange, where the merchants meet; the terraces, where they build the galleys; and the palace where the nobility of the county meet, called *La Casa de la Deputacion*. This last is built with fine large free stone, and adorned with columns of marble: there is in it a large hall, with a gilt ceiling and a handsome portico, wherein persons may either walk or sit; the hall is adorned with the portraits of all the counts of Barcelona. There are several fine squares, particularly that of St

Barcelonet- Michael, into which all the great streets run. The port is wide, spacious, deep, and safe; defended on the one side by a great mole, and on the other sheltered from the west wind by two mountains that advance into the sea, and form a kind of promontory: the mole is 750 paces long, with a quay, at the end of which is a light-house and a small fort. One of the mountains, called *Mount Foy*, is very high, and rises in the middle of the plain near the city: it is covered with gardens, vineyards, groves of trees, and has a strong fort for the defence of the city: this mountain, being a rock, yields an inexhaustible quarry of fine hard free stone. Barcelona is a place of great trade, on account of the conveniency of its harbour; and it has a manufacture of knives greatly esteemed in Spain, as also of blankets. Here are also several glass-houses. The inhabitants are diligent, and equally fit for labour and trade; they are also very civil to strangers. The women are well shaped, and as handsome as any in Spain; they are brisk and lively in their conversation, and more free and unrestrained in their behaviour than in other parts of Spain. E. Long. 2. 5. N. Lat. 41. 26.

BARCELONETTA, a town of France in the government of Dauphiny, and capital of the valley of its own name. It belonged to the Duke of Savoy, and was ceded to France by the treaty of Utrecht in 1712. E. Long. 6. 40. N. Lat. 44. 26.

BARCELOR, a town of Asia, in the East Indies, on the coast of Malabar. It is a Dutch factory, where they carry on a considerable trade in pepper. E. Long. 74. 15. N. Lat. 13. 45.

BARCELOS, a town of Portugal, with the title of a duchy. It is seated on the river Cavado, over which there is a handsome bridge. W. Long. 7. 0. N. Lat. 41. 20.

BARCINO (anc. geog.), a town of the Terraconensis in Spain, and capital of the Laetani. Now **BARCELONA**. See that article.

BARCLAY (Alexander), a learned monk in the reign of Henry VIII. Where he was born, though of no great importance, was nevertheless a matter of virulent contention among his former biographers. Bale, who was his cotemporary, is of opinion he was born in Somersetshire. There is indeed a village of his name, and a numerous family, in that county. Pits thinks he was born in Devonshire. Mackenzie is positive he was a Scotchman; but without proof, unless we admit as such his name *Alexander*. He was, however, educated in Oriel college Oxford. After leaving the university he went abroad, and continued some time in France, Italy, and Germany, where he acquired a competent knowledge of the languages of those countries, as appears from several translations of books, which he afterwards published. On his return to England, he was made chaplain to his patron the bishop of Tyne, who likewise appointed him a priest of St Mary, at the college of Ottery in Devonshire, founded by Grandison bishop of Exeter. After the death of his patron, he became a Benedictine monk of Ely. On the dissolution of that monastery, he first obtained the vicarage of St Matthew at Wokey in Somersetshire; and, in 1549, being then doctor of divinity, was presented to the vicarage of Much Badew in Essex. In 1552 he was appointed rector of Allhallows, Lombard-street, which he lived to enjoy but a very

short time. He died at Croydon in Surrey in June 1552. He is generally allowed to have improved the English language, and to have been one of the politest writers of his time. He composed several original works; but was chiefly remarkable for his translations from the Latin, Italian, French, and German languages. His version from Sallust of the war of Jugurtha is accurate, and not without elegance. His lives of several saints, in heroic verse, are still unpublished. His *Stultifera navis*, or *The ship of fools*, is the most singular of his performances. It was printed by Richard Pynson at London 1509 in folio; and contains a variety of wooden plates, which are worthy the inspection of the curious.

BARCLAY (William), a learned civilian, was born in Aberdeenshire in the year 1541. He spent the early part of his life, and much of his fortune, at the court of Mary Queen of Scots, from whose favour he had reason to expect preferment. In 1573 he went over to France, and at Bourges commenced student of civil law under the famous Cujacius. He continued some years in that seminary, where he took a doctor's degree; and was soon after appointed professor of civil law in the university of Pont-à-Mousson, then first founded by the Duke of Lorraine. That prince afterwards made him counsellor of state and master of requests. Barclay, in the year 1581, married Ann de Mallaville, a French lady, by whom he had a son, who became a celebrated author, and of whom the reader will find an account in the next article. This youth the Jesuits would gladly have received into their society. His father refused his consent, and for that reason these disciples of Jesus soon contrived to ruin him with the duke his patron. Barclay now embarked for Britain, where King James I. offered him considerable preferment, provided he would become a member of the church of England: but, not choosing to comply, he returned to France in 1604; and, soon after his arrival, was appointed professor of civil law in the university of Angers, where he died the year following, and was buried in the Franciscan church. He was esteemed a learned civilian; and wrote elaborately in defence of the divine right of kings, in answer to Buchanan and others. The titles of his works are, 1. *De regno et regali potestate*, &c. 2. *Commentarius in tit. Pandectarum de rebus creditis, et de jurejurando*. 3. *De potestate papæ*, &c. 4. *Præmetia in vitam Agricole*.

BARCLAY (John), son of the former, was, as we have above mentioned, so great a favourite of the Jesuits, that they used all their efforts to engage him in their society. His father would not consent, and carried his son with him into England, who was already an author, for he had published *A commentary upon the Thebais of Statius*, and a Latin poem on the coronation of King James, and the first part of *Euphormio*, 1603. He returned to France with his father; and after his father's death went to Paris, and soon after came back to London: he was there in 1606. He published *The History of the Gun-powder Plot*, a pamphlet of six leaves, printed at Amsterdam. He published at London in 1610 *An Apology for the Euphormio*, and his father's treatise *De potestate papæ*. And at Paris, 1612, he published a book intitled *Pretas*, in answer to Cardinal Bellarmin, who had written against William Barclay.

Barclay, clay's book concerning the power of the Pope. Two years after he published *Icon Animorum*. He was invited to Rome by Pope Paul V. and received a great deal of civility from Cardinal Bellarmin, though he had written against him. He died at Rome in 1621, while his *Argenis* was printing at Paris. This celebrated work has since gone through a great number of editions, and has been translated into most languages. M. de Peirese, who had the care of the first edition, caused the effigies of the author to be placed before the book; and the following distich, written, by Grotius, was put under it:

*Gente Caledonius, Gallus natalibus, hic est,
Romam Romano qui docet ore loqui.*

BARCLAY (Robert), one of the most eminent among the Quakers, the son of Colonel David Barclay, descended of the ancient family of Barclays, was born at Edinburgh in 1648. He was educated under an uncle at Paris, where the Papists used all their efforts to draw him over to their religion. He joined the Quakers in 1669, and distinguished himself by his zeal and abilities in defence of their doctrines. In 1676 he published in Latin at Amsterdam his *Apology for the Quakers*; which is the most celebrated of his works, and esteemed the standard of the doctrine of the Quakers. The *Theses Theologicæ*, which were the foundation of this work, and addressed to the clergy of what sort soever, were published before the writing of the *Apology*, and printed in Latin, French, High-Dutch, Low-Dutch, and English. The dedication of his *Apology* to King Charles II. is very remarkable for the uncommon frankness and simplicity with which it is written. Amongst many other extraordinary passages, we meet with the following: "There is no king in the world who can so experimentally testify of God's providence and goodness; neither is there any who rules so many free people, so many true Christians; which thing renders thy government more honourable, thyself more considerable, than the accession of many nations filled with slavish and superstitious souls. Thou hast tasted of prosperity and adversity; thou knowest what it is to be banished thy native country, to be over-ruled as well as to rule and sit upon the throne; and being oppressed, thou hast reason to know how hateful the oppressor is both to God and man: if, after all those warnings and advertisements, thou dost not turn unto the Lord with all thy heart, but forget him who remembered thee in thy distress, and give up thyself to follow lust and vanity, surely great will be thy condemnation."—He travelled with the famous Mr William Penn through the greatest part of England, Holland, and Germany, and was every where received with the highest respect; for though both his conversation and behaviour were suitable to his principles, yet there was such liveliness and spirit in his discourse, and such serenity and cheerfulness in his deportment, as rendered him extremely agreeable to all sorts of people. When he returned to his native country he spent the remainder of his life in a quiet and retired manner. He died at his own house at Ury on the 3d of October 1690, in the 42d year of his age.

BARCOCHEBAS, or rather BARCOCHAB, a Jewish impostor, whose real name was *Akiba*; but he took that of *Barcochab*, which signifies the *Son of a*

Star; in allusion to the prophecy of Balaam, "There shall a star arise out of Jacob." He proclaimed himself the Messiah; and talking of nothing but wars, victories, and triumphs, made his countrymen rise against the Romans, by which means he was the author of innumerable disorders: he ravaged many places, took a great number of fortresses, and massacred an infinite multitude of people, particularly the Christians. The emperor sent troops to Rufus, governor of Judea, to suppress the sedition. Rufus, in obedience, exercised a thousand cruelties, but could not finish his attempt. The emperor was therefore obliged to send Julius Severus, the greatest general of that time; who attained his end without a direct battle: he fell on them separately; cut off their provisions; and at last the whole contest was reduced to the siege of Bitter, in the 18th year of Hadrian. The impostor perished there. This war cost the Romans a great deal of blood.

BARD, a word denoting one who was a poet by his genius and profession; and "who sung of the battles of heroes, or the heaving breasts of love." *Ossian's Poems*, I. 37.

The curiosity of man is great with respect to the transactions of his own species; and when such transactions are described in verse, accompanied with music, the performance is enchanting. An ear, a voice, skill in instrumental music, and, above all, a poetical genius, are requisite to excel in that complicated art. As such talents are rare, the few that possessed them were highly esteemed; and hence the profession of a bard, which, beside natural talents, required more culture and exercise than any other known art. Bards were capital persons at every festival and at every solemnity. Their songs, which, by recording the achievements of kings and heroes, animated every hearer, must have been the entertainment of every warlike nation. We have Hesiod's authority, that in his time bards were as common as potters or joiners, and as liable to envy. Demodocus is mentioned by Homer as a celebrated bard; and Phemius, another bard, is introduced by him deprecating the wrath of Ulysses in the following words:

"O King! to mercy be thy soul inclin'd,
"And spare the poet's ever-gentle kind:
"A deed like this thy future fame would wrong,
"For dear to gods and men is sacred song.
"Self-taught I sing; by heav'n, and heav'n alone,
"The genuine seeds of poesy are sown;
"And (what the gods bestow) the lofty lay,
"To gods alone, and godlike worth, we pay.
"Save then the poet, and thyself reward;
" 'Tis thine to merit, mine is to record."

ODYSSEY, viii.

Cicero reports, that at Roman festivals, anciently, the virtues and exploits of their great men were sung. The same custom prevailed in Peru and Mexico, as we learn from Garcilasso and other authors. We have for our authority Father Gobien, that even the inhabitants of the Marian islands have bards, who are greatly admired, because in their songs are celebrated the feats of their ancestors.

But in no part of the world did the profession of bard appear with such lustre as in Gaul, in Britain, and in Ireland. Wherever the Celtæ or Gauls are mentioned,

Bard.

tioned by ancient writers, we seldom fail to hear of their druids and their bards; the institution of which two orders, was the capital distinction of their manners and policy. The druids were their philosophers and priests; the bards, their poets and recorders of heroic actions: and both these orders of men seem to have subsisted among them, as chief members of the state, from time immemorial. The Celtæ possessed, from very remote ages, a formed system of discipline and manners, which appears to have had a deep and lasting influence. Ammianus Marcellinus gives them this express testimony, that there flourished among them the study of the most noble art: introduced by the bards, whose office it was to sing in heroic verse the gallant actions of illustrious men; and by the druids, who lived together in colleges or societies, after the Pythagorean manner, and philosophizing upon the highest subjects, asserted the immortality of the human soul. Though John Caesar, in his account of Gaul, does not expressly mention the bards; yet it is plain, that, under the title of *Druides*, he comprehends that whole college or order: of which the bards, who, it is probable, were the disciples of the druids, undoubtedly made a part. It deserves remark, that, according to his account the druidical institution first took rise in Britain, and passed from thence into Gaul; so that they who aspired to be thorough masters of that learning were wont to resort to Britain. He adds too, that such as were to be initiated among the druids, were obliged to commit to their memory a great number of verses, insomuch that some employed 20 years in this course of education; and that they did not think it lawful to record these poems in writing, but sacredly handed them down by tradition from race to race.

So strong was the attachment of the Celtic nations to their poetry and their bards, that amidst all the changes of their government and manners, even long after the order of the druids was extinct, and the national religion altered, the bards continued to flourish; not as a set of strolling songsters, like the Greek *Aspades* or *rhapsodists*, in Homer's time, but as an order of men highly respected in the state, and supported by a public establishment. We find them, according to the testimonies of Strabo and Diodorus, before the age of Augustus Cæsar; and we find them remaining under the same name, and exercising the same functions as of old, in Ireland, and in the north of Scotland, almost down to our own times. It is well known, that, in both these countries, every *regulus* or chief had his own bard, who was considered as an officer of rank in his court.

Of the honour in which the bards were held, many instances occur in Ossian's poems. On all important occasions, they were the ambassadors between contending chiefs; and their persons were held sacred. "Cairnor feared to stretch his sword to the bards, though his soul was dark. Loose the bards (said his brother Cathmor), they are the sons of other times. Their voice shall be heard in other ages, when the kings of Temora have failed."—The bards, as well as the druids, were exempted from taxes and military services, even in times of the greatest danger; and when they attended their patrons in the field, to record and celebrate their great actions, they had a guard assigned

them for their protection. At all festivals and public assemblies they were seated near the person of the king or chieftain, and sometimes even above the greatest nobility and chief officers of the court. Nor was the profession of the bards less lucrative than it was honourable. For, besides the valuable presents which they occasionally received from their patrons when they gave them uncommon pleasure by their performances, they had estates in land allotted for their support. Nay, so great was the veneration which the princes of these times entertained for the persons of their poets, and so highly were they charmed and delighted with their tuneful strains, that they sometimes pardoned even their capital crimes for a song.

We may very reasonably suppose, that a profession that was at once so honourable and advantageous, and enjoyed so many flattering distinctions and desirable immunities, would not be deserted. It was indeed very much crowded; and the accounts which we have of the number, of the bards in some countries, particularly in Ireland, are hardly credible. We often read, in the poems of Ossian, of a hundred bards belonging to one prince, singing and playing in concert for his entertainment. Every chief bard, who was called *Allah Redan*, or *doctor in poetry*, was allowed to have 30 bards of inferior note constantly about his person; and every bard of the second rank was allowed a retinue of 15 poetical disciples.

Though the ancient Britons of the southern parts of this island had originally the same taste and genius for poetry with those of the north, yet none of their poetical compositions of this period have been preserved. Nor have we any reason to be surprized at this. For after the provincial Britons had submitted quietly to the Roman government, yielded up their arms, and had lost their free and martial spirit, they could take little pleasure in hearing or repeating the songs of their bards in honour of the glorious achievements of their brave ancestors. The Romans too, if they did not practise the same barbarous policy which was long after practised by Edward I. of putting the bards to death, would at least discourage them, and discountenance the repetition of their poems, for very obvious reasons. These sons of the song being thus persecuted by their conquerors, and neglected by their countrymen, either abandoned their country or their profession; and their songs being no longer heard, were soon forgotten.

It is probable that the ancient Britons, as well as many other nations of antiquity, had no idea of poems that were made only to be repeated, and not to be sung to the sound of musical instruments. In the first stages of society in all countries, the two sister-arts of poetry and music seem to have been always united; every poet was a musician, and sung his own verses to the sound of some musical instrument. This, we are directly told by two writers of undoubted credit, was the case in Gaul, and consequently in Britain, in this period.

"The bards (says Diodorus Siculus *) sung their poems to the sound of an instrument not unlike a lyre." *Lib. 7. sec. 31.*
 "The bards, (according to Ammianus Marcellinus †, † *Lib. 15. as above cited*), celebrated the brave actions of illustrious men in heroic poems, which they sung to the sweet sounds of the lyre." This account of these Greek and Latin writers is confirmed by the gene-

Bard.

Blair's Dissertation, subjoined to Ossian's Poems, Vol. II. p. 306.

Lib. xv. c. 9.

Del Gal. 1. 6.

Ossian, II. 22.

Henry's History, Vol. I. p. 365.

Lib. 7.

Lib. 15.

c. 9.

Bard
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Barlefa-
1125.
} Vol. II.
} 112, 11.

ral strain, and by many particular passages, of the poems of Ossian. "Beneath his own tree, at intervals, each bard sat down with his harp. They raised the song, and touched the string, each to the chief he loved &c."

Kilm's
Sketches,
ubi supra.

§ See the
article
Attention.

The invention of writing made a considerable change in the bard-profession. It is now an agreed point, that no poetry is fit to be accompanied with music, but what is simple: a complicated thought or description requires the utmost attention, and leaves none for the music; or, if it divide the attention, it makes but a faint impression. The simple operas of Quinault bear away the palm from every thing of the kind composed by Boileau or Racine. But when a language, in its progress to maturity, is enriched with variety of phrases fit to express the most elevated thoughts, men of genius aspired to the higher strains of poetry, leaving music and song to the bards: which distinguished the profession of a poet from that of a bard. Homer, in a lax sense, may be termed a bard; for in that character he strolled from feast to feast. But he was not a bard in the original sense: he, indeed, recited his poems to crowded audiences; but his poems are too complex for music, and he probably did not sing them, nor accompany them with the lyre. The Trovadores of Provence were bards in the original sense, and made a capital figure in the days of ignorance, when few could read, and fewer write. In later times, the songs of the bards were taken down in writing, which gave every one access to them without a bard; and the profession sunk by degrees into oblivion. Among the Highlanders of Scotland, reading and writing in their own tongue is not common even at present; and that circumstance supported long the bard-profession among them, after being forgot among the neighbouring nations.

BARDANA, or BURDOCK. See ARCTIUM.

BARDARIOLE, in antiquity, were a kind of ancient guard attending the Greek emperors, armed with rods, wherewith they kept off the people from crowding too near the prince when on horseback. Their captain, or commander, was denominated *primivergius*.—The word was probably formed from the *barde*, or housings on their horses.

BARDAS, the brother of the empress Theodora, and uncle of the famous Photius, is said to have had no other good quality besides that of loving the sciences and polite literature, which he established in the Eastern empire; for he was treacherous, cruel, and ambitious. In the year 856, he assassinated Theoctistes, general of the Emperor Michael's forces, and obtained his post. At length he caused the disgrace of the Empress Theodora; and St Ignatius, patriarch of Constantinople, reproaching him for his vices, he had him deposed in 858, in order to make room for Photius. Bardas was assassinated by Basilus the Macedonian, in 866.

BARDED, in heraldry, is used in speaking of a horse that is caparisoned. He bears fable, a *cavalier d'or*, the horse *barbed*, argent.

BARDESANISTS, a sect of ancient heretics, thus denominated from their leader Bardesanes, a Syrian of Edessa in Mesopotamia. Bardesanes, born in the middle of the second century, became eminent, after his conversion to Christianity, for his zeal against

heretics; against whom, we are informed by St Jerome and Eusebius, he wrote a multitude of books: yet had he the misfortune to fall, himself, into the errors of Valentinus, to which he added some others of his own. He taught, that the actions of men depend altogether on fate, and that God himself is subject to necessity. His followers went further, and denied the resurrection of the body, and the incarnation and death of our Saviour; holding that these were only apparent or phantastical.

BARDEWICK, a town of Germany, in the circle of Lower Saxony and duchy of Lunenburg; formerly a very large place; but being ruined in 1189, by the Duke of Saxony, has never yet recovered itself. It is seated on the river Ilmenau, in E. Long. 10. 6. N. Lat. 53. 40.

BARDI, a strong and rich town of Germany, in the duchy of Pomerania, with a castle and spacious harbour. It is subject to the Swedes; and is situated near the Baltic Sea, in E. Long. 13. 20. N. Lat. 54. 23.

BARE, in a general sense, signifies *not covered*. Hence we say bare-headed, bare-footed, &c.

The Roman women, in times of public distress and mourning, went *bare-headed*, with their hair loose.—Among both Greeks, Romans, and Barbarians, we find a feast called *Nudipedalia*.—The Abyssinians never enter their churches, nor the palaces of kings and great men, but *bare-footed*.

Bare-foot Carmelites and Augustines, are religious of the order of St Carmel and St Auttin, who live under a strict observance, and go without shoes, like the capuchins. There are also barefoot fathers of mercy. Formerly there were barefoot dominicans, and even barefoot nuns of the order of St Augustin.

BAREITH, a town of Germany in Franconia, in the margravate of Culembach, with a famous college belonging to the margrave of Brandenburg Bareith. E. Long. 11. 50. N. Lat. 50. 0.

BARENT (Ditric), an excellent painter, was born at Amsterdam, and was the son of a very industrious painter. He studied in Italy, and became the favourite disciple of Titian, with whom he lived a long time; but at length returned to Amsterdam, where he performed many extraordinary pieces. He died in 1582, aged 48.

BARFLEUR, a town of France, in Normandy, on the continent. It was ruined, and had its harbour filled up by the English in 1346. The Cape of that name is 12 miles east of Cherbourg, and near it part of the French fleet was destroyed in 1692. W. Long. 1. 6. N. Lat. 49. 40.

BARGAIN AND SALE, a species of conveyance in the English law. It is a kind of a real contract, whereby the bargainer for some pecuniary consideration bargains and sells, that is, contracts to convey, the land of the bargainee; and becomes by such bargain a trustee for, or seized to the use of, the bargainee; and then the statute of uses completes the purchase: or, as it hath been well expressed, the bargain first vests the use, and then the statute vests the possession. But as it was foreseen that conveyances, thus made, would want all those benefits of notoriety which the old common-law assurances were calculated to give; to prevent therefore clandestine conveyances of freeholds, it

Bardewick
||
Bargain.

Barge
||
Bari.

was enacted in the same session of parliament by statute 27 Hen. VIII. c. 16. that such bargains and sales should not enure to pass a freehold, unless the same be made by indenture, and enrolled within six months in one of the courts of Westminster-hall, or with the *custos rotularum* of the county. Clandestine bargains and sales of chattel interests, or leases for years, were thought not worth regarding, as such interests were very precarious till about six years before; which also occasioned them to be overlooked in framing the statute of uses: and therefore such bargains and sales are not directed to be enrolled. But how impossible is it to foresee, and provide against, all the consequences of innovations! This omission has given rise to the species of conveyance by LEASE and RELEASE.

BARGE (*bargie*, Dutch), a vessel or boat of state, furnished with elegant apartments, canopies, and cushions; equipped with a band of rowers, and decorated with flags and streamers: they are generally used for processions on the water, by noblemen, officers of state, or magistrates of great cities. Of this sort, too, we may naturally suppose the famous barge or galley of Cleopatra, which, according to Shakepear,

————— Like a burnish'd throne
Burnt on the water: the poop was beaten gold:
Purple her sails; and so perfumed, that
The winds were love-sick with them: the oars were silver,
Which to the tune of flutes kept time, and made
The water which they beat to follow faster,
As amorous of their strokes ———

————— At the helm
A seeming mermaid steer'd: the silken tackles
Swell'd with the touches of those flower-soft hands
That yarely 'form'd their office. ———

There are likewise other barges of a smaller kind, for the use of admirals and captains of ships of war. These are of a lighter frame, and may be easily hoisted into and out of the ships to which they occasionally belong.

BARGE is also the name of a flat-bottomed vessel of burden, for lading and discharging ships, and removing their cargoes from place to place in a harbour.

BARGE-Coupler, in architecture, a beam mortised into another, to strengthen the building.

BARGE-Course, with bricklayers, a term used for that part of the tiling which projects over without the principal rafters, in all sorts of buildings where there is either a gable or a kirkin-head.

BARGHMASTER, **BARMER**, or **BAR-MASTER**, in the royal mines, the steward or judge of the barmote. — The bar-master is to keep two great courts of barmote yearly; and every week a small one, as occasion requires.

BARGHMOTE, or **BARMOTE**, a court which takes cognizance of causes and disputes between miners. — By the custom of the mines, no person is to sue any miner for ore-debt, or for ore, or for any ground in variance, but only in the court of barmote, on penalty of forfeiting the debt, and paying the charges at law.

BARI, a very handsome and rich town of Italy, in the kingdom of Naples; the capital of Terra di Bari, and an archbishop's see. It is well fortified, is seated on the gulph of Venice, and had formerly a good har-

bour, but it was destroyed by the Venetians. E. Long. 17. 40. N. Lat. 41. 31.

BARI, or *Terra di Bari*, a territory of Italy in the kingdom of Naples, of which the above-mentioned city is the capital. It is bounded on the north by the Capitanata, on the north-west by the Ulterior Principato, on the south by the Basilicata, on the south-east by the Terra de Otranto, and on the north-east by the gulph of Venice. It has no considerable river except the Ofianto, which separates it from the Capitanata. The air is temperate; and the soil produces plenty of corn, fruit, and saffron: but there are a great many serpents, and spiders called *tarantulas*. See **ARANEÆ**. The principal towns are Bari the capital, Frani, Andria, Bavo, Bilonto, Conversano, Monopoli, Polignano, Barletta, and Mafsetto. The two first are archiepiscopal, and all the rest episcopal.

BARILLA, or **BARILHA**, the name of a plant cultivated in Spain for its ashes, from which the purest kinds of mineral alkali are obtained.

There are four plants, which, in the early part of their growth, bear so strong a resemblance to each other as would deceive any but the farmers and nice observers. These four are, *barilla*, *gazul* (or, as some call it, *algazul*), *soza*, and *salicornia* or *salicor*. They are all burnt to ashes; but applied to different uses, as being possessed of different qualities. Some of the roguish farmers mix more or less of the three last with the first; and it requires a complete knowledge of the colour, taste, and smell of the ashes to be able to detect their knavery.

Barilla is sown afresh every year. Its greatest height above ground is four inches: each root pushes out a vast number of little stalks, which again are subdivided into smaller sprigs resembling samphire; and all together form a large spreading tufted bush. The colour is bright green; as the plant advances towards maturity, this colour vanishes away till it comes at last to be a dull green tinged with brown.

Gazul bears the greatest affinity to *barilla*, both in quality and appearance: the principal difference consists in its growing on a still drier saltier earth, consequently it is impregnated with a stronger salt. It does not rise above two inches out of the ground, spreading out into little tufts. Its sprigs are much flatter and more pulpy than those of *barilla*, and are still more like samphire. It is sown but once in three, four, or five years, according to the nature of the soil.

Soza, when of the same size, has the same appearance as *gazul*; but in time grows much larger, as its natural soil is a strong salt marsh, where it is to be found in large tufts of sprigs, treble the size of *barilla*, and of a bright green colour, which it retains to the last.

Salicor has a stalk of a deep green colour inclining to red, which last becomes by degrees the colour of the whole plant. From the beginning it grows upright, and much resembles a bush of young rosemary. Its natural soil is on the declivities of hills near the salt marshes, or on the edges of the small drains or channels cut by the husbandmen for the purpose of watering the fields: before it has acquired its full growth, it is very like the *barilla* of those seasons in which the ground has been dunged before sowing. In those years

Bari,
Barilla.

Barilla
Bark.

years of manuring, barilla, contrary to its usual nature, comes up with a tinge of red; and when burnt falls far short of its wonted goodness, being bitter, more impregnated with salts than it should be, and raising a blister if applied for a few minutes to the tongue. Barilla contains less salt than the others; when burnt, it runs into a mass resembling a spongy stone, with a faint cast of blue.

Gazul, after burning, comes as near barilla in its outward appearance as it does while growing in its vegetable form; but, if broken, the inside is of a deeper and more glossy blue. Soza and falicor are darker, and almost black within, of a heavier consistence, with very little or no sign of sponginess.

All these ashes contain a strong alkali; but barilla the best and purest, though not in the greatest quantity. Upon this principle, it is fitted for making glass and bleaching linen; the others are used in making soap. Each of them would whiten linen; but all, except barilla, would burn it. A good crop of barilla impoverishes the land to such a degree, that it cannot bear good barilla a second time, being quite exhausted. For this reason the richer farmers lay manure upon the ground, and let it lie fallow for a season; at the end of which it is sown afresh without any danger, as the weeds that have sprung up in the year of rest have carried off all the pernicious effects of the dung. A proper succession of crops is thus secured by manuring and fallowing the different parts of the farm, each in their turn. The poorer tribe of cultivators cannot pursue the same method for want of capital; and are therefore under the necessity of sowing their lands immediately after manuring, which yields them a profit just sufficient to afford a present scanty subsistence, though the quality and price of their barilla be but trifling.

The method used in making barilla is the same as that followed in Britain in burning kelp. The plant as soon as ripe is plucked up and laid in heaps, then set on fire. The salt juices run out below into a hole made in the ground, where they run into a vitrified lump, which is left about a fortnight to cool. An acre may give about a tun.

BARING OF TREES, in agriculture, the taking away some of the earth about the roots, that the winter-rain and snow-water may penetrate farther into the roots. This is frequently practised in the autumn.

BARJOLS, a small populous town of Provence, in France. E. Long. 5. 23. N. Lat. 43. 35.

BARIUM, (anc. geog.) a town of Apulia on the Adriatic; so called from the founders, who being expelled from the island Bara, built this town. It is now called **BARI**; see that article.

BARK, in the anatomy of plants, the exterior part of trees, corresponding to the skin of an animal. For its organization, texture, &c. see the article **PLANTS**.

As animals are furnished with a panniculus adiposus, usually replete with fat, which invests and covers all the fleshy parts, and screens them from external

cold; plants are encompassed with a bark replete with fatty juices, by means whereof the cold is kept out, and in winter-time the spiculae of ice prevented from fixing and freezing the juices in the vessels: whence it is, that some sorts of trees remain ever-green the year round, by reason their barks contain more oil than can be spent and exhaled by the sun, &c.

The bark has its peculiar diseases, and is infested with insects peculiar to it.—It appears from the experiments of M. Buffon, that trees stripped of their bark the whole length of their stems, die in about three or four years. But it is very remarkable, that trees thus stripped in the time of the sap, and suffered to die, afford timber heavier, more uniformly dense, stronger, and fitter for service, than if the trees had been cut down in their healthy state. Something of a like nature has been observed by Vitruvius and Evelyn.

The ancients wrote their books on bark, especially of the ash and lime-tree, not on the exterior, but on the inner and finer bark called *phlyra*.

There are a great many kinds of barks in use in the several arts. Some in agriculture, and in tanning leather, as the oak-bark (A); some in physic, as the *quinquina* or Jesuit's bark, mace, &c.; others in dyeing, as the bark of alder, and walnut-trees; others in spicery, as cinnamon, cassia lignea, &c.; and others for divers uses, as the bark of the cork-tree, &c.

In the East Indies, they prepare the bark of a certain tree so as to spin like hemp. After it has been beat and steeped in water, they extract long threads from it, which are something between silk and common thread; being neither so soft nor so glossy as silk, nor so rough and hard as hemp. They mix silk with it in some stuffs; and these are called *nillaes*, and *cherquemelles*.

Of the bark of a species of mulberry-tree the Japanese make their paper. See **MORUS**.

In the island of O-Taheite, the natives make their cloth, which is of three kinds, of the bark of three different trees; the paper-mulberry above-mentioned, the bread fruit tree, and the cocoa-tree. That made of the mulberry is the finest and whitest, and worn chiefly by the principal people. It is manufactured in the following manner. When the trees are of a proper size, they are drawn up, and stripped of their branches; after which, the roots and tops are cut off: the bark of these rods being then slit up longitudinally, is easily drawn off; and, when a proper quantity has been procured, it is carried down to some running water, in which it is deposited to soak, and secured from floating away by heavy stones: when it is supposed to be sufficiently softened, the women servants go down to the brook, and, stripping themselves, sit down in the water, to separate the inner bark from the green part on the outside: to do this, they place the under side upon a flat smooth board, and with a kind of shell scrape it very carefully, dipping it continually in the water till nothing remains but the fine fibres of the inner coat. Being thus prepared in the afternoon, they are spread

(A) The bark of the oak has been long used in tanning leather, and even thought essential to that operation: but a different substance has been lately discovered, which answers the purpose full as well, and may be procured at a much cheaper rate; we mean oak saw-dust, or the chips of oak reduced to powder. This valuable secret was purchased by the society for the encouragement of arts, &c.

Bark. spread out upon plantain leaves in the evening; they are placed in lengths of about 11 or 12 yards, one by the side of another, till they are about a foot broad, and two or three layers are also laid one upon the other: care is taken that the cloth shall be in all parts of an equal thickness, so that if the bark happens to be thinner in any one particular part of one layer than the rest, a piece that is somewhat thicker is picked out to be laid over in the next. In this state it remains till the morning, when great part of the water which it contained when it was laid out is either drained off or evaporated, and the several fibres adhere together, so as that the whole may be raised from the ground in one piece. It is then taken away, and laid upon the smooth side of a long piece of wood prepared for the purpose, and beaten by the women servants. The instrument used for this purpose is a square wooden club, having each of its four sides or faces marked, lengthways, with small grooves, or furrows, of different degrees of fineness; those on one side being of a width and depth sufficient to receive a small pack-thread, and the others finer in a regular gradation, so that the last are not more than equal to sewing silk. They beat it first with the coarsest side of this mallet, keeping time like our smiths; it spreads very fast under the strokes, chiefly however in the breadth, and the grooves in the mallet mark it with the appearance of threads; it is successively beaten with the other sides, last with the finest, and is then fit for use. Of this cloth there are several sorts, of different degrees of fineness, in proportion as it is more or less beaten. The other cloth also differs in proportion as it is beaten; but they differ from each other in consequence of the different materials of which they are made. The bark of the breadfruit is not taken till the trees are considerably longer and thicker than those of the mulberry; the process afterwards is the same.—Of the bark, too, of a tree which they call *poerou**, they manufacture excellent matting; both a coarse sort which serves them to sleep upon, and a finer to wear in wet weather. Of the same bark they also make ropes and lines, from the thickness of an inch to the size of a small pack-thread.

BARK, or *Jesuit's Bark*, is a name given by way of eminence to the quinquina, or cinchona. See CINCHONA.

BARK, in navigation, a general name given to small ships; it is however peculiarly appropriated by seamen to those which carry three masts without a mizen top-sail. Our northern mariners, who are trained in the coal-trade, apply this distinction to a broad-sterned ship which carries no ornamental figure on the stern or prow.

Water-BARKS, are little vessels used in Holland for the carriage of fresh water to places where it is wanting, as well as for the fetching sea-water to make salt of. They have a deck, and are filled with water up to the deck.

BARK-Binding, a distemper incident to trees; cured by slitting the bark, or cutting along the grain.

BARK-Galling, is when the trees are galled with thorns, &c. It is cured by binding clay on the galled places.

BARK-Lozgue, or *Barca Longa*, a small low sharp-built, but very long, vessel without a deck. It goes with sails and oars, and is very common in Spain.

BARKHAMSTEAD, or **BERHAMSTEAD**, a town of Hertfordshire in England; formerly of more note than at present. It had formerly a strong castle built by the Normans, but it has been long since demolished. W. Long. \circ . 35. N. Lat. 45. 49.

BARKING, a town of Essex in England, seated on the river Roding, not far from the Thames, in a very unwholesome air. It has been chiefly noted for a large monastery, now in ruins; there being nothing left standing but a small part of the walls, and a gate-house. E. Long. \circ . 13. N. Lat. 51. 30.

BARKING of Trees, the peeling off the rind or bark. This must be done, in our climate, in the month of May, because at that time the sap of the tree separates the bark from the wood. It would be very difficult to perform it at any other time of the year, unless the season was extremely wet and rainy; for heat and dryness are a very great hindrance to it.

By the French laws, all dealers are forbid to bark their wood while growing, on the penalty of 500 livres. This law was the result of ignorance; it being now found, that barking of trees, and letting them die, increases the strength of timber.

BARKLEY, a town of Gloucestershire in England, seated on a branch of the river Severn. It was formerly of some note for a nunnery, and has still the title of a barony. W. Long. 2. 30. N. Lat. 51. 40.

BARKWAY, a town of Hertfordshire in England, on the great road from London to York. W. Long. \circ . 5. N. Lat. 52.

BARLÆUS (Gaspar), professor of philosophy at Amsterdam, and one of the best Latin poets of the 17th century. There was scarce any thing great that happened in the world while he lived, but he made a pompous elegy upon it, when reasons of state were no obstacle to it. He was a great defender of Arminius; and showed his abilities in history by his relation of what passed in Brasil during the government of count Maurice of Nassau, published 1647. He died the year after.

BARLERIA, **SNAP-DRAGON**: A genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Personate*. The calyx is quadripartite; two of the stamina are much less than the rest; the capsule is quadrangular, bilocular, bivalved, elastic, and without claws; and the seeds are two. There are ten species; all natives of the warm parts of America, and therefore require to be kept in a stove and treated like other tender exotics. They possess no great beauty nor any remarkable property; but are kept for the sake of variety.

BARLETTA, a handsome and strong town of Italy, in the kingdom of Naples, and in the Terra di Bari, with a bishop's see. It is situated on the gulph of Venice, in E. Long. 16. 32. N. Lat. 41. 30.

BARLEY, in botany. See HORDEUM; and AGRICULTURE, n^o 139.

The principal use of barley among us is for making beer; in order to which it is first malted. See the article BEER.

The Spaniards, among whom malt liquors are little known, feed their horses with barley as we do with oats. In Scotland, barley is a common ingredient in broths; and the consumpf of it for that purpose is

Barley,
Barlow.

very considerable, *barley-broth* being a dish as frequent there as that of *scup* in France.

PEARL BARLEY, and *FRENCH BARLEY*; barley freed of the husk by a mill; the distinction between the two being, that the pearl barley is reduced to the size of small shot, all but the very heart of the grain being ground away.

BARLEY-WATER, is a decoction of either of these, reputed soft and lubricating, of frequent use in physic. This well-known decoction is a very useful drink in many disorders; and is recommended, with nitre, by some authors of reputation, in slow fevers.

BARLEY-CORN is used to denote a long measure, containing in length the third part of an inch, and in breadth the eighth. The French carpenters also use barley-corn, *grain d'orge*, as equivalent to a line, or the twelfth part of an inch.

BARLEY-CORN (*grain d'orge*), is also used in building, for a little cavity between the mouldings of joiners work, serving to separate or keep them asunder; thus called because made with a kind of plane of the same name.

BARLOW (William), bishop of Chichester, descended of an ancient family in Wales, was born in the county of Essex. In his youth he favoured the reformation; and travelled to Germany to be instructed by Luther, and other preachers of the new doctrine. How long he continued a Protestant is uncertain; but from his letter to king Henry VIII. quoted below, it appears that he wrote several books against the church of Rome. However, he was a regular canon in the Augustine monastery of St Olith in the county of Essex, and studied some time at Oxford with the brothers of that order, where he took the degree of doctor in divinity. He was then made prior of the convent at Bisham in Berkshire; and afterwards succeeded to the several priories of Blackmore, Typtree, Lega, Bromhole, and Haverford-well. On the dissolution of abbeys, he resigned not only with a good grace, but persuaded several other abbots to follow his example. King Henry was so pleased with his ready obedience on this occasion, that he sent him, in 1535, on an embassy to Scotland; in the same year, made him bishop of St Asaph; in two months after, translated him to the see of St David's, and in 1547 to that of Bath and Wells. During this time, our good bishop, as appears from the following epistle to the king, was, or pretended to be, a staunch Papist; it was written in 1533. "Praise be to God, who of his infynyte goodness and mercy inestimable hath brought me out of darkness into light, and from deadly ignorance into the quick knowledge of the truth. From the whiche, through the fiend's instigation and false persuasion, I have greatly swerved.—In so much that I have made certayn bookes, and have soffred them to be emprinted, as the tretise of the *buryall of the masse*, &c. In these tretises I perceive and acknowledge myself grievously to have erred, namely against the blessed sacrament of the altare; disallowing the masse and denying purgatory, with slanderous infamy of the pope and my lord cardinal, and outrageous raylying against the clergy; which I have forsaken and utterly renounced—Asks pardon, *William Barlow*." However, when Edward VI. N° 41.

Barl. w.

came to the crown, he was again a Protestant; and for that reason, on queen Mary's accession, was deprived of his bishoprick, and sent prisoner to the fleet, where he continued some time. At length he found means to escape, and immediately joined the other English Protestants in Germany. When queen Elizabeth ascended the throne, our prelate was raised to the see of Chichester, and soon after made first prebendary of the collegiate church of Westminster. He died in 1568, and was buried in the cathedral at Chichester. He had five daughters, each of which married a bishop. He wrote, 1. *The buryall of the masse*. 2. *The climbing up of sycers and religious persons portred with figures*. 3. *Christian homilies*. 4. *A book upon Cosmography*. 5. *The godly and pious institution of a Christian man, commonly called the bishop's book*; and several other works. He is said to be the translator of the Apocrypha as far as the book of Wisdom. His letters to M. Parker are in manuscript in Corpus Christi college Cambridge, Misc. i. 445.

BARLOW (William), a mathematician and divine, the son of the bishop of Chichester, was born in Pembrokehire whilst his father was bishop of St David's. In 1560, he was entered commoner of Baliol college in Oxford; and in 1564, took a degree in arts, which having completed by determination, he left the university and went to sea; but in what capacity is uncertain: however, he acquired considerable knowledge in the art of navigation. About the year 1573, he entered into orders; and became prebendary of Winchester, and rector of Easton near that city. In 1588, he was made prebendary of Litchfield, which he exchanged for the place of treasurer of that church. Some years after, he was made chaplain to prince Henry, the son of king James I.; and in 1614, archdeacon of Salisbury. He was the first writer on the nature and properties of the magnet. Barlow died in the year 1625, and was buried in the church at Easton. His works are, 1. *The navigator's supply, containing many things of principal importance belonging to navigation, and use of diverse instruments framed chiefly for that purpose*. Lond. 1597, 4to. Dedicated to Robert Earl of Essex. 2. *Magnetical advertisements, or diverse pertinent observations and approved experiments concerning the nature and properties of the lodestone*, Lond. 1616, 4to. 3. *A brief discovery of the idle animadversions of Mark Ridley, M. D. upon a treatise entitled Magnetical advertisements*. Lond. 1618, 4to.

BARLOW (Thomas), born in 1607, was appointed fellow of Queen's college in Oxford in 1633; and two years after was chosen reader of metaphysics to the university. He was keeper of the Bodleian library, and in 1657 was chosen provost of Queen's college. After the restoration of king Charles II. he was nominated one of the commissioners for restoring the members unjustly expelled in 1648. He wrote at that time *The case of Toleration in matters of Religion*, to Mr R. Boyle. In 1675, he was made bishop of Lincoln. After the popish plot, he published several tracts against the Roman-catholic religion; in which he shows an uncommon extent of learning, and skill in polemical divinity. Nevertheless, when the Duke of York was proclaimed king, he took all opportunities of expressing his affection toward him; but after the revolution he as readily voted

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Barnias

voted that the king had abdicated his kingdom; and was very vigorous in excluding those of the clergy who refused the oaths, from their benefices.

Mr Granger observes, that "this learned prelate, whom nature designed for a scholar, and who acted in conformity with the bent of nature, was perhaps as great a master of the learned languages, and of the works of the celebrated authors who have written in those languages, as any man of his age. The greatest part of his writings, of which Mr Wood has given us a catalogue, are against Popery; and his conduct for some time, like that of other Calvinists, appeared to be in direct opposition to the church of Rome. But after James ascended the throne, he seemed to approach much nearer to Popery than he ever did before. He sent the king an address of thanks for his declaration for liberty of conscience, and is said to have written reasons for reading that declaration. His compliances were much the same after the revolution. His moderation, to call it by the feeblest name, was very great; indeed so great as to bring the firmness of his character in question. But casuistry, which was his most distinguished talent, not only reconciles seeming contradictions, but has also been known to admit contradictions themselves. He was, abstracted from this laxity of principles, a very great and worthy man." He died at Buckden, in Huntingdonshire, on the 8th of October 1691, in the 85th year of his age.

BARLOW (Francis), an English painter, was born in Lincolnshire. On his coming to London, he was placed with one Shepherd, a limner; but his genius led him chiefly to drawing of birds, fish, and other animals. There are six books of animals from his drawings, and he painted some ceilings with birds for noblemen and gentlemen in the country.—His etchings are numerous; his illustration of Esop is his greatest work. He died in 1702.—There is something pleasing in the composition and manner of this master, though neither is excellent. His drawing too is very indifferent; nor does he characterize any animal justly. His birds in general are better than his beasts.

BARM, the same with yeast. See YEST.—Barm is said to have been first used by the Celtæ in the composition of bread. About the time of Agricola's entrance into Lancashire, a new sort of loaf had been introduced at Rome; which was formed only of water and flour, and much esteemed for its lightness: and it was called the *water cake* from its simple composition, and the *Parthian roll* from its original inventors. But even this was not comparable to the French or Spanish bread for its lightness. The use of curmi*, and the knowledge of brewing, had acquainted the Celtes with an ingredient for their bread, which was much better calculated to render it light and pleasant, than the leaven, the eggs, the milk, or the wine and honey, of other nations. This was the spume which arose on the surface of their curw in fermentation, and which the Welch denominate *burm*, and we *barm*. The Celtes of Gaul, of Spain, and most probably therefore of South-Britain, had long used it; and their bread was, in consequence of this, superior in lightness to that of any other nation in the world †. See the articles BAKING and BREAD.

BARMAS, an East Indian people, who in 1515

possessed all the coast extending from Bengal to Pegu. It appears also, that they were formerly masters of Ava, the dominions of which extended as far as China; and of consequence the Barmas were masters of most of the northern part of the peninsula beyond the Ganges. Their dominions, however, were afterwards reduced to very narrow bounds, and their king became tributary to him of Pegu; but by degrees they not only recovered their former empire, but conquered the kingdoms of Pegu, Siam, and several others. By the latest accounts, their kingdom extends from the province of Yun-nan in China, about 800 miles in length from north to south, and 250 in breadth from east to west. See the article PEGU.

BARN, in husbandry, a covered place or house, with air-holes in the sides, for laying up any sort of grain, hay, or straw.

St BARNABAS'S DAY, a Christian festival, celebrated on the 11th of June.—St Barnabas was born at Cyprus, and descended of the tribe of Levi, whose Jewish ancestors are thought to have retired thither to secure themselves from violence during the troublesome times in Judea. His proper name was *Joses*; to which, after his conversion to Christianity, the apostles added that of *Barnabas*, signifying either *the son of prophecy*, or *the son of consolation*; the first respecting his eminent prophetic gifts, the other his great charity in selling his estate for the comfort and relief of the poor Christians. He was educated at Jerusalem, under the great Jewish doctor Gamaliel; which might probably lay the foundation of that intimate friendship which was afterwards contracted between this apostle and St Paul. The time of his conversion is uncertain; but he is generally esteemed one of the seventy disciples chosen by our Saviour himself.

At Antioch, St Paul and St Barnabas had a contest, which ended in their separation: but what followed in respect to St Barnabas, is not related in the *Acts of the Apostles*. Some say, he went into Italy, and founded a church at Milan. At Salamis, we are told, he suffered martyrdom; whither some Jews, being come out of Syria, set upon him, as he was disputing in the synagogue, and stoned him to death. He was buried, by his kinsman Mark, whom he had taken with him, in a cave near that city. The remains of his body are said to have been discovered in the reign of the emperor Zeno, together with a copy of St Matthew's gospel, written with his own hand, and lying on his breast.

St BARNABAS'S *Epistle*, an apocryphal work ascribed to St Barnabas, and frequently cited by St Clement of Alexandria and Origen.—It was first published in Greek, from a copy of father Hugh Menaid a Benedictine monk. An ancient version of it was found in a manuscript of the abbey of Cobey, near a thousand years old. Vossius published it, in the year 1656, together with the epistles of St Ignatius.

St BARNABAS'S *Gospel*, another apocryphal work, ascribed to St Barnabas the apostle, wherein the history of Jesus Christ is related in a manner very different from the account given us by the four Evangelists. The Mahometans have this gospel in Arabic, and it corresponds very well with those traditions which Mahomet followed in his Koran. It was, probably, a forgery of some nominal Christians; and afterwards

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Barnabas† Flory, lib.
xviii. c. 7,
21.

Barnabites altered and interpolated by the Mahometans, the better to serve their purpose.

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Barnes.

BARNABITES, a religious order, founded in the 16th century by three Italian gentlemen, who had been advised by a famous preacher of those days to read carefully the epistles of St Paul. Hence they were called *clerks of St Paul*; and *Barnabites*, because they performed their first exercise in a church of St Barnabas at Milan. Their habit is black; and their office is to instruct, catechise, and serve in mission.

BARNACLE, in ornithology, a species of goose. See **ANAS**.

BARNACLES, in farriery, an instrument composed of two branches joined at one end with a hinge, to put upon horses noses when they will not stand quietly to be shod, blooded, or dressed.

BARNADESIA, in botany; a genus of the polygamia equalis order, belonging to the syngenesia class of plants, the characters of which are: The corolla is radiated; the calyx is naked, imbricated, and pungent; the pappus of the rays feathery, of the disk brittle and retrofracted. There is but one species, the spinofa, a native of America.

BARNARD, or **BERNARD** (John), the son of John Barnard, gent. was born at Castor in Lincolnshire, and educated at Cambridge. After several preferments, he was made a prebendary of the church of Lincoln. He wrote *Censura Clericorum*, against scandalous ministers not fit to be restored to church livings; the *Life of Dr Heylyn*; and a few other works. He died at Newark, August 17. 1683.

BARNARD-Croft, seated on the river Tees in the county of Durham, is a town and barony belonging to Vane earl of Darlington. It is indifferently large, and has a manufacture of stockings. W. Long. 1. 45. N. Lat. 54. 35.

BARNES (Joshua), professor of the Greek language at Cambridge, in the beginning of the 18th century. He was chosen queen's professor of Greek in 1695, a language he wrote and spoke with the utmost facility. His first publication was a whimsical tract, intitled, *Gerania, or a new Discovery of the little sort of people called Pygmies*. After that appeared his *Life of Edward III.* in which he introduces his hero making long and elaborate speeches.—In the year 1700, when he published many of his works, Mrs Mason, of Hemmingford, in Huntingdonshire, a widow lady of between 40 and 50, with a jointure of L. 200 per annum, who had been for some time a great admirer of him, came to Cambridge, and desired leave to settle L. 100 a-year upon him after her death; which he politely refused, unless she would likewise condescend to make him happy with her person, which was not very engaging. The lady was too obliging to refuse any thing to Joshua, for whom she said, “the sun stood still;” and they were accordingly married. Mr Barnes wrote several other books besides those abovementioned, particularly, *Sacred poems*; *The Life of Oliver Cromwell, the Tyrant*; several *dramatic pieces*; *A poetical Paraphrase on the History of Esther, in Greek verse*, with a Latin translation, &c.; and he published editions of *Euripides, Anacreon, and Homer's Iliad and Odyssey*, with notes and a Latin translation. He wrote with greater ease in Greek than even in English, and yet is generally allowed not to have understood the delicacies of that language. He was of such a humane disposi-

tion, and so unacquainted with the world, that he gave his only coat to a vagrant begging at his door. This excellent man died on the 3d of August 1712, in the 58th year of his age.

Barnavelde
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B. r. cci.

BARNAVELDT (John d'Olden), the celebrated Dutch statesman, and one of the founders of the civil liberty of Holland. His patriotic zeal inducing him to limit the authority of Maurice prince of Orange the second stadtholder of Holland, the partizans of that prince falsely accused him of a design to deliver his country into the hands of the Spanish monarch. On this absurd charge he was tried by 26 commissaries deputed from the seven provinces, condemned and beheaded in 1619. His sons William and René, with a view of revenging their father's death, formed a conspiracy against the stadtholder, which was discovered. William fled: but René was taken and condemned to die; which fatal circumstance has immortalized the memory of his mother, of whom the following anecdote is recorded. She solicited a pardon for René; upon which Maurice expressed his surprize that she should do that for her son which she had refused for her husband. To this remark, she replied with indignation, “I would not ask a pardon for my husband, because he was innocent. I solicit it for my son, because he is guilty.”

BARNET, a town partly in Middlesex, and partly in Hertfordshire. It is a great thorough fare; and the market is very remarkable for hogs. W. Long. c. 5. N. Lat. 51. 42.

BARNSLEY, or **BLACK BARNSLEY**, a town of the west riding of Yorkshire, seated on the side of a hill, and five furlongs in length. W. Long. 1. 20. N. Lat. 53. 35.

BARNSTABLE, a sea-port town of Devonshire, seated on the river Tau, over which there is a good bridge. It is a corporation town, and sends two members to Parliament. W. Long. 4. 5. N. Lat. 51. 15.

BARO, or **BARON** (Peter), professor of divinity in the university of Cambridge, in the 16th century, was born at Estampes in France, and educated in the university of Bourges, where he was admitted a licentiate in the law: but being of the Protestant religion, he was obliged to leave his native country to avoid persecution; and withdrawing into England, was kindly entertained by Lord Burleigh. He afterwards settled at Cambridge; and by the recommendation of his noble patron, was, in 1574, chosen lady Margaret's professor there. For some years he quietly enjoyed his professorship; but there was at last raised a restless faction against him, by his opposing the doctrine of absolute predestination; which rendered his place so uneasy to him, that he chose to leave the university, and to settle in London. He wrote, 1. *In Jonam Prophetam Praelectionis xxxix.* 2. *De Praesentia & Dignitate Divinae Legis*; and other pieces. He died in London, about the year 1600.

BAROCCI (Frederic), a celebrated painter, was born at Urbin, where the genius of Raphael inspired him. In his early youth he travelled to Rome; where he painted several things in fresco. He then returned to Urbino; and giving himself up to intense study, acquired a great name in painting. His genius particularly led him to religious subjects. At his leisure hours, he etched a few prints from his own designs; which are highly finished, and executed with great softness and delicacy. The *Salutation* is his capital performance in that way: of which we seldom meet with

¹Baroche
Barometer. with any impressions, but those taken from the retouched plate, which are very harsh. He died at Urbino in 1612, aged 84.

BAROCHE, a town of Cambaya, in the dominions of the Great Mogul; it is walled round, and was formerly a place of great trade. It is now inhabited by weavers and such mechanics as manufacture cotton cloth. Here they have the best cotton in the world, and of consequence the best bastas are manufactured in this place. The English and Dutch had formerly factories here, which are now abandoned. E. Long. 72. 5. N. Lat. 22. 15.

BAROCO, in logic, a term given to the fourth mode of the second figure of syllogisms. A syllogism in baroco has the first proposition universal and affirmative, but the second and third particular and negative, and the middle term is the predicate in the two first propositions. For example,

Nullus homo non est bipes :
Non omne animal est bipes :
Non omne animal est homo.

BAROMETER (from *βαρ* weight, and *μετρον* measure), an instrument for measuring the weight of the atmosphere, and of use in fortelling the changes of the weather, and also for measuring the height of mountains, &c.

¹Principles of the barometer. The common barometer consists of a glass tube hermetically sealed at one end, and filled with quicksilver well defecated and purged of its air. The finger being then placed on the open end, in immediate contact with the mercury, so as not to admit the least particle of air, the tube is inverted, and the lower end plunged into a basin of the same prepared mercury; then upon removing the finger, the mercury in the tube will join that in the basin, and the mercurial column in the tube will subside to the height of 29 or 30 inches, according to the state of the atmosphere at that time. This is the principle on which all barometers are constructed. Of their invention, the different kinds of them, and the theories by which their phenomena are solved, we shall proceed to give an historical account.

²Discovered by Galileo and improved by Torricelli. In the beginning of the last century, when the doctrine of a plenum was in vogue, philosophers were of opinion, that the ascent of water in pumps was owing to the abhorrence of a vacuum; and that by means of suction, fluids might be raised to any height whatever. But Galileo, who flourished about that time, discovered that water could not ascend in a pump unless the sucker reached within 33 feet of its surface in the well. From hence he concluded, that not the power of suction, but the pressure of the atmosphere, was the cause of the ascent of water in pumps; that a column of water 33 feet high was a counterpoise to one of air of an equal base, whose height extended to the top of the atmosphere; and that for this reason the water would not follow the sucker any farther. From this Torricelli, Galileo's disciple took the hint; and considered, that if a column of water of about 33 feet in height was equal in weight to one of air having the same base, a column of mercury no longer than about 29½ inches would be so too, because mercury being about 14 times heavier than water, a column of mercury must be 14 times shorter than one of water equally heavy. Accordingly, having filled a glass tube with mercury, and

inverted it into a basin of the same, he found the mercury in the tube to descend till it stood about 29½ inches above the surface of that in the basin. ³Barometer.

Notwithstanding this clear proof of the pressure of the atmosphere, however, the assertors of a plenum left no means untried to solve the phenomena of the Torricellian experiment by some other hypothesis. The most ridiculous solution, and which at the same time gave the adverse party the greatest difficulty to overthrow it, was that of Linus. He contended, that in the upper part of the tube, there is a film, or *rope of mercury*, extended through the seeming vacuity; and that, by this rope, the rest of the mercury was suspended, and kept from falling into the basin. Even this so absurd hypothesis he pretended to confirm by the following experiments. ⁴Experiments in confirmation of it. Take, says he, a small tube, open at both ends, suppose about 20 inches long; fill this tube with mercury, stopping the lower orifice with your thumb: Then closing the upper end with your finger, and immersing the lower in stagnant mercury, you shall perceive, upon the removal of your thumb, a manifest suction of your finger into the tube; and the tube and mercury will both stick so close to it, that you may carry them about the room. Therefore, says he, the internal cylinder of mercury in the tube is not held up by the preponderate air without; for if so, whence comes so strong a suction, and so firm an adhesion of the tube to the finger?—The same effect follows, though the tube be not quite filled with mercury; for if a little space of air is left at the top, after the tube is immersed in the stagnant mercury, there will be a considerable suction as before.

⁵Refuted. These experiments, which are themselves clear proofs of the pressure of the air, supported for some time the *funicular* hypothesis, as it was called, of Linus. But when it was discovered, that if the tube was carried to the top of an high mountain the mercury stood lower than on the plain, and that if removed into the vacuum of an air-pump it fell out altogether, the hypothesis of Linus was rejected by every body. ⁶Remarkable experiments by Mr Huygens. There are, however, two experiments which create a considerable difficulty. One is mentioned by Mr Huygens, viz. that if a glass tube 75 inches long, or perhaps longer, is filled with mercury well purged of its air, and then inverted, the whole will remain suspended; whereas, according to the Torricellian experiment, it ought to subside immediately to the height of 29 or 30 inches. It is true indeed, that, upon shaking the tube, the mercury presently subsides to that height; but why it should remain suspended at all, more than twice the height to which it can be raised by the pressure of the most dense atmosphere, seems not easily accounted for; and accordingly, in the Philosophical Transactions, we find attempts to account for it by the pressure of a medium more subtle than the common air, and capable of pervading both the mercury and glass. ⁷Unsatisfactorily accounted for in the Philosophical Transactions. We find therein also another very surprising fact of the same kind mentioned; viz. that a pretty large tube under 29 inches in length, filled with mercury, and inverted into a basin of the same, will remain full, though there be a small hole in the top. This, too, is there accounted for by the pressure of a medium more subtle than common air; but by no means in a satisfactory manner. Mr ⁸Rowning, who mentions the phenomenon of the 75 inch tube, accounts for it in the following manner. ⁸Mr Rowning's solution. "The cause

Barometer. cause of this phenomenon seems to be, that by the great weight of so long a column of mercury, it was pressed into so close contact with the glass in pouring in, that, by the mutual attraction of cohesion between the mercury and the glass, the whole column was sustained after the tube was inverted."—Here, however, we must observe, that this solution seems equally unsatisfactory with that of the subtiler medium already mentioned; because it is only one end of the column which sustains so great a pressure from the weight of the mercury; and therefore, though five or six inches of the upper part of the tube, where the pressure had been strongest, might thus remain full of mercury, yet the rest ought to fall down. Besides, it is only the outside of the mercurial column that is in contact with the glass, and consequently these parts only ought to be attracted. Therefore, even granting the pressure to be equally violent, on the inversion of the tube, all the way from 29 to 75 inches, yet the glass ought to be only as it were silvered over by a very thin film of mercury, while the middle parts of the column ought to fall out by reason of their fluidity.

10
Another experiment with siphons.

The other experiment hinted at, is with regard to siphons; which though it belongs more properly to the article HYDROSTATICS, yet seems necessary to be mentioned here. It is this: That a siphon, once set a running, will continue to do so though set under the receiver of an air-pump and the air exhausted in the most perfect manner; or if a siphon is filled, and then set under a receiver and the air exhausted, if by any contrivance the end of the lower leg is opened, it will immediately begin to run, and discharge the water of any vessel in which the other leg is placed, as though it was in the open air. The cause of this phenomenon, as well as the former, seems very difficult to be investigated. In Chambers's Dictionary, under the word *Siphon*, we have a solution something similar to the funicular hypothesis of Linus abovementioned; namely, that "fluids in siphons seem as it were to form one continued body; so that the heavier part, descending, like a chain pulls the lighter after it." This might be deemed a sufficient explication, if the siphon was only to empty the water it at first contains in itself: but when we consider that the water in the vessel, which much exceeds the quantity contained in the siphon, is likewise evacuated, Mr Chambers's hypothesis can by no means be admitted; because this would be like the lighter part of a chain pulling the heavier after it.

11
Solution by Mr Chambers.

12
Insufficient.

13
Another solution from the action of electricity.

Concerning the cause of these singular phenomena, we can only offer the following conjecture. The existence of a medium much more subtiler than air, and which pervades the vacuum of an air-pump with the utmost facility, is now sufficiently ascertained in the phenomena of electricity. It is also well known, that this fluid surrounds the whole earth to an indeterminate height. If therefore this fluid either is the power of gravity itself, or is acted upon by that power, it must necessarily press upon all terrestrial bodies in a manner similar to the pressure of the atmosphere. If then we could from any vessel entirely exclude this subtiler fluid, and form an electrical vacuum, as well as we can do an aerial one by means of the air-pump, we would in that case see fluids as evidently raised by the pressure of the electric matter, as we now see them raised by that of the air. But tho' this cannot be done, we are

Barometer. assured that there are certain substances, of which glass is one, through which the electric matter cannot pass but with difficulty. We are likewise certain, that tho' the electric matter passes through the pores of water, metals, &c. with very great facility, yet it still must meet with some resistance from their solid and impenetrable parts, which cannot be pervaded by any material substance. We know also, that all substances do naturally contain a certain quantity of this electric matter, which they are not always ready to part with; and when by any means the fluid they contain is set in motion, they are then said to be *electricized*. Now, though we are certain, that the friction of glass by mercury does set in motion the electric fluid contained in the mercury or in the glass; yet when the tube is filled with the metallic fluid, whatever quantity has been extricated either from the glass or mercury during the time of filling, will be reabsorbed by the metal and conveyed to the earth during the time of inversion; and consequently the mercurial tube, when inverted, will not be electricized, but both glass and mercury will be in their natural state. Here, then, the pressure of the electrical fluid is kept off in some measure from the upper part of the mercury by the glass, which it cannot penetrate easily at least. To the mercury in the basin it has free access, and therefore presses more upon the lower than the upper part; the consequence of which is a suspension of the mercury. It is true, this fluid very easily penetrates the metallic matter; but it must be considered, that the electric fluid itself is in some measure entangled in the particles of the quicksilver, and cannot be extricated without motion. As soon therefore as the tube is shaken, some part of the electricity is extricated, and the mercury begins to descend. The subtilty of the medium is such, that no sooner has it begun to extricate itself, than, by the motion of the metal downwards, it issues forth in great quantities, so as to become visible, like a blue flame, in the dark. The equilibrium is therefore destroyed in an instant, as it would be were we to admit air to the top of the barometer; nay, in a more effectual manner. For if a small quantity of air was admitted to the top of a barometer, the mercury would only descend in proportion to the quantity of air admitted; but here, no sooner is a quantity of electric matter admitted, than it procures admission for a vast deal more, and consequently the mercury descends with accelerated velocity.—On this principle the ascent of water in the siphon while *in vacuo* is so easily accounted for, that we need not take up time in explaining it farther.—But why an inverted glass tube should remain full of mercury when it has a hole either great or small in the top, is more difficult to be accounted for, and requires this farther circumstance to be taken into consideration, viz. that though all solid bodies will, by the action of gravity, or by any other impulse, easily approach very near to one another, yet they cannot be brought into absolute contact without a very considerable force, much greater than is sufficient to overcome their gravity; and thus it appears from some experiments, that the links of a chain are by no means in contact with one another, till the chain has a considerable weight appended to it. This may be the case with the tube in question. The air by its gravity descends upon it, and is ready to enter the small hole in the

Barometer. top; but, by a repulsive power from the glass, its action is prevented, so that the mercury cannot fall.

¹⁴ It was, however, some time after the Torricellian experiment had been made, and even after it had been universally agreed that the suspension of the mercury was owing to the weight of the atmosphere, before it was discovered that this pressure of the air was different at different times though the tube was kept in the same place. But the variations of altitude in the mercurial column were too obvious to remain long unobserved; and accordingly philosophers soon became careful enough to mark them. When this was done, it was impossible to avoid observing also, that the changes in the height of the mercury were accompanied, or very quickly succeeded, by changes in the weather. Hence the instrument obtained the name of the *weather-glass*, and was generally made use of with a view to the foreknowledge of the weather. In this character, its principal phenomena are as follow.

¹⁵ Its phenomena as a weather-glass by Mr Patrick. 1. The rising of the mercury presages, in general, fair weather; and its falling, foul weather, as rain, snow, high winds, and storms.

2. In very hot weather, the falling of the mercury foretells thunder.

3. In winter, the rising presages frost; and in frosty weather, if the mercury falls three or four divisions, there will *certainly* follow a thaw. But in a continued frost, if the mercury rises, it will *certainly* snow.

4. When foul weather happens soon after the falling of the mercury, expect but little of it; and, on the contrary, expect but little fair weather when it proves fair shortly after the mercury has risen.

5. In foul weather, when the mercury rises much and high, and so continues for two or three days before the foul weather is quite over, then expect a continuance of fair weather to follow.

6. In fair weather, when the mercury falls much and low, and thus continues for two or three days before the rain comes; then expect a great deal of wet, and probably high winds.

7. The unsettled motion of the mercury denotes uncertain and changeable weather.

8. You are not so strictly to observe the words engraved on the plates (though in general it will agree with them), as the mercury's *rising* and *falling*. For if it stands at *much rain*, and then rises up to *changeable*, it presages fair weather; though not to continue so long as if the mercury had risen higher: and so, on the contrary, if the mercury stood at *fair*, and falls to *changeable*, it presages foul weather; though not so much of it as if it had sunk lower.

¹⁶ Remarks by Mr Rowning. These are the observations of Mr Patrick, on which Mr Rowning makes the following remarks. "From these observations it appears, That it is not so much the height of the mercury in the tube that indicates the weather, as the motion of it up and down: wherefore, in order to pass a right judgment of what weather is to be expected, we ought to know whether the mercury is actually rising or falling; to which end the following rules are of use.

"1. If the surface of the mercury is convex, standing higher in the middle of the tube than at the sides, it is generally a sign that the mercury is then rising.

"2. If the surface is concave, it is then sinking: and,

"3. If it is plain, the mercury is stationary; or rather, if it is a little convex: for mercury being put into a glass tube, especially a small one, will naturally have its surface a little convex, because the particles of mercury attract one another more forcibly than they are attracted by glass. Further,

"4. If the glass is small, shake the tube; and if the air is grown heavier, the mercury will rise about half the tenth of an inch higher than it stood before; if it is grown lighter, it will sink as much. This proceeds from the mercury's sticking to the sides of the tube, which prevents the free motion of it till it is disengaged by the shock: and therefore, when an observation is to be made with such a tube, it ought always to be shaken first; for sometimes the mercury will not vary of its own accord, till the weather it ought to have indicated is present."

Here we must observe, that the abovementioned phenomena are peculiar to places lying at a considerable distance from the equator; for, in the torrid zone, the mercury in the barometer seldom either rises or falls much. In Jamaica, it is observed by Sir William Beefton*, that the mercury in the morning constantly stood at one degree below *changeable*, and at noon sunk to one degree above *rain*; so that the whole scale of variation there was only $\frac{1}{5}$ of an inch. At St Helena, too, where Dr Halley made his observations, he found the mercury to remain wholly stationary whatever weather happened. Of these phenomena, their causes, and why the barometer indicates an approaching change of weather, the Doctor gives us the following account.

"1. In calm weather, when the air is inclined to rain, the mercury is commonly low.

"2. In serene, good, and settled weather, the mercury is generally high.

"3. Upon very great winds, though they be not accompanied with rain, the mercury sinks lowest of all, with relation to the point of the compass the wind blows upon.

"4. *Cæteris paribus*, the greatest heights of the mercury are found upon easterly, or north-easterly, winds.

"5. In calm frosty weather, the mercury generally stands high.

"6. After very great storms of wind, when the mercury has been very low, it generally rises again very fast.

"7. The more northerly places have greater alterations of the barometer than the more southerly.

"8. Within the tropics, and near them, those accounts we have had from others, and my own observations at St Helena, make very little or no variation of the height of the mercury in all weathers.

"Hence I conceive, that the principal cause of the rise and fall of the mercury is from the variable winds which are found in the temperate zone, and whose great inconsistency here in England is notorious.

"A second cause is, the uncertain exhalation and precipitation of the vapours lodging in the air, whereby it comes to be at one time much more crowded than at another, and consequently heavier; but this latter depends in a great measure upon the former. Now from these principles I shall endeavour to explicate the several phenomena of the barometer, taking them in the same order I have laid them down. Thus,

"1. The mercury's being low inclines it to rain, because

Barometer.

¹⁷ These phenomena peculiar to the temperate and frigid zones. Philof. Transact. N^o 220.

¹⁸ Phenomena of the barometer followed by Dr Halley.

Barometer. because the air being light, the vapours are no longer supported thereby, being become specifically heavier than the medium wherein they floated; so that they descend towards the earth, and, in their fall, meeting with other aqueous particles, they incorporate together, and form little drops of rain: but the mercury's being at one time lower than another, is the effect of two contrary winds blowing from the place where the barometer stands; whereby the air of that place is carried both ways from it, and consequently the incumbent cylinder of air is diminished, and accordingly the mercury sinks: As, for instance, if in the German Ocean it should blow a gale of westerly wind, and, at the same time, an easterly wind in the Irish Sea; or, if in France it should blow a northerly wind, and in Scotland a southerly; it must be granted, that that part of the atmosphere impendant over England would thereby be exhausted and attenuated, and the mercury would subside, and the vapours which before floated in these parts of the air of equal gravity with themselves would sink to the earth.

" 2. The greater height of the barometer is occasioned by two contrary winds blowing towards the place of observation, whereby the air of other places is brought thither and accumulated; so that the incumbent cylinder of air being increased both in height and weight, the mercury pressed thereby must needs stand high, as long as the winds continue so to blow; and then the air being specifically heavier, the vapours are better kept suspended, so that they have no inclination to precipitate and fall down in drops, which is the reason of the serene good weather which attends the greater heights of the mercury.

" 3. The mercury sinks the lowest of all by the very rapid motion of the air in storms of wind. For the tract or region of the earth's surface, wherein the winds rage, not extending all round the globe, that stagnant air which is left behind, as likewise that on the sides, cannot come in so fast as to supply the evacuation made by so swift a current; so that the air must necessarily be attenuated when and where the said winds continue to blow, and that more or less according to their violence: add to which, that the horizontal motion of the air being so quick as it is, may in all probability take off some part of the perpendicular pressure thereof; and the great agitation of its particles is the reason why the vapours are dissipated, and do not condense into drops so as to form rain, otherwise the natural consequence of the air's rarefaction.

" 4. The mercury stands highest upon the easterly and north-easterly wind; because in the great Atlantic ocean, on this side the 35th degree of north latitude, the winds are almost always westerly or south-westerly; so that whenever here the wind comes up at east and north-east, it is sure to be checked by a contrary gale as soon as it reaches the ocean; wherefore, according to our second remark, the air must needs be heaped over this island, and consequently the mercury must stand high as often as these winds blow. This holds true in this country; but is not a general rule for others, where the winds are under different circumstances: and I have sometimes seen the mercury here as low as 29 inches upon an easterly wind; but then it blew exceedingly hard, and so comes to be accounted for by what was observed in the third remark.

Barometer. " 5. In calm frosty weather the mercury generally stands high; because (as I conceive) it seldom freezes but when the winds come out of the northern and north-easterly quarters, or at least unless those winds blow at no great distance off. For the north parts of Germany, Denmark, Sweden, Norway, and all that tract from whence north-easterly winds come, are subject to almost continual frost all the winter: and thereby the lower air is very much condensed, and in that state is brought hitherward by those winds, and, being accumulated by the opposition of the westerly wind blowing in the ocean, the mercury must needs be pressed to a more than ordinary height; and as a concurring cause, the shrinking of the lower parts of the air into lesser room by cold, must needs cause a descent of the upper parts of the atmosphere, to reduce the cavity made by this contraction to an equilibrium.

" 6. After great storms, when the mercury has been very low, it generally rises again very fast: I once observed it to rise one inch and an half in less than six hours after a long-continued storm of south-west wind. The reason is, because the air being very much rarefied by the great evacuations which such continued storms make thereof, the neighbouring air runs in the more swiftly to bring it to an equilibrium; as we see water runs the faster for having a greater declivity.

" 7. The variations are greater in the more northerly places, as at Stockholm greater than at Paris (compared by M. Paschal); because the more northerly parts have usually greater storms of wind than the more southerly, whereby the mercury should sink lower in that extreme; and then the northerly winds bringing in the more dense and ponderous air from the neighbourhood of the pole, and that again being checked by a southerly wind at no great distance, and so heaped, must of necessity make the mercury in such case stand higher in the other extreme.

" 8. Lastly, this remark, that there is little or no variation near the equinoctial, does above all others confirm the hypothesis of the variable winds being the cause of these variations of the height of the mercury; for in the places above named there is always an easy gale of wind blowing nearly upon the same point, viz. E. N. E. at Barbadoes, and E. S. E. at St Helena; so that there being no contrary currents of air to exhaust or accumulate it, the atmosphere continues much in the same state: however, upon hurricanes, the most violent of storms, the mercury has been observed very low; but this is but once in two or three years, and it soon recovers its settled state, about 29½ inches."

This theory we find controverted in Chambers's ¹⁹ *Cyclopædia*, under the word **BAROMETER**. The ^{by} principal objections are, "That if the wind was the sole ^r agent in raising or depressing the mercury, the alterations of its height in the barometer would be only relative or topical; there would still be the same quantity supported at several places taken collectively: thus what a tube at London lost, another at Paris, Pisa, or Zurich, &c. would gain. But the contrary is found to be the case; for, from all the observations hitherto made, the barometers in several distant parts of the globe rise and fall together. This is a very surprising fact; and deserves to be well examined. Again, setting aside

Barometer. aside all other objections, it is impossible, on Dr Halley's hypothesis, to explain the mercury's fall before, and rise after, rain. For suppose two contrary winds sweeping the air from over London: We know that few if any of the winds reach above a mile high; all therefore they can do will be to cut off a certain part of the column of air over London: in the consequence of this be the fall of the mercury; yet there is no apparent reason for the rains following it. The vapours indeed may be let lower; but it will only be till they come into an air of the same specific gravity with themselves, and there they will stick as before. Lastly, it is impossible, according to the laws of fluids, that the air above any place could be exhausted by the blowing of two contrary winds from it: for, suppose a north-east and south-west wind both blow from London at the same time, there will be two others at the same time blowing towards it from opposite points, viz. a N. W. and S. E. one, which will every moment restore the equilibrium, so that it can never be lost in any considerable degree at least."

20
By the thesis
of Mr
Leibnitz.
21
concluded.
22
insufficient
upon the thesis
of Mr
Chambers.
23
in the
theory.

Mr Leibnitz accounted for the sinking of the mercury before rain upon another principle, viz. That as a body specifically lighter than a fluid, while it is suspended by it, adds more weight to that fluid than when, by being reduced in its bulk, it becomes specifically heavier, and descends; so the vapour, after it is reduced into the form of clouds, and descends, adds less weight to the air than before; and therefore the mercury falls. To which it is answered, 1. That when a body descends in a fluid, its motion in a very little time becomes uniform, or nearly so, a farther acceleration of it being prevented by the resistance of the fluid; and then, by the third law of nature, it forces the fluid downwards with a force equal to that whereby it tends to be farther accelerated, that is, with a force equal to its whole weight. 2. The mercury by its descent foretells rain a much longer time before it comes, than the vapour after it is condensed into clouds can be supposed to take up in falling. 3. Supposing that as many vapours as fall in rain during a whole year were at once to be condensed into clouds, and even quite cease to gravitate upon the air, its gravity would scarce be diminished thereby so much as is equivalent to the descent of two inches of mercury in the barometer. Besides, in many places between the tropics, the rains fall at certain seasons in very great quantities, and yet the barometer shows there very little or no alteration in the weight of the atmosphere.

Mr Chambers gives an hypothesis somewhat similar to that of Leibnitz: but as it is liable to the objections just now mentioned, especially the last, we forbear to give any particular account of it; and shall attempt, upon other principles, to give a satisfactory solution of this phenomenon.

The necessary preliminaries to our hypothesis are, 1. That vapour is formed by an intimate union between the element of fire and that of water, by which the fire or heat is so totally enveloped, and its action so entirely suspended by the watery particles, that it not only loses its properties of giving light and of burning, but becomes incapable of affecting the most sensible thermometer; in which case, it is said by Dr Black, the author of this theory, to be in a latent state. For the proofs of

Barometer. this, see the articles EVAPORATION, COLD, CONGELATION, &c. 2. If the atmosphere is affected by any unusual degree of heat, it thence becomes incapable of supporting so long a column of mercury as before, for which reason that in the barometer sinks. This appears from the observations of Sir William Beecham already mentioned; and likewise from those of De Luc, which shall be afterwards taken notice of.

These axioms being established, it thence follows, that as vapour is formed by an union of fire with water, or if we please to call it an *elective* attraction between them, or solution of the water in the fire, it is impossible that the vapour can be condensed until this union, attraction, or solution, be at an end. The beginning of the condensation of the vapour then, or the first symptoms of an approaching rain, must be the separation of the fire which lies hid in the vapour. This may be at first slow and partial, or it may be sudden and violent: in the first case, the rain will come on slowly, and after a considerable interval; and in the other, it will be very quick, and in great quantity. But Dr Black hath proved, that when fire quits its latent state, however long it may have lain dormant and insensible, it always assumes its proper qualities again, and affects the thermometer as though it had never been absorbed. The consequence of this must be, that in proportion as the latent heat is discharged from the vapour, it must sensibly affect those parts of the atmosphere into which it is discharged; and in proportion to the heat communicated to these, they will become specifically lighter, and the mercury sink of course. Neither are we to imagine that the quantity of heat discharged by the vapour is inconsiderable; for Dr Black hath shown, that when any quantity of water, a pound for instance, is condensed from the vapour of a common still, as much heat is communicated to the head and refrigeratory as would have been sufficient to heat the pound of water red hot, could it have borne that degree of sensible heat.

The causes by which this separation between the fire and water is, or may be, effected, come to be considered under the articles RAIN, CONDENSATION, VAPOUR, &c. Here we have only to observe, that as the separation may be gradual and slow, the barometer may indicate rain for a considerable time before it happens: or if the sensible heat communicated from the vapour to the atmosphere shall be absorbed by the colder parts, or by any unknown means carried off, or prevented from affecting the specific gravity of the air, the barometer will not be affected; and yet the water being deprived of the heat necessary to sustain it, must descend in rain; and thus it is found that the indications of the barometer do not always hold true. Hence also it appears, that tho' the specific gravity of the air is diminished, unless that diminution proceeds from a discharge of the latent heat contained in the vapours, no rain will follow; and thus the sinking of the barometer may prognosticate wind as well as rain, or sometimes nothing at all.

The difficulty, however, on this hypothesis, is to account for the barometer being stationary in all weathers between the tropics; whereas it ought to move up and down there as well as here, only more suddenly, as the changes of weather there are more sudden than here. But it must be considered, that in these climates, during the

Barometer.

the day-time, the action of the sun's rays is so violent, that what is gained by the discharge of latent heat from the vapour, is lost by the interposition of the clouds betwixt the sun and earth, or by the great evaporation which is constantly going on; and in the night, the cold of the atmosphere is so much increased, that it absorbs the heat as fast as the vapour discharges it, so that no sensible effect can be produced; for in warm climates, though the day is excessively hot, the night is observed to be vastly colder in proportion than it is with us. This, however, does not prevent the barometer from being affected by other causes, as well as with us; for Dr Halley observes, that in the time of hurricanes it sinks very low. The cause of this is most probably a great commotion in the electric fluid, by which the air is internally agitated, and its power of gravitation in part suspended — A confirmation of the above hypothesis, however, is taken from the different heights at which the mercury arrives in different climates. The barometer-range, for instance, at the latitude of 45° is the greatest of all; because here the evaporation and condensation of the vapours are both very considerable, at the same time that the latent heat discharged cannot be absorbed so suddenly as in the torrid zone, the distance betwixt the length of the days and nights being greater, and consequently the nights warmer in summer and colder in winter. Farther to the northward the range is less, and in the latitude of 60° only two inches, by reason of the greater cold and length of the days and nights; whence the quantity of vapour condensed, or of latent heat expelled, becomes proportionably less.

24
Different
kinds of
barometers
described.

Having thus given an account of the several phenomena of the barometer considered as a weather-glass, and likewise endeavoured to account for them in the most satisfactory manner, we now proceed to give a particular description of the barometers most commonly made use of, with various schemes for their improvement.

Plate XCII.

Fig. 1. represents the common barometer, such as was invented by Torricelli, and such as we have already given a general description of. A B represents a tube of glass, a quarter of an inch in diameter, and 34 inches long, hermetically sealed at A. This tube being supposed to be filled with mercury, is then inverted into the basin CD; upon which the mercury in the tube falls down to GH, somewhat above 28 inches, while that in the basin rises to CF. The lowest station of the mercury in this country is found to be 28 inches, and the highest 31. From the surface of the mercury CF, therefore, 28 inches are to be measured on the tube AB, which suppose to reach to the point K. This point, therefore, is the lowest of the scale of variation, and in the common barometers is marked *stormy*. In like manner, the highest point of the scale of variation I, is placed 31 inches above EF; and is marked *very dry* on one side for the summer, and *very hard frost* on the other for the winter. The next half inch below is marked *set fair* on the one side, and *set frost* on the other. At 30 inches from CF is marked the word *fair* on one side, and *frost* on the other. Half an inch below that, is wrote the word *changeable*, which answers both for summer and winter. At 29 inches is *rain* on the one side, and *snow* on the other; and at $28\frac{1}{2}$ are the words *much rain* on the one

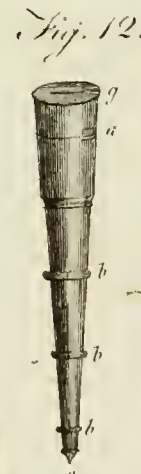
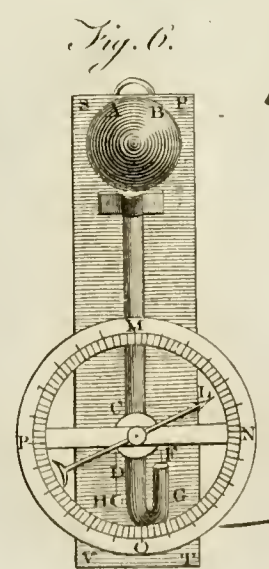
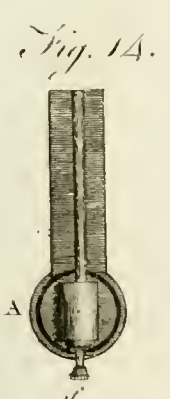
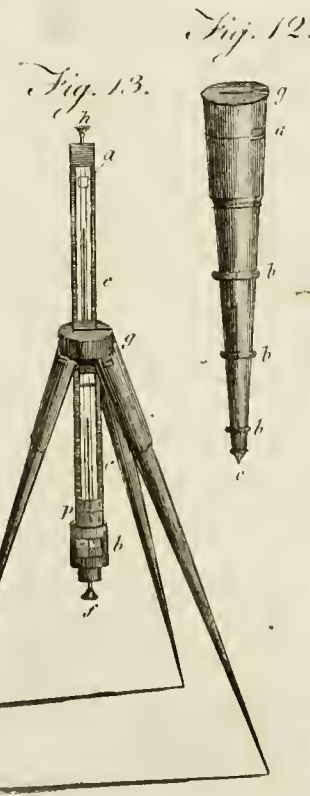
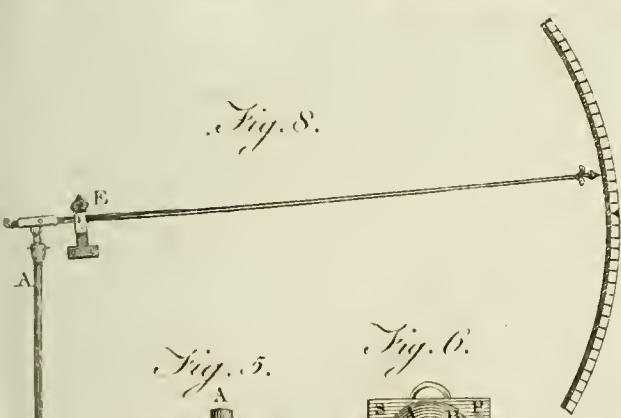
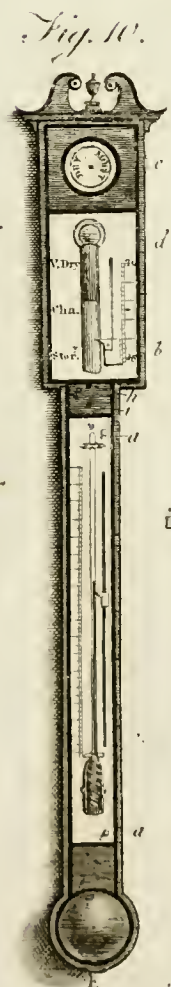
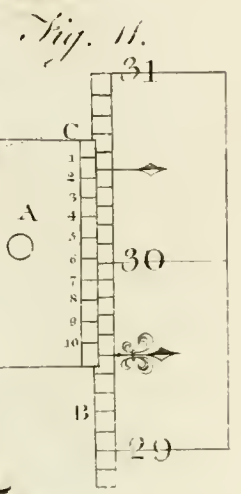
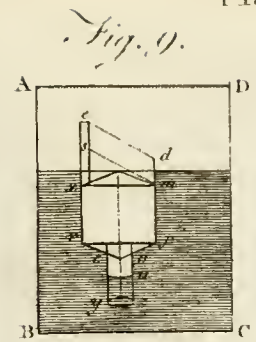
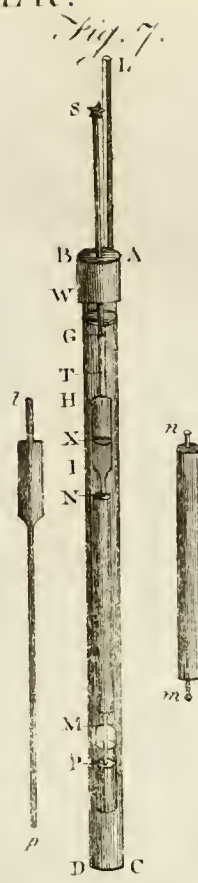
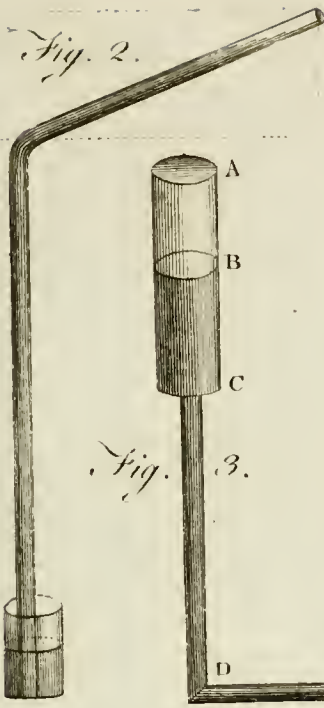
No. 41.

side, and *much snow* on the other. Each of these large divisions is usually subdivided into ten; and there is a small sliding index fitted to the instrument, by which the ascent or descent of the mercury to any number of divisions is pointed out. Each of these tenths is sometimes divided into *ten* more, or *hundredths* of an inch, by means of a sliding slip of brass with a *vernier* scale on it, which shall be hereafter described and explained. This kind of barometer is the most common, and perhaps the most useful and accurate, of any that has yet been invented, from the following circumstance, that the natural simplicity of its construction, in preference to others hereafter described, does not admit of any kind of resistance to the free motion of the column of mercury in the tube. The scale of variation being only three inches, and it being naturally wished to discover more minute variations than can thus be perceived, several improvements have been thought of.

The improvement most generally adopted is the diagonal barometer represented fig. 2. in which the scale of variation, instead of three inches, may be made as many feet, by bending the tube so as to make the upper part of it the diagonal of a parallelogram of which the shortest side is the three-inches scale of variation of the common barometer. This, however, has a very great inconvenience: for not only is the friction of the mercury upon the glass so much increased that the height doth not vary with every slight change of air; but the column of mercury is apt to break in the tube, and part of it to be left behind, upon any considerable descent.

Fig. 3. is the rectangular barometer; where AC represents a pretty wide cylinder of glass, from which proceeds the tube CDF bent into a right angle at D. Suppose now the cylinder AC to be four times larger than the tube CD, so that every inch of the cylinder from C to A should be equal in capacity to four inches of the tube CD. The whole being then filled with mercury, and inverted, the mercury will subside from A to B, at the same time that it cannot run out at the open orifice F, because the air presses in that way. If any alteration then happens in the weight of the air, suppose such as would be sufficient to raise the mercury an inch from B towards A, it is evident that this could not be done without the mercury in the horizontal leg retiring four inches from E towards D; and thus the scale of variation counted on the horizontal leg would be 12 inches. But the inconveniences of friction are much greater here than in the diagonal barometer; and besides, by the least accident the mercury is apt to be driven out at the open orifice F.

The pendant barometer (fig. 4.) consists of a single tube, suspended by a string fastened to the end A. This tube is of a conical or tapering figure, the end A being somewhat less than the end B. It is hermetically sealed at A, and filled with mercury: then will the mercury sink to its common station, and admit of a length of altitude CD, equal to that in the common barometers. But from the conical bore of the tube, the mercury will descend as the air grows lighter, till it reaches its lowest altitude, when the mercury will stand from the lower part of the tube B to E, so that BE will be equal to 28 inches: consequently the mercury will, in such a tube, move from A to E, or 32 inches, if the tube be five feet, or 60 inches; and therefore



Barometer. the scale AE is here above ten times greater than in the common barometer: but the fault of this barometer is, that the tube being of a very small bore, the friction will be considerable, and prevent its moving freely; and if the tube is made of a wider bore, the mercury will be apt to fall out.

Fig. 5. is an invention of Mr Rowning, by which the scale of variation may be increased to any length, or even become infinite. ABC is a compound tube hermetically sealed at A, and open at C, empty from A to D, filled with mercury from thence to B, and from thence to E with water. Let GBH be a horizontal line; then it is plain from the nature of the siphon, that all the compound fluid contained in the part from H to G, will be always *in equilibrio* with itself, be the weight of the air what it will, because the pressure at H and G must be equal. Whence it is evident, that the column of mercury DH is *in equilibrio* with the column of water GE, and a column of air taken conjointly, and will therefore vary with the sum of the variations of these. That the variation in this barometer may be infinite, will appear from the following computation. Let the proportion between the bores of the tube AF and FC be such, that when HD, the difference of the legs wherein the mercury is contained, is augmented one inch, GE, the difference of the legs wherein the water is contained, shall be diminished 14: then, as much as the pressure of the mercury is augmented, that of the water will be diminished, and so the pressure of both taken together will remain as it was; and consequently, after it has begun to rise, it will have the same tendency to rise on, without ever coming to an equilibrium with the air.

Fig. 6. represents Dr Hook's wheel-barometer. Here ACDG is a glass tube, having a large round head at A, and turned up at the lower end F. Upon the surface of the mercury in the bent leg is an iron ball G, with a string going over a pulley CD. To the other end of the string is fastened a smaller ball H, which as the mercury rises in the leg FG, turns the index KI, from N towards M, on the graduated circle MNOP; as it rises in the other leg, the index is carried the contrary way by the descent of the heavier ball G, along with the mercury. The friction of this machine, however, unless it is made with very great accuracy, renders it useless.

Fig. 7. is another barometer, invented by Mr Rowning, in which also the scale may be infinite. ABCD is a cylindrical vessel, filled with a fluid to the height W, in which is immersed the barometer SP consisting of the following parts: The principal one is the glass tube TP (represented separately at *tp*), whose upper end T is hermetically sealed: this end does not appear to the eye, being received into the lower end of a tin pipe GH, which in its other end G receives a cylindrical rod or tube ST, and thus fixes it to the tube TP. This rod ST may be taken off, in order to put in its stead a larger or a lesser as occasion requires. S is a star at the top of the rod ST; and serves as an index by pointing to the graduated scale LA, which is fixed to the cover of the vessel ABCD. MN is a large cylindrical tube made of tin (represented separately at *mn*), which receives in its cavity the smaller part of the tube TP, and is well cemented to it at both ends, that

Barometer. none of the fluid may get in. The tube TP, with this apparatus, being filled with mercury, and plunged into the basin MP, which hangs by two or more wires upon the lower end of the tube MN, must be so poised as to float in the liquor contained in the vessel ABCD; and then the whole machine rises when the atmosphere becomes lighter, and *vice versa*. Let it now be supposed, that the fluid made use of is water; that the given variation in the weight of the atmosphere is such, that, by pressing upon the surface of the water at W, the surface of the mercury at X may be raised an inch higher (measuring from its surface at F) than before; and that the breadth of the cavity of the tube at X, and of the basin at P, are such, that by this ascent of the mercury, there may be a cubic inch of it in the cavity X more than before, and consequently in the basin a cubic inch less. Now, upon this supposition, there will be a cubic inch of water in the basin more than there was before; because the water will succeed the mercury, to fill up its place. Upon this account the whole machine will be rendered heavier than before by the weight of a cubic inch of water; and therefore will sink, according to the laws of hydrostatics, till a cubic inch of that part of the rod WS, which was above the surface of the water at W, comes under it. Then, if we suppose this rod so small, that a cubic inch of it shall be 14 inches in length, the whole machine will sink 14 inches lower into the fluid than before; and consequently the surface of the mercury in the basin will be pressed, more than it was before, by a column of water 14 inches high. But the pressure of 14 inches of water is equivalent to one of mercury; this additional pressure will make the mercury ascend at X as much as the supposed variation in the weight of the air did at first. This ascent will give room for a second cubic inch of water to enter the basin; the machine will therefore be again rendered so much heavier, and will subside 14 inches farther, and so on *in infinitum*. If the rod was so small that more than fourteen inches of it were required to make a cubic inch, the variation of this machine would be negative with respect to the common barometer; and instead of coming nearer to an equilibrium with the air by its ascent or descent, it would continually recede farther from it: but if less than 14 inches of rod were required to make a cubic inch, the scale of variation would be finite, and might be made in any proportion to the common one. Neither this nor the other infinite barometer have ever been tried, so that how far they would answer the purposes of a barometer is as yet unknown.

Fig. 8. represents another contrivance for enlarging the scale of the barometer to any size.—AB is the tube of a common barometer open at B and sealed at A, suspended at the end of the lever which moves on the fulcrum E.—CD is a fixed glass tube, which serves in place of the cistern. This last tube must be so wide as to allow the tube AB to play up and down within it.—AB being filled with mercury, is nearly counterbalanced by the long end of the lever. When the atmosphere becomes lighter, the mercury descends in the long tube, and the surface of the mercury rising in the cistern pushes up the tube AB, which at the same time becoming lighter, the lever preponderates, and points out the most minute variations. Here too

Barometer. the friction occasions inconveniences; but this may be in some measure remedied by a small shake of the apparatus at each inspection.

In the Philosophical Transactions, Mr Caswell gives the following account of a barometer, which is recommended by Mr Chambers as the most exact hitherto invented. "Let ABCD (Fig. 9.) represent a bucket of water, in which is the barometer *erezosm*, which consists of a body *ersm*, and a tube *ezyo*: the body and tube are both concave cylinders communicating with one another, and made of tin: the bottom of the tube *zy*, has a lead weight to sink it so that the top of the body may just swim even with the surface of the water by the addition of some grain weights on the top. The water, when the instrument is forced with its mouth downwards, gets up into the tube to the height *yz*. There is added on the top a small concave cylinder, which I call the *pipe*, to distinguish it from the bottom small cylinder which I call the *tube*. This pipe is to sustain the instrument from sinking to the bottom: *md* is a wire; *ms, de*, are two threads oblique to the surface of the water, which threads perform the office of diagonals: for that while the instrument sinks more or less by the attraction of the gravity of the air, there where the surface of the water cuts the thread, is formed a small bubble; which bubble ascends up the thread, as the mercury in the common barometer ascends."

The dimensions of this instrument given there are, 21 inches for the circumference of the body, the altitude 4, each base having a convexity of $6\frac{1}{2}$ inches. The inner circumference of the tube is 5.14 inches, and its length $4\frac{1}{2}$; so that the whole body and tube will contain almost $2\frac{1}{4}$ quarts. The circumference of the pipe, that the machine may not go to the bottom on every small alteration of the gravity of the air, is 2.14 inches; according to which dimensions, he calculates that it will require 44 grains to sink the body to the bottom, allowing it only four inches to descend; at the same time that it is evident, that the fewer grains that are required to sink it to this depth, the more nice the barometer will be. He also calculates, that when the mercury in the common barometer is $30\frac{1}{2}$ inches high, the body with a weight of 44 grains on its top will be kept *in equilibrio* with the water; but when the mercury stands at 28 inches, only 19 grains can be supported: and lastly, by computing the lengths of the diagonal threads, &c. he finds, that his instrument is 1200 times more exact than the common barometer. The following are his observations on the use of it.

24
Mr Caswell's observations with his barometer.

"1. While the mercury of the common barometer is often known to be stationary 24 hours together, the bubble of the new barometer is rarely found to stand still one minute.

"2. Suppose the air's gravity increasing, and accordingly the bubble ascending; during the time that it ascends 20 inches, it will have many short descents of the quantity of half an inch, one, two, three, or more inches; each of which being over, it will ascend again. These retrocessions are frequent, and of all varieties in quantity and duration; so that there is no judging of the general course of the bubble by a single inspection, though you see it moving, but by waiting a little time.

Barometer. "3. A small blast of wind will make the bubble descend; a blast that cannot be heard in a chamber of the town will sensibly force the bubble downward. The blasts of wind sensible abroad, cause many of the abovementioned retrocessions or accelerations in the general course; as I found by carrying my barometer to a place where the wind was perceptible.

"4. Clouds make the bubble descend. A small cloud approaching the zenith, works more than a great cloud near the horizon. In cloudy weather, the bubble descending, a break of the clouds (or clear place) approaching to the zenith, has made the bubble to ascend: and after that break had passed the zenith a considerable space, the bubble again descended.

"5. All clouds (except one) hitherto by me observed, have made the bubble to descend. But the other day, the wind being north, and the course of the bubble descending, I saw to the windward a large thick cloud near the horizon, and the bubble still descended: but as the cloud drew near the zenith, it turned the way of the bubble, making it to ascend; and the bubble continued ascending till the cloud was all passed, after which it resumed its former descent. It was a cloud that yielded a cold shower of small hail."

These are the most remarkable contrivances for the improvement of the common barometer: and indeed we must agree with Mr Chambers, that the last, on account of its being so exceedingly sensible, and likewise easy of construction and portable, seems to deserve attention much more than the others, which are always the more unexact, and the less easily moved, according to the enlargement of their scale; whereas this is seemingly subject to no such inconvenience. It is evident, however, that none of these could be used at sea, on account of the unsteady motion of the ship: for which reason Dr Hook thought of constructing a barometer upon other principles.

26
Marine barometer by Mr Hook.

His contrivance was no other than two thermometers. The one was the common spirit-of-wine thermometer, which is affected only by the warmth of the air: the other, which acts by the expansion of a bubble of air included, is affected not only by the external warmth, but by the various weight of the atmosphere. Therefore, keeping the spirit thermometer as a standard, the excess of the ascent or descent of the other above it would point out the increase or decrease of the specific gravity of the atmosphere. This instrument is recommended by Dr Halley, who speaks of it as follows. "It has been observed by some, that, in long keeping this instrument, the air included either finds a means to escape, or deposits some vapours mixed with it, or else for some other cause becomes less elastic, whereby in process of time it gives the height of the mercury somewhat greater than it ought: but this, if it should happen in some of them, hinders not the usefulness thereof, for that it may at any time very easily be corrected by experiment, and the rising and falling thereof are the things chiefly remarkable in it, the just height being barely a curiosity.

27
Recommended by Dr Halley.

"I had one of these barometers with me in my late southern voyage, and it never failed to prognosticate and give early notice of all the bad weather we had,

Barometer. so that I depended thereon, and made provision accordingly; and from my own experience I conclude, that a more useful contrivance hath not for this long time been offered for the benefit of navigation."

28
Chamber
Barometer
by Mr W. Jones.

Fig. 10. represents a kind of *Chamber Barometer*, or a complete instrument for observing in a fixed place, such as a room, &c. the changes in the atmosphere. It is constructed by Mr W. Jones optician, London; and consists of barometer *d*, thermometer *aa*, and hygrometer *c*, all in one mahogany frame. One advantage of this instrument is, that either the thermometer or hygrometer may be taken from the frame, and occasionally made use of in another place if required. The thermometer is separated by only unscrewing two screws *a, a*; and the hygrometer, by unscrewing a brass pin at the back of the frame, not seen in this figure. The index of the hygrometer is at any time set, by only moving with your finger the brass wheel seen at *c*; the two sliding indexes of the barometer and thermometer are moved by a rack-work motion, set in action by the key *g* placed in the holes *h* and *i*. The divisions of the barometer plate *b* are in tenths of an inch, from 28 to 31 inches; these again subdivided into *hundredths* by means of the *vernier scale*, placed oppositely on a sliding slip of brass similar to the common barometers, most of which are now made with this *vernier*. On this vernier are *ten equal parts*, or divisions; (see A, fig. 11. which for the sake of perspicuity is drawn larger). All of these together are equal just to eleven of those on the scale of inches; that is, to eleven tenths. By this artifice the height of the mercury at E is evident by inspection only, to the one hundredth part of an inch. To understand this, nothing more is necessary than to consider, that *one tenth part of a tenth of an inch* is the *one hundredth part of an inch*. Now every tenth of an inch in the scale B is divided into ten equal parts by the slip or *vernier A*: for since ten divisions on that exceed ten on the scale by one division, that is, by one-tenth of an inch; therefore one division on the vernier will exceed one division on the scale by *one-tenth part*; and two divisions on the vernier will exceed two on the scale by *two tenths*, and so on: Therefore every division on the vernier will exceed the same number of divisions on the scale by *so many tenths of a tenth*, or by *so many hundredth parts of an inch*. Therefore the ten equal divisions of an inch on the scale B, must be looked upon as so many *ten hundredth parts of an inch*, and numbered thus, 10. 20. 30. 40. &c. parts of an inch; then the *vernier* gives the *line* to each ten, thus: Set the index C very nicely to the top of the surface of the mercury B, and at the same time the beginning of the divisions at C coincide with a line of division in the scale B, then *reads* the altitude of the mercury in *inches and tenths of an inch* exactly. But suppose the index C of the *vernier* falls between two divisions or tenths of the scale B, then there will be a coincidence of lines in both at that number of the vernier, which shows how many tenth parts of that tenth the index of the vernier has passed the last decimal division of the scale. Thus, for example, suppose the index of the vernier were to point somewhere between the sixth and seventh tenth above 30 on the scale: then if, by looking down the *vernier*, you observe the

29
M. thod of
using the
vernier
scale.

coincidence at number 8, it shows that the altitude of the mercury is 30 inches and 68 parts of a hundredth of another inch; or simply thus, 30.68 inches.

Barometer.

The screw at fig. 10. serves to press the mercury quite up into the tube, when required to be much moved or carried about, thereby rendering the barometer of the kind called *portable*. To the lower extremity of the tube (see fig. 14.) is cemented a wooden reservoir A, with a kind of leathern bag at bottom, the whole containing the mercury, but not quite full: and though the external air cannot get into the bag to suspend the mercury in the tube, by pressing on its surface, as in the common one; yet it has the same effect by pressing on the outside of the bag; which being flexible, yields to the pressure, and keeps the mercury suspended in the tube to its proper height. Through the under part of the frame passes the screw *f*, with a flat round plate at its end; by turning of this screw, the bag may be so compressed as to force the mercury up to the top of the tube, which keeps it steady, and hinders the tube from breaking by the mercury dashing against the top when carried about, which it is otherwise apt to do.

30
Marine barometer by Mr Nairne.

A new kind of marine barometer hath lately been invented by Mr Nairne. It differs from the common one in having the bore of the tube small for about two feet in its lower part; but above that height it is enlarged to the common size. Through the small part of the instrument the mercury is prevented from ascending too hastily by the motion of the ship; and the motion of the mercury in the upper wide part is consequently lessened. Much is found to depend on the proper suspension of this instrument; and Mr Nairne has since found, by experiment, the point from which it may be suspended so as not to be affected by the motion of the ship.

31
By Pafcente.

Another marine barometer has been invented by one Pafcente, a French artist. It is only a common one having the middle of the tube twisted into a spiral consisting of two revolutions. By this contrivance, the impulses which the mercury receives from the motions of the ship are destroyed by being transmitted in contrary directions.

We must now speak of the barometer in its second character, namely, as an instrument for measuring accessible altitudes. This method was first proposed by M. Pascal; and succeeding philosophers have been at no small pains to ascertain the proportion between the sinking of the mercury and the height to which it is carried. For this purpose, however, a new improvement in the barometer became necessary, viz. the making of it easily portable from one place to another, without danger of its being broken by the motion of the mercury in the tube; which was effected by the contrivance already mentioned.

32
Barometer applied to the mensuration of altitudes.

Among the number of portable barometers we may perhaps reckon what Mr Boyle called his *Statistical Barometer*. It consisted of a glass bubble, about the size of a large orange, and blown very thin, so as to weigh only 70 grains. This being counterpoised by brass weights in a pair of scales that would turn with the 30th part of a grain, was found to act as a barometer. The reason of this was, that the surface of the bubble was opposed to a vastly larger portion of air than that

33
Statistical Barometer.

Barometer. of the brass weight, and consequently liable to be affected by the various specific gravity of the atmosphere: thus, when the air became specifically light, the bubble descended, and *vice versa*; and thus, he says, he could have perceived variations of the atmosphere no greater than would have been sufficient to raise or lower the mercury in the common barometer an eighth part of an inch.

34 Method of measuring the charges of the air by the sound of a wire.

To these we may add an account of a new, and very singular barometer mentioned by M. Lazowski in his tour through Switzerland. "A Curé, shortsighted, who nevertheless amused himself with firing at a mark, thought of stretching a wire in such a manner as to draw the mark to him, in order to see how he had aimed. He observed, that the wire sometimes sounded as if it had been oscillatory; and that this happened when a change was about to ensue in the atmosphere; so that he came to predict with considerable accuracy when there was to be rain or fine weather. On making further experiments, it was observed, that this wire was more exact, and its sounds more distinct, when extended in the plane of the meridian than in other positions. The sounds were more or less soft, and more or less continued, according to the changes of weather that were to follow; though the matter was not reduced to any accuracy, and probably is not capable of much. Fine weather, however, was said to be announced by the sounds of counter tenor, and rain by those of bass. M. Volta was said to have mounted 15 chords at Pavia, in order to bring this method to some perfection; but there are as yet no accounts of his success.

35 Difficulties in measuring heights by the barometer.

The portable barometer, as already observed, has long been in use for the mensuration of accessible altitudes; and, in small heights, was found to be more exact than a trigonometrical calculation, the mercury descending at the rate of about one inch for 800 feet of height to which it was carried: but, in great heights, the most unaccountable differences were found between the calculation of the most accurate observers; so that the same mountain would sometimes have been made thousands of feet higher by one person than another; nay, by the same person at different times. All these anomalies M. de Luc of Geneva undertook to account for, and to remove; and in this undertaking he persisted with incredible patience for 20 years. The result of his labour is as follows.

36 Removed by M. de Luc.

The first cause of irregularity observed was a fault in the barometer itself. M. de Luc found, that two barometers, though perfectly alike in their appearance, did not correspond in their action. This was owing to air contained in the tube. The air was expelled by boiling the mercury in them; after which, the motions of both became perfectly consonant. That the tubes may bear boiling, they must not be very thick, the thickness of the glass not above half a line, and the diameter of the bore ought to be from two and an half to three lines. The operation is performed in the following manner: A chafing-dish with burning coals is placed on a table; the tube hermetically sealed at one end, is inverted, and filled with mercury within two inches of the top; the tube is gradually brought near the fire, moving it obliquely up and down, that the whole length of it may be heated; and advancing it nearer and nearer, till it is actually in the flame, the

37 Mercury how boiled in the tubes with the effects.

globules of air begin to move visibly towards the top. The boiling at last commences; and it is easy to make it take place from one end to the other, by causing the several parts of the tube successively pass with rapidity through the flame. By this operation the mercury is freed from all aerial particles, particularly those which line the inside of the tube, and which cannot easily be got clear of by any other method. When this last stratum of air is discharged, the tube may be afterwards emptied, and filled even with cold mercury, when it will be found nearly as free of air as before. The mercury in the tube thus prepared by a determinate quantity of heat, will rise higher than those in the common sort, and the barometers will more nearly correspond with each other; whereas there will be a difference of six or eight lines in the ascent of mercury in the common barometers. Instruments of this kind rise uniformly in a heated room, whilst those of the common kind descend in different proportions. On cooling the room, the former descend uniformly, while the latter descend unequally, by reason of the unequal proportions of air in them.

The next cause of variation was a difference of temperature. To discover the effects of heat on the mercury, several barometers were chosen that for a long time had been perfectly consonant in their motions. One of these was placed in an apartment, by itself, to mark the change in the external air, if any should happen. The rest were situated in another apartment, along with three thermometers, graduated according to the scale of M. de Reamur, and exactly correspondent with one another. The point at which the mercury stood when the experiment began, was carefully noted, and also the precise height of the thermometers. The latter apartment then was gradually heated; and with so much uniformity, that the thermometers continued still to agree. When the heat had been augmented as much as possible, the altitudes both of the barometers and thermometers were again accurately marked, to ascertain the differences that corresponded to one another. This experiment was repeated several times with next to no variation; and from the barometer in the first apartment it appeared, that no sensible alteration had taken place in the external air. Hence M. de Luc found, that an increase of heat sufficient to raise the thermometer from the point of melting ice to that of boiling water, augments the height of the mercury in the barometer precisely six lines; and therefore, dividing the distance between these two points on the thermometer into 95 equal parts, there will be $\frac{1}{95}$ th of a line to add to, or subtract from, the height of the mercury in the barometer, for every degree of variation of the thermometer so graduated. A scale of this kind, continued above boiling or below freezing water, accompanies his portable barometer and thermometer.—So accurate, he says, did long practice make him in barometrical observations, that he could distinguish a variation of $\frac{1}{95}$ of a line in the height of the mercury. He allows of no inclination of the tube, or other means to augment the scale, as all these methods diminish the accuracy of the instrument. Two observations are always required to measure the altitude of a mountain: one with a barometer left on the plain, and another on the summit; and both must be accompanied with a thermometer.

38 Variation of the height of the mercury by heat.

rometer. His portable barometer consists of two tubes, one of 34 French inches in length; and from the top, for this length, perfectly straight; but below this, it is bent round, so that the lower end turns up for a short space parallel to the straight part. On this open end is fixed a cock; and on the upper side of this cock is placed another tube, of the same diameter with the former, eight inches in length, open at both ends, and communicating with the long tube, through the cock. When the barometer is carried from one place to another, it is inverted very slowly, to hinder any air getting in; the quicksilver retires into the long tube on which the key of the cock is turned; and to preserve the cock from too great pressure of the mercury, the barometer is conveyed about in this inverted posture. When an observation is to be made, the cock is first opened; the tube is then turned upright, very slowly, to prevent, as much as possible, all the vibration of the mercury, which disturbs the observation; and, according to the weight of the atmosphere, the mercury falls in the longer branch, and rises up through the cock, into the shorter.

The whole of the cock is made of ivory, except the key. The extremities of the tubes are wrapped round with the membrane employed by the gold-beaters, done over with fish-glue, in order to fix them tight, the one in the lower, and the other in the upper, end of the perpendicular canal of the cock. The part of the key that moves within the cock is of cork, and the outward part or the handle is of ivory. The cork is fastened firmly to the ivory by means of a broad thin plate of steel, which cuts both the ivory and cork, lengthwise, through the centre, and reaches inward to the hole of the key. This plate also counteracts the flexibility of the cork, and makes it obey the motion of the handle, notwithstanding it is very considerably compressed by the ivory, to render it tight. That this compression may not abridge the diameter of the hole of the key, it is lined with a thin hollow ivory cylinder, of the same diameter with the tubes.

On the upper end of the shorter tube is fixed, in the intervals of observation, a kind of funnel, with a small hole in it, which is shut with an ivory stopple. The use of it is to keep the tube clean; to replace the mercury that may have made its way through the cock in consequence of any dilatation; and likewise to replace the mercury taken out of the shorter tube; after shutting the cock, on finishing an observation; because, when the mercury is left exposed to the air, it contracts a dark pellicle on its surface, that sullies both itself and the tube. The shorter tube should be wiped from time to time, by a little brush of sponge fixed on the end of a wire.

The barometer, thus constructed, is placed in a long box of fir, the two ends of which are lined on the inside with cushions of cotton covered with leather. This box may be carried on a man's back, like a quiver, either walking or riding; and should have a cover of wax-cloth, to defend it against rain. It should be kept at some distance from the body of the man, and be protected from the sun by an umbrella, when near the place of observation, to prevent its being affected by any undue degree of heat. The barometer should, farther, be attended with a plummet, to determine the

perpendicular position of it; and a tripod, to support it firm in that position at the time of observation.

The scale of the barometer begins on the long tube, at a point on a level with the upper end of the short one; and rises, in the natural order of the numbers, to 21 inches. Below the above point, the scale is transferred to the short tube; and descends on it, in the natural order of the numbers, to 7 inches. The whole length of the scale is 28 French inches; and since, as the mercury falls in the one tube, it must rise in the other, the total altitude will always be found by adding that part of the scale, which the mercury occupies in the long tube, to that part of it which the mercury does not occupy in the short one. In estimating, however, the total fall or rise on the long tube, every space must be reckoned twice; because, of barometers of this construction, half the real variation only appears in one of the branches.

Near the middle of the greater tube is placed the thermometer above-mentioned, for ascertaining the corrections to be made on the altitude of the mercury in consequence of any change in the temperature of the air. It is placed about the middle of the barometer, that it may partake as much as possible of its mean heat. The ball is nearly of the same diameter with the tube of the barometer, that the dilatations or condensations of the fluids they contain may more exactly correspond. The scale is divided into 96 parts; between the points of boiling water and melting ice, and the term of 0 is placed one eighth part of this interval above the lower point; so that there are 12 degrees below, and 84 above, it. The reason for placing 0 here is, that as 27 French inches are about the mean height of the barometer, so the 12th degree above freezing is nearly the mean altitude of the thermometer. Hence, by taking these two points, the one for the mean altitude, and the other for the mean heat, there will be fewer corrections necessary to reduce all observations to the same state, than if any higher or lower points had been fixed upon.

If then the barometer remains at 27 inches, and the thermometer at 0, there are no corrections whatever to be made. But if, while the barometer continues at 27 inches, the thermometer shall rise any number of degrees above 0, so many sixteenths of a line must be subtracted from the 27 inches, to obtain the true height of the barometer produced by the weight of the atmosphere, and to reduce this observation to the state of the common temperature. If, on the other hand, the thermometer shall fall any number of degrees below 0, while the barometer still stands at 27 inches, so many sixteenths must be added to that height, to obtain the true altitude.

Nothing is more simple than these corrections, when the barometer is at or near 27 inches of height. If, however, it fall several inches below this point, as the portable barometer very frequently must, the dilatations will no longer keep pace with the degrees of heat, after the rate of $\frac{1}{8}$ of a line for every degree of the thermometer; because the columns of mercury being shortened, the quantity of fluid to be dilated will be diminished. The truth is, the quantity of the dilatations for the same degree of heat is just as much diminished as the column is shortened. If, then, it shall

Barometer. still be found convenient to reckon the dilatations by sixteenths of a line, these sixteenths must be counted on a scale, of which the degrees shall be as much longer than the degrees of the first scale, as the shortened column of mercury is less than 27 inches, the height to which the length of the degrees of the first scale was adapted. For instance, let the mercury descend to $13\frac{1}{2}$ inches, half the mean column, and let the thermometer ascend 10 degrees above the mean heat; 10 sixteenths should be deduced from the mean column, for this temperature, according to the rule; but 10 half-sixteenths only, or 5 whole sixteenths, must be subtracted from the column of $13\frac{1}{2}$ inches, because the sum of its dilatations will be half that of the former, the quantities of fluid being to one another in that proportion.

It would cause considerable embarrassment if the sixteenths of correction were always to be subdivided into less fractions, proportional to every half inch of descent of the barometer: and the same end is obtained in a very easy manner, by reckoning the corrections on different scales of the same length, but of which the degrees are longer according as the columns of the barometer are shorter. For example, the degrees of correction on the scale applicable to the column of $13\frac{1}{2}$ inches, will be double in length what the same degrees are for the column of 27 inches; and of course the number of corrections will be reduced likewise one half, which we have seen by the rule they ought to be.

The author constructed, on a piece of vellum, scales with these properties, for no less than 23 columns of mercury, being all those between 18 inches and 29 inclusive, counting from half inch to half inch; within which extremes, every practical case will be comprehended. He wrapped this vellum on a small hollow cylinder, including a spring, like a spring-curtain, and fixed it on the right side of the thermometer. The vellum is made to pass from right to left, behind the tube of the thermometer, and to graze along its surface. The observer, to find the corrections to be made, pulls out the vellum till the scale corresponding to the observed altitude of the barometer comes to touch the thermometer, and on that scale he counts them. The vellum is then let go, and the screw gently curls it up.

40
His operations on the mountain of Salève.

The author having now, as he imagined, completely finished the instruments necessary for the accurate mensuration of heights; proceeded to establish, by experiment, the altitudes corresponding to the different descents of the mercury. Much had been written, and many rules had been given, on this subject, by different eminent philosophers, since the days of Pascal, who first broached it: but these disagreed so much with one another, and presented so little good reason why any one of them should be preferred, that no conclusion could with confidence be deduced from them. It became requisite, therefore, to lay them all aside, and to endeavour to discover by practice what could not be ascertained by theory. Salève, a mountain near Geneva, was chosen for the scene of these operations. This mountain is near 3000 French feet high. The height of it was twice measured by levelling, and the result of the mensurations differed only $10\frac{1}{2}$ inches; though there intervened six months between them, and the

total altitude was so considerable. On this mountain were chosen no less than 15 different stations, rising after the rate of 200 feet, one above another, as nearly as the ground would admit. At these stations, it was proposed to make such a number of observations as might be a good foundation either for establishing a new rule of proportion between the heights of places and the descents of the mercury, or for preferring some one of those formerly discovered.

41
Strange anomalies the barometer at different times of the day.
Little progress was made in this plan, when a phenomenon, altogether unexpected, presented itself. The barometer being observed, at one of the stations, twice in one day, was found to stand higher in the latter observation than in the former. This alteration gave little surprise, because it was naturally imputed to a change of the weight of the atmosphere, which would affect the barometer on the plain in the same manner. But it produced a degree of astonishment, when on examining the state of the latter, it was found, instead of corresponding with the motions of the former, to have held an opposite course, and to have fallen while the other rose. This difference could not proceed from any inaccuracy in the observations, which had been taken with all imaginable care; and it was so considerable as to destroy all hopes of success, should the cause not be detected and compensated.

The experiment was repeated several times, at intervals, that no material circumstance might escape notice. An observer on the mountain, and another on the plain, took their respective stations at the rising of the sun, and continued to mark an observation, every quarter of an hour, till it set. It was found, that the lower barometer gradually descended for the first three quarters of the day; after which it reascended, till in the evening it stood at nearly the same height as in the morning. While the higher barometer ascended for the first three fourths of the day; and then descended, so as to regain likewise, about sun-set, the altitude of the morning.

42
Accounted for.
The following theory seems to account in a satisfactory manner for this phenomenon. When the sun rises above the horizon of any place, his beams penetrate the whole of the section of the atmosphere of which that horizon is the base. They fall, however, very obliquely on the greater part of it, communicate little heat to it, and consequently produce little dilatation of its air. As the sun advances, the rays become more direct, and the heat and rarefaction of course increase. But the greatest heat of the day is not felt even when the rays are most direct, and the sun is in the meridian. It increases while the place receives more rays than it loses, which it will do for a considerable time after mid-day; in like manner as the tide attains not its highest altitude till the moon has advanced a considerable way to the west of the meridian. The heat of the atmosphere is greatest at the surface of the earth, and seems not to ascend to any great distance above it. The dilatations, for this reason, of the air, produced by the sun, will be found chiefly, if not solely, near the earth. A motion must take place, in all directions, of the adjacent air, to allow the heated air to expand itself. The heated columns extending themselves vertically, will become longer, and at the same time specifically lighter, in consequence of the rarefaction of their inferior parts. The motion of

air, till it rises into wind, is not rapid: these lengthened columns, therefore, will take some time to dissipate their summits among the adjacent less rarified columns that are not so high; at least, they will not do this as fast as their length is increased by the rarefaction of their bases.

The reader, we presume, anticipates the application of this theory to the solution of the phenomenon in question. The barometer on the plain begins to fall a little after morning, because the column of air that supports it becomes specifically lighter on account of the rarefaction arising from the heat of the sun. It continues to fall for the first three quarters of the day; because, during that time, the heat, and consequently the rarefaction, are gradually increasing. It rises again, after this period: because the cold, and of course the condensation, coming on, the specific gravity is augmented by the rushing in of the adjacent air. The equilibrium is restored, and the mercury returns to the altitude of the morning.

The barometer on the eminence rises after morning, and continues to do so for three-fourths of the day, for two reasons. The density of the columns of air is greatest near the earth, and decreases as the distance from it increases. The higher, for this reason, we ascend in the atmosphere, we meet with air specifically lighter. But by the rarefaction of the base of the column that supports the mercury of the barometer on the eminence, the denser parts of that column are raised higher than naturally they would be if left to the operation of their own gravity. On this account, the higher barometer is pressed with a weight, nearly as great as it would sustain, were it brought down, in the atmosphere, to the natural place of that denser air now raised above it by the prolongation of the base of the column. The other reason is, that as the rarefaction does not take place at any great distance from the earth, little change is produced in the specific gravity of the portion of the column that presses on the higher barometer, and the summit of that column dissipates itself more slowly than it increases. Thus, we see how this barometer must ascend during the first three fourths of the day, and pursue a course the reverse of that on the plain. The condensations returning after this time, the denser air subsides, the equilibrium takes place, and the mercury descends to its first position.

This phenomenon prompted the idea of a second pair of thermometers, to measure the mean heat of the column of air intercepted between the barometers. These thermometers are extremely delicate and sensible. The tubes are the finest capillary, the glass very thin, and the diameters of the balls only three lines. The balls are insulated, or detached from the scales, which are fixed to the tubes only, by ligatures of fine brass-wire covered with silk. The air, by this contrivance, has free communication with the balls on all sides; and, if the direct rays of the sun be intercepted at some distance by a bit of paper, or even the leaf of a tree, the thermometers will quickly mark the true temperature of the air.

The reader, perhaps, will ask here, Could not this end have been gained by the first pair of thermometers? But we must request him to suspend his judgment, till we have explained the theory of computing

the altitudes from the descents of the mercury. He will then find the scales of these thermometers so different, that neither of them could, without much incon-
venience, serve the purpose of the other.

The altitudes are computed by logarithms. A table of logarithms contains two series of numbers, running parallel to one another. The first has its terms in geometrical progression, and the second its terms in arithmetical. The natural numbers 1, 2, 3, 4, &c. form the first series; which, though in arithmetical progression when standing detached, are in geometrical in regard of the second series; whose terms are in arithmetical progression, and are called *logarithms*, because they express the distance of their correspondent terms of the geometrical progression from the beginning of the series.

To apply this table to the present purpose: let us suppose the whole atmosphere divided into concentric spherical sections, whose common centre is that of the earth. Suppose also all these sections of equal thickness, namely, 12.497 toises, which is found to be the thickness of the lowest section, and balances a line of mercury, when the barometer stands at 348 lines or 29 inches. Add, then, all these sections together; and we shall have the total altitude of the atmosphere expressed in an arithmetical progression, whose common difference is 12.497 toises. Consequently, in this view, the heights are proportioned to the logarithms.

It remains only to find the descents of the mercury, which measures the weights of the respective sections, in geometrical proportion, in order to justify the application of the logarithmic table to the computation of the altitudes. Now, it is easy to prove, in a very satisfactory manner, that the mean densities of these sections, which are in proportion of their weights, must be in geometrical progression, when the altitudes are in arithmetical; consequently, it is with great propriety and convenience that the logarithms are employed in the computation of the altitudes corresponding to the descents of the mercury. For, to find the vertical distance between two barometers, at different heights, no more is necessary than to look, in a table of logarithms, for the numbers that express in lines, or sixteenths of a line, the altitudes of the two columns of mercury, and take the logarithms of these numbers, whose difference will give this distance accurately, in thousandth parts of a toise. Multiply the toises by 6, which will furnish the altitudes in French feet.

The author made about 500 different observations at the several stations on the mountain of Salève, which both suggested and verified the computation by logarithms. Many, however, of these observations, produced conclusions that deviated considerably from the results of the actual mensuration, on account of the different temperatures in which they were taken. It was the design of the second pair of thermometers to point out the corrections of these deviations. In settling the scales necessary for this end, the first object was, to mark the temperature of all the observations where the logarithms gave the altitudes exactly, or nearly equal to what they were found to be by levelling. This temperature corresponded to 16 $\frac{1}{4}$ on the scale of Reaumur, and to 70 on that of Fahrenheit, and as it was fixed the term 0. The next step was, to determine the corrections of the heights that became necessary, accord-

Barometer- ing as the state of the air was warmer or colder than the fixed point. With this view, all the remaining observations were collected, and compared with the different temperatures in which they were taken; and from an attentive examination of these circumstances, it was discovered, that for every 215 feet of height furnished by the logarithms, one foot of correction must be added or subtracted, for every degree of the thermometer, according as it stood above or below the term 0.

The scale of Reaumur did not conveniently express this correction of 1 to 215. The author wished to adopt the ratio of 1 to 1000, in forming a new scale for that purpose; but the divisions would have been too small. He employed, therefore, that of 1 to 500: because, by doubling the degrees of the higher thermometer above or below 0; or, which amounted nearly to the same thing, by doubling the mean heat of the column of air in taking the sum of the degrees of both thermometers, there resulted the ratio of 1 to 1000. The new scale, then, was divided by the following proportion: As 215, the last term of the ratio found by Reaumur's scale, is to 500, the last term of the ratio to be applied on the new scale; so is 80, the parts between the fixed points of the first scale, to 186, the number of parts between the same points on the second. And as 80 is to 186; so is 16 $\frac{2}{3}$, the point on Reaumur's scale at which the logarithms give the altitudes without correction, to 39, the point at which they give them on the new scale. The term 0 is placed at this point, 39 at melting ice, and 147 at that of boiling water. To reduce all observations to the same temperature by this scale, nothing more is necessary than to multiply the heights found from the logarithms, by the sum of the degrees of both thermometers above or below 0, and to divide the product by 1000. The quotient must be added to, or subtracted from, the logarithmic height, according as the temperature is positive or negative.

As a specimen of the author's method, we shall now present our readers with the result of his operations at the 15 stations on Saleve. In one column are marked the heights found by levelling, and opposite to them the same heights found by the barometer; to the latter are prefixed the number of observations of which they are the mean.

Stations.	Heights by levelling.	Number of observations.	Heights by barometer.
	feet. inches.		feet.
1	216	2	230 $\frac{1}{2}$
2	428	10	435 $\frac{2}{3}$
3	586	0	591 $\frac{1}{3}$
4	728	8	732 $\frac{2}{3}$
5	917	0	919 $\frac{1}{3}$
6	1218	8	1221 $\frac{2}{3}$
7	1420	0	1418 $\frac{1}{3}$
8	1800	0	1798 $\frac{1}{3}$
9	1965	3	1962 $\frac{2}{3}$
10	2211	0	2210
11	2333	0	2331 $\frac{2}{3}$
12	2582	4	2583 $\frac{1}{3}$
13	2700	0	2703 $\frac{1}{3}$
14	2742	0	2741 $\frac{2}{3}$
15	2926	0	2924 $\frac{2}{3}$

From this table we presume the reader will be informed.

clined to entertain the most favourable opinion of the abilities and industry of M. de Luc. Notwithstanding the amazing pains, however, which he has taken to remove every inaccuracy in the barometer, it did not remain entirely free from error; nor in many instances have the observations made by different persons exactly corresponded. Considerable improvements have been suggested by Col. Roy and Sir George Shuckburgh, &c. (see *Phil. Trans.* vol. 67. and 68.); and put in execution, with improvements, by Mr Ramsden, and other ingenious instrument-makers in London. The following is a description of a very portable one constructed by Mr William Jones of Holborn, which, from its principle, comprehends every advantage that M. de Luc's instrument possesses; in many particulars is exempted from the errors to which his is liable; and is not subject to be deranged by carriage or other motion.

Fig. 12. is a representation of the instrument as enclosed in its mahogany case by means of three metallic rings *bbb*: This case is in the form of an hollow cone divided into three arms or legs from *a* to *c*, and is carved in the inside as to contain steadily the body of the barometer: The arms, when separated, form three firm legs or supports for the barometer when making observations (see fig. 13.): The instrument is suspended at the part *g* of the case, by a kind of improved gimbals; and therefrom, with its own weight, is sufficiently steady in exposed weather. In that part of the frame where the barometer tube is seen (*ae*), there is a long slit or opening made, so that the altitude of the mercury may be seen against the light, and the vernier piece *a* brought down to coincide with the edge of the mercury to the greatest possible exactness. When the instrument is placed on its support, the screw *f* is to be let down in order that the mercury may subside to its proper height; and also a peg at *f* must be loosened, to give admision to the action of the external air upon the mercury contained in the box *b*. The adjustment or mode of observing what is called the zero, or 0, division of the column of mercury, is by the mercury being seen in the transparent part of the box *b*; the inside of which is a glass tube or reservoir for the mercury, and an edged piece of metal fixed on the external part of the box. The mercury is to be brought into contact with the edge by turning the screw *f* towards the right or left as necessary. The vernier piece at *a* that determines the altitude of the column of mercury, is to be brought down by the hand to a near contact, and then accurately adjusted by turning the screw *b* at top of the instrument. This barometer has usually two different sorts of scales inserted on it: that on the right at *ae*, is a scale of French inches from 19 to 31, measured from the surface or zero of the mercury in the box *b* below, divided into 12th parts or lines, and each line subdivided by the vernier into ten parts, so that the height of the column of mercury may be ascertained to the 120th part of a French inch. The scale which is on the other side, or left of observation, is of the same length; but divided into English inches, each of which is subdivided into 20ths of an inch, and the vernier subdivides each 20th into 25 parts; so that the height of the mercury is hereby ascertained to the 500th part of an English inch (viz. 20x25=500). But this vernier is figured double for the conveniency of calculation, viz. The first 5 divisions are marked 10, the

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Barometer. the 20 marked 40, and the 25 marked 50: then each exact division is reckoned as the *two thousandths* of an inch, which amounts to the same; for $\frac{1}{500}$ is the same in value as $\frac{2}{1000}$ of an inch. A thermometer is always attached to the barometer, and indeed is indispensably necessary: it is fastened to the body at *c*, counterfunk beneath the surface of the frame, which makes it less liable to be broken: the degrees of the thermometer are marked on two scales, one on each side, viz. that of Fahrenheit and Reaumur, scales generally known; the freezing point of the former being at 32 and the latter at 0. On the right-hand side of these two scales there is a third, called a scale of *correction*; it is placed oppositely to that of Fahrenheit, with the words *add* and *subtract*: it serves as a necessary correction to the observed altitude of the mercury at any given temperature of the air shown by the thermometer. There are several other valuable pieces of mechanism about the instrument that cannot clearly be represented in the figure; but what has already been said, we presume, is sufficient for the reader's general information. For the manner of making the necessary observations, and calculating the necessary particulars deducible therefrom, a full information may be obtained from M. De Luc, *Recherches sur les Modifications de l'Atmosphere*, and the Philosophical Transactions vol. 67. and 68. before cited.

It may be necessary to add here, that by very small additional contrivances to this instrument, Mr Jones renders it equally useful for making observations at sea with any *marine* barometer that has hitherto been invented.

This article may not be improperly concluded by an observation of Mr Magellan*, relative to a principal cause of error in barometrical measurements. This he states to be owing to the inattention of observers to the *specific gravity* of the mercury with which their barometers were made. If two barometers were both at 30 inches high, and equally circumstanced in every other respect, excepting only their specific gravity of the quicksilver; so that one be filled with the first kind I have tried, viz. whose specific gravity was = 13,62 and the other = 13,45. In this case, and in all probability many of this kind have often occurred, the error must have been no less than 327 feet; because the heights of the mercurial columns in each barometer must be in the inverse ratio of their specific gravities: viz. 13,45 : 13,62 :: 30 : 30,379.

Now the logarithm of 30 = 4771.21
ditto of 30,379 = 4825.73

the difference is = 54.52

which difference shows, that there are 54.52 fathoms between one place and another, or 327 feet; though in reality both places are on the same level.

“ But if the specific gravity of the mercury, in the two barometers, were as the two above alluded to of Bergman and Fourcroy; viz. one of 14,110, and the other of 13,000, which may happen to be the case, as the heaviest is commonly reputed the purest mercury; on this supposition the error must have amounted to 35,576 toises, or above 2134 feet and a half; because 13,000 : 14,110 :: 30 : 32,561

Now the logarithm of 30 = 4771.21
and that of 32,561 = 5126.97

the difference is = 355.76; which shows that the error should amount to so many fathoms, or 2134.5 feet.

BARON, a person who holds a barony. The origin and primary import of this term is much contested.

Mease derives it from the Latin *baro*, which we find used in the pure age of that language for *vir*, a *stout* or *valiant man*; whence, according to this author, it was, that those placed next the king in battles were called *barones*, as being the bravest men in the army; and as princes frequently rewarded the bravery and fidelity of those about them with fees, the word came to be used for any noble person who holds a fee immediately of the king. Isidore, and after him Camden, take the word, in its original sense, to signify a *mercenary soldier*. Messieurs of the Port Royal derive it from *baro*, weight or authority. Cicero uses the word *baro* for a stupid brutal man; and the old Germans make mention of *buffetting a baron*, i. e. a *villain*; as the Italians still use the word *barone* to signify a *beggar*. M. de Marca derives baron from the German *bar*, man, or *freeman*; others derive it from the old Gaulish, Celtic, and Hebrew languages; but the most probable opinion is, that it comes from the Spanish *varo*, a *stout*, *noble person*; whence wives used to call their husbands, and princes their tenants, *barons*. In the Salic law, as well as the laws of the Lombards, the word *baron* signifies a *man* in the general; and the old glossary of Philomenes translates baron by *avns*, man.

BARON is more particularly used, among us, for a lord or peer of the lowest class; or a degree of nobility next below that of a viscount, and above that of a knight or a baronet. In ancient records the word *baron* included all the nobility of England, because regularly all noblemen were barons, though they had also a higher dignity. But it hath sometimes happened, that, when an ancient baron hath been raised to a new degree of peerage, in the course of a few generations the two titles have descended differently; one perhaps to the male descendants, the other to the heirs general; whereby the earldom or other superior title hath subsisted without a barony: and there are also modern instances, where earls and viscounts have been created without annexing a barony to their other honours: so that now the rule doth not hold universally that all peers are barons.

The original and antiquity of barons has occasioned great inquiries among our English antiquarians. The most probable opinion is supposed to be, that they were the same with our present lords of manors; to which the name of *court baron* (which is the lord's court, and incident to every manor) gives some countenance. It is said the original name of this dignity in England was *vavassour*, which by the Saxons was changed into *thane*, and by the Normans into *baron*. It may be collected from King John's *magna charta*, that originally all lords of manors, or barons, had seats in the great council or parliament: but such is the deficiency of public records, that the first precept to be found is of no higher date than the 49th year of King Henry III.; which, although it was issued

Magellan's edition of Cronstedt's Mineralogy, notes on Mercury.

Baron. sued out in the king's name, was neither by his authority nor by his direction: for, not only the king himself, but his son Prince Edward, and most of the nobility who stood loyal to him, were then prisoners in the hands of the rebellious barons; having been so made in the month of May preceding, at the battle of Lewes, and so continued until the memorable battle of Evesham, which happened in August the year following; when, by the happy escape of Prince Edward, he rescued the king and his adherents out of the hands of Simon Mountfort Earl of Leicester. It cannot be doubted but that several parliaments were held by King Henry III. and King Edward I.; yet no record is to be found giving any account thereof (except the 5th of King Edward I.), until the 22d year of the reign of the last mentioned king.

Before the 49th of Hen. III. the ancient parliaments consisted of the archbishops, bishops, abbots, earls, and barons. Of these barons there were two sorts: the *greater barons*, or the king's chief tenants, who held of him *in capite* by barony; and the *lesser barons*, who held of the first by military service *in capite*. The former had summons to parliament by several writs; and the latter (*i. e.* all those who were possessed of thirteen knights fees and a quarter) had a general summons from the sheriff in each county. Thus things continued till the 49th of Henry III. But then, instead of keeping to the old form, the prevailing powers thought fit to summon, not all, but only those of the greater barons who were of their party; and, instead of the lesser barons who came with large retinues, to send their precepts to the sheriff of each county, to cause two knights in every shire to be chosen, and one or two burgesses for each borough, to represent the body of the people residing in those counties and boroughs; which gave rise to the separation into two houses of parliament. By degrees the title came to be confined to the greater barons, or lords of parliament only; and there were no other barons among the peerage but such as were summoned by writ, in respect of the tenure of their lands or baronies, till Richard II. first made it a mere title of honour, by conferring it on divers persons by his letters patent. See further LAW, Part III. N^o clviii. 12, 13, 14.

When a baron is called up to the house of peers by writ of summons, the writ is in the king's name, and he is directed to come to the parliament appointed to be held at a certain time and place, and there to treat and advise with his majesty, the prelates, and nobility, about the weighty affairs of the nation. The ceremony of the admission of a baron into the house of peers is thus: He is brought into the house between two barons, who conduct him up to the Lord Chancellor, his patent or writ of summons being carried by a king at arms, who presents it kneeling to the Lord Chancellor, who reads it, and then congratulates him on his becoming a member of the house of peers, and invests him with his parliamentary robe. The patent is then delivered to the clerk of the parliament, and the oaths are administered to the new peer, who is then conducted to his seat on the barons bench. Some barons hold their seats by tenure. The first who was raised to this dignity by patent was John de Beauchamp of Holt Castle, created Baron of Kidderminster in Worcestershire, to him and his heirs-male, by King Richard II. in the 11th year of his reign. He

invested him with a mantle and cap. The coronation-ropes of a baron are the same as an earl's, except that he has only two rows of spots on each shoulder. In like manner, his parliamentary robes have but two guards of white fur, with rows of gold lace. In other respects they are the same as other peers. King Charles II. granted a coronet to the barons. It has six pearls, set at equal distances on the chaplet. His cap is the same as a viscount's. His style is *Right Honourable*; and he is styled by the king or queen, *Right Trusty and Well Beloved*.

BARONS by ancient tenure were those who held by certain territories of the king, who still reserved the tenure in chief to himself. We also read of *barons by temporal tenure*; who are such as hold honours, castles, manors, as heads of their barony, that is by grand serjeanty; by which tenure they were anciently summoned to parliament. But at present a baron by tenure is no lord of parliament, till he be called thither by writ.

The barons by tenure after the conquest, were divided into *majores* and *minores*, and were summoned accordingly to parliament; the *majores* or greater barons, by immediate writ from the king; the *minores*, or lesser barons, by general writ from the high sheriff, at the king's command.

Anciently they distinguished the greater barons from the less, by attributing high, and even sovereign jurisdiction, to the former, and only inferior jurisdiction over smaller matters to the latter.

BARONS of the *Exchequer*, the four judges to whom the administration of justice is committed, in causes between the king and his subjects relating to matters concerning the revenue. They were formerly barons of the realm, but of late are generally persons learned in the laws. Their office is also to look into the accounts of the king, for which reason they have auditors under them. See EXCHEQUER.

BARONS of the *Cinque-ports* are members of the house of commons, elected by the five ports, two for each port. See the article CINQUE-PORTS.

BARON and *Feme*, in the English law, a term used for husband and wife, in relation to each other: and they are deemed but one person; so that a wife cannot be witness for or against her husband, nor he for or against his wife, except in cases of high treason.

BARON and *Feme*, in heraldry, is when the coats of arms of a man and his wife are borne par pale in the same escutcheon, the man's being always on the dexter side, and the woman's on the sinister; but here the woman is supposed not an heiress, for then her coat must be borne by the husband on an escutcheon of pretence.

BARON (Robert), a dramatic author, who lived during the reign of Charles I. and the protectorship of Oliver Cromwell. He received the earlier parts of his education at Cambridge, after which he became a member of the honourable society of Gray's-Inn. During his residence at the university, he wrote a novel called the *Cyprian Academy*, in which he introduced the two first of the dramatic pieces mentioned below. The third of them is a much more regular and perfect play, and was probably written when the author had attained a riper age. The names of them are, 1. *Deorum Dona*, a masque. 2. *Gripus and Hegio*, a pastoral. 3. *Mirza*, a tragedy. Mr Baron had a great intimacy with the celebrated Mr James Howell, the great traveller, in whose collections of Letters * there

Baron
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Barone's

is one to this gentleman, who was at that time at Paris. To Mr Howell in particular, and to all the ladies and gentlemen in England in general, he has dedicated his romance.

BARON (Michael), an excellent comedian of Paris, was the son of Michael Baron another comedian, who was a native of Ifoudun. He wrote some poems, and several theatrical pieces, which are printed together in 2 vols 12mo. He died at Paris in 1729, aged 77.

BARONET, a dignity or degree of honour next beneath a baron, and above a knight; having precedence of all knights excepting those of the garter, and being the only knighthood that is hereditary.

The dignity of baronet is given by patent, and is the lowest degree of honour that is hereditary. The order was founded by King James I. at the suggestion of Sir Robert Cotton, in 1611, when 200 baronets were created at once; to which number it was intended they should always be restrained: but it is now enlarged at the king's pleasure, without limitation.

They had several considerable privileges given them, with an *habendum* to them and their heirs male. They were allowed to charge their coat with the arms of Ulster, which are, in a field argent, a sinister hand, gules; and that upon condition of their defending the province of Ulster in Ireland against the rebels, who then harassed it extremely: to which end they were each to raise and keep up 30 soldiers at their own expence for three years together, or to pay into the exchequer a sum sufficient to do it; which, at 8 d. per day per head, was L. 1095. So that, including fees, the expence of this dignity may be about L. 1200 sterling. To be qualified for it, one must be a gentleman born, and have a clear estate of L. 1000 *per annum*.

Baronets take place according to the dates of their patents: by the terms of which no honour is to be erected between barons and baronets. The title *Sir* is granted them by a peculiar clause in their patents, tho' they be not dubbed knights: but both a baronet, and his eldest son, being of full age, may claim knighthood.—The first baronet who was created was Sir Nicholas Bacon of Redgrave in Suffolk, whose successor is therefore styled *Primus Baronetorum Angliæ*.

BARONETS of Scotland, called also *Baronets of Nova Scotia*. The order of knights-baronets was also designed to be established in Scotland in the year 1621, by King James I. for the plantation and cultivation of the province of Nova Scotia in America; but it was not actually instituted till the year 1625 by his son Charles I. when the first person dignified with this title was Sir Robert Gordon of Gordonstone, a younger son of the Earl of Sutherland. The king granted a certain portion of land in Acadia or New Scotland, to each of them, which they were to hold of Sir William Alexander (afterwards Earl of Stirling), for their encouragement who should hazard their lives for the good and increase of that plantation, with precedence to them, and their heirs-male for ever, before all knights called *equites aurati*, and all lesser barons called *lairds*, and all other gentlemen, except Sir William Alexander his majesty's lieutenant in Nova Scotia, his heirs, their wives and children; that the title of *Sir* should be prefixed to their Christian name, and *Baronet* added to their surname; and that their own and their eldest sons wives should enjoy the title of *Lady, Madam, or Dame*.

—His majesty was so desirous of adding every mark of dignity to this his favourite order, that, four years after its institution, he issued a royal warrant, granting them the privilege of wearing an orange ribbon and a medal; which last was presented to each of them by the king himself, according to the words of the warrant. All the privileges of the order, particularly this of wearing the medal, were confirmed at the king's request by the convention of estates in the year 1630; and in order to establish them on the most solid foundation, they were again confirmed by an act of the parliament of Scotland in the year 1633. This mark of distinction fell to the ground with all the other honours of Scotland during the usurpation of the long parliament and of Oliver Cromwell. It continued in general, though not total, disuse, after the Restoration. There have been former meetings of the order to revive the use of it, one in the year 1721, and another in 1734. These meetings proved ineffectual, because the proper steps towards its revival were not taken; but, under the auspices of our illustrious monarch George III. such measures were concerted in the year 1775 as have effectually established this honourable dignity.

BARONETS of Ireland. This order was likewise instituted by King James I. in the 18th year of his reign, for the same purpose and with the same privileges within the kingdom of Ireland, as he had conferred on the like order in England; for which the Irish baronets paid the same fees into the treasury of Ireland. The first of that kingdom who was advanced to this hereditary dignity was Sir Francis Blundell, then secretary for the affairs of Ireland. Since his time, several have been created, no number being limited.

BARONI (Leonora), a celebrated singer and composer, was born at Naples, but spent the greatest part of her life at Rome. She was daughter of Adriana Baroni of Mantua, Baroness of Piancetta; a lady also distinguished for her musical talents, and for her beauty surnamed *the fair*. Leonora had less beauty than her mother; but excelled her in her profound skill in music, the sweetness of her voice, and the charmingness of her manner. She is said by Mr Bayle to have been one of the finest singers in the world. She was, as well as her mother, celebrated by the wits, who strove to excel each other in recording her praises; and in 1639 there was published, at Bracciano, a collection of Latin, Greek, Italian, Spanish, and French poems made upon her, under this title, *Appiausi Poetici alle Glorie della Signora Leonora Baroni*. Among the Latin poems of Milton are no fewer than three intitled *Ad Leonoram Rome contentem*, wherein this lady is celebrated for her singing, with an allusion to her mother's exquisite performance on the lute. A fine eulogium on this accomplished woman is contained in a discourse on the Music of the Italians, printed with the life of Malherbe, and some other treatises at Paris, 1672, in 12mo. This discourse was composed by Mr Maugars prior of St Peter de Mac, the king's interpreter of the English language, and besides so famous a performer on the viol, that the king of Spain and several other sovereign princes of Europe desired to hear him. The character given by this person of Leonora Baroni is as follows: "She is endowed with fine parts; she has a very good judgement to distinguish good from bad music; she understands it perfectly well; and even composes, which

Baroness,
Baroni.

Baronius,
Barony.

makes her absolute mistress of what she sings, and gives her the most exact pronunciation and expression of the sense of her words. She does not pretend to beauty, neither is she disagreeable, or a coquet. She sings with a bold and generous modesty, and an agreeable gravity; her voice reaches a large compass of notes, and is exact, loud, and harmonious; she softens and raises it without straining or making grimaces. Her raptures and sighs are not lascivious; her looks having nothing impudent, nor does she transgress a virgin modesty in her gestures. In passing from one key to another, she shows sometimes the divisions of the enharmonic and chromatic kind with so much art and sweetness, that every body is ravished with that fine and difficult method of singing. She has no need of any person to assist her with a theorbo or viol, one of which is necessary to make her singing complete; for she plays perfectly well herself on both these instruments. In short, I have had the good fortune to hear her sing several times above 30 different airs, with second and third stanzas composed by herself. I must not forget to tell you, that one day she did me the particular favour to sing with her mother and her sister. Her mother played upon the lute, her sister upon the harp, and herself upon the theorbo. This concert, composed of three fine voices, and of three different instruments, so powerfully transported my senses, and threw me into such raptures, that I forgot my mortality, and thought myself already among the angels enjoying the felicity of the blessed."

BARONIUS (Cæsar), a pious and learned cardinal, was born at Sora in 1538. He studied at Rome, and put himself under the discipline of St Philip de Neri. In 1593, he was made general of the congregation of the Oratory by the resignation of the founder Philip de Neri. Pope Clement VIII. made him his confessor, and created him a cardinal in 1596. He was afterwards made librarian to the Vatican; and died in 1605, at 68 years of age. He wrote several works, the principal of which is his *Annales Ecclesiastici*, from A. D. 1 to 1198, in 12 vols folio; which has been abridged by several persons, particularly by Henry Spondæus, Bzovius, and Ludovico Aurelio.

BARONY, BARONIA, or *Baronagium*, the lordship or fee of a baron, either temporal or spiritual: In which sense *barony* amounts to the same with what is otherwise called *honour*.

A barony may be considered as a lordship held by some service in chief of the king, coinciding with what is otherwise called *grand seigneurie*. Baronies, in their first creation, moved from the king himself, the chief lord of the whole realm, and could be holden immediately of no other lord. For example, the king enfeoffed a man of a great seigneurie in land, to hold to the person enfeoffed and his heirs, of the king and his heirs, by baronial service; to wit, by the service of 20, 40, 60 knights, or of such other number of knights, either more or fewer, as the king by his enfeoffment limited or appointed.—In the ages next after the Conquest, when a great lord was enfeoffed by the king of a large seigneurie, such seigneurie was called a *barony*, but more commonly an *honour*; as, the honour of Gloucestershire, the honour of Wallingford, the honour of Lancaster, the honour of Richmond, and the like. There were in England certain honours, which

were often called by Norman or other foreign names; that is to say, sometimes by the English and sometimes by the foreign name. This happened when the same person was lord of an honour in Normandy, or some other foreign country, and also of an honour in England. For example, William de Forz, de Force, or de Fortibus, was lord of the honour of Albemarle in Normandy: he was also lord of two honours in England; to wit, the honour of Holderness, and the honour of Skipton in Craven. These honours in England were sometimes called by the Norman name, the honour of Albemarle, or the honour of the Earl of Albemarle. In like manner, the Earl of Britannie was lord of the honour of Britannie in France, and also of the honour of Richmond in England: the honour of Richmond was sometimes called by the foreign name, the honour of Britannie, or the honour of the Earl of Britannie. This serveth to explain the terms "honour of Albemarle in England," *honor Albemarlæ*, or *comitis Albemarlæ in Anglia*; *honor Britanniæ*, or *comitis Britanniæ in Anglia*, "the honour of Britannie," or "the Earl of Britannie in England." Not that Albemarle or Britannie were in England, but that the same person respectively was lord of each of the said honours abroad and of each of the said honours in England. The baronies belonging to bishops are by some called *regalia*, as being held solely on the king's liberality. These do not consist in one barony alone, but in many; for *tot erant baroniæ, quot majora prædia*.

A barony, according to Bracton, is a right indivisible. Wherefore, if an inheritance be to be divided among coparceners, though some capital messuages may be divided, yet if the capital messuage be the head of a county or barony, it may not be parcelled: and the reason is, lest by this division many of the rights of counties and baronies by degrees come to nothing, to the prejudice of the realm, which is said to be composed of counties and baronies.

BARRA, or BARA, island of. See BARA.

BARRA, in commerce, a long-measure used in Portugal and some parts of Spain, to measure woollen cloths, linen cloths, and ferges. There are three sorts; the barra of Valencia, 13 of which make 12 $\frac{1}{2}$ yards English measure; the barra of Castile, 7 of which make 6 $\frac{1}{2}$ yards; and the barra of Aragon, 3 of which make 2 $\frac{1}{2}$ yards English.

BARRABA, (desart of); a tract of land in Siberia, lying between the rivers Irtis and Oby, in the province of Tobolsk. It is uninhabited, but not thro' any deficiency of the soil; for that is excellent for tillage, and part of it might also be laid out in meadows and pastures. It is interspersed with a great number of lakes, which abound with a species of carp called by the neighbouring people *karawoschen*; and the country produces great numbers of elks, deer, foxes, ermine and squirrels. Between the Irtis and Oby are some rich copper-mines; particularly on a mountain called *Pistorwa*, from the *pitsta* or white firs that grow upon it. Every hundred weight of the ore found here yields 12 pounds of pure copper; and there is no occasion for digging deep in order to come at it. Most of these ores, besides being very rich in copper, yield a great deal of silver, which affords so much gold as makes rich returns for the trouble and expence of extracting it.

Barony
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Barraba.

Barracan
||
Barrel.

BARRACAN, in commerce, a fort of stuff, not diapered, something like camblet, but of a coarser grain. It is used to make cloaks, furtouts, and such other garments, to keep off the rain.—The cities where the most barracans are made in France are Valenciennes, Lisle, Abbeville, Amiens, and Roan. Those of Valenciennes are the most valued; they are all of wool, both the warp and the woof.

BARRACIDA, in ichthyology, a species of pike. See **ESOX**.

BARRACKS, or **BARACKS**, places for soldiers to lodge in, especially in garrisons.—Barracks, when damp, are greatly prejudicial to the health of the soldiers lodged in them; occasioning dysenteries, intermitting fevers, coughs, rheumatic pains, &c. For which reason, quarter-masters ought to be careful in examining every barrack offered by the magistrates of a place; rejecting all ground-flours in houses that have either been uninhabited, or have any signs of moisture.

BARRATOR, or **BARRETOR**, in law, a person guilty of barretry. See **BARRETRY**.

Lambert derives the word *barretor* from the Latin *balatro*, “a vile knave;” but the proper derivation is from the French *barrateur*, *i. e.* a “deceiver;” and this agrees with the description of a common barretor in my Lord Coke’s report, *viz.* that he is a common mover and maintainer of suits in disturbance of the peace, and in taking and detaining the possession of houses and lands or goods by false inventions, &c. And therefore it was adjudged that the indictment against him ought to be in these words, *viz.* That he is *communis malefactor, calumniator et seminator litium et discordiarum inter vicinos suos, et pacis regis perturbator*, &c. And there it is said that a common barretor is the most dangerous oppressor in the law, for he oppresses the innocent by colour of law, which was made to protect them from oppression.

BARRATRY, in law. See **BARRETRY**.

BARRATRY, in a shipmaster, is his cheating the owners. If goods delivered on ship-board are embezzled, all the mariners ought to contribute to the satisfaction of the party that lost his goods, by the maritime law; and the cause is to be tried in the admiralty. In a case where a ship was insured against the barratry of the master, &c. and the jury found that the ship was lost by the fraud and negligence of the master, the court agreed, that the fraud was barratry, though not named in the covenant; but that negligence was not.

BARRAUX, a fortress of Dauphiny belonging to France. It stands in the valley of Gressivaudan, and was built by a Duke of Savoy in 1597. The French took it in 1598, and have kept it ever since. It is seated on the river Iser, in E. Long. 4. 35. N. Lat. 45. 0.

BARRAY, one of the Hebrides, or Western isles of Scotland, situated in W. Long. 6. 30. N. Lat. 56. 55.

BARRE (Louis Francois Joseph de la), of Tour nay, author of several works printed at Paris. Amongst others, *Imper. Orientale, Recueil des Medailles des empereurs*, “Memoirs for the history of France, &c.” He died in 1738.

BARREL, in commerce, a round vessel, extending more in length than in breadth, made of wood, in

form of a little tun. It serves for holding several sorts of merchandize.

BARREL is also a measure of liquids. The English barrel, wine-measure, contains the eighth part of a tun, the fourth part of a pipe, and one half of a hoghead; that is to say, it contains 31½ gallons: a barrel, beer-measure, contains 36 gallons; and, ale-measure, 32 gallons. The barrel of beer, vinegar, or liquor preparing for vinegar, ought to contain 34 gallons, according to the standard of the ale-quart.

BARREL also denotes a certain weight of several merchandizes, which differs according to the several commodities. A barrel of Essex butter weighs 106 pounds; and of Suffolk butter, 255 pounds. The barrel of herrings ought to contain 32 gallons wine-measure, which amount to about 28 gallons old standard, containing about 1000 herrings. The barrel of salmon must contain 42 gallons; the barrel of eels the same. The barrel of soap must weigh 256 lb.

BARREL, in mechanics, a term given by watch-makers to the cylinder about which the spring is wrapped; and by gun-smiths to the cylindrical tube of a gun, pistol, &c. through which the ball is discharged.

BARREL, in anatomy, a pretty large cavity behind the tympanum of the ear, about four or five lines deep, and five or six wide.

Fire BARRELS. See *FIRE-SHIP*.

Thundering BARRELS, in the military art, are filled with bombs, grenades, and other fire-works to be rolled down a breach.

BARRENESS, the same with sterility. See **STERILITY**.

BARRETRY, in law, is the offence of frequently exciting and stirring up suits and quarrels between his Majesty’s subjects, either at law or otherwise. The punishment for this offence, in a common person, is by fine and imprisonment: but if the offender (as is too frequently the case) belongs to the profession of the law, a barretor who is thus able as well as willing to do mischief ought also to be disabled from practising for the future. And indeed it is enacted by statute 12 Geo. I. c. 29. that if any one, who hath been convicted of forgery, perjury, subordination of perjury, or common barretry, shall practise as an attorney, solicitor, or agent, in any suit; the court, upon complaint, shall examine it in a summary way; and, if proved, shall direct the offender to be transported for seven years. Hereunto also may be referred another offence, of equal malignity and audaciousness; that of suing another in the name of a fictitious plaintiff, either one not in being at all, or one who is ignorant of the suit. This offence, if committed in any of the king’s superior courts, is left, as a high contempt, to be punished at their discretion: but in courts of a lower degree, where the crime is equally pernicious, but the authority of the judges not equally extensive, it is directed by statute 8 Eliz. c. 2. to be punished by six months imprisonment, and treble damages to the party injured.

BARRICADE, or **BARRICADO**, a military term for a fence formed in haste with vessels, baskets of earth, trees, pallisades, or the like, to preserve an army from the shot or assault of the enemy.—The most usual materials for barricades consist of pales or stakes, erolled

Barrel
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Barricade.

Barricade
||
Barrister.

crossed with batons, and shod with iron at the feet, usually set up in passages or breaches.

BARRICADE, in naval architecture, a strong wooden rail, supported by stanchions, extending across the foremost part of the quarter-deck. In a vessel of war, the vacant spaces between the stanchions are commonly filled with rope-matts, cork, or pieces of old cable; and the upper part, which contains a double ropening above the rail, is studded with full hammocks to intercept the motion, and prevent the execution of small-shot in time of battle.

BARRIER, in fortification, a kind of fence made at a passage, retrenchment, &c. to stop up the entry thereof. It is composed of great stakes, about four or five feet high, placed at the distance of eight or ten feet from one another, with transoms, or overthwart rafters, to stop either horse and foot, that would enter or rush in with violence: in the middle is a moveable bar of wood, that opens or shuts at pleasure. A barrier is commonly set up in a void space, between the citadel and the town, in half moons, &c.

BARRIERS, signifies that which the French call *jeu de barres*, i. e. *jalafira*: a martial exercise of men armed and fighting together with short swords, within certain bars or rails which separated them from the spectators: it is now disused in this country.

BARRING A VEIN, in farriery, an operation performed upon the veins of a horse's legs, and other parts of his body, with intent to stop the course, and lessen the quantity, of the malignant humours that prevail there.

BARRINGTON. See SHUTE.

BARRINGTONIA, in botany; a genus of the polyandria order, belonging to the monadelphia class of plants, the characters of which are: one female, the calyx dephyllous above: with a drupa, which it crowns; and the seed is a quadrilocular nut. There is but one species known, the speciosa, a native of China and Otaheite.

BARRISTER, is a counsellor learned in the law, admitted to plead at the bar, and there to take upon him the protection and defence of clients. They are termed *jurisconsulti*; and in other countries called *licentiati in jure*: and anciently barristers at law were called *apprentices of the law*, in Latin *apprenticii juris nobiliores*. The time before they ought to be called to the bar, by the ancient orders, was eight years, now reduced to five; and the exercises done by them (if they were not called *ex gratia*) were twelve grand moots performed in the inns of Chancery in the time of the grand readings, and 24 petty moots in the term times, before the readers of the respective inns: and a barrister newly called is to attend the six (or four) next long vacations the exercise of the house, viz. in Lent and Summer, and is thereupon for those three (or two) years styled a *vacation barrister*. Also they are called *utter barristers*, i. e. pleaders *ouster* the bar, to distinguish them from benchers, or those that have been readers, who are sometimes admitted to plead

within the bar, as the king, queen, or prince's counsellors are.

BARRITUS is a word of German original, adopted by the Romans to signify the general shout usually given by the soldiers of their armies on their first encounter after the *classicum* or alarm. This custom, however, of setting up a general shout was not peculiar to the Romans, but prevailed amongst the Trojans according to Homer, amongst the Germans, the Gauls, Macedonians, and Persians. See **CLASSICUM**.

BARROS (John), a celebrated Portuguese historian, born at Visco, in 1496. He was educated at the court of king Emanuel, among the princes of the blood, and made a great progress in Greek and Latin. The Infant John, to whom he attached himself, and became preceptor, having succeeded the king his father in 1521, Barros obtained a place in this prince's household; and in 1522, was made governor of St George del Mina, on the coast of Guinea. Three years after, the king having recalled him to court, made him treasurer of the Indies, and this post inspired him with the thought of writing this history; for which purpose he retired to Pompos, where he died, in 1570. His history of Asia and the Indies is divided into decades; the first of which he published in 1552, the second in 1553, and the third in 1563; but the fourth decade was not published till the year 1615, when it appeared by order of King Philip III. who had the manuscript purchased of the heirs of John Barros. Several authors have continued it, so that we have at present 12 decades. He left many other works; some of which have been printed, and others remain in manuscript.

BARROW (Isaac), an eminent mathematician and divine, of the last century, was the son of Mr Thomas Barrow a linen draper in London, where he was born, in 1630. He was at first placed at the charter-house school, for two or three years; where his behaviour afforded but little hopes of success in the profession of a scholar, he being fond of fighting, and promoting it among his school-fellows: but being removed from thence, his disposition took a happier turn; and having soon made a great progress in learning, he was admitted a pensioner of Peter House in Cambridge. He now applied himself with great diligence to the study of all parts of literature, especially to that of natural philosophy. He afterwards turned his thoughts to the profession of physic, and made a considerable progress in anatomy, botany, and chemistry; after this he studied chronology, astronomy, and geometry. He then travelled into France and Italy, and in a voyage from Leghorn to Smyrna, gave a proof of his bravery; for the ship being attacked by an Algerine pirate, he staid upon deck, and with the greatest intrepidity fought, till the pirate, perceiving the stout resistance the ship made, sheered off and left her (A).

At Smyrna he met with a most kind reception from Mr

(A) There is another anecdote told of him, which not only showed his intrepidity, but an uncommon goodness of disposition, in circumstances where an ordinary share of it would have been probably extinguished. He was once in a gentleman's house in the country, where the necessary was at the end of a long garden, and consequently at a great distance from the room where he lodged: as he was going to it before day, for

Barrow. Mr Bretton, the English consul, upon whose death he afterwards wrote a Latin elegy. From thence he proceeded to Constantinople, where he received the like civilities from Sir Thomas Bendish the English ambassador, and Sir Jonathan Dawes, with whom he afterwards preserved an intimate friendship. At Constantinople he read over the works of St Chrysostom, once bishop of that see, whom he preferred to all the other fathers. When he had been in Turkey somewhat more than a year, he returned to Venice. From thence he came home in 1659, through Germany and Holland; and was episcopally ordained by bishop Brownrig. In 1660, he was chosen to the Greek professorship at Cambridge. When he entered upon this province, he intended to have read upon the tragedies of Sophocles; but he altered his intention, and made choice of Aristotle's rhetoric. These lectures having been lent to a friend who never returned them, are irrecoverably lost. July the 16th 1662, he was elected professor of geometry in Gresham college, by the recommendation of Dr Wilkins, master of Trinity-college, and afterward bishop of Chester. Upon the 20th of May 1663 he was elected a fellow of the Royal Society, in the first choice made by the council after their charter. The same year the executors of Mr Lucas having, according to his appointment, founded a mathematical lecture at Cambridge, they fixed upon Mr Barrow for the first professor; and though his two professorships were not inconsistent with each other, he chose to resign that of Gresham college, which he did May the 20th 1664. In 1669 he resigned his mathematical chair to his learned friend Mr Isaac Newton, being now determined to give up the study of mathematics for that of divinity. Upon quitting his professorship, he was only a fellow of Trinity college, till his uncle gave him a small sinecure in Wales, and Dr Seth Ward bishop of Salisbury conferred upon him a prebend in his church. In the year 1670 he was created doctor in divinity by mandate; and, upon the promotion of Dr Pearson master of Trinity college to the see of Chester, he was appointed to succeed him by the king's patent bearing date the 13th of February 1672. When the king advanced him to this dignity, he was pleased to say, "he had given it to the best scholar in England." His majesty did not speak from report, but from his own knowledge: the doctor being then his chaplain, he used often to converse with him, and in his humorous way, to call him an "unfair preacher," because he exhausted every subject, and left no room for others to come after him. In 1675 he was chosen vice-chancellor of the university.—The doctor's works are very numerous, and such as do honour to the English nation. They are, 1. Euclid's Elements. 2. Euclid's Data.

3. Optical Letters, read in the public school of Cambridge. 4. Thirteen Geometrical Letters. 5. The Works of Archimedes, the four Books of Apollonius's Conic Sections, and Theodosius's Spherics explained in a new Method. 6. A Lecture, in which Archimedes's Theorems of the Sphere and Cylinder are investigated and briefly demonstrated. 7. Mathematical Lectures, read in the public schools of the university of Cambridge: the above were all printed in Latin; and as to his English works, they are printed together in four volumes folio.—"The name of Dr Barrow (says the reverend and learned Mr Granger) will ever be illustrious for a strength of mind and a compass of knowledge that did honour to his country. He was unrivalled in mathematical learning, and especially in the sublime geometry; in which he has been excelled only by one man, and that man was his pupil the great Sir Isaac Newton. The same genius that seemed to be born only to bring hidden truths to light, to rise to the heights or descend to the depths of science, would sometimes amuse itself in the flowery paths of poetry, and he composed verses both in Greek and Latin. He at length gave himself up entirely to divinity; and particularly to the most useful part of it, that which has a tendency to make men wiser and better. He has, in his excellent sermons on the Creed, solved every difficulty and removed every obstacle that opposed itself to our faith, and made divine revelation as clear as the demonstrations in his own Euclid. In his sermons he knew not how to leave off writing till he had exhausted his subject; and his admirable Discourse on the Duty and Reward of Bounty to the Poor, took him up three hours and an half in preaching. This excellent person, who was a bright example of Christian virtue, as well as a prodigy of learning, died on the 4th of May 1677, in the 47th year of his age;" and was interred in Westminster abbey, where a monument, adorned with his bust, was soon after erected, by the contribution of his friends.

BARROWS, in ancient topography, artificial hillocks or mounts, met with in many parts of the world, intended as repositories for the dead, and formed either of stones heaped up, or of earth. For the former, more generally known by the name of *cairns*, see CAIRNS.—Of the latter Dr Plott takes notice of two sorts in Oxfordshire: one placed on the military ways; the other in the fields, meadows, or woods; the first sort doubtless of Roman erection, the other more probably erected by the Britons or Danes. We have an examination of the barrows in Cornwall by Dr Williams, in the Phil. Trans. N^o 458. from whose observations we find that they are composed of foreign or adventitious earth; that is, such as does not rise on the place, but is fetched from some distance.—Monuments of

Barrow,
Barrows.]

he was a very early riser, a fierce mastiff, who used to be chained up all day, and let loose at night for the security of the house, perceiving a strange person in the garden at that unseasonable time, set upon him with great fury. The Doctor caught him by the throat, threw him, and lay upon him; and whilst he kept him down, considered what he should do in that exigence: once he had a mind to kill him; but he altered this resolution, upon recollecting that this would be unjust, since the dog did only his duty, and he himself was in fault for rambling out of his room before it was light. At length he called out so loud, that he was heard by some of the house, who came presently out, and freed the Doctor and the dog from the danger they were both in.

Barrows.

of this kind are also very frequent in Scotland. On digging into the barrows, urns have been found in some of them, made of calcined earth, and containing burnt bones and ashes; in others, stone chests containing bones entire; in others, bones neither lodged in chests nor deposited in urns. These tumuli are round, not greatly elevated, and generally at their basis surrounded with a foss. They are of different sizes; in proportion, it is supposed, to the greatness, rank, and power, of the deceased person. The links or sands of Skail, in Sandwich, one of the Orkneys, abound in round barrows. Some are formed of earth alone, others of stone covered with earth. In the former was found a coffin, made of six flat stones. They are too short to receive a body at full length: the skeletons found in them lie with the knees pressed to the breast, and the legs doubled along the thighs. A bag, made of rushes, has been found at the feet of some of these skeletons, containing the bones, most probably, of another of the family. In one were to be seen multitudes of small beetles; and as similar insects have been discovered in the bag which inclosed the sacred *Ibis*, we may suppose that the Egyptians, and the nation to whom these tumuli did belong, might have had the same superstition respecting them. On some of the corpses interred in this island, the mode of burning was observed. The ashes, deposited in an urn which was covered on the top with a flat stone, have been found in the cell of one of the barrows. This coffin or cell was placed on the ground, then covered with a heap of stones, and that again cased with earth and fods. Both barrow and contents evince them to be of a different age from the former. These tumuli were in the nature of family vaults: in them have been found two tiers of coffins. It is probable, that on the death of any one of the family, the tumulus was opened, and the body interred near its kindred bones.

Ancient Greece and Latium concurred in the same practice with the natives of this island. Patroclus among the Greeks, and Hector among the Trojans, received but the same funeral honours with our Caledonian heroes; and the ashes of Dercennus the Laurentine monarch had the same simple protection. The urn and pall of the Trojan warrior might perhaps be more superb than those of a British leader: the rising monument of each had the common materials from our mother earth.

The snowy bones his friends and brothers place,
With tears collected, in a golden vase.
The golden vase in purple palls they roll'd
Of softest texture and inwrought with gold.
Last o'er the urn the sacred earth they spread,
And rais'd a tomb, memorial of the dead.

Popè's Homer's Iliad, xxiv. 1003.

Or, as it is more strongly expressed by the same elegant translator, in the account of the funeral of Patroclus;

High in the midst they heap the swelling bed
Of rising earth, memorial of the dead. *Ib. xxiii. 319.*

The Grecian barrows, however, do not seem to have been all equally simple. The barrow of Alyattes, father of Croesus king of Lydia, is described by Herodotus as a most superb monument inferior only to the

N^o 41.

Barrows.

works of the Egyptians and Babylonians. It was a vast mound of earth heaped on a basement of large stones by three classes of the people; one of which was composed of girls, who were prostitutes. Alyattes died, after a long reign, in the year 562 before the Christian æra. Above a century intervened, but the historian relates, that to his time five stones (*upoi termini* or *stelæ*) on which letters were engraved, had remained on the top, recording what each class had performed; and from the measurement it had appeared, that the greater portion was done by the girls. Strabo likewise has mentioned it as a huge mound raised on a lofty basement by the multitude of the city. The circumference was six stadia or three quarters of a mile; the height two plethra or two hundred feet; and the width thirteen plethra. It was customary among the Greeks to place on barrows either the image of some animal or *stelæ*, commonly round pillars with inscriptions. The famous barrow of the Athenians in the plain of Marathon, described by Pausanias, is an instance of the latter usage. An ancient monument in Italy by the Appian way, called without reason the sepulchre of the Curatii, has the same number of *termini* as remained on the barrow of Alyattes; the basement, which is square, supporting five round pyramids—Of the barrow of Alyattes the apparent magnitude is described by travellers as now much diminished, and the bottom rendered wider and less distinct than before, by the gradual increase of the soil below. It stands in the midst of others by the lake Gygeus; where the burying-place of the Lydian princes was situated. The barrows are of various sizes, the smaller made perhaps for children of the younger branches of the royal family. Four or five are distinguished by their superior magnitude, and are visible as hills at a great distance. That of Alyattes is greatly supereminent. The lake it is likely furnished the soil. All of them are covered with green turf; and all retain their conical form without any sinking in of the top.

Barrows, or similar tumuli, are also found in great numbers in America. These are of different sizes, according to Mr Jefferson's* account; some of them constructed of earth, and some of loose stones. That they were repositories of the dead has been obvious to all; but on what particular occasion constructed, was matter of doubt. Some have thought they covered the bones of those who have fallen in battles fought on the spot of interment. Some ascribed them to the custom said to prevail among the Indians, of collecting at certain periods the bones of all their dead, wheresoever deposited at the time of death. Others again supposed them the general sepulchres for towns, conjectured to have been on or near these grounds; and this opinion was supported by the quality of the lands in which they are found (those constructed of earth being generally in the softest and most fertile meadow-grounds on river sides), and by a tradition said to be handed down from the aboriginal Indians, that when they settled in a town, the first person who died was placed erect, and earth put about him, so as to cover and support him; that when another died, a narrow passage was dug to the first, the second reclined against him, and the cover of earth replaced, and so on. "There being one of these barrows in my neighbourhood (says Mr Jefferson), I wished to satisfy myself whether any, and which of these

* Notes on
the State of
Virginia,
p. 156.

Barrow.

these opinions were just. For this purpose I determined to open and examine it thoroughly. It was situated on the low grounds of the Rivanna, about two miles above its principal fork, and opposite to some hills, on which had been an Indian town. It was of a spheroidal form, of about 40 feet diameter at the base, and had been of about 12 feet altitude, though now reduced by the plough to seven and a half, having been under cultivation about a dozen years. Before this it was covered with trees of twelve inches diameter, and round the base was an excavation of five feet depth and width, from whence the earth had been taken of which the hillock was formed. I first dug superficially in several parts of it, and came to collections of human bones, at different depths, from six inches to three feet below the surface. These were lying in the utmost confusion, some vertical, some oblique, some horizontal, and directed to every point of the compass, entangled, and held together in clusters by the earth. Bones of the most distant parts were found together; as, for instance, the small bones of the foot in the hollow of a skull, many skulls would sometimes be in contact, lying on the face, on the side, on the back, top or bottom, so as on the whole to give the idea of bones emptied promiscuously from a bag or basket, and covered over with earth, without any attention to their order. The bones of which the greatest numbers remained, were skulls, jaw-bones, teeth, the bones of the arms, thighs, legs, feet, and hands. A few ribs remained, some vertebrae of the neck and spine, without their processes, and one instance only of the bone which serves as a base to the vertebral column. The skulls were so tender, that they generally fell to pieces on being touched. The other bones were stronger. There were some teeth which were judged to be smaller than those of an adult; a skull which, on a slight view, appeared to be that of an infant, but it fell to pieces on being taken out, so as to prevent satisfactory examination; a rib, and a fragment of the under-jaw of a person about half-grown; another rib of an infant; and part of the jaw of a child, which had not yet cut its teeth. This last furnishing the most decisive proof of the burial of children here, I was particular in my attention to it. It was part of the right half of the under jaw. The processes by which it was articulated to the temporal bones were entire; and the bone itself firm to where it had been broken off, which, as nearly as I could judge, was about the place of the eye-tooth. Its upper edge, wherein would have been the sockets of the teeth, was perfectly smooth. Measuring it with that of an adult, by placing their hinder processes together, its broken end extended to the penultimate grinder of the adult. This bone was white, all the others of a sand colour. The bones of infants being soft, they probably decay sooner, which might be the cause so few were found here. I proceeded then to make a perpendicular cut through the body of the barrow, that I might examine its internal structure. This passed about three feet from its centre, was opened to the former surface of the earth, and was wide enough for a man to walk through and examine its sides. At the bottom, that is, on the level of the circumjacent plain, I found bones; above these a few stones, brought from a cliff a quarter of a mile off, and

from the river one-eighth of a mile off; then a large interval of earth, then a stratum of bones, and so on. At one end of the section were four strata of bones plainly distinguishable; at the other, three; the strata in one part not ranging with those in another. The bones nearest the surface were least decayed. No holes were discovered in any of them, as if made with bullets, arrows, or other weapons. I conjectured that in this barrow might have been a thousand skeletons. Every one will readily seize the circumstances above related, which militate against the opinion that it covered the bones only of persons fallen in battle; and against the tradition also which would make it the common sepulchre of a town, in which the bodies were placed upright, and touching each other. Appearances certainly indicate that it has derived both origin and growth from the accustomed collection of bones, and deposition of them together; that the first collection had been deposited on the common surface of the earth, a few stones put over it, and then a covering of earth; that the second had been laid on this, had covered more or less of it in proportion to the number of bones, and was then also covered with earth, and so on. The following are the particular circumstances which give it this aspect. 1. The number of bones. 2. Their confused position. 3. Their being in different strata. 4. The strata in one part having no correspondence with those in another. 5. The different states of decay in these strata, which seem to indicate a difference in the time of inhumation. 6. The existence of infant bones among them. But on whatever occasion they may have been made, they are of considerable notoriety among the Indians: for a party passing, about thirty years ago, through the part of the country where this barrow is, went through the woods directly to it, without any instructions or enquiry; and having staid about it some time, with expressions which were construed to be those of sorrow, they returned to the high road, which they had left about half a dozen miles to pay this visit, and pursued their journey. There is another barrow, much resembling this in the low grounds of the South branch of Shenandoah, where it is crossed by the road leading from the Rock-fish gap to Staunton. Both of these have, within these dozen years, been cleared of their trees and put under cultivation, are much reduced in their height, and spread in width, by the plough, and will probably disappear in time. There is another on a hill in the blue ridge of mountains, a few miles north of Wood's gap, which is made up of small stones thrown together. This has been opened and found to contain human bones as the others do. There are also many others in other parts of the country."

BARROW, in the salt-works, are wicker-cases, almost in the shape of a sugar-loaf, wherein the salt is put to drain.

BARRULET, in heraldry, the fourth part of the bar, or the one half of the cresset: an usual bearing in coat-armour.

BARRULY, in heraldry, is when the field is divided bar-ways, that is, across from side to side, into several parts.

BARRY (Girald), commonly called *Giraldus Cambrensis*, i. e. *Girald of Wales*, an historian and eccle-

Barrow
||
Barry.

Barry.

astic in the reigns of Henry II. and Richard I. was born at the castle of Mainarper, near Pembroke, A. D. 1146. By his mother he was descended from the princes of South Wales; and his father, William Barry, was one of the chief men of that principality. Being a younger brother, and intended for the church, he was sent to St David's, and educated in the family of his uncle, who was bishop of that see. He acknowledges, in his history of his own life and actions, that in his early youth he was too playful; but being severely reproached for it by his preceptors, he became a very hard student, and greatly excelled all his school-fellows in learning. When he was about 20 years of age, he was sent, A. D. 1166, for his further improvement, to the university of Paris; where he continued three years, and became, according to his own account, a most excellent rhetorician; which rendered him very famous. On his return into Britain, he entered into holy orders, and obtained several benefices both in England and Wales. Observing, with much concern, that his countrymen, the Welsh, were very backward in paying the tithes of wool and cheese, which he was afraid would involve them in eternal damnation, he applied to Richard archbishop of Canterbury, and was appointed his legate in Wales for rectifying that disorder, and for other purposes. He executed this commission with great spirit; excommunicating all, without distinction, who refused to save their souls by surrendering the tithes of their cheese and wool. Not satisfied with enriching, he also attempted to reform, the clergy; and dilated the archdeacon of Brechin to the archbishop, for the unpardonable crime of matrimony; and the poor old man, refusing to put away his wife, was deprived of his archdeaconry; which was bestowed upon our zealous legate. In discharging the duties of this new office, he acted with great vigour, which involved him in many quarrels; but, if we may believe himself, he was always in the right, and always victorious. His uncle, the bishop of St David's, dying A. D. 1176, he was elected his successor by the chapter: but this election having been made without the permission, and contrary to the inclination of Henry II. our author prudently declined to insist upon it, and went again to Paris to prosecute his studies, particularly in the civil and canon law, and theology. He speaks with great raptures of the prodigious fame he acquired by his eloquent declamations in the schools, and of the crowded audiences who attended them, who were at a loss to know whether the sweetness of his voice, the beauty of his language, or the irresistible force of his arguments, were most to be admired. Having spent about four years at Paris, he returned to St David's; where he found every thing in confusion; and the bishop being expelled by the people, he was appointed administrator by the archbishop of Canterbury, and governed the diocese in that capacity to A. D. 1184, when the bishop was restored. About the same time he was called to court by Henry II. appointed one of his chaplains, and sent into Ireland A. D. 1185, with prince John. By this prince he was offered the united bishoprics of Fernes and Leighlin; but declined them, and employed his time in collecting materials for his Topography of Ireland, and his History of the conquest of that island. Having finished his Topography, which consisted of three books, he published it at Oxford, A. D. 1187, in the following manner, in three days. On the first

day he read the first book to a great concourse of people, and afterwards entertained all the poor of the town; on the second day he read the second book, and entertained all the doctors and chief scholars; and, on the third day, he read the third book, and entertained the younger scholars, foldiers, and burgeses. "A most glorious spectacle! (says he) which revived the ancient times of the poets, and of which no example had been seen in England." He attended Baldwin archbishop of Canterbury, in his progress through Wales, A. D. 1186, in preaching a crusade for the recovery of the Holy Land; in which, he tells us, he was far more successful than the primate; and particularly, that the people were prodigiously affected with his Latin sermons, which they did not understand, melting into tears, and coming in crowds to take the cross. Although Henry II. as our author assures us, entertained the highest opinion of his virtues and abilities; yet he never would advance him to any higher dignity in the church, on account of his relation to the princes and great men of Wales. But on the accession of Richard I. (A. D. 1189), his prospects of preferment became better: for he was sent for by that Prince into Wales to preserve the peace of that country, and was even joined in commission with William Longchamp, bishop of Ely, as one of the regents of the kingdom. He did not, however, improve this favourable opportunity; refusing the bishopric of Bangor in A. D. 1190, and that of Landaff the year after, having fixed his heart on the see of St David's, the bishop of which was very old and infirm. In A. D. 1192, the state of public affairs, and the course of interest at court, became so unfavourable to our author's views, that he determined to retire. At first he resolved to return to Paris to prosecute his studies; but meeting with some difficulties in this, he went to Lincoln, where William de Monte read lectures in theology with great applause. Here he spent about six years in the study of divinity, and in composing several works. The see of St David's, which had long been the great object of his ambition, became vacant, A. D. 1198, and brought him again upon the stage. He was unanimously elected by the chapter; but met with so powerful an adversary in Hubert archbishop of Canterbury (who opposed his promotion with great violence), that it involved him in a litigation which lasted five years, cost him three journeys to Rome, at a great expence, and in which he was at last defeated, A. D. 1203. Soon after this he retired from the world, and spent the last 17 years of his life in a studious privacy, composing many books, of which we have a very correct catalogue in the Biographia Britannica. That Girald of Wales was a man of uncommon activity, genius, and learning, is undeniable; but these and his other good qualities were much tarnished by his insufferable vanity, which must have been very offensive to his contemporaries, as it is highly disgusting to his readers.

BARRY, in heraldry, is when an escutcheon is divided bar-ways, that is, across from side to side, into an even number of partitions, consisting of two or more tinctures, interchangeably disposed: it is to be expressed in the blazon by the word *barry*, and the number of pieces must be specified; but if the divisions be odd, the field must be first named, and the number of bars expressed.

BARRY-Bendy is when an escutcheon is divided evenly, bar and bend-ways, by lines drawn transverse and diagonal,

Barry.

Barfary
||
Barfanti.

diagonal, interchangeably varying the tinctures of which it confifts.

BARRY-Pily is when a coat is divided by feveral lines drawn obliquely from fide to fide, where they form certain angles.

BARSA (anc. geog.), an ifland on the coaft of France, in the Englifh Channel, Itinerary: *Bafepool* according to fome; but according to others, *Bardfey*.

BARSALLI, a kingdom of Africa, bordering on the river Gambia, inhabited by a tribe of negroes called *Jallofs*. The government of this kingdom is a moft defpotic monarchy; all people being obliged to prostrate themfelves on the earth when any of the royal family makes his appearance. In time of war, every foldier has his fhare of the booty, and the king but a certain proportion, which is moderate, confidering that if he pleafed he might keep the whole. The kingdom is divided into a number of provinces, over which governors called *bumeys* are appointed by the king. Thefe bumeys are abfolute within their jurifdictions; but they feldom carry their prerogative fo far as to incur the diflike of the people, which would quickly prove fatal to them. The Mohemetan religion is profefled by the king and his court; though little regard is paid to that part of the impoftor's creed which forbids the ufe of wine; for the king cannot live without brandy, nor is he ever more devout than when he is drunk. When his majefty is in want of brandy or other neceffaries, he fends to beg of the governor of James-fort that he will difpatch a boat with the merchandize he has occafion for; and to purchafe this he plunders the neighbouring towns, and feizes a certain number of his fubjects, whom he fells for flaves to the Europeans in exchange for their commodities. This is his method of fupplying himfelf if he happens to be at peace with his neighbours; for which reafon the people are never fo happy as when at war; and hence they purfue war with great vigour, and continue it with obftinacy.— The general drefs of the people is a kind of loofe callicoe furlpic, that hangs down below the knee; which they fometimes plait about the waift in a very agreeable manner. They wear a great number of gold trinkets in their hair, ears, nofes, and round their necks, arms, and legs; but the women efppecially are fond of thefe ornaments. The king of Barfalli, whom Moore faw in 1732, had a prodigious number of women: but when he went abroad he was feldom attended by more than two, who feemed to be drefled out in the whole finery and jewels of the feraglio. He had likewife a number of brethren; but it was feldom that he deigned to fpeak to them: if ever he did them that honour, they were forced to treat him with the fame refpect as other fubjects, and fall prostrate on the earth the moment they came into his prefence, notwithstanding they were the prefumptive heirs of the crown. It is indeed ufual for the king's children to difpute the right of fucceffion with his brethren, and the longeft fword generally carries away the prize.

BARSANTI (Francifco), an eminent mufical performer and compofer, was born at Lucca about the year 1690. He ftudied the civil law in the univerfity of Padua; but, after a fhort ftay there, chofe mufic for his profeflion. Accordingly he put himfelf under the tuition of fome of the ableft mafters in Italy; and having attained to a confiderable degree of proficiency in the fcience of practical compofition, took a refolu-

tion to fettle in England, and came thither with Geminiani, who was alfo a Luccefe, in the year 1714. He was a good performer on the hautboy, and alfo on the flute; in the former capacity he found employment in the opera band, and in the latter derived confiderable advantages by teaching. He publifhed with a dedication to the earl of Burlington, fix folos for a flute with a thorough-bafs, and afterwards fix folos for a German flute and a bafs. He alfo made into fonatas, for two violins and a bafs, the firft fix folos of Geminiani. He continued many years a performer at the opera-houfe: at length, reflecting that there was a profpect of advantage for one of his profeflion in Scotland, he went thither; and, with greater truth than the fame is afferted of David Rizzo, may be faid to have meliorated the mufic of this country, by collecting and making baffes to a great number of the moft popular Scots tunes. About the year 1750 Barfanti returned to England; but, being advanced in years, he was glad to be taken into the opera band as a performer on the tenor violin; and in the fummer feafon into that of Vauxhall. At this time he publifhed 12 concertos for violins; and fhortly after, *Sei Antifone*, in which he endeavoured to imitate the ftyle of Paleftrina, and the old compofers of motets: but from thefe publications fo little profit refulted, that, towards the end of his life, the induftry and oeconomy of an excellent wife, whom he had married in Scotland, and the ftudies and labours of a daughter, whom he had qualified for the profeflion of a finger, but who is now an actrefs at Covent-Garden, were his chief fupport.

BARTAS (William de Salufte du), a French poet, who lived in the 16th century. He was employed by Henry IV. of France in England, Denmark, and Scotland; and commanded a troop of horfe in Gafcony, under the marechal de Martignan. He was a Calvinift; and died in 1590, aged 46. He wrote a great number of poems; the moft famous of which are, 1. *The Week, or the Creation of the World*, in feven books. 2. *The Poem of Judith*; and 3. *the battle of Ivry*, gained by Henry IV. in 1590. Du Bartas wrote in a bombaft ftyle.

BARTAR, or **TRUCK**, is the exchanging of one commodity for another. The word comes from the Spanifh *baratar*, to deceive or circumvent in bargaining, perhaps becaufe thofe who deal this way ufually endeavour to over-reach one another.

To tranfact properly, the price of one of the commodities, and an equivalent quantity of the other, muft be found either by practice, or by the rule of three.

Queft. 1. How many pounds of cotton, at 9d. per lb. muft be given in bartar for 13 C. 3 Q. 14. lb. of pepper, at 2l. 16 s. per C.?

Firft. Find the price or value of the commodity whole quantity is given as follows:

	C.	Q.	lb.	l.	s.
	13	3	14	at	2 16.
	26				
2l.	10	8			
16s.	1	8			
2Q.		14			
1Q.		7			
14 lb.					
	L. 38	17			

Bartas,
Bartar.

Bartar
||
Barthius.

Secondly, Find how much cotton, at 9d. per lb. as well as ancient languages, and his translations from Bartholinus the Spanish and French show that he was not content with a superficial knowledge. Upon his return to Germany, he took up his residence at Leipzig, where he led a retired life, his passion for study having made him renounce all sort of employment. He wrote a vast number of books; the principal of which are, 1. His *Adversaria*, a large volume in folio; the second and third volumes of which he left in manuscript. 2. A Translation of *Æneas Gazæus*. 3. A large volume of Notes upon Claudian, in 4to. 4. Three large volumes upon Statius; &c. He died at Leipzig, in 1658, aged 71.

38 l. 17 s. will purchase as under:
d. lb. L. s.
If 9 : 1 :: 38 17
20
777
12
9)9324(C. Q.
Ans. 1036 lb. = 9 1

If the above question be wrought decimally, the operation may stand as follows:

C. L. C.
If 1 : 2.8 :: 13.875
2.8
111000
27750
0375)38.8500(lb. C. Q.
1036=9 1 Ans.
37.500
1350
1125
2250
2250

The value or price of the goods received and delivered in bartar being always equal, it is obvious that the product of the quantities received and delivered, multiplied in their respective rates, will be equal.

Hence arise a rule which may be used with advantage in working several questions; namely, Multiply the given quantity and rate of the one commodity, and the product divided by the rate of the other commodity quotes the quantity sought; or divided by the quantity quotes the rate.

Quest. 2. How many yards of linen, at 4 s. per yard, should I have in bartar for 120 yards of velvet, at 15 s. 6 d.?

Yds. Sixp. Sixp. Yds.
120 x 31 = 3720, and 8)3720(459 Ans.

BARTH, or BARR (John), a brave fisherman of Dunkirk, who rose to the rank of an admiral; and is celebrated for his signal valour and naval exploits, in the annals of France. He died in 1702, aged 51.

BARTHIUS (Gaspar), a very learned and copious writer, born at Cultrin in Brandenburg, the 22d of June 1576. Mr Baillet has inserted him in his *Enfans Celebres*; where he tells us, that at 12 years of age he translated David's Psalms into Latin verse of every measure, and published several Latin Poems. Upon the death of his father (who was professor of civil law at Francfort, counsellor to the elector of Brandenburg, and his chancellor at Cultrin), he was sent to Gotha, then to Eisenach, and afterwards, according to custom, went through all the different universities in Germany. When he had finished his studies, he began his travels; he visited Italy, France, Spain, England, and Holland, improving himself by the conversation and works of the learned in every country. He studied the modern

as well as ancient languages, and his translations from Bartholinus the Spanish and French show that he was not content with a superficial knowledge. Upon his return to Germany, he took up his residence at Leipzig, where he led a retired life, his passion for study having made him renounce all sort of employment. He wrote a vast number of books; the principal of which are, 1. His *Adversaria*, a large volume in folio; the second and third volumes of which he left in manuscript. 2. A Translation of *Æneas Gazæus*. 3. A large volume of Notes upon Claudian, in 4to. 4. Three large volumes upon Statius; &c. He died at Leipzig, in 1658, aged 71.

BARTHOLINUS (Caspar), a learned physician and anatomist in the 17th century, was born at Malmoe, a town in the province of Schonen, which then belonged to Denmark. At three years of age he had such a quick capacity, that in 14 days he learned to read; and in his 13th year he composed Greek and Latin orations, and pronounced them in public. When he was about 18 he went to the university of Copenhagen, and afterwards studied at Rostock and Wirtemberg. He next set out upon his travels; during which he neglected no opportunity of improving himself at the different universities to which he came, and every where receiving marks of respect. He was in 1613 chosen professor of physic in that university, which he enjoyed 11 years; when, falling into a dangerous illness, he made a vow, that if it should please God to restore him, he would solely apply himself to the study of divinity. He recovered, and kept his word; and soon after obtained the professorship of divinity, and the canonry of Roschild. He died on the 13th of July 1629, after having written several small works, chiefly on metaphysics, logic, and rhetoric.

BARTHOLINUS (Thomas), a celebrated physician, son of the former, was born at Copenhagen in 1616. After studying some years in his own country, he in 1637 went to Leyden, where he studied physic during three years. He then travelled into France; and resided two years at Paris and Montpellier, in order to improve himself under the famous physicians of those universities. Afterwards going to Italy, he continued three years at Padua; and at length went to Basil, where he obtained the degree of doctor of philosophy. Soon after, he returned to Copenhagen; where in 1647 he was appointed professor of the mathematics; and next year was nominated to the anatomical chair, an employment better suited to his genius and inclination; which he discharged with great assiduity for 13 years, and distinguished himself by making several discoveries with respect to the lacteal veins and lymphatic vessels. His close application, however, having rendered his constitution very infirm, he, in 1661, resigned his chair; but the king of Denmark allowed him the title of *honorary professor*. He now retired to a little estate he had purchased at Hagesled, near Copenhagen, where he hoped to have spent the remainder of his days in peace and tranquillity; but his house being burnt in 1650, his library, with all his books and manuscripts, was destroyed. In consideration of this loss the king appointed him his physician with a handsome salary, and exempted his land from all taxes; the university of Copenhagen also appointed him their librarian; and, in 1675, the king did him

Bartholomew's day
||
artolomeo

the honour to give him a seat in the grand council of Denmark. He wrote, 1. *Anatomia Caspari Bartholini Parentis novis Observationibus primum locupletata*, 8vo. 2. *De Monstris in Natura & Medecina*, 4to. 3. *De Arnillis Veterum, praesertim Danorum Schedion*, 8vo.; and several other works. This great man died on the 4th of December 1680.

St BARTHOLOMEW'S DAY, a festival of the Christian church, celebrated on the 24th of August. St Bartholomew was one of the twelve Apostles; and is esteemed to be the same as Nathanael, one of the first disciples that came to Christ.

It is thought this apostle travelled as far as India, to propagate the gospel; for Eusebius relates, that a famous philosopher and Christian, named *Parthenus*, desiring to imitate the apostolical zeal in propagating the faith, and travelling for that purpose as far as India, found there, among those who yet retained the knowledge of Christ, the gospel of St Matthew, written, as the tradition asserts, by St Bartholomew, one of the twelve apostles, when he preached the gospel in that country. From thence he returned to the more northern and western parts of Asia, and preached to the people of Hierapolis; then in Lyeaonia; and lastly at Albania, a city upon the Caspian Sea; where his endeavours to reclaim the people from idolatry were crowned with martyrdom, he being (according to some writers) flea'd alive, and crucified with his head downwards.—There is mention made of a Gospel of St Bartholomew, in the preface to Origen's Homilies on St Luke, and in the preface to St Jerome's commentary on St Matthew: but it is generally looked upon as spurious, and is placed by pope Gelasius among the apocryphal books.

BARTHOLOMEW (St), one of the Caribbee islands belonging to the French, who sent a colony thither in 1648. It is about 24 miles in compass, and has a good haven. W. Long. 62. 15. N. Lat. 18. 6.

BARTHOLOMITES, a religious order founded at Genoa in the year 1307; but the monks leading very irregular lives, the order was suppressed by pope Innocent X. in 1650, and their effects were confiscated. In the church of the monastery of this order at Genoa is preserved the image which it is pretended Christ sent to king Abgarus. See ABGARUS.

BARTOLOCCI (Julius), a learned monk, and professor of Hebrew at Rome, was born at Celeno, in 1613; and distinguished himself by writing an excellent Hebrew and Latin catalogue of the Hebrew writers and writings, in 4 vols folio, a continuation of which was performed by Imbonati his disciple. He died in 1687.

BARTOLOMEO (Francisco), a celebrated painter, born at Savignano, a village 10 miles from Florence, in the year 1469, was the disciple of Cosimo Rosselli, but was much more beholden to the works of Leonarda da Vinci for his extraordinary skill in painting. He was well versed in the fundamentals of design. Raphael, after quitting the school of Perugino, applied to this master; and under him studied the rules of perspective, with the art of managing and uniting his colours. In the year 1500, he turned Dominican friar; and some time after was sent by his superiors to the convent of St Martin, in Florence. He painted both portraits and histories; but his scrupulous con-

science would hardly ever suffer him to draw naked figures, though nobody understood them better. He died in 1517, aged 48.

BARTON, a town of Lincolnshire, seated on the river Humber, where there is a considerable ferry to pass over into Yorkshire. W. Long. 0. 10. N. Lat. 53. 40.

BARTSIA, PAINTED CUP: A genus of the angiosperma order, belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Personatae*. The calyx is bilobed, emarginated and coloured; the corolla less coloured than the calyx, with its upper lip longer than the under one. The viscosa or marthy, called also *yellow marsh eyebright*, was found by Mr Lightfoot in bogs and marshy places about Loch Goyl, near Loch-Long in the district of Cowal in Argyleshire. The plant is about ten or twelve inches high, with an erect stalk downy and unbranched: the leaves are sessile, spear-shaped, and a little viscoso; the flowers are yellow, and the plant dries black. It is likewise found in marshy places in Cornwall in England. The alpina, or mountain eyebright cow-wheat, hath heart-shaped leaves placed opposite, and bluntly serrated, with purple blossoms in leafy spikes. It is likewise a native of Britain, and is found near rivulets in hilly countries. Sheep and goats eat it. There are two other species.

BARUCH (the prophecy of), one of the apocryphal books, subjoined to the canon of the Old Testament. Baruch was the son of Neriah, who was the disciple and amanuensis of the prophet Jeremiah. It has been reckoned part of Jeremiah's prophecy, and is often cited by the ancient fathers as such. Josephus tells us, Baruch was descended of a noble family; and it is said in the book itself, that he wrote this prophecy at Babylon; but at what time is uncertain. It is difficult to determine in what language this prophecy was originally written. There are extant three copies of it; one in Greek, the other two in Syriac; but which of these, or whether any one of them, be the original, is uncertain.

BARULES, in church-history, certain heretics, who held, that the Son of God had only a phantom of a body; that souls were created before the world, and that they lived all at one time.

BARUTH, an ancient town of Turkey in Syria, with a Christian church of the Nestorian persuasion. It is situated in a fine fertile soil, but is inconsiderable now to what it was formerly. E. Long. 34. 20. N. Lat. 33. 30.

BARUTH, an Indian measure, containing 17 gantans: It ought to weigh about three pounds and an half English avoirdupois.

BARYTONUM, in the Greek grammar, denotes a verb, which having no accent marked on the last syllable, a grave accent is to be understood. In Italian music, *barytono* answers to our common pitch of bass.

BAS CHEVALIER. See BACHELOR.

Bas-Relief. See *Basso-Relievo*.

BAS (James Philip le) a modern French engraver, by whom we have some excellent prints. His great force seems to lie in landscapes and small figures, which he executed in a superior manner. His style of engraving is extremely neat; but yet he proves the freedom of the etching, and harmonizes the whole with

Barton
||
Bas.

Basaltes. the graver and dry point. We have also a variety of pretty vignettes by this artist. He flourished about the middle of the present century; but we have no account of the time of his birth or death.

1
Name, derivation, &c.

BASALTES, (from *basal*, "iron," or βασιλις, *diligenter examinans*), in natural history, an heavy, hard stone, chiefly black or green, consisting of prismatic crystals, the number of whose sides is uncertain. The English miners call it *cockle*; the German *scheerl*. Its specific gravity is to that of water as 3000 or upwards to 1000. It frequently contains iron; and consists either of particles of an indeterminate figure, or of a sparry, striated, or fibrous texture. It has a stinty hardness, is insoluble by acids, and is fusible by fire. The following is an analysis of some basaltes by Mr Bergman; and as the resemblance of it to lava will be frequently mentioned in the succeeding part of this article, we shall here contrast this analysis with that of lava by the same author.

2
Comparative analysis of Basaltes and lava.

Basaltes, 100 parts contains	Lava, 100 parts contains
Siliceous earth 50	Siliceous earth 49
Argillaceous 15	Argillaceous 35
Calcareous 8	Calcareous 4
Magnesia 2	Iron 12
Iron 25	

The most remarkable property of this substance is its figure, being never found in strata, like other marbles, but always standing up in the form of regular angular columns, composed of a number of joints, one placed upon, and nicely fitted to another, as if formed by the hands of a skilful workman. See Plate XCII. fig. 15.

3
Basaltes, where found.

Basaltes was originally found in columns in Ethiopia, and fragments of it in the river Tmolus, and some other places. We now have it frequently, both in columns and small pieces, in Spain, Russia, Poland, near Dresden, and in Sicilia; but the noblest store in the world seems to be that called the Giant's Causeway in Ireland, and Staffa, one of the western isles of Scotland*. Great quantities of basaltes are likewise found in the neighbourhood of Mount Ætna in Sicily, of Hecla in Iceland, and of the volcano in the island of Bourbon. These are the only three active volcanoes in whose neighbourhood it is to be met with; but it is also found in the extinguished volcanoes in Italy, though not in the neighbourhood of Vesuvius.

* See Giant's Causeway and Staffa.

4
Of the Giant's Causeway in Ireland.

In Ireland the basaltes rises far up the country, runs into the sea, crosses at the bottom, and rises again on the opposite land. In Staffa the whole end of the island is supported by natural ranges of pillars, mostly above 50 feet high, standing in natural colonnades, according as the bays and points of land have formed themselves, upon a firm basis of solid unformed rock. Above these, the stratum, which reaches to the soil or surface of the island, varies in thickness, as the island itself is formed into hills or valleys, each hill, which hangs over the valleys below, forming an ample pediment. Some of these, above 60 feet in thickness from the base to the point, are formed by the sloping of the hill on each side, almost into the shape of those used in architecture.

The pillars of the Giant's Causeway have been very particularly described and examined. The most accurate account of them is to be met with in a work

intituled, "Letters concerning the northern coast of the county of Antrim;" from which the following particulars relative to the present subject are extracted.

Basaltes
5
Particular account of the pillars

"1. The pillars of the Causeway are small, not very much exceeding 1 foot in breadth and 30 in length; sharply defined, neat in their articulation, with concave or convex terminations to each point. In many of the capes and hills they are of a larger size; more imperfect and irregular in their figure and articulation, having often flat terminations to their joints. At Fairhead they are of a gigantic magnitude, sometimes exceeding 5 feet in breadth and 100 in length; oftentimes apparently destitute of joints altogether. Thro' many parts of the country, this species of stone is entirely rude and unformed, separating in loose blocks; in which state it resembles the stone known in Sweden by the name of *trappe*.

Pl. XCI
fig. 1.

"2. The pillars of the Giant's Causeway stand on the level of the beach; from whence they may be traced through all degrees of elevation to the summit of the highest grounds in the neighbourhood.

"3. At the Causeway, and in most other places, they stand perpendicular to the horizon. In some of the capes, and particularly near Ushet harbour, in the Isle of Bagherly, they lie in an oblique position. At Doon point in the same island, and along the Balintoy shore, they form variety of regular curves.

"4. The stone is black, close, and uniform; the varieties of colour are blue, reddish, and grey; and of all kinds of grain, from extreme fineness to the coarse granulated appearance of a stone which resembles imperfect granite, abounding in crystals of schorl chiefly black, though sometimes of various colours.

"5. Though the stone of the Giant's Causeway be in general compact and homogeneous; yet it is remarkable, that the upper joint of each pillar, where it can be ascertained with any certainty, is always rudely formed and cellular. The gross pillars also in the capes and mountains frequently abound in these air-holes through all their parts, which sometimes contain fine clay, and other apparently foreign bodies: and the irregular basaltes beginning where the pillars cease, or lying over them, is in general extremely honey-combed; containing in its cells crystals of zeolite, little morsels of fine brown clay, sometimes very pure steatite, and in a few instances bits of agate."

6
Account of those in Staffa.

Sir Joseph Banks observes, that the bending pillars of Staffa differ considerably from those of the Giant's Causeway. In Staffa, they lie down on their sides, each forming the segment of a circle; and in one place, a small mass of them very much resembles the ribs of a ship. Those of the Giant's Causeway which he saw, ran along the face of a high cliff, bent strangely in the middle, as if unable, at their first formation, while in a soft state, to support the mass of incumbent earth.

7
Rocks of the Cyclops described.

The rocks of the Cyclops, in the neighbourhood of Ætna, exhibit very magnificent basaltic pillars. A general view of them is given on Plate XCIII. fig. 2. where *a*, *b*, *c*, are the three principal rocks; *e* is the extremity of an island, one half of which is composed of lava, on a base of basaltes, of no uncommon nature; above which there is a crust of pozzolana, combined with a certain white calcareous matter, which is pretty hard and compact; and which, as it is composed by the action

Basaltes. tion of the air, appears like a piece of knotty, porous, wood. That rock, at some former period, became so hard as to split; and the clefts were then filled up with a very hard and porous matter like scorie. This matter afterwards acquiring new hardness, also split, leaving large interstices, which in their turn have been filled up with a species of compound yellow matter. The island was formerly inhabited; and there still remains a flight of steps leading from the shore to the ruins of some houses which appear to have been hewn in the rock.

The rock *b* has the straightest and most regular columns of any. It is represented distinctly in Plate XCIV. fig. 1, and likewise a general view of *c* and *d*, with the foot of *Ætna* leading to *Catana*. These basaltic columns, at first view, seem to resemble those of the Giant's Causeway, and others commonly met with: but on a nearer inspection, we find a remarkable difference; being assembled in groups of five or six about one, which serves as their common centre. They are of various sizes and forms; some square, others hexagonal, heptagonal, or octagonal. One half of this rock is composed of perpendicular columns; the other of another species of basaltes disposed in inclined, and almost rectilinear, layers. These are in contact with the columns, and are as closely connected with them as they are with one another. The layers are longer at the base than towards the top of the rock. It is further to be remarked, that most of these layers are subdivided as they rise upwards; so that towards these upper extremities, one layer presents to the eye sometimes one, sometimes two, and sometimes three, divisions. The fragments of basaltes taken off from these layers are of a rhomboidal figure, because the layers break obliquely.

These layers, though inclined towards the base, become almost perpendicular towards the upper part of the rock, where they appear united in a point, and overtop most of the visible and elevated parts of the prismatic columns. These columns terminate in such a manner as to form a kind of stair-case. They appear even to rise under a species of clay with which they are covered at one extremity, till they reunite themselves with the point which is formed by the most elevated parts of the layers of basaltes beside them.

This extraneous matter with which these columns are covered, and of which the summit of this pyramid consists, appears to be of the same species with the former, composing the upper part of the island already described.

The basaltes of that island has one particularity, *viz.* that it is full of small crystals of about the size of peas. These appear no less beautiful than rock-crystal; but they are much softer, and yield even to the action of the air. We see here large fragments of basaltes which were formerly full of crystals, but destroyed by time. They are now not unlike a sponge, from the great number of holes which appear all over their surface. Those pieces of basaltes which contain most of these crystals are not so hard as those which contain fewer of them.

8 The promontory of *Castel d'Iaci*, which terminates the basis of *Ætna*, is almost entirely composed of basaltes, but of a kind very different from the former. It consists of a great number of cylinders from the diam-

eter of six inches to that of twenty feet. Some of these are solid, others hollow like cannon; some extended in layers, others similar to carrots of tobacco consisting of a number of pieces squeezed together. Some of these cylinders are straight, others curved into a variety of forms. Some look like globes inclosed in the rocks; and in the fractures of these globes we perceive the strata of which they are composed.

Fig. 2. represents the basaltes at the foot of this promontory on the south side. The little mounts into which it appears to be collected, are sometimes only one French foot in diameter, sometimes six. They are composed of small prisms or needles, or of cubic trapezoids, and consist of a matter distinguished by the name of *dirty lava*. It is made up of *pozzolana*, consolidated by a certain liquid, which while it has communicated solidity to the *pozzolano*, has at the same time suffered that substance to shrink considerably, in such a manner as to leave large chinks between the pieces of basaltes, which are thus formed by the operation of the liquid on the *pozzolana*. It appears also to have insinuated itself into the clay with which the promontory is covered; which has become hard in its turn, and which has also split into chinks that appear to contain a kind of hard matter.

These descriptions and figures will serve to give an idea of the appearance of the basaltes, which is now generally accounted a kind of marble. *Wallerius* considers it as a species of the corneous or horn rock; and *Cronstedt* enumerates it among those substances which he calls *garnet carths*. The largest block of this stone that ever was seen, was placed, according to *Pliny*, by *Vespasian* in the temple of peace. It represented the figure of *Nilus*, with 16 children playing about it, denoting, as many cubits of the rise of the river. The statue of *Memnon*, in the temple of *Serapis* at *Thebes*, which founded at the rising of the sun, was also made of the same material, if we may believe this author. Most of the Egyptian figures are likewise made of basaltes. Some of the ancients call it *Lapis Lydius*, from *Lydia*, where it seems it was formerly found in greatest abundance. The moderns denominate it the touch-stone, as being used for the trial of gold and silver.

Various substances are found intermixed with basaltes; of which *Mr Hamilton*, in the letters above-mentioned, enumerates the following. 1. Extensive layers of red ochre, varying in all degrees from a dull ferruginous colour to a bright red, answering very well for coarse painting. 2. Veins of iron ore, sometimes very rich, commonly of a very brown or reddish cast, at other times of a blue colour. 3. *Steatites*, generally of a greenish soapy appearance, more rarely of a pure white, and raising an imperfect saponaceous froth when agitated with water. 4. *Zeolite*, of a bright and pure white colour; in masses, varying in weight from a grain to a pound; generally disposed in cavities of the cellular basaltes; often affecting a crystallization, in which the fibres proceed as rays from a centre; and in some instances have a beautiful spangled appearance, resembling that of thistle-down. The most remarkable property of this substance is, that with any of the mineral acids, but especially with that of nitre, it forms a gelatinous mixture in the course of a few hours. 5. *Peperino stone*, a friable.

8 Basaltes on the promontory of the Castel d'Iaci described.

9 Basaltes used in different ancient works.

10 Substances mixed with basaltes.

Basaltes.

friable matrix of indurated clay and iron, studded with little bits of zeolite or other substances; and which is often of a reddish burnt colour. 6. Pumice stone of a black colour, containing iron not entirely dephlogisticated, but still acting on the magnetical needle.

11
Of the nature of basaltes.

These substances are met with among the basaltes of the Giant's Causeway in Ireland. In other places its attendants may perhaps vary according to circumstances. The basaltes itself has been considered by some as a crystallization from water; but others strenuously maintain that it is only a species of lava, and in defence of these opinions very considerable disputes have been carried on. The following is a state of the arguments on both sides from Mr Hamilton's treatise already mentioned.

12
Mr Hamilton's state of the arguments concerning it.

In support of the volcanic origin of the basaltes it has been argued,

1. That it agrees almost entirely with lava in its elementary principles, in its grain, the species of the foreign bodies it includes, and all the diversities of its texture.

2. The iron of the basaltes is found to be in a metallic state, capable of acting on the magnetical needle, which is also the case with that found in compact lava.

3. The basaltes is fusible *per se*; a property which it has in common with lavas.

4. The basaltes is a foreign substance superinduced on the original limestone-foil of the country, in a state of softness capable of allowing the flints to penetrate considerably within its lower surface.

5. Those extensive beds of red ochre which abound among our basaltes are supposed to be an iron earth reduced to this state by the powerful action of heat; for such a change may be produced on iron in our common furnaces, provided there be a sufficient afflux of fresh air; and the basaltes itself, in such circumstances, is easily reducible to an impure ochre. This is also found to take place in the living volcanoes, particularly within their craters; and is therefore supposed to afford a presumptive argument of the action of fire in the neighbourhood of basaltes.

6. Though zeolite is not yet proved to be the actual production of a volcano, yet its presence is always supposed to give countenance to this hypothesis; because zeolite is found in countries where the action of subterraneous fire is still visible, and where there is reason to believe that the whole soil has been ravaged by that principle. Thus it abounds in Iceland, where the flames of Hecla yet continue to blaze; and in the isle of Bourbon, where there is still a volcano in force. It is therefore supposed to arise from the decomposition of the products of a volcano, where the fires have been long extinct.

7. Crystals of schorl appear in great plenty among many kinds of our basaltes; and these, though not absolutely limited to volcanic countries, yet being found in great abundance among the Italian lavas, in circumstances exactly corresponding to those of our basaltes, are thought to supply a good probable argument in the present case.

8. The peperino stone is thought to be undoubtedly of a volcanic origin. It has frequently the burnt and spongy appearance of many of the volcanic pro-

ducts; and that of the Giant's Causeway agrees exactly with the peperino of Iceland and Bourbon.

Basalt.

9. Puzzolane earth is met with among the basaltes of France; and there is very little reason to doubt that our basaltes, if pulverised, would agree with it in every respect; that is, it would produce a fine sharp powder, containing the same elementary parts, and probably agreeing with it in its valuable uses as a cement. This earth is also found in the Canary islands, which are thought to have other marks of fire; it is met with in all the volcanised parts of Italy, and is never found excepting where there are other evident marks of fire.

10. Pumice stone is universally allowed to be produced by fire, and indeed bears the resemblance of a cinder so obviously, that one must be instantly convinced of its original. This is also found among the basaltes of Ireland.

11. There are three living volcanoes, within whose neighbourhood the basaltes and most of its usual attendant fossils have been observed, viz. *Ætna* in Sicily, *Hecla* in Iceland, and the island of Bourbon on the coast of Africa. To which it may be added, that it is found throughout all the volcanised parts of Italy, though not any where immediately in the neighbourhood of Vesuvius. Sir William Hamilton, however, informs us, that in the year 1779 he "picked up some fragments of large and regular crystals of close-grained lava or basalt; the diameter of which, when the prisms are complete, might have been eight or nine inches." He observes, that Vesuvius does not exhibit any lavas regularly crystallized, and forming what are called *Giant's Causeways*, except a lava that ran into the sea, near Torre del Græco, in the year 1631, which has a small degree of such an appearance. As the fragments of basaltes which he found on this mountain, however, had been evidently thrown out of the crater in their proper form, he puts the question, "May not lavas be more ready to crystallize within the bowels of a volcano than after their emission? And may not many of the Giant's Causeways already discovered be the nuclei of volcanic mountains, whose lighter and less solid parts may have been worn away by the hand of time? Mr Faujais de St Fond gives an example of basalt columns placed deep within the crater of an extinguished volcano.

13
Of the basaltes thrown out by Vesuv.

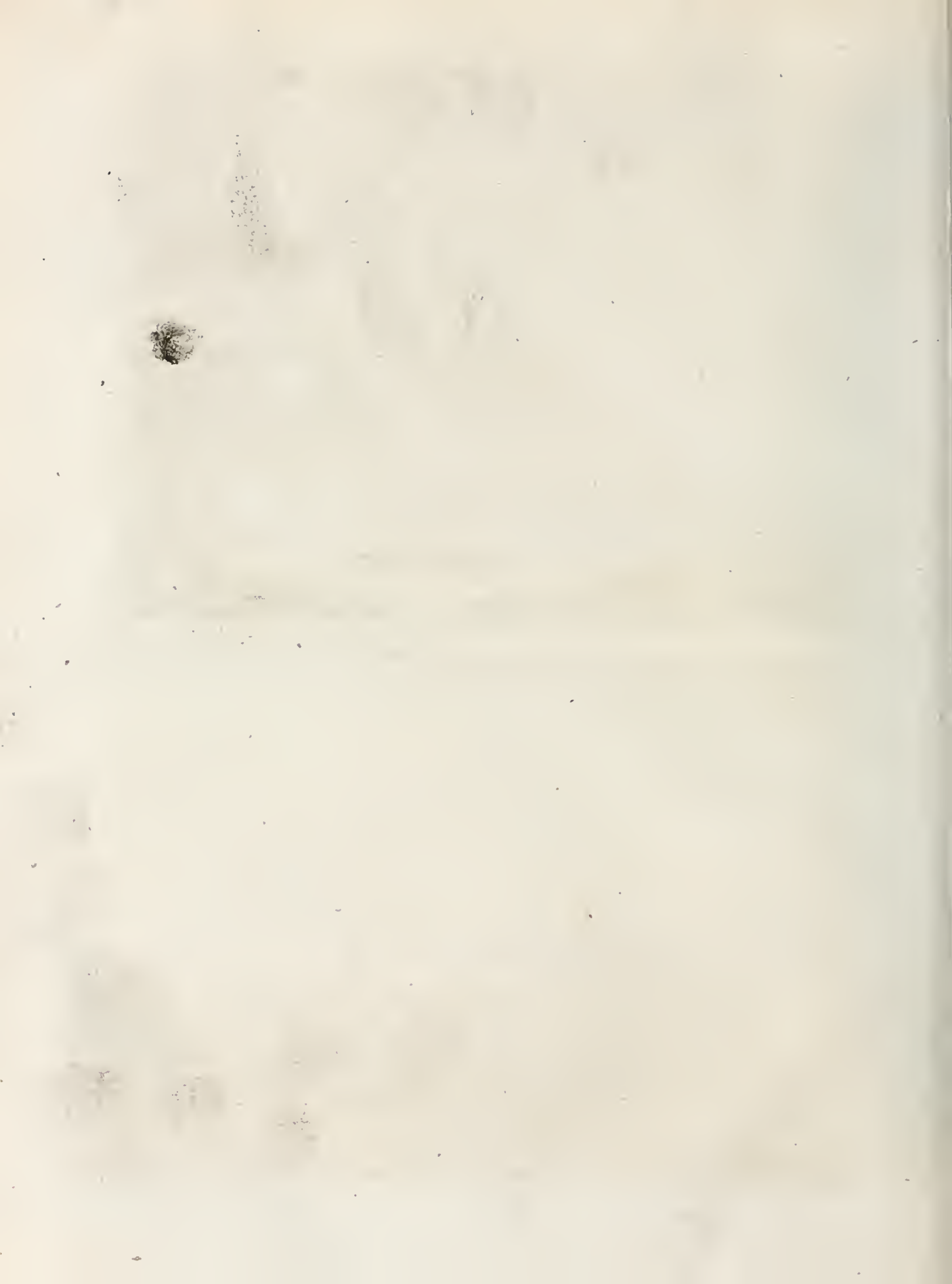
12. It is well ascertained by experience, that there are vast beds of pyrites dispersed through the interior parts of the earth at all depths; and it is also a certain fact, that this compound substance may be decomposed by the accidental affusion of water, in such a manner as to become hot, and at last to burn with great fury. This accension of pyrites is by many supposed to be the true origin of the volcanic fire; and an argument for this is, that the present volcanoes do pour forth great quantities of the component parts of pyrites, particularly sulphur, iron, and clay. Now, among the superinduced substances of the county of Antrim, and the same may probably be said of every other basaltic country, it is certain that the quantity of iron and clay diffused through almost every species of fossil, amounts to more than one-half of the whole material; so that two of the principal elements of the pyrites are still found there, reduced in many instances

Fig. 1.



Fig. 2.





Basaltes. to a slag or scoria. The third principle, viz. the sulphur, cannot be expected to remain; because sulphur is totally consumed by combustion; and what might perhaps escape and be sublimed would no doubt have since perished by decomposition, in consequence of being exposed to the air.

¹⁴ Glass sometimes appears in the form of prismatic crystals.

13. Another argument, which to Sir William Hamilton appears very convincing, is, that glass sometimes takes on the appearance of prisms, or crystallizes in cooling. He received some specimens of this kind from Mr Parker of Fleet-street, who informed him that a quantity of his glass had been rendered unserviceable by taking such a form. Some of these were in laminae which may be easily separated, and others resemble basaltic columns in miniature, having regular faces. "Many of the rocks of lava in the island of Ponza (says he) are, with respect to their configurations, strikingly like the specimens of Mr Parker's glass above mentioned; none being very regularly formed basaltes, but all having a tendency towards it. Mr Parker could not account for the accident that occasioned his glass to take the basaltic form; but I have remarked, both in Naples and Sicily, that such lavas as have run into the sea are either formed into regular basaltes, or have a great tendency towards such a form. The lavas of Mount *Ætna*, which ran into the sea near *Jacic*, are perfect basaltes; and a lava that ran into the sea from *Vesuvius*, near *Torre del Græco* in 1631, has an evident tendency to the basaltic form."

¹⁵ Lavas which run into the sea have a tendency to run into basaltes.

¹⁶ Arguments in opposition to the volcanic theory.

¹⁷ Answered.

In opposition to these arguments it is urged, that in many of the countries where basaltes most abound, there are none of the characteristics of volcanic mountains. They assert, therefore, that the basaltes is a fossil, very extensively spread over the surface of the earth; and that, where it is found in the neighbourhood of volcanic mountains, we ought to suppose these to be accidentally raised on a basaltic soil rather than to have created it. But the advocates for the volcanic system are not much embarrassed with this argument. According to them, the basaltes has been formed under the earth itself, and within the bowels of these very mountains; where it could never have been exposed to view until, by length of time or some violent shock of nature, the incumbent mass must have undergone a very considerable alteration, such as should go near to destroy every exterior volcanic feature. In support of this it may also be observed, that the promontories of *Antrim* do bear evident marks of some very violent convulsion, which has left them in their present situation; and that the island of *Ragberry*, and some of the western isles of *Scotland*, do really appear like the surviving fragments of a country, great part of which might have been buried in the ocean. It is further added, that though the exterior volcanic character be in great measure lost in the basaltic countries; yet this negative evidence can be of little weight, when we consider, that the few instances where the features have been preserved afford a sufficient answer to this objection. Thus the *Montagne de la Coupe* in *France* still bears the marks of its having been formerly a volcano: and this mountain is observed to stand on a base of basaltic pillars, not disposed in the tumultuary heap into which they must have been thrown by the furious action of a volcanic eruption, tearing up the natural soil of the country; but arranged in all

the regularity of a *Giant's Causeway*, such as might be supposed to result from the crystallization of a bed of melted lava, where rest and a gradual refrigeration contributed to render the phenomenon as perfect as possible.

Basaltes.
¹⁸ Mr Ferber's argument from the crystals found in black lava.

To these arguments stated by Mr Hamilton we shall add another from Mr Ferber; viz. That at the time he went from *Rome* to *Ostia* they were paving the road with a species of black lava. In some of the broken pieces he observed little empty holes, of the bigness of a walnut, incrustated all around their sides by white or amethystine semipellucid, pointed, or truncated pyramidal crystallizations, entirely resembling the agate nodules or geodes, which are commonly filled with quartz crystallizations. There was no crack or fissure in the ambient compact lava; the crystal shells were pretty hard, and might rather be called *quartz*. Some fine brownish dust lay in the rest of the holes, as impalpable and light as ashes. He tells us also, that in the greatest part of the *Paduan*, *Veronese*, and *Vicentine* lavas, we meet with an infinite quantity of white polygonal shell crystallizations, whose figure is as regular, and still more polygonal, than the basaltes.

These may be considered as the principal arguments in favour of the volcanic theory of basaltes. On the other hand, the late celebrated Mr Bergman expresses himself to the following purpose.

¹⁹ Mr Bergman's theory.

"Ten years ago it was a general opinion, that the surface of the earth, together with the mountains, had been produced by moisture. It is true that some declared fire to be the first original cause, but the greater number paid little attention to this opinion. Now, on the contrary, the opinion that subterraneous fire had been the principal agent gains ground daily; and every thing is supposed to have been melted, even to the granite. My own opinion is, that both the fire and water have contributed their share in this operation; though in such a proportion, that the force of the former extends much farther than the latter; and, on the contrary, that the fire has only worked in some parts of the surface of the earth. It cannot be doubted that there has been some connection betwixt the basaltic pillars and subterraneous fire; as they are found in places where the marks of fire are yet visible; and as they are even found mixed with lava, tophus, and other substances produced by fire.

²⁰ Both fire and water contribute to form basaltes.

"As far as we know, nature makes use of three methods to produce regular forms in the mineral kingdom. 1. That of crystallization or precipitation; 2. The crusting or settling of the external surface of a liquid mass while it is cooling; and, 3. The bursting of a moist substance while it is drying.

²¹ Of the methods by which mineral crystals are naturally formed.

"The first method is the most common; but to all appearance, nature has not made use of it in the present case. Crystals are seldom or never found in any quantity running in the same direction; but either inclining from one another, or, what is still more common, placed towards one another in sloping directions. They are also generally separated a little from one another when they are regular. The nature of the thing requires this, because the several particles of which the crystals are composed must have the liberty of obeying that power which affects their constitution. The basaltic columns, on the contrary, whose height is frequently from 30 to 40 feet, are placed parallel to one

another

Basalt. another in considerable numbers, and so close together that the point of a knife can hardly be introduced between them. Besides, in most places, each pillar is divided into several parts or joints, which seem to be placed on one another. And indeed it is not uncommon for crystals to be formed above one another in different layers, while the solvent has been visibly diminished at different times; but then the upper crystals never fit so exactly upon one another as to produce connected prisms of the same length or depth in all the strata taken together; but each stratum, separately taken, produces its own crystals.

“Precipitation, both in the wet and dry way, requires that the particles should be free enough to arrange themselves in a certain order; and as this is not practicable in a large melted mass, no crystallizations appear, excepting on its surface or in its cavities. Add to this, that the basalt in a fresh fracture do not show a plain smooth surface under the microscope; but appear sometimes like grains of different magnitude, and at other times resemble fine rays running in different directions, which does not correspond with the internal structure of crystals.

“Hence the opinion of basalt being formed by crystallization either in the wet or dry method must become less probable; but it must not be omitted, that the spars exhibit a kind of crystallization, which at first sight resembles a heap of basalt, but upon a closer examination a very great difference is to be found. The form of the spar is every where alike, but the basalt differ from one another in size and the number of their sides. The former, when broken, consists of many small unequal cubes; but the basalt does not separate in regular parts, &c. &c.

“Nature’s second method of producing regular forms is that of cracking the outer surface of a melted mass. By a sudden refrigeration, nature, to effect this purpose, makes use of polyhedrous and irregular forms. If we suppose a considerable bed which is made fluid by fire, and spread over a plain, it evidently appears, that the surface must first of all lose the degree of heat requisite for melting, and begin to congeal. But the cold requisite for this purpose likewise contracts the uppermost congealed stratum into a narrower space; and consequently causes it to separate from the remaining liquid mass, as the side exposed to the air is already too stiff to give way. In this manner a stratum is produced, running in a parallel direction with the whole mass; others are still produced by the same cause in proportion as the refrigeration penetrates deeper. Hence we may very plainly see how a bed may be divided into strata. In the same manner the refrigeration advances on the sides; which consequently divides the strata into polyhedrous pillars, which can hardly ever be exactly square, as the strongest refrigeration into the inner parts of the mass advances almost in a diagonal line from the corners. If we add to this, that a large mass cannot be equal through its composition, nor every where liquid in the same degree, it will be easy to discover the cause of several irregularities. If the depth of the bed be very considerable in proportion to its breadth, prismatic pillars without cross divisions will be formed at least lengthwise from the uppermost surface downwards.

“The third way is perfectly similar to the prece-

ding in its effect; but it is different from it by the mass being soaked in water, and by the bursting of it asunder, being the effect of the contraction while it is drying. If we suppose such a bed to be spread over a level space, the drying advances in the same manner as the refrigeration in the former case. This separation into strata properly happens when a considerable quantity of clay enters into the whole composition, because the clay decreases more than any other kind of earth in drying.

“It is most probable, therefore, that the pillars have been produced out of the basaltic substance while it was yet soft, or at least not too hard to be softened by exhalations. If we therefore suppose a bed to be spread over a place where a volcano begins to work, it is evident that a great quantity of the water always present on such occasions must be driven upwards in exhalations or vapours; which, it is well known, possesses a penetrating, softening power, by means of which they produce their first effect: but when they are increased to a sufficient quantity, they force this tough moist substance upwards; which then gradually falls, and during this time bursts in the manner above described.

“The reasons for this supposition are as follows: 1. We do not find the internal substance of the basalt melted or vitrified; which, however, soon happens by fusion; and for which only a very small degree of fire is requisite. It is of consequence very hard to explain how this substance could have been so fluid that no traces of bubbles appear in it; and yet, when broken, seem dull and uneven. Lava is seldom vitrified within; but the great number of bubbles and pores which are found in the whole mass, are more than sufficient proofs, that it has not been perfectly melted to its smallest parts, but has only been brought to be near fluid. Secondly, the basalt so much resemble the finer trapp, both in their grain and original composition, that they can hardly be distinguished in small fragments.”

Mr Kirwan is of opinion, that the basalt owe their origin both to fire and water: they seem to have been at first a lava; but this, while immersed in water, was so diffused or dissolved in it with the assistance of heat, as to crystallize when cold, or coalesce into regular forms. That basalt is not the effect of mere fusion he concludes from comparing its form with its texture. Its form, if produced by fusion, ought to be the effect of having flowed very thin; but in that case its texture should be glassy: whereas it is merely earthy and devoid of cavities. Hence we may understand how it comes to pass that lava perfectly vitrified, and even water, have been found inclosed in basalt.

Mr Houel in his *Voyage Pittoresque*, is at considerable pains to account for the origin of the different species of basalt he met with in the neighbourhood of *Ætna*. “Some modern writers (says he) attribute the configuration of the basalt to the sudden cooling of the lava in consequence of the effects produced upon it by the coldness of sea-water, when it reaches the sea in a state of fusion. They suppose that the shock, which it then receives, is the cause of those different configurations which this substance assumes; the most remarkable of which have been already mentioned. This assertion, however, seems to be ill founded. By considering

Basalt. How the basalt has been formed, according to this theory.

²³ Reasons for supposing that the basalt has not been melted.

²⁴ Mr Kirwan’s opinion.

²⁵ Mr Houel’s theory.

considering the basaltic rock, the first of the cyclops represented in the plate, we find that the pile is not in its original state, and that the series of columns is at present incomplete. It is very probable, that the species of clay found there, and which is extraneous to the basaltes, has by some means taken possession of its place; and it likewise appears, that not one of the basaltes here described is entire.

“ It seems incredible, however, that a mass of matter reduced by fire to a state of liquefaction, and flowing into the sea, should be suddenly changed into regular figures by the shock of coming into contact with cold water; and that all the figures which are thus formed should be disposed in the same manner with regard to one another. For if we suppose that the water made its way into the cavity of the lava at the instant when it retreated backwards, then might the same quantity of water penetrate into the most remote parts of the mass; and by that means prolong the cavity which it had begun to form when it first entered the mass. The water then being lodged within this burning mass, and being in a state of dilatation, would have expelled whatever opposed it, and swelled the whole mass in such a manner as to form much larger interstices than those which appear between the basaltic columns; since these are every where in close contact with one another. Besides, how could the sudden cooling of the lava divide the upper part and sides of such an enormous mass as exactly as if they had been cast in a mould made on purpose?

“ It remains also for those who adopt the hypothesis in question to explain how the shock occasioned by the cold water should make itself felt beyond a certain depth; since the very first moment it comes into contact with the liquid lava, it must cease to be cold; for the lava cannot but communicate to it a greater degree of heat than it communicates of cold in return, as the water is more easily penetrable by the burning lava than the mass of lava by the surrounding water. But farther, if at the first moment after the lava enters the water it were cooled and contracted, the water would soon prevent, by the contraction of its whole surface, any continuation of the effect which it had first occasioned.

“ This seems to be the great difficulty: for how is it thus possible for the water to extend its influence to the centre of any very considerable mass; and even supposing it to act at the centre, how could it be able to fix the common centre of all the different columns?

“ Let us next consider what a degree of ebullition must take place in the water when it receives such a vast quantity of lava heated not only more intensely than common fire, but than red-hot iron! Though that mass, 100 fathoms in diameter, were to proceed from the bottom of the sea; or though it were immersed in it, the degree of ebullition would still be the same; and it is difficult to conceive what shock can be occasioned by a cold which does not exist, on a mass which burns, or causes to boil, whatever comes near it.

“ One peculiarity attending the basaltes is, that it remains fixed in the recess which it has once occupied. Another, not less essential, is its power of dividing itself in the midst of any one of its hardest parts †, and to form two distinct pieces, one of which is always con-

ceive, and the other convex; a division which seems the most singular curiosity of the whole.

“ A third peculiarity might still be found in the interior part of these columns, if we were to meet with any that had suffered more by the lapse of time than those already described; but it is impossible for all this to be effected by water. How can water, which is every where the same, and which may be expected always to produce the same effects, produce such a variety on basaltes by mere contact?

“ The cause of all these varieties, therefore, seems to be this, that these lavas are originally composed of materials extremely different in their natures, and from which such a variety of effects naturally proceed. The same species of matter, when actuated by the same cause, will constantly produce the same effects. This variety of effects therefore is much less owing to the influence of the water, than to the variety of materials of which those lavas are composed; and these are combined in different forms and quantities, according to the nature and quantity of the various materials which have been reduced by the volcano to a state of fusion.

“ The forms of the basaltes therefore proceed from two causes. One of them, viz. the cooling, belongs indifferently to every species, independent of its meeting with water. The other is the diversity of the quantities and of the materials of which the lava is composed. From these causes alone proceed all the beauties and varieties which are beheld with admiration in this class of bodies. These take place, from the most irregular fractures in the lava, to those which display the greatest exactness and symmetry. Every new erupted lava differs from those which preceded it, and from those which will follow. In the various principles of these lavas we must seek for the causes of those cavities discoverable in the basaltes, and for the causes which produce those basaltes, at the time when the matter of which it is composed contracted itself, and consolidated all its parts. In the act of condensation, it appears to have formed various foci, around which we may distinguish the line which sets bounds to the power of each of them; and this is the line which marks the spaces intervening between the different pieces; because all of them are possessed of the same attractive force. The fire emitted by the lava, at the time the basaltes is formed, produces upon it the same effect that is produced by the evaporation of the aqueous moisture from those bodies where water forms a part of the original constitution; which bodies harden in proportion as they become dry, by reason of the approach of their constituent parts to one another. The abstraction of fire produces the same effect upon basaltes, by suffering its component parts to come into closer union.

“ A new proof of this theory is deducible from the form of the basaltes represented Plate XCIV. fig. 2. The interstices there are pretty numerous; because the lava being of that species denominated *dirty*, and consisting of parts, most of which have but little solidity, they have left much larger spaces between them at their contraction. From this want of solidity we may perceive how much the basaltic mass lost of the fire by which it was dilated while in a state of fusion.

“ The void spaces left by the contraction of the basaltes,

† See
Pl. XCIII.
fig. 2, c.

Basaltes
||
Basart-
schik.

Basaruco
||
Basella.

Basaltes, are filled with a spongy matter, which by drying has also left large interstices; and these have been filled in their turn with a kind of yellow matter similar to that which covers the promontory of Castel d' Iaci.

"Whatever variety of forms we meet with among the basaltes, and whatever divisions and subdivisions may be observable among these varieties, they are owing, 1. To the minuteness, 2. To the homogeneous nature, or, 3. To the diversity among the particles which compose the basaltes. Among the varieties already enumerated, we find reddish, earthy, soft and porous substances, together with the zeolite crystals. We see others extremely hard and compact, very finely grained, and containing likewise spherul and zeolite crystals. Others are very hard and dense, which appear to be a mixture of small grey and white bodies; and of each of these colours many different shades, from light to darker, containing also zeolite crystals. Lastly, we find some consisting of a matter similar to clay, mixed with round black sand.

"It may be objected, that the late eruptions of Ætna afford no basaltes, nor have they any divisions similar to those above mentioned. But to this we may reply, that if they afford neither such basaltes, nor such regular divisions, the reason is, that neither their quantity, nor the ingredients of which they are composed, are such as are necessary for the production of basaltes: and for a proof of this we may refer to lavas of the most remote antiquity, which have no more resemblance to basaltes than those that are more modern.

"Lastly, an argument, to which no plausible reply can be made, that the basaltes are not formed by sea-water, is, that in the year 1669, the lava of mount Ætna ran into the sea for two leagues and an half, without having the least appearance of being converted into basaltes."

BASAN, or BASHAN, (anc. geog.), a territory beyond Jordan, mentioned in scripture. By Josephus, Eusebius, and Jerom, it is called *Batanea*. On the entering of the Israelites into the land of Canaan, the whole of the country beyond Jordan, from that of the Moabites, or Arabia, as far as mount Hermon and Lebanon, was divided into two kingdoms, viz. that of Sihon king of the Amorites, and of Og king of Basan or *Bashan*; the former to the south, and the latter to the north. The kingdom of Sihon extended from the river Arnon and the country of Moab, to the river Jabbok; which running in an oblique course from the east, was at the same time the boundary of the Ammonites, as appears from Numb. xxi. 24. and Deut. ii. 37. and iii. 16. The kingdom of Sihon fell to the lot of the Reubenites and Gadites, and Basan to the half-tribe of Manasseh. To this was annexed a part of the hilly country of Gilead, and the district of Argob; yet so that Basan continued to be the principal and greatest part: but, after the Babylonish captivity, Basan was subdivided; so that only a part was called *Batanea* or *Basan*, another *Trabonitis*, a third *Aurunitis* or *Ituræa*, and some part also *Gaulonitis*; but to settle the limits of each of these parts is a thing now impossible.—*Bashan* was a country famous for its pastures and breed of large cattle.

BASARTSCHIK, a considerable town of Romania in Turkey of Europe. It is pretty well built,

and hath clean and broad streets; has a great trade; and is situated on the river Meritz, in E. Long. 24. 30. N. Lat. 41. 40.

BASARUCO, in commerce, a small base coin in the East Indies, being made only of very bad tin. There are, however, two sorts of this coin, a good and a bad; the bad is one sixth in value lower than the good.

BASE, in geometry, the lowest side of the perimeter of a figure: Thus, the base of a triangle may be said of any of its sides, but more properly of the lowest, or that which is parallel to the horizon. In rectangled triangles, the base is properly that side opposite to the right angle.

Base of a Solid Figure, the lowest side, or that on which it stands.

Base of a Conic Section, a right line in the hyperbola and parabola, arising from the common intersection of the secant plain and the base of the cone.

BASE, in architecture, is used for any body which bears another, but particularly for the lower part of a column and pedestal.—The ancients, in the early times of architecture, used no bases. The Doric columns in the temple of Minerva at Athens have none, but stand immediately upon the floor of the porch. Columns afterwards came to be supported on square pieces called *plinths*, and after that on pedestals. When we see a column, of whatsoever order, on a pedestal, the base is that part which comes between the top of the pedestal and the bottom of the shaft of the column; when there is no pedestal, it is the part between the bottom of the column and the plinth: some have included the plinth as a part of the base; but it is properly the piece on which the base stands, as the column stands upon that.—The pedestal also has its base as well as the column, and the pilaster. The base of columns is differently formed in the different orders; but in general it is composed of certain spires or circles, and was thence in early times called the *spire of a column*. These circles were in this case supposed to represent the folds of a snake as it lies rolled up; but they are properly the representations of several larger and smaller rings or circles of iron, with which the trunk of trees which were the ancient columns were surrounded to prevent their bursting: these were rude and irregular, but the sculptor who imitated them in stone found the way to make them elegant.

BASE, in fortification, the exterior side of the polygon, or that imaginary line which is drawn from the flanked angle of a bastion to the angle opposite to it.

BASE, in gunnery, the least sort of ordnance, the diameter of whose bore is $1\frac{1}{4}$ inch, weight 200 pound, length 4 feet, load 5 pound, shot $1\frac{1}{2}$ pound weight, and diameter $1\frac{1}{8}$ inch.

BASE, in chemistry. See BASIS.

BASE, in law. *Base estate*, such as base tenants have in their hands. *Base tenure*, the holding by villenage, or other customary services; as distinguished from the higher tenures *in capite*, or by military service. *Base fee*, is to hold in fee at the will of the lord, as distinguished from fockage tenure. *Base court*, any court not of record.

BASELLA, CLIMBING NIGHTSHADE *from Malabar*: A genus of the trigynia order belonging to the pentandria class of plants; and in the natural method ranking



Fig. 2.



Basil
||
Bashaw.

ranking under the 12th order, *Holeraceæ*. The calyx is wanting; the corolla is seven-cleft, with the two opposite divisions broader, and at last berried; there is one seed.

Species. 1. The *rubra*, with red leaves and simple footstalks, has thick, strong, succulent stalks and leaves, which are of a deep purple colour. The plant will climb to the height of ten or twelve feet, provided it is kept in a stove; but in the open air it will not grow so large in this country; nor will the seeds come to perfection in the open air, unless in very warm seasons. The flowers of this plant have no great beauty, but it is cultivated on account of the odd appearance of its stalks and leaves. There is a variety of this with green stalks and leaves, and the flowers of a whitish green colour tipped with purple. 2. The *alba*, with oval waved leaves. This sort hath flaccid leaves, and smaller flowers and fruit than the first. The plants will climb to a considerable height, and send forth a great number of branches; so they should be trained up to a trellis, or fastened to the back of the stove, otherwise they will twist themselves about whatever plants stand near them, which will make a very disagreeable appearance.

Culture. These plants are propagated from seeds, which should be sown on a moderate hot-bed in the spring; and when the plants are fit to remove, they should be each planted in a separate pot, and plunged into the tan bed, where they are to be treated like other tender exotics. They may be also propagated from cuttings; but as they arise so easily from the seeds, the latter method is seldom practised.

Uses. The berries of the first species are said to be used for staining calicoes in India. Mr Miller assures us, that he has seen a very beautiful colour drawn from them, but which did not continue long when used in painting. He is of opinion, however, that a method of fixing the colour might be invented, in which case the plant would be very useful.—This, we apprehend, might be accomplished by means of solution of tin in aqua regia, which hath a surprising effect both in brightening and giving durability to other vegetable colours.

BASEMENT, in architecture. See ARCHITECTURE, N^o 70. 71.

BASHARIANS, a sect of Mahometans, being a branch or subdivision of the Motazalites. The Basharians are those who maintain the tenets of Bashir Ebn Motamer, a principal man among the Motazalites, who varied, in some points, from the general tenets of the sect, as carrying man's free agency to a great length, and even to the making him independent.

BASHAW, a Turkish governor of a province, city, or other district.

A bashaw is made with the solemnity of carrying a flag or banner before him, accompanied with music and songs, by the miralem, an officer on purpose for the investiture of bashaws. *Bashaw*, used absolutely, denotes the prime vizier; the rest of the denomination being distinguished by the addition of the province, city, or the like, which they have the command of; as the bashaw of Egypt, of Palestine, &c. The bashaws are the emperor's sponges. We find loud complaints among Chrillians of their avarice and extortions. As they buy their governments, every thing is venal

with them. When glutted with wealth, the emperor frequently makes them a present of a bow string, and becomes heir to all their spoils.

The appellation *bashaw* is given by way of courtesy to almost every person of any figure at the grand signior's court.

BASIL (St) the Great, one of the most learned and eloquent doctors of the church, was born at Cæsarea, in Cappadocia, about the year 328; and went to finish his studies at Athens, where he contracted a strict friendship with St Gregory Nazianzen. He returned to his native country in 355, where he taught rhetoric. Some time after, he travelled into Syria, Egypt, and Lybia, to visit the monasteries of these countries; and the monastic life so much suited his disposition, that upon his return home he resolved to follow it, and he was the first imitator thereof in Pontus and Cappadocia. His reputation became so great, that, upon the death of Eusebius bishop of Cæsarea, in 370, he was chosen his successor. It was with some difficulty that he accepted of this dignity; and no sooner was he raised to it, than the emperor Valens began to persecute him because he refused to embrace the doctrine of the Arians. Being at length let alone, he began to use his utmost endeavours to bring about a reunion betwixt the eastern and western churches, who were then much divided about some points of faith, and in regard to Meletius and Paulinus two bishops of Antiochia. But all his efforts were ineffectual, this dispute not being terminated till nine months after his death. Basil had a share in all the disputes which happened in his time in the east in regard to the doctrine of the church; and died the 11th of January, 379.—There have been several editions of his works in Greek and Latin. The best is that of Father Garnier, printed in Greek and Latin, in three volumes folio. St Basil's style is pure and elegant, his expressions are grand and sublime, and his thoughts noble and full of majesty. Erasmus places him among the greatest orators of antiquity.

BASIL, a Canton of Switzerland, which joined the confederacy in 1501. It is bounded on the south by the canton of Solothurn; on the north by part of the margravate of Baden Durlach, and the territory of Rheinfelden; on the east by Frickthal; and on the west by part of Solothurn, the diocese of Basil, and the Sundgare; being upwards of 20 miles in length, and about 18 in breadth. It is entirely protestant; and contains 27 parishes, and seven bailiwicks. The lower parts of it are fruitful in corn and wine, and also fit for pasture; but the mountains are extremely barren. Here are many medicinal springs and baths, and the air is wholesome and temperate. Both men and women for the most part wear the French dress; but the language commonly spoken is the High-Dutch, tho' the French also is much used. The government is aristocratical; and its revenues arise chiefly from secularized abbeyes, and imposts on goods carried through the country, to and from France, Italy, and Germany. Besides the military establishment of the city of Basil, there are two provincial regiments, consisting each of ten companies, and a troop of dragoons.—The places of most note are Basil the capital, Wallenburg, St Jacob, Neue-Haus, &c.

BASIL, the capital of the canton of that name, is the

Basil. the largest city in all Switzerland, having 220 streets, and six market-places or squares. Its environs are exceeding beautiful, consisting of a fine level tract of fields and meadows. The city is divided into two parts by the Rhine, over which there is a handsome bridge. It is thought by some to have risen on the ruins of the old Augusta Rauracorum. For its name of *Basilia* it is indebted to Julian the Apostate, who would have it so called in honour of his mother Basilia. It is fortified with walls, moats, towers, and bastions, and contains several churches, besides the cathedral, which is an old Gothic structure; a commandery of the order of St John, and another of the Teutonic order; a public granary and arsenal; a stately town-house, in which is an exquisite piece of the sufferings of Christ, by Holbein, and a statue of Munatius Plancus, a Roman general, who, about 50 years before Christ, built the ancient city of Augusta Rauracorum; an university, which was founded in 1459, and has a curious physic-garden, library, and museum; a gymnasium: a stately palace, belonging to the margrave of Baden-Dourlach; besides a chamber of curiosities, several hospitals, &c. In the arsenal is shown the armour in which Charles the Bald lost his life, with the furniture of his horse, and the kettle-drums and trumpets of his army. On the stair-case of the council-house, is a picture of the last judgment, in which, though drawn before the reformation, popes, cardinals, monks, and priests, are represented in the torments of hell. Over-against the French church, on a long covered wall, is painted the dance of death; where the king of terrors is represented as mixing with all ranks and ages, and complimenting them, in German verses, on their arrival at the grave. St Peter's square, planted with elm and lime-trees, makes a pleasant walk; but a spot regularly planted with trees, close by the river, and near the miller, makes still a finer, as commanding a most beautiful and extensive prospect. The celebrated Erasimus died here in 1536, in the 70th year of his age, and was buried in the great church. He left his library and cabinet of rarities to one Amberbach, a learned lawyer of this city, of whose heirs they were purchased by the university. Besides this cabinet, there are several other curious private ones. The clocks of this city go an hour faster than elsewhere, except at Constance; a circumstance which some ascribe to the famous councils held there, when it was thought the best expedient to bring the fathers earlier to the assembly, for the quicker dispatch of business; but others say, that, in Basil, it was owing to an assault being defeated by that means. About 400 years ago, according to the story, the city was threatened with an assault by surprise. The enemy was to begin the attack when the large clock of the tower at one end of the bridge should strike one after midnight. The artist who had the care of the clock, being informed that this was the expected signal, caused the clock to be altered, and it struck two instead of one; so the enemy thinking they were an hour too late, gave up the attempt: and in commemoration of this deliverance, all the clocks in Basil have ever since struck two at one o'clock, and so on. In case this account of the matter should not be satisfactory, they show, by way of confirmation, a head, which is placed near to this patriotic clock, with the face

turned to the road by which the enemy was to have entered. This same head lolls out its tongue every minute, in the most insulting manner possible. This was originally a piece of mechanical wit of the famous clockmaker's who saved the town. He framed it in derision of the enemy, whom he had so dexterously deceived. It has been repaired, renewed, and enabled to thrust out its tongue every minute for these four hundred years, by the care of the magistrates, who think so excellent a joke cannot be too often repeated. Trade still flourishes here, especially in silk, ribbons, and wines; and the police is under excellent regulations. Most of the offices are bestowed by lot among well qualified persons. No person, without the city, must wear lace of gold or silver. All young women are prohibited from wearing silks; and the nearest relations only are to be invited to a marriage-feast. For the government of the city there are several councils or colleges, and officers. Of the last, the two burgomasters, and two wardens of trades, are the chief. The great council is composed of the representatives of the several companies of the greater and lesser city. Basil was the see of a bishop till the Reformation; but though there is one that still bears the title, he has now no jurisdiction here, and lives at Porentru, near the Upper Alsace. The two Buxtorffs, father and son, and the famous painter Holbein, were natives of this place. The council held here, in 1431, sat in the vestry of the cathedral.

BASIL, in botany. See **OCYMU**M.

BASIL, among joiners, the sloping edge of a chissel, or of the iron of a plane, to work on soft wood: they usually make the basil 12 degrees, and for hard wood 18; it being remarked, that the more acute the basil is, the better the instrument cuts; and the more obtuse, the stronger, and fitter it is for service.

BASILEUS, βασιλευς, a title assumed by the emperors of Constantinople, exclusive of all other princes, to whom they give the title *rex*, "king." The same quality was afterwards given by them to the kings of Bulgaria, and to Charlemagne, from the successors of which last they endeavoured to wrest it back again.

The title *basileus* has been since assumed by other kings, particularly the kings of England, *Ego Edgar totius Angliæ basileus confirmavi*. Hence also the queen of England was intitled *Basilea* and *Basilissa*.

BASILIAN MONKS; Religious of the order of St Basil. That saint, having retired into a desert, in the province of Pontus, founded a monastery for the convenience of himself and his numerous followers: and for the better regulation of this new society, he drew up in writing the orders and rules he would have them follow. This new order soon spread all over the east; nor was it long before it passed into the west. The rule of St Basil was approved by pope Liberius, the same year in which it was written and published; and afterwards by several other popes; and, in these last ages, by pope Gregory XIII. who approved the abridgement made of it by cardinal Bessiaon, in the pontificate of Eugenius IV.—Some authors pretend, that St Basil, before he died, saw himself the spiritual father of more than 90,000 monks, in the east only. But this order, which flourished so greatly for more than three centuries, was afterwards considerably diminished by

Basilic. by heresy, schism, and a change of empire. The greatest storm it felt, was in the reign of Constantine Copronymus; who persecuted the monks of St Basil, imprisoning some, and banishing others; inasmuch that the monasteries were abandoned and spoiled of all their goods.

The historians of this order tell us, that it has produced 1805 bishops; and beatified, or acknowledged as saints, 3010 abbots, 11,805 martyrs, and an infinite number of confessors and virgins. They likewise place among the religious of the order of St Basil 14 popes, some cardinals, and a very great number of patriarchs, archbishops, and bishops. This order likewise boasts of several emperors and empresses, kings and queens, princes and princesses, who have embraced its rule.

This order was introduced in the west in 1057; and was reformed in 1569, by pope Gregory XIII. who united the religious of this order in Italy, Spain, and Sicily, into one congregation; of which the monastery of St Saviour at Messina is the chief, and enjoys pre-eminence over the rest. Each community has its particular rule, besides the rule of St Basil, which is very general, and prescribes little more than the common duties of a Christian life.

BASILIC, or **BASILICA**, in the ancient architecture, denotes a kind of public hall or court of judicature, where the princes or magistrates sat to administer justice. The word is originally Greek, βασιλική, *q. d.* *royal house, palace.*

The basilics consisted of a great hall, with ailes, porticos, tribunes, and tribunals. The bankers too had one part of the basilica allotted for their residence. The scholars also went thither to make their declamations, according to the testimony of Quintilian. In after-times the denomination *basilica* was also given to other buildings of public use, as town-houses, exchanges, burses, and the like. The Roman *basilicæ* were covered, by which they were distinguished from the *fora*, which were public places open to the air. The first basilica was built at Rome by Cato the elder, whence it was called *Porcia*; the second was called *Opimia*; the third was that of Paulus, built with a great expence, and with much magnificence, whence it was called by some *regia Pauli*; another was built by Julius Cæsar, called *basilica Julia*; of which Vitruvius tells us he had the direction. There were others also, to the number of eighteen or twenty. The *basilica Julia* not only served for the hearing of causes, but for the reception and audience of foreign ambassadors. It was supported by a hundred marble pillars in four rows, and enriched with decorations of gold and precious stones. In it were 13 tribunals or judgment seats, where the prætors sat to dispatch causes.

BASILIC is also used, in ecclesiastical writers, for a church. In which sense, this name frequently occurs in St Ambrose, St Austin, St Jerom, Sidonius Apollinaris, and other writers of the fourth and fifth centuries. It is thought that the name was thus applied, from many of the ancient churches having been formed of the Roman halls mentioned in the preceding article. In reality, on the conversion of Constantine, many of the ancient *basilicæ* were given to the church, and turned to another use, *viz.* for Christian assemblies to meet in, as may be collected from that passage in Ausonius, where speaking to the emperor Gratian, he tells

him, the *basilicæ*, which heretofore were wont to be filled with men of business, were now thronged with votaries praying for his safety. By which he must needs mean, that the Roman halls or courts were turned into Christian churches: and hence, we conceive, the name *basilicæ* came to be a general name for churches in after ages.

BASILIC is chiefly applied, in modern times, to churches of royal foundation; as those of St John de Lateran, and St Peter of the Vatican at Rome, founded by the emperor Constantine.

BASILICs were also little chapels built by the ancient Franks over the tombs of their great men, so called, as resembling the figure of the sacred *basilicæ* or churches. Persons of inferior condition had only *tumbæ* or *porticuli* erected over them. By an article in the Salic law, he that robbed a *tumba* or *porticulus*, was to be fined fifteen *solidi*; but he that robbed a basilica, thirty *solidi*.

BASILICS, in literary history, a name supposed to have been given by the emperor Leo to a collection of laws in honour of his father Basilus Macedo, who began it in the year 867, and in the execution chiefly made use of Sabbathius Protospatharius, who carried the work as far as 40 books. Leo added 20 books more, and published the work in 880. The whole, 30 years after, was corrected and improved by Constantin Porphyrogenitus, son of Leo; whence many have held him the author of the basilica. Six books of the basilica were translated into Latin in 1557, by Gentian Hervetus. An edition of the Greek basilics, with a Latin version, has been since published at Paris, in 1647, by Annib. Fabrotus, in 7 volumes. There still want 19 books, which are supposed to be lost. Fabrotus has endeavoured to supply in some measure the defect from the synopsis of the basilica, and the glosses; of which several had been made under the succeeding emperors, and contained the whole Justinian law, excepting the superfluities, in a new and more consistent order, together with the later constitutions of the emperors posterior to Justinian.

BASILICA, in anatomy, the interior branch of the axillary vein, running the whole length of the arm.

BASILICATA, a territory of Italy, bounded on the north by the Otranto, Bari, and Capitanata; on the west by the Principato, and a small part of the Tuscan sea; on the south by Calabria; and on the east by the gulph of Taranto. It is watered by several rivers: but as it is almost all occupied by the Apennine mountains, it is neither very populous nor fertile; however it produces enough to maintain its inhabitants, and has a small quantity of cotton. The principal towns are Cirenza the capital, Mesi, Turfi, Rapollo, Muro, Lavello, Tracarico, Monte Pelose, and Venoso, which are all episcopal sees.

BASILICI, a denomination given in the Greek empire to those who carried the emperor's orders and commands.

BASILICON, in pharmacy, a name given to several compositions to be found in ancient medicinal writers. At present it is confined to three officinal ointments, distinguished by the epithets black, yellow, and green. See **PHARMACY**.

BASILIDIANS, ancient heretics, the followers of

Basilic
||
Basilidians.

Basilippum
||
Basilisk.

Basilides, an Egyptian, who lived near the beginning of the second century. He was educated in the Gnostic school, over which Simon Magus presided; with whom he agreed that Christ was a man in appearance, that his body was a phantom, and that he gave his form to Simon the Cyrenian, who was crucified in his stead. We learn from Eusebius, that this heresiarch wrote 24 books upon the gospel, and that he forged several prophets; to two of which he gave the names *Barcaba* and *Barcoph*. We have still the fragment of a Basilidian gospel. His disciples supposed there were particular virtues in names; and taught with Pythagoras and Plato, that names were not formed by chance, but naturally signified something.—Basilides, to imitate Pythagoras, made his disciples keep silence for five years.

In general, the Basilidians held much the same opinions with the Valentinians, another branch of the Gnostic family. They asserted, that all the actions of men are necessary; that faith is a natural gift, to which men are forcibly determined, and should therefore be saved though their lives were ever so irregular. Irenæus and others assure us, they acted consistently with their principle; committing all manner of villainies and impurities, in confidence of their natural election. They had a particular hierarchy of divine persons, or Æons. Under the name *Abraxas*, they are said to have worshipped the supreme God, from whom as a principle, all other things proceeded. There are several gems still subsisting, inscribed with the name *Abraxas*, which were used by the Basilidians as amulets against diseases and evil spirits. See *ABRASAX* and *ABRAX*.

BASILIPPUM (anc. geog.), a town of Bætica in Spain; now *Cantillana*, a citadel of Andalusia, above Seville in the Guadalquivir.

BASILISCUS, in zoology, the trivial name of a species of lacerta. See *LACERTA*.

BASILISK, a fabulous kind of serpent, said to kill by its breath or sight only. Galen says, that it is of a colour inclining to yellow; and that it has three little eminences upon its head, speckled with whitish spots, which have the appearance of a sort of crown. Ælian says, that its poison is so penetrating, as to kill the largest serpents with its vapour only; and that if it but bite the end of any man's stick, it kills him. It drives away all other serpents by the noise of its hissing. Pliny says, it kills those who look upon it.—The generation of the basilisk is not less marvellous, being said to be produced from a cock's egg, brooded on by a serpent. These, and other things equally ridiculous, are related by Matthioli, Galen, Dioscorides, Pliny, and Erasistratus. Hirschmayer and Vander Wiel have given the history of the basilisk, and detected the folly and imposture of the traditions concerning it.—In some apothecaries shops there are little dead serpents shown, which are said to be basilisks. But these seem rather to be a kind of small bird, almost like a cock, but without feathers: its head is lofty, its wings are almost like a bat's, its eyes large, and its neck is very short. As to those which are shown and sold at Venice, and in other places, they are nothing but little thornbacks artificially put into a form like that of a young cock, by stretching out their fins, and contriving them with a little head and hollow eyes: and this, Calmet says, lie

Nº 42.

has in reality observed in a supposed basilisk, at an apothecary's shop at Paris, and in another at the Jefeits of Pont-a-Mousson.

Basilisk
||
Basis.

BASILISK, in military affairs, a large piece of ordnance, thus denominated from its resemblance to the supposed serpent of that name. The basilisk throws an iron ball of 200 pound weight. It was much talked of in the time of Solymán emperor of the Turks, in the wars of Hungary; but seems now out of use. Paulus Jovius relates the terrible slaughter made by a single ball from one of these basilisks in a Spanish ship; after penetrating the boards and planks in the ship's head, it killed above 30 men. Maffeus speaks of basilisks made of brass, which were drawn each by 100 yoke of oxen.—Modern writers also give the name *basilisk* to a much smaller and sizeable piece of ordnance, which the Dutch make 15 feet long, and the French only 10. It carries 48 pounds.

BASILIVS, surnamed the *Macedonian*, emperor of the Greeks. He was a common soldier, and of an obscure family in Macedonia, and yet raised himself to the throne; for having pleased the emperor Michael by his address in the management of his horses, he became his first equerry, and then his great chamberlain. He at length assassinated the famous Bardas, and was associated to the empire in 849. He held the eighth general council at Constantinople; deposed the patriarch Photius, but in 858 restored him to the patriarchate; and declared against the popes, who refused to admit him into their communion. He was dreaded by his enemies the Saracens, whom he frequently vanquished; and loved by his subjects, for his justice and clemency. He died in 886. Under his reign the Russians embraced Christianity, and the doctrine of the Greek church. He ought not to be confounded with Basilivus the Younger, who succeeded Zernices in 975, and after a reign of 50 years died in 1025.

BASINGSTOKE, a corporation-town of Hampshire in England, and a great thoroughfare on the western road. It is seated on a small brook, in W. Long. 1. 10. N. Lat. 51. 20.

BASIOGLOSSUS, a muscle arising from the base of the os hyoides. See *ANATOMY*, *Table of the Muscles*.

BASIS, or base, in geometry. See *BASE*.

BASIS, or *Base*, in chemistry, any body which is dissolved by another body, which it receives and fixes, and with which it forms a compound, may be called the *basis* of that compound. Thus, for example, the bases of neutral salts are the alkaline, earthy, and metallic matters which are saturated by the several acids, and form with them these neutral salts. In this sense it is that these neutral salts are called *salts with earthy bases*, *salts with alkaline bases*, *salts with metallic bases*: also the appellations *basis of alum*, *basis of nitre*, *basis of Glauber's salt*, *basis of vitriol*, &c. signify the argillaceous earth, which, with the vitriolic acid, forms alum; the vegetable alkali, which, with the nitrous acid, forms nitre; the mineral alkali, which, with the vitriolic acid, forms Glauber's salt; and the metal which, with the vitriolic acid, forms a vitriol; because these substances are supposed to be fixed, unactive, and only yielding to the action of the acids, which they fix, and to which they give a body and consistence.

BASIS,

Baskets.

BASIS, among physicians, denotes the principal ingredients in compound medicines.

BASKERVILLE (John), an eminent artist, especially in letter-founding and printing, of the present century. He was born in 1706 at Woverley in Worcester-shire, and was heir to an estate of about L.60 a-year; the whole of which income he allowed to his parents till their deaths. In his early years he conceived a love for fine writing, and cutting in stone; and being brought up to no particular profession, he commenced writing-masser in Birmingham when about 20 years of age. The improvements in different manufactures there soon drew his attention, and he applied to the japan business, which he carried on for a long time with distinguished excellence and success. In 1750 he applied himself to letter-founding, the bringing of which to perfection cost him much labour and expence. In a few years he proceeded to printing; and his first work was an edition of Virgil on royal quarto, which now sells for three guineas. In a short time he obtained leave from the university of Cambridge to print a Bible in royal folio, and editions of the Common Prayer in three sizes; for which he paid a large sum to the university. He afterwards printed Horace, Terence, Catullus, Lucretius, Juvenal, Sallust, and Florus, in royal quarto; Virgil in octavo; and several books in duodecimo. He published likewise some of the English classics. The best testimonies of the merit of these performances are themselves; and Mr Baskerville's name is deservedly ranked among those who, in modern times, have brought the art of printing to its greatest perfection. Not meeting, however, with that encouragement from the booksellers which he expected, he set up a letter-foundry for sale a little before his death. He died without issue in July 1775.

BASKET, an utensil made of twigs interwoven together, in order to hold fruit, earth, &c. As a measure, it denotes an uncertain quantity; as, a basket of medlars is two bushels, of asafetida from 20 to 50 pound weight. The ancient Britons were noted for their ingenuity in making baskets, which they exported in large quantities. These baskets were of very elegant workmanship, and bore a high price; and are mentioned by Juvenal among the extravagant expensive furniture of the Roman tables in his time.

Add et bascaudas et mille escaria.

Add baskets, and a thousand other dishes.

That these baskets were manufactured in Britain, we learn from the following epigram of Martial:

*Barbara de pictis venit bascauda Britannis,
Sed me jam mavult dicere Roma suam.*

A basket I, by painted Britons wrought,
And now to Rome's imperial city brought.

BASKETS of Earth, in the military art, called by the French *corbeilles*, are small baskets used in sieges, on the parapet of a trench, being filled with earth. They are about a foot and a half high, about a foot and a half in diameter at the top, and 8 or 10 inches at bottom; so that, being set together, there is a sort of embrasures left at their bottoms, through which the soldiers fire, without exposing themselves.

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BASKET-Fish, a species of *Sea-flar*. See **ASTERIAS**.

BASKET-Salt, that made from salt-springs, being purer, whiter, and composed of finer grains, than the common brine-salt. See **SALT**.

BASKING-SHARK, or *SUN-Fish of the Irish*. See **SQUALUS**.

BASNAGE (James), a learned and accomplished author, and pastor of the Walloon church at the Hague, was born at Roan in Normandy August 8. 1653. He was the son of Henry Basnage, one of the ablest advocates in the parliament of Normandy. At 17 years of age, after he had made himself master of the Greek and Latin authors, as well as the English, Spanish, and Italian languages, he went to Geneva, where he began his divinity studies under Metzcrat, Turretin, and Tronchin; and finished them at Sedan, under the professors Jurieu and Le Blanc de Beaulieu. He then returned to Roan, where he was received as minister, September 1676; in which capacity he remained till the year 1685, when, the exercise of the Protestant religion being suppressed at Roan, he obtained leave of the king to retire to Holland. He settled at Rotterdam; and was a minister pensionary there till 1691, when he was chosen pastor of the Walloon church of that city. In 1709 Pensionary Heinius got him chosen one of the pastors of the Walloon church at the Hague, intending not only to employ him in religious but in state affairs. He was employed in a secret negociation with Marshal d'Uxelles, plenipotentiary of France at the congress of Utrecht; and he executed it with so much success, that he was afterwards entrusted with several important commissions, all which he discharged in such a manner as to gain a great character for his abilities and address; a celebrated modern writer has therefore said of him, that he was fitter to be minister of state than of a parish. The abbe du Bois, who was at the Hague in 1716, as ambassador plenipotentiary from his most Christian majesty, to negotiate a defensive alliance between France, England, and the States General, was ordered by the Duke of Orleans, regent of France, to apply himself to M. Basnage, and to follow his advice: they accordingly acted in concert, and the alliance was concluded in January 1717. He kept an epistolary correspondence with several princes, noblemen of high rank, and ministers of state, both Catholic and Protestant, and with a great many learned men in France, Italy, Germany, and England. The Catholics esteemed him no less than the Protestants; and the works he wrote, which are mostly in French, spread his reputation almost all over Europe: among these are, 1. The History of the Religion of the Reformed Churches. 2. Jewish Antiquities. 3. The History of the Old and New Testament; and many others. He died September 22. 1723.

BASNAGE (Henry) Sieur de Beauval, second son to Henry Basnage, and brother to James mentioned in the last article. He applied himself to the study of the law, and was admitted advocate in the parliament of Roan in the year 1679. He did not follow the bar immediately upon his admission; but went to Valencia, where he studied under M. de Marville. Upon his return from thence, he practised with great reputation till the year 1687, when the revocation of the edict of

Basket
||
Basnage.

B. n.
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B. f.

Nantz obliged him to fly to Holland, where he composed the greatest part of his works, and died there the 29th of March 1710. His chief work is *Histoire des ouvrages des Scavans*. Rotterd. 24 vol. in duodecimo. This work was begun in the month of September 1687, and continued till June 1709. When he arrived in Holland, Mr Bayle, through indisposition, had been obliged to drop his *Nouvelles de la Republique des Lettres*, which induced Mr Basnage to undertake a work of the same kind under a different title.

BASON, in hydraulics, a reservoir of water, used for various purposes: thus we say, *The basin of a jet d'eau*, *the basin of a fountain*, and likewise *the basin of a port or harbour*.

BASON, in Jewish antiquities, the laver of the tabernacle, made of the brass looking-glasses belonging to those devout women that watched and stood centinels at the door of the tabernacle.

BASON, or *Dish*, among glass-grinders. These artificers use various kinds of basons, of copper, iron, &c. and of various forms, some deeper, others shallower, according to the focus of the glasses that are to be ground. In these basons it is that convex glasses are formed, as concave ones are formed on spheres or bowls.

Glasses are worked in basons two ways.—In the first, the basin is fitted to the arbor or tree of a lathe, and the glass (fixed with cement to a handle of wood) presented and held fast in the right hand within the basin, while the proper motion is given by the foot of the basin. In the other, the basin is fixed to a stand or block, and the glass with its wooden handle moved. The moveable basons are very small, seldom exceeding five or six inches in diameter; the others are larger, sometimes above ten feet diameter. After the glass has been ground in the basin, it is brought smoother with grease and emery; and polished first with tripoli, and finished with paper cemented to the bottom of the basin.

BASON, among hatters, is a large round snell or case, ordinarily of iron, placed over a furnace; wherein the matter of the hat is moulded into form. The hatters have also basons for the brims of hats, usually of lead, having an aperture in the middle, of a diameter sufficient for the largest block to go through.

BASQUES, a small territory of France, towards the Pyrenean mountains. It comprehends Labour, Lower Navarre, and the district of Soule.

BASS, the lowest in the four parts of music: of uncertain etymology; whether from the Greek word *βασίς*, a foundation; or from the Italian adjective *basso*, signifying "low." Of all the parts it is the most important, and it is upon this that the chords proper to constitute a particular harmony are determined. Hence the maxim among musicians, that when the bass is properly formed, the harmony can scarcely be bad.

Basses are of different kinds. Of which in their order.

Thorough-Bass is the harmony made by the bass-voles, or theorbos, continuing to play both while the voices sing and the other instruments perform their parts, and also filling up the intervals when any of the other parts stop. It is played by figures marked over the notes, on the organ, spinet, harpsichord, &c. and

frequently simply and without figures on the bass-viol and bassoon.

Counter Bass is a second or double bass, where there are several in the same concert.

Bass-Viel, a musical instrument of the like form with that of a violin, but much larger. It is struck with a bow, as that is; has the same number of strings; and has eight stops, which are subdivided into semistops: Its sound is grave, and has a much nobler effect in a concert than that of the violin.

BASS (isle of), a rock, about a mile in circumference, in the mouth of the Frith of Forth, at a small distance from the town of North Berwick in East Lothian. It is steep and inaccessible on all sides, except to the south-west; and even there it is with great difficulty that a single man can climb up with the help of a rope or ladder. It was formerly kept as a garrison. A party of King James's adherents surprised it at the Revolution, and it was the last place in the three kingdoms that submitted to the new government; upon which, its fortifications were ordered to be neglected. In summer, this remarkable rock, which rises to a great height above the water, in form of a cone, is quite covered with sea-fowl which come hither to breed. The chief of these are the solon geese†, which arrive in June, † See *PeH-canus*. and retire in September. It also contains a small warren for rabbits, and affords pasture for a few sheep. The force of the tides have now almost worn a hole quite through this rock. W. Long. 2. 15. N. Lat. 56. 3.

BASSAN (Giacomo de Pont), or LE BASSAN, a celebrated Venetian painter, was born in 1510. His subjects generally were peasants and villagers, busy at their different rural occupations, according to the various seasons of the year; cattle, landscapes, and historical designs; and in all those subjects the figures were well designed, and the animals and landscapes have an agreeable resemblance of simple nature. His compositions cannot boast of much elegance or grandeur of taste, not even those which are historical; but they have abundance of force and truth. His local colours are very well observed, his carnations are fresh and brilliant, and the chiaro-scuro and perspective well understood. His touch is free and spirited; and the distances in his landscapes are always true, if not sometimes too dark in the nearer parts. His works are spread all over Europe: many of them were purchased by Titian; and there are several in the French king's cabinet, the royal palace, and the Hotel de Touloufe. They are more readily known than those of most other painters; from the similitude of characters and countenances in the figures and animals; from the taste in the buildings, utensils, and draperies; and, beside, from a violet or purple tint that predominates in every one of his pictures. But the genuine pictures of his hand are not so easily ascertained; because he frequently repeated the same design, and his sons were mostly employed in copying the works of their father, which he sometimes retouched. As he lived to be very old, he finished a great number of pictures; yet notwithstanding his application and years, the real pictures of Giacomo are not commonly met with. Many of those which are called originals by purchasers as well as dealers, being at best no more than copies by the sons of Bassan, who were far inferior to him; or perhaps

B. n.
B. f.

Bassani,
Bassantin.

by some painter of still meaner abilities. But the true pictures of Giacomo always bear a considerable price if they happen to be undamaged. He died in 1592, aged 82.—Francis and Leander, his sons, distinguished themselves in the same art; but inheriting a species of lunacy from their mother, both came to an untimely end.

BASSANI (Giovanni Battista), maestro di cappella of the cathedral church of Bologna about the middle of the last century, was a very voluminous composer of music, having given to the world no fewer than 31 different works. He is equally celebrated both as a composer for the church and for concerts; and was besides a celebrated performer on the violin, and, as it is said, taught Corelli on that instrument. His compositions consist of masses, psalms, motets with instrumental parts, and sonatas for violins: his fifth opera in particular, containing 12 sonatas for two violins and a bass, is much esteemed; it is written in a style wonderfully grave and pathetic, and abounds with evidences of great learning and fine invention. The first and third operas of Corelli are apparently formed after the model of this work. Bassani was one of the first who composed motets for a single voice, with accompaniments of violins; a practice which is liable to objection, as it assimilates church-music too nearly to that of the chamber; and of his solo-motets it must be confessed that they differ in style but little from opera airs and cantatas: two operas of them, viz. the eighth and thirteenth, were printed in London by Pearson above 50 years ago, with the title of *Harmonia Fesiva*.

BASSANTIN (James), a Scotch astronomer, son of the Laird of Bassantin in Mers, was born in the reign of James IV. He was educated at the university of Glasgow, travelled through Germany and Italy, and then fixed his abode in the university of Paris, where he taught mathematics with great applause. Having acquired some fortune in this occupation in 1562, he returned to Scotland, where he died in the year 1568. From his writings, he appears to have been no contemptible astronomer, considering the times; but, like most of the mathematicians of that age, he was not a little addicted to judicial astrology. Sir James Melvil, in his Memoirs, says that his brother Sir Robert, when he was exerting his abilities to reconcile the two queens Elizabeth and Mary, met with one Bassantin, a man learned in the high sciences, who told him, "that all his travel would be in vain; for, said he, they will never meet together; and next, there will never be any thing but dissembling and secret hatred for a while, and at length captivity and utter wreck to our queen from England." He added, "that the kingdom of England at length shall fall, of right, to the crown of Scotland: but it shall cost many bloody battles; and the Spaniards shall be helpers, and take a part to themselves for their labour." Sir James Melvil is an author of credit; therefore it is probable that our astrologer ventured to utter his prediction: but, as it proved true only in part, either he misunderstood the stars, or they deceived the astrologer.—His works are, 1. *Astronomia Jacobi Bassantini Scoti, opus absolutissimum, &c. editum Latine et Gallice*. Genev. 1599, fol. This is the title given it by Tornæusius, who translated it into Latin from the French, in which language it was first published. 2. *Paraphrase de l'Astrolabe, avec un am-*

plification de l'usage de l'Astrolabe. Lyons 1555. Paris, 1617, 8vo. 3. *Mathematic. genethliaca*. 4. *Arithmetica*. 5. *Musica secundum Platonem*. 6. *De mathesi in genere*.

BASSE, or Bass, a town of the French Netherlands, in the county of Flanders, on the confines of Artois, remarkable on account of the many sieges it has sustained; but its fortifications are now demolished. It is seated on a canal which runs as far as Deule. E. Long. 3. 0. N. Lat. 50. 53.

BASSE *Terræ*, part of the island of St Christopher's, one of the Carribbee islands, formerly occupied by the French, but ceded to Great Britain by the treaty of Utrecht in 1713.

BASSET, or BASSETTE, a game with cards, said to have been invented by a noble Venetian, for which he was banished. It was first introduced into France by Signior Justiniani, ambassador of Venice, in 1674. Severe laws were made against it by Louis XIV. to elude which they disguised basset under the name of *pour & contre*, that is, "for and against," which occasioned new arrets and prohibitions of parliament. The parties concerned in it are, a dealer or banker; his assistant, who supervises the losing cards; and the punter, or any one who plays against the banker.

Besides these, there are other terms used in this game; as, 1. The *saissé* or *saetz*, which is the first card turned up by the tailleur belonging to the pack, by which he gains half the value of the money laid down on every card of that sort by the punters. 2. The *couch*, or first money which every punter puts on each card; each person that plays having a book of 13 several cards before him, on which he may lay his money, more or less, at discretion. 3. The *paroli*; which is, when a punter having won the first stake, and having a mind to pursue his good fortune, crooks the corner of his card, and lets his prize lie, aiming at a *sept et le va*. 4. The *massé*; when having won the first stake, the punter is willing to venture more money on the same card. 5. The *pay*; when the punter having won the first stake, be it a shilling, half-crown, guinea, or whatever he laid down on his card, and not caring to hazard the paroli, leaves off, or goes the *pay*: in which case, if the card turn up wrong, he loses nothing, having won the couch before; whereas, if it turn right, he by this adventure wons double the money staked. 6. The *alpiow*; much the same with paroli, and used when a couch is won by turning up or crooking the corner of the winning card. 7. *Sept et le va*, the first great chance or prize, when the punter, having won the couch, makes a paroli, and goes on to a second chance; so that if his winning card turns up again, it comes to *sept et le va*, which is seven times as much as he laid down on his card. 8. *Quinze et le va* is the next higher prize, when the punter having won the former, is resolved to push his fortune, and lay his money a second time on the same card by crooking another corner; in which case, if it comes up, he wins fifteen times the money he laid down. 9. *Trent et le va* is the next higher prize, when the punter, crooking the fourth corner of his winning card, if it turn up, wins 33 times the money he first staked. 10. *Soixant et le va* is the highest prize, and intitles the winner to 67 times his first money; which, if it were considerable, stands a chance to break the bank:

B. de,
B. de.

Basset, Basseting. but the bank stands many chances first of breaking the punter. This cannot be won but by the *tailleur's* dealing the cards over again.

The rules of the game of *basset* are as follow: 1. The banker holds a pack of 52 cards, and having shuffled them, he turns the whole pack at once, so as to discover the last card; after which he lays down all the cards by couples. 2. The punter has his book of 13 cards in his hand, from the king to the ace; out of these he takes one card, or more, at pleasure, upon which he lays a stake. 3. The punter may, at his choice, either lay down his stake before the pack is turned, or immediately after it is turned, or after any number of couples are down. 4. Supposing the punter to lay down his stake after the pack is turned, and calling 1, 2, 3, 4, 5, &c. the places of those cards which follow the card in view, either immediately after the pack is turned, or after any number of couples are drawn. Then, 5. If the card upon which the punter has laid a stake comes out in any even place, except the first, he wins a stake equal to his own. 6. If the card upon which the punter has laid a stake comes out in any even place, except the second, he loses his stake. 7. If the card of the punter comes out in the first place, he neither wins nor loses, but takes his own stake again. 8. If the card of the punter comes out in the second place, he does not lose his whole stake, but only one half; and this is the case in which the punter is said to be *faced*. 9. When the punter chooses to come in after any number of couples are down, if his card happens to be but once in the pack and is the last of all, there is an exception from the general rule; for though it comes out in an odd place, which should intitle him to win a stake equal to his own, yet he neither wins nor loses from that circumstance, but takes back his own stake.

This game has been the object of mathematical calculations. M. de Moivre solves this problem: to estimate at *basset* the loss of the punter under any circumstance of cards remaining in the stock when he lays his stake, and of any number of times that his card is repeated in the stock. From this solution he has formed a table showing the several losses of the punter in whatsoever circumstances he may happen to be. From this table it appears, 1. That the fewer the cards are in the stock, the greater is the loss of the punter. 2. That the least loss of the punter, under the same circumstances of cards remaining in the stock, is when his card is but twice in it; the next greater when but three times; still greater when four times; and the greatest when but once. The gain of the banker upon all the money adventured at *basset* is 15s. 3d. *per cent.*

BASSER (Peter), a gentleman of a good family, was chamberlain, or gentleman of the privy-chamber, to King Henry V. a constant attendant on that brave prince, and an eye-witness of his most glorious actions both at home and abroad; all which he particularly described in a volume intitled, *The Acts of King Henry V.* which remains in MS. in the college of heralds.

BASSETING, in the coal mines, denotes the rise of the vein of coal towards the surface of the earth, till it come within two or three feet of the surface itself. This is also called by the workmen *creeping*; and stands opposed to *dipping*, which is the descent of the vein to

such a depth that it is rarely, if ever, followed to the end.

BASSIA; a genus of the monogynia order, belonging to the dodecandria class of plants; the characters of which are: The calyx is quadriphyllous; the corolla octofid, with the tube inflated; the stamina are 16; and the drupe is quinquepermous. There is but one species, the *longifolia*, a native of Malabar.

BASSO RELIEVO, or **BASS-RELIEF**; a piece of sculpture, where the figures or images do not protuberate, jet, or stand out, far above the plane on which they are formed.—Whatever figures or representations are thus cut, stamped, or otherwise wrought, so that not the entire body, but only part of it, is raised above the plane, are said to be done in *relief*, or *relievo*; and when that work is low, flat, and but little raised, it is called *low relief*. When a piece of sculpture, a coin, or a medal, has its figure raised so as to be well distinguished, it is called *bold*, and we say its *relief is strong*.

BASSOON, a musical instrument of the wind sort, blown with a reed, furnished with 11 holes, and used as a bass in a concert of hautboys, flutes, &c.—To render this instrument more portable, it is divided into two parts, whence it is also called a *fagot*. Its diameter at bottom is nine inches, and its holes are stopped like those of a large flute.

BASSORA, **BALSORA**, or *Basrah*, a city between Arabia and Persia, situated in the extremity of the deserts of Irak, a little to the west of the Tigris, in about 57° east longitude, and 30° north latitude. It was built by the command of the khalif Omar, in the 15th year of the Hegira, for the sake of carrying on more commodiously an extensive commerce between the Syrians, Arabians, Persians, and Indians. It is at present a very famous emporium of the East; and stands upon a thick stony soil, as the word *basra* imports, about a day and a half's journey from one of the mouths of the Tigris, where it empties itself into the Persian Gulf, denominated likewise from this town the *Bay of Basra*. The circumjacent tract is looked upon by the Arabs to be one of the most delightful spots in Asia, and even as one of the most beautiful gardens in the world; however, the hot winds that frequently blow there are very troublesome to travellers, and sometimes overwhelm them with sand driven by the force of these winds out of the neighbouring deserts. The city is inhabited by Jacobites, Nestorians, Jews, Mahometans, and Chaldean Christians, commonly called *Christians of St John*, which last are pretty numerous here.

The Abbé Raynal values the merchandize annually brought to Bassora at L. 525,000: of which the English furnish L. 175,000; the Dutch L. 87,500; and the Moors, Banians, Armenians, and Arabs, furnish the remainder. "The cargoes of these nations (says he) consist of rice; sugar; plain, striped, and flowered muslins from Bengal; spices from Ceylon and the Molucca islands; coarse, white, and blue cottons from Coromandel; cardamum, pepper, sanders-wood, from Malabar; gold and silver stuffs, turbans, shawls, indigo, from Surat; pearls from Baharen, and coffee from Mocha; iron, lead, and woolen cloth, from Europe. Other articles of less consequence are imported from different places. Some of these commodities are shipped on board small Arabian vessels; but the greater part is brought

Bassora, bastard. brought by European ships, which have the advantage of a considerable freight.

" This merchandize is sold for ready money; and passes through the hands of the Greeks, Jews, and Armenians. The Banians are employed in changing the coin current at Bassora, for that which is of higher value in India.

" The different commodities collected at Bassora are distributed into three channels. One half of them goes to Persia, whither they are conveyed by the caravans; there being no navigable river in the whole empire. The chief consumption is in the northern provinces, which have not been so much ravaged as those of the south. Both of them formerly made their payments in precious stones, which were become common by the plunder of India. They had afterwards recourse to copper utensils, which had been exceedingly multiplied from the great abundance of copper mines. At last they gave gold and silver in exchange, which had been concealed during a long scene of tyranny, and are continually dug out of the bowels of the earth. If they do not allow time for the trees that produce gum, and have been cut to make fresh shoots; if they neglect to multiply the breed of goats which afford such fine wool; and if the silks, which are hardly sufficient to supply the few manufactures remaining in Persia, continue to be so scarce; in a word, if this empire does not rise again from its ashes; the mines will be exhausted, and this source of commerce must be given up."

BASTARD, a natural child, or one begotten and born out of lawful wedlock.

Blackstone's comment. The civil and canon laws do not allow a child to remain a bastard, if the parents afterwards intermarry; and herein they differ most materially from our law; which though not so strict as to require that the child shall be *begotten*, yet makes it an indispensable condition that it shall be *born*, after lawful wedlock. And the reason of our law is surely much superior to that of the Roman, if we consider the principal end and design of establishing the contract of marriage, taken in a civil light; abstractedly from any religious view, which has nothing to do with the legitimacy or illegitimacy of the children. The main end and design of marriage, therefore, being to ascertain and fix upon some certain person, to whom the care, the protection, the maintenance, and the education of the children, should belong; this end is undoubtedly better answered by legitimating all issue born after wedlock, than by legitimating all issue of the same parties, even born before wedlock, so as wedlock afterwards ensues: 1. Because of the very great uncertainty there will generally be, in the proof that the issue was really begotten by the same man; whereas, by confining the proof to the birth, and not to the begetting, our law has rendered it perfectly certain, what child is legitimate, and who is to take care of the child. 2. Because by the Roman law a child may be continued a bastard, or made legitimate, at the option of the father and mother, by a marriage *ex post facto*; thereby opening a door to many frauds and partialities, which by our law are prevented. 3. Because by those laws a man may remain a bastard till 40 years of age, and then become legitimate by the subsequent marriage of his parents; whereby the main end of marriage, the protection of infants, it totally frustrated. 4. Because this rule of the Ro-

man law admits of no limitation as to the time, or number, of bastards to be so legitimated; but a dozen of them may, 20 years after their birth, by the subsequent marriage of their parents, be admitted to all the privileges of legitimate children. This is plainly a great discouragement to the matrimonial state; to which one main inducement is usually not only the desire of having children, but also the desire of procreating lawful heirs. Whereas our constitution guards against this indecency, and at the same time give sufficient allowance to the frailties of human nature. For if a child be begotten while the parents are single, and they will endeavour to make an early reparation for the offence, by marrying within a few months after, our law is so indulgent as not to bastardize the child, if it be born, though not begotten, in lawful wedlock; for this is an incident that can happen but once; since all future children will be begotten, as well as born, within the rules of honour and civil society.

From what has been said it appears, that all children born before matrimony are bastards by our law: and so it is of all children born so long after the death of the husband, that, by the usual course of gestation, they could not be begotten by him. But this being a matter of some uncertainty, the law is not exact as to a few days. But if a man dies, and his widow soon after marries again, and a child is born within such a time as that by the course of nature it might have been the child of either husband: in this case, he is said to be more than ordinarily legitimate; for he may, when he arrives to years of discretion, choose which of the fathers he pleases. To prevent this, among other inconveniences, the civil law ordained that no widow should marry *infra annum luctus*; a rule which obtained so early as to the reign of Augustus, if not of Romulus: and the same constitution was probably handed down to our early ancestors from the Romans, during their stay in this island; for we find it established under the Saxon and Danish governments.

As bastards may be born before the coverture or marriage-state is begun, or after it is determined, so also children born during wedlock may in some circumstances be bastards. As if the husband be out of the kingdom of England (or as the law loosely phrases it, *extra quatuor maria*) for above nine months, so that no access to his wife can be presumed, her issue during that period shall be bastards. But generally during the coverture, access of the husband shall be presumed, unless the contrary shall be shown; which is such a negative as can only be proved by showing him to be elsewhere; for the general rule is, *presumitur pro legitimatione*. In a divorce *a mensa et thoro*, if the wife breeds children, they are bastards; for the law will presume the husband and wife conformable to the sentence of separation, unless access be proved: but in a voluntary separation by agreement, the law will suppose access, unless the negative be shown. So also, if there is an apparent impossibility of procreation on the part of the husband, as if he be only eight years old, or the like, there the issue of the wife shall be bastard. Likewise, in case of divorce in the spiritual court *a vinculo matrimonii*, all the issue born during the coverture are bastards; because such divorce is always upon some cause that rendered the marriage unlawful and null from the beginning.

Bastard.

Bastard.

As to the *duty* of parents to their bastard children, by our law, it is principally that of maintenance. For though bastards are not looked upon as children to any civil purposes; yet the ties of nature, of which maintenance is one, are not so easily dissolved: and they hold indeed as to many other intentions; as particularly that a man shall not marry his bastard sister or daughter. The method in which the English law provides maintenance for them is as follows: When a woman is delivered, or declares herself with child, of a bastard, and will by oath before a justice of the peace charge any person having got her with child, the justice shall cause such person to be apprehended, and commit him till he gives security, either to maintain the child, or appear at the next quarter-sessions to dispute and try the fact. But if the woman dies, or is married, before delivery, or miscarries, or proves not to have been with child, the person shall be discharged: otherwise the sessions, or two justices out of sessions, upon original application to them, may take order for the keeping of the bastard, by charging the mother or the reputed father with the payment of money or other sustentation for that purpose. And if such putative father, or lewd mother, run away from the parish, the overseers by direction of two justices may seize their rent, goods, and chattels, in order to bring up the said bastard child. Yet such is the humanity of our laws, that no woman can be compulsively questioned concerning the father of her child till one month after her delivery: which indulgence is however very frequently a hardship upon parishes, by giving the parents opportunity to escape.

As to the *rights* and *incapacities* which appertain to a bastard: The former are very few, being only such as he can *acquire*; for he can *inherit* nothing, being looked upon as the son of nobody, and sometimes called *filius nullius*, sometimes *filius populi*. Yet he may gain a surname by reputation, though he has none by inheritance. All other children have their primary settlement in their father's parish; but a bastard in the parish where born, for he hath no father. However, in case of fraud, as if a woman either be sent by order of justices, or comes to beg as a vagrant, to a parish which she does not belong to, and drops her bastard there; the bastard shall, in the first case, be settled in the parish from whence she was illegally removed; or in the latter case, in the mother's own parish, if the mother be apprehended for her vagrancy. Bastards also, born in any licensed hospital for pregnant women, are settled in the parishes to which the mothers belong.—The *incapacity* of a bastard consists principally in this, that he cannot be heir to any one; for being *nullius filius*, he is therefore of kin to nobody, and has no ancestor from whom any inheritable blood can be derived: Therefore, if there be no other claimant upon an inheritance than such illegitimate child, it shall escheat to the lord. And as bastards cannot be heirs themselves, so neither can they have any heirs but those of their own bodies. For as all collateral kindred consists in being derived from the same common ancestor, and as a bastard has no legal ancestors, he can have no collateral kindred; and consequently can have no legal heirs, but such as claim by a lineal descent from himself. And therefore, if a bastard purchases land, and dies seized thereof without issue, and intestate, the land shall escheat to the lord of

the fee. A bastard was also, in strictness, incapable of holy orders; and though that were dispensed with, yet he was utterly disqualified from holding any dignity in the church; but this doctrine seems now obsolete; and in all other respects, there is no distinction between a bastard and another man. And really any other distinction but that of not inheriting, which civil policy renders necessary, would, with regard to the innocent offspring of his parent's crimes, be odious, unjust, and cruel to the last degree; and yet the civil law, so boasted of for its equitable decisions, made bastards in some cases incapable even of a gift from their parents. A bastard may, lastly, be made legitimate, and capable of inheriting, by the transcendent power of an act of parliament, and not otherwise: as was done in the case of John of Gaunt's bastard children, by a statute of Richard II.

As to the *punishment* for having bastard children: By the statute 18 Eliz. c. 3. two justices may take order for the punishment of the mother and reputed father: but what that punishment shall be, is not therein ascertained: though the cotemporary exposition was, that a corporeal punishment was intended. By statute 7 Jac. I. c. 4. a specific punishment (*viz.* commitment to the house of correction) is inflicted on the woman only. But in both cases, it seems that the penalty can only be inflicted, if the bastard becomes chargeable to the parish; for otherwise the very maintenance of the child is considered as a degree of punishment. By the last mentioned statute the justices may commit the mother to the house of correction, there to be punished and set on work for one year; and in case of a second offence, till she find sureties never to offend again.

He that gets a bastard in the hundred of Middleton in Kent, forfeits all his goods and chattels to the king*.

If a bastard be got under the umbrage of a certain oak in Knollwood in Staffordshire, belonging to the manor of Terley-castle, no punishment can be inflicted, nor can the lord nor the bishop take cognizance of it †.

It is enacted by statute 21 Jac. I. c. 27. that if any woman be delivered of a child, which if born alive should by law be a bastard; and endeavours privately to conceal its death, by burying the child or the like; the mother so offending shall suffer death, as in the case of murder, unless she can prove by one witness at least that the child was actually born dead. This law, which favours pretty strongly of severity, in making the concealment of the death almost conclusive evidence of the child's being murdered by the mother, is nevertheless to be also met with in the criminal codes of many other nations of Europe; as the Danes, the Swedes, and the French: but it has of late years been usual with us, upon trials for this offence, to require some sort of presumptive evidence that the child was born alive, before the other constrained presumption (that the child, whose death is concealed, was theretofore killed by its parent) is admitted to convict the prisoner.

Concerning bastards in Scotland, see LAW, Part III. N^o clxxxii. 3, 4, and clxxii. 33.

BASTARD, in respect of artillery, is applied to those pieces which are of an unusual or illegitimate make or

Bastar

* Chambr. Diz.

† Plat. Nat. Hist. Staff. P. 279.

proportion. These are of two kinds, long and short, according as the defect is on the redundant or defective side. The long bastards again, are either common or uncommon. To the common kind belong the double culverin extraordinary, half culverin extraordinary, quarter culverin extraordinary, falcon extraordinary, &c. The ordinary ballard culverin carries a ball of eight pounds.

BASTARDS are also an appellation given to a kind of faction or troop of banditti who rose in Guienne about the beginning of the fourteenth century, and joining with some English parties, ravaged the country, and set fire to the city of Xaintes.—Mezeray supposes them to have consisted of the natural sons of the nobility of Guienne, who being excluded the right of inheriting from their fathers, put themselves at the head of robbers and plunderers to maintain themselves.

BASTARD Flower-sena. See ADENANTHERA.—The flowers of this plant bruised and steeped in breack-milk are a gentle anodyne; for which purpose they are often given in the West Indies to quiet very young children. The leaves are used instead of sena in Barbadoes and the Leeward Islands. In Jamaica, the plant is called *sená*.

BASTARD-Hemp. See DATISCA.

BASTARD-Rocket, Dyers-wood, or Wild Wood. See RESEDA.

BASTARD Star-of-Bethlehem. See ALBUCA.

BASTARD-Scarlet is a name given to red dyed with bale-madder, as coming nearest the bow-dye, or new scarlet.

BASTARDY is a defect of birth objected to one born out of wedlock. Eustathius will have bastards among the Greeks to have been in equal favour with legitimate children, as low as the Trojan war; but the course of antiquity seems against him. Potter and others show, that there never was a time when bastardy was not in disgrace.

In the time of William the Conqueror, however, bastardy seems not to have implied any reproach, if we may judge from the circumstance of that monarch himself not scrupling to assume the appellation of bastard. His epistle to Alan count of Bretagne begins, *Ego*

u Gange. Willielmus cognomento bastardus.

BASTARDY, in relation to its trial in law, is distinguished into general and special. *General* bastardy is a certificate from the bishop of the diocese, to the king's justices, after inquiry made, whether the party is a bastard or not, upon some question of inheritance. *Bastardy special* is a suit commenced in the king's courts, against a person that calls another bastard.

Arms of BASTARDY should be crossed with a bar, fillet, or traverse, from the left to the right. They were not formerly allowed to carry the arms of their father, and therefore they invented arms for themselves; and this is still done by the natural sons of a king.

Right of BASTARDY, Droit de batardisse, in the French laws, is a right, in virtue whereof the effects of bastards dying in estate devolve to the king or the lord.

BASTARNÆ, or BASTERÆ, a people of German original, manners, and language; who extended themselves a great way to the east of the Vitula, the east boundary of Germany, among the Sarmatæ, as far as

the mouth of the Ister and the Euxine; and were divided into several nations.

BASTARNICÆ ALPES, (anc. geog.), mountains extending between Poland, Hungary, and Transylvania, called also the *Carpatæ*, and now the *Carpathian* mountains.

Bastarnicæ
||
Bastile.

BASTI (anc. geog.), a town of the province of Bætica in Spain, situated to the west of the Campus Spartarius. Now *Baza* in Granada.

BASTIA, a sea-port town of Albania in Turkey in Europe, over against the island of Corfu, at the mouth of the river Calamu. E. Long. 10. 35. N. Lat. 39. 40.

BASTIA, the capital of the island of Corsica in the Mediterranean. It has a good harbour; and is seated on the eastern part of the coast, in E. Long. 9. 42. N. Lat. 42. 35.

BASTILE, denotes a small antique castle, fortified with turrets. Such is the bastile of Paris, which seem the only castle that has retained the name: it was begun to be built in 1369 by order of Charles V. and was finished in 1383 under the reign of his successor.—Its chief use is for the custody of state-prisoners; or, more properly speaking, for the clandestine purposes of unfeeling despotism.

The lieutenant-general of the police of Paris is the sub-delegate of the ministry for the department of the Bastile. He has under him a titular commissary, who is called the commissary of the Bastile. He has a fixed salary for drawing up what are called instructions, but he does not this exclusively. He has no inspection nor function but in cases where he receives orders; the reason of which is, that all that is done in this castle is arbitrary.

Every prisoner on coming to the Bastile has an inventory made of every thing about him. His trunks, cloaths, linen, and pockets are searched, to discover whether there be any papers in them relative to the matter for which he is apprehended. It is not usual to search persons of a certain rank; but they are asked for their knives, razors, scissars, watches, canes, jewels, and money. After this examination, the prisoner is conducted into an apartment, where he is locked up within three doors. They who have no servants make their own bed and fire. The hour of dining is eleven, and of supping six.

At the beginning of their confinement, they have neither books, ink or paper; they go neither to mass, nor on the walks; they are not allowed to write to any one, not even to the lieutenant of the police, on whom all depends, and of whom permission must first be asked by means of the major, who seldom refuses. At first they go to mass only every other Sunday. When a person has obtained leave to write to the lieutenant of the police, he may ask his permission to write to his family, and to receive their answers; to have with him his servant or an attendant, &c. which requests are either granted or refused according to circumstances. Nothing can be obtained but through this channel.

The officers of the staff take the charge of conveying the letters of the prisoners to the police. They are sent regularly at noon and at night: but if they desire it, their letters are sent at any hour by express, who are paid

out

Bastile.

out of the money of those who are confined. The answers are always addressed to the major, who communicates them to the prisoner. If no notice is taken of any request contained in the letter of the prisoner, it is a refusal. The attendants whom they appoint for those who are not allowed their own servants, or who have none of their own, are commonly invalid soldiers. These people lie near the prisoners, and wait upon them. A person ought always to be upon his guard with these men, as well as with the turnkeys; for all his words are noticed, and carried to the officers, who report them to the police: it is thus they study the characters of the prisoners. In this castle, all is mystery, trick, artifice, snare, and treachery. The officers, attendants, turnkeys, and valets, often attempt to draw a man on to speak against the government, and then inform of all.

Sometimes a prisoner obtains permission of having books, his watch, knife, and razors, and even paper and ink. He may ask to see the lieutenant of the police when he comes to the Bastile. This officer commonly causes prisoners to be brought down some days after their arrival. Sometimes he goes to visit them in their chambers; especially the ladies.

When the lieutenant of the police sees a prisoner, the conversation turns upon the cause of his confinement. He sometimes asks for written and signed declarations. In general, as much circumspection should be used in these conferences as in the examination itself, since nothing that a person may have said or written is forgotten.

When a prisoner wants to transmit any thing to the lieutenant of the police, it is always by means of the major. Notes may be sent to this officer by the turnkeys. A person is never anticipated in any thing—he must ask for every thing; even for permission to be shaved. This office is performed by the surgeon; who also furnishes sick or indisposed prisoners with sugar, coffee, tea, chocolate, confections, and the necessary remedies.

The time for walking is an hour a-day; sometimes an hour in the morning and an hour in the evening, in the great court.

A prisoner may be interrogated a few days after his entrance into the Bastile, but frequently this is not done till after some weeks. Sometimes he is previously informed of the day when this is to be done: often he is only acquainted with it the moment he is brought down to the council-chamber. This commission of interrogatory is executed by the lieutenant of the police, a counsellor of state, a master of requests, a counsellor or a commissioner of the Chatelet. When the lieutenant of the police does not himself interrogate, he usually comes at the end of the examination.

These commissioners are purely passive beings. Frequently they attempt to frighten a prisoner; they lay snares for him, and employ the meanest artifices to get a confession from him. They preterd proofs, exhibit papers without suffering him to read them; asserting that they are instruments of unavoidable conviction. Their interrogatories are always vague. They turn not only on the prisoner's words and actions, but on his most secret thoughts, and on the discourse and conduct of persons of his acquaintance, whom it is wished to bring into question.

No 42.

The examiners tell a prisoner that his life is at stake; that this day his fate depends upon himself; that if he will make a fair declaration, they are authorized to promise him a speedy release; but if he refuses to confess, he will be given up to a special commission: that they are in possession of decisive documents, of authentic proofs, more than sufficient to ruin him; that his accomplices have discovered all; that the government has unknown resources, of which he can have no suspicion. They fatigue prisoners by varied and infinitely multiplied interrogatories. According to the persons, they employ promises, caresses, and menaces. Sometimes they use insults, and treat the unhappy sufferers with an insolence that fills up the measure of that tyranny of which they are the base instruments.

If the prisoner makes the required confession, the commissioners then tell him that they have no precise authority for his enlargement, but that they have every reason to expect it; that they are going to solicit it, &c. The prisoner's confessions, far from bettering his condition, give occasion to new interrogatories, often lengthen his confinement, draw in the persons with whom he has had connections, and expose himself to new vexations.

Although there are rules for all occasions, yet every thing is subject to exceptions arising from influence, recommendations, protection, intrigue, &c. because the first principle in this place is arbitrary will. Very frequently, persons confined on the same account are treated very differently, according as their recommendations are more or less considerable.

There is a library, founded by a foreign prisoner who died in the Bastile in the beginning of the present century. Some prisoners obtain leave to go to it; others, to have the books carried to their chambers.

The falsest things are told the prisoners with an air of sincerity and concern. "It is very unfortunate that the king has been prejudiced against you. His majesty cannot hear your name mentioned without being irritated. The affair for which you have lost your liberty is only a pretext—they had designs against you before—you have powerful enemies." These discourses are the etiquette of the place.

It would be in vain for a prisoner to ask leave to write to the king—he can never obtain it.

The perpetual and most insupportable torment of this cruel and odious inquisition, are vague, indeterminate, false, or equivocal promises, inexhaustible and constantly deceitful hopes of a speedy release, exhortations to patience, and blind conjectures, of which the lieutenant of the police and officers are very lavish.

To cover the odium of the barbarities exercised here, and slacken the zeal of relations or patrons, the most absurd and contradictory slanders against a prisoner are frequently published. The true causes of imprisonment, and real obstacles to release, are concealed. These resources, which are infinitely varied, are inexhaustible.

When a prisoner who is known and protected has entirely lost his health, and his life is thought in danger, he is always sent out. The ministry do not choose that persons well known should die in the Bastile. If a prisoner does die there, he is interred in the parish of St Paul, under the name of a domestic; and this

falsity

Bastile. falsity is written in the register of deaths, in order to deceive posterity. There is another register in which the true names of the deceased are entered; but it is not without great difficulty that extracts can be procured from it. The commissary of the Bastile must first be informed of the use the family intends to make of the extract.

In 1674 the baggage of Louis chevalier de Rohan, grand huntsman of France, having been taken and rummaged in a skirmish, some letters were found which caused a suspicion that he had treated with the English for the surrender of Havre de Grace. He was arrested and put into the Bastile. The Sieur de la Tuanderie, his agent, concealed himself. The proof was not sufficient. A commission was named to proceed against the accused for treason. La Tuanderie was discovered at Rouen: an attempt was made to arrest him; but he fired on the assailants, and obliged them to kill him on the spot. Persons attached to the chevalier de Rohan went every evening round the Bastile, crying through a speaking trumpet, "La Tuanderie is dead, and has said nothing;" but the chevalier did not hear them. The commissioners, not being able to get any thing from him, told him, "that the king knew all, that they had proofs, but only wished for his own confession, and that they were authorised to promise him pardon if he would declare the truth." The chevalier, too credulous, confessed the whole. Then the perfidious commissioners changed their language. They said, "that with respect to the pardon, they could not answer for it; but that they had hopes of obtaining it, and would go and solicit it." This they troubled themselves little about, and condemned the criminal to lose his head. He was conducted on a platform to the scaffold, by means of a gallery raised to the height of the window of the armoury in the arsenal, which looks towards the little square at the end of the *Rue des Tournelles*. He was beheaded on November 27. 1674.

The Jesuits of the college of Clermont, in the *Rue St Jacques* Paris, having this same year (1674) invited the king (Louis XIV.) to honour with his presence a tragedy to be performed by their scholars, that prince accepted the invitation. These able courtiers took care to insert in the piece several strokes of flattery, with which the monarch, greedy of such incense, was greatly pleased. When the rector of the college was conducting the king home, a nobleman in the train applauded the success of the tragedy. Louis said, "Do you wonder at it? *this is my college.*" The Jesuits did not lose a word of this. The very same night they got engraved in large golden letters on black marble, *Collegium Ludovici Magni*, instead of the former inscription which was placed beneath the name of Jesus on the principal gate of the college (*Collegium Claramontanum Societatis Jesus*); and in the morning the new inscription was put up in place of the old one. A young scholar of quality, aged 13, who was witness to the zeal of the reverend fathers, made the two following verses, which he posted up at night on the college gate:

*Assulit hinc Jesum, p'suitque insignia regis
Impia gens: alium non colit illa Deum.*

The Jesuits did not fail to cry out sacrilege: the
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young author was discovered, taken up, and put into the Bastile. The implacable society caused him, as a matter of *favour*, to be condemned to perpetual imprisonment; and he was transferred to the citadel of the isle Sainte Marguerite. Several years after, he was brought back to the Bastile. In 1705 he had been a prisoner 31 years. Having become heir to all his family, who possessed great property, the Jesuit Riquet, then professor of the Bastile, remonstrated to his brethren on the necessity of restoring the prisoner to liberty. The golden shower which forced the tower of Danae had the same effect on the castle of the Bastile. The Jesuits made a merit with the prisoner of the protection they granted him; and this man of rank, whose family would have become extinct without the aid of the society, did not fail to give them extensive proofs of his gratitude.

Nowhere else on earth, perhaps, has human misery, by human means, been rendered so lasting, so complete, or so remediless. This the following case may suffice to evince; the particulars of which are translated from that elegant and energetic writer M. Mercier. The heinous offence which merited an imprisonment surpassing torture and rendering death a blessing, though for obvious reasons not specified by our author, is known from other sources to have consisted in some unguarded expressions implying disrespect concerning the late Gallic monarch Louis XV.

Upon the accession of Louis XVI. to the throne, the ministers now in office, and moved by humanity, begun their administration with an act of clemency and justice; they inspected the registers of the Bastile, and set many prisoners at liberty. Among those there was an old man who had groaned in confinement for 47 years between four thick and cold stone-walls. Hardened by adversity, which strengthens both the mind and the constitution, when they are not overpowered by it, he had resisted the horrors of his long imprisonment with an invincible and manly spirit. His locks white, thin, and scattered, had almost acquired the rigidity of iron; whilst his body, environed for so long a time by a coffin of stone, had borrowed from it a firm and compact habit. The narrow door of his tomb, turning upon its grating hinges, opened not as usual by halves; and an unknown voice announced his liberty, and bade him depart. Believing this to be a dream, he hesitated; but at length rose up and walked forth with trembling steps, amazed at the space he traversed: The stairs of the prison, the halls, the court, seemed to him vast, immense, and almost without bounds. He stopped from time to time, and gazed around like a bewildered traveller: His vision was with difficulty reconciled to the clear light of day: He contemplated the heavens as a new object: His eyes remained fixed, and he could not even weep. Stupified with the newly acquired power of changing his position, his limbs, like his tongue, refused, in spite of his efforts, to perform their office; at length he got through the formidable gate.

When he felt the motion of the carriage prepared to transport him to his former habitation, he screamed out, and uttered some inarticulate sounds; and as he could not bear this new movement, he was obliged to descend. Supported by a benevolent arm, he sought out the street where he had formerly resided: he found

Bastile,
Bastimen-
tos.

Bastinado
||
Baston.

it, but no trace of his house remained; one of the public edifices occupied the spot where it had stood. He now saw nothing that brought to his recollection, either that particular quarter, the city itself, or the objects with which he had formerly been acquainted. The houses of his nearest neighbours, which were fresh in his memory, had assumed a new appearance. In vain were his looks directed to all the objects around him; he could discover nothing of which he had the smallest remembrance. Terrified, he stopped and fetched a deep sigh. To him, what did it import that the city was peopled with living creatures? None of them were alive to him; he was unknown to all the world, and he knew nobody: And whilst he wept, he regretted his dungeon.

At the name of the Bastile, which he often pronounced and even claimed as an asylum, and the sight of his clothes that marked a former age, the crowd gathered round him: curiosity, blended with pity, excited their attention. The most aged asked him many questions, but had no remembrance of the circumstances he recapitulated. At length accident brought in his way an ancient domestic, now a superannuated porter, who, confined to his lodge for 15 years, had barely sufficient strength to open the gate:—Even he did not know the master he had served; but informed him that grief and misfortune had brought his wife to the grave 30 years before, that his children were gone abroad to distant climes, and that of all his relations and friends none now remained. This recital was made with the indifference which people discover for events long passed, and almost forgot. The miserable man groaned, and groaned alone. The crowd around, offering only unknown features to his view, made him feel the excess of his calamities even more than he would have done in the dreadful solitude that he had left.

Overcome with sorrow, he presented himself before the minister to whose humanity he owed that liberty which was now a burden to him. Bowing down, he said, "Restore me again to that prison from which you have taken me: I cannot survive the loss of my nearest relations; of my friends; and, in one word, of a whole generation: Is it possible in the same moment to be informed of this universal destruction, and not to die for death? This general mortality, which to the rest of mankind comes slowly and by degrees, has to me been instantaneous, the operation of a moment. Whilst secluded from society, I lived with myself only; but here I neither can live with myself nor with this new race, to whom my anguish and despair appear only as a dream. There is nothing terrible in dying; but it is dreadful indeed to be the last." The minister was melted; he caused the old domestic to attend this unfortunate person, as only he could talk to him of his family. This discourse was the single consolation that he received: for he flung all intercourse with a new race, born since he had been exiled from the world; and he passed his time in the midst of Paris in the same solitude as he had done whilst confined in a dungeon for almost half a century. But the chagrin and mortification of meeting no person who could say to him, We were formerly known to one another, soon put an end to his existence.

BASTIMENTOS, the name of some small islands

near Terra Firma in South America, at the mouth of the bay of Nombre de Dios.

BASTINADO. See **BASTONADO**.

BASTION, in the modern fortification, a huge mass of earth, faced usually with sods, sometimes with brick, and rarely with stone, standing out from a rampart whereof it is a principal part, and is what, in the ancient fortification, was called a *bulwark*.

Solid BASTIONS, are those that have the void space within them filled up entirely, and raised of an equal height with the rampart.

Void and Hollow BASTIONS, are those that are only surrounded with a rampart and parapet, having the space within void and empty, where the ground is so low, that, if the rampart be taken, no retrenchment can be made in the centre, but what will lie under the fire of the besieger.

Flat BASTION, is a bastion built in the middle of the curtain, when it is too long to be defended by the bastion at its extremes.

Cut BASTION, is that whose point is cut off, and instead thereof has a re-entering angle, or an angle inwards, with two points outwards; and is used either when without such a contrivance the angle would be too acute, or when water or some other impediment hinders the carrying on the bastion to its full extent.

Composed BASTION, is when two sides of the interior polygon are very unequal, which makes the gorges also unequal.

Deformed BASTION, is when the irregularity of the lines and angles makes the bastion out of shape; as when it wants one of its demigorges, one side of the interior polygon being too short.

Demi BASTION, is composed of one face only, and but one flank, and a demigorge.

Double BASTION, is that which is raised on the plane of another bastion.

Regular BASTION, is that which has its true proportion of faces, flanks, and gorges.

BASTION of France, a fortress on the coast of Barbary, belonging to the French.

BASTITANI (anc. geog.), a people of the province of Bætica in Spain. See **BÆTICA**.

BASTOIGNE, a small town of the Netherlands, in the duchy of Luxemburgh. E. Long. 6. o. N. Lat. 50. 10.

BASTON, in law, one of the servants to the warden of the Fleet-prison, who attended the king's courts with a red staff, for taking into custody such as are committed by the court. He also attends on such prisoners as are permitted to go at large by licence.

BASTON, or *Batoon*, in architecture, a moulding in the base of a column, called also a *torc*. See Plate XXXVIII. fig. 3.

BASTON, *Baton*, or *Batunz*. This word is French, and signifies a staff or cudgel: it should be spelt *Bâton*; but is, by most English writers, corruptly spelt as above. It is only borne in English coats of arms, as a badge of illegitimacy; but French heralds introduce it in arms as a difference, or mark of consanguinity.

BASTON (Robert), a Carmelite monk, afterwards prior of the convent of that order at Scarborough, and also poet laureat and public orator at Oxford, flourished in the fourteenth century. King Edward I.

Bastonado
||
Bat.

ward I. in his expedition into Scotland in 1304, took Robert Baston with him, in order to celebrate his victories over the Scots; but our poet being taken prisoner, was obliged to change his note, and sing the successes of Robert Bruce. He wrote several books in Latin, on the Wars of Scotland, the Luxury of Priests, Synodical Sermons, &c.; and also a volume of tragedies and comedies, in English. He died about the year 1310.

BASTONADO, BASTONADE, the punishment of beating or drubbing a criminal with a stick. The word is formed of the French *baston*, a "stick" or "staff." The bastonade is a punishment used both among the ancient Greeks, Romans, and Jews, and still obtains among the Turks. The Romans called it *fustigatio*, *fustium admonitio*, or *fustibus cedi*; which differed from the *flagellatio*, as the former was done with a stick, the latter with a rod, or scourge. The fustigation was a lighter punishment, and inflicted on freemen; the flagellation a severer, and reserved for slaves. It was also called *lympanum*, because the patient here was beat with sticks, like a drum.—The punishment is much in use in the east to this day. The method there practised is thus: the criminal being laid on his belly, his feet are raised, and tied to a stake, held fast by officers for the purpose; in which posture he is beaten by a cudgel on the soles of his feet, back, chin, &c. to the number of 100 or more blows.

BASTWICK (Dr John), born at Writtle in Essex, in 1593; practised physic at Colchester; but being a man of warm imagination, and a good Latin scholar, applied himself to writing books against popery. About the year 1633, he printed in Holland a Latin treatise intitled, *Elenchus religionis Papiſticæ*, with *Flagellum pontificis et episcoporum Latialium*, in which the English prelates thinking themselves also aimed at, he was fined L. 1000 in the high commission court, excommunicated, prohibited practising physic, his books ordered to be burnt, and himself to remain in prison until he made a recantation. Instead of recanting, he wrote in prison, *Apologeticus ad præſules Anglicanos*; and another book called, *The Litany*; wherein he severely exclaimed against the proceedings of that court, and taxed the bishops with an inclination towards popery. Prynne and Burton coming under the lash of the star-chamber court at the same time, they were all censured as scandalous seditious persons, condemned to a fine of L. 5000 each, to be pilloried, to lose their ears, and to perpetual imprisonment in three remote parts of the kingdom. The parliament in 1640 reversed these proceedings; and ordered Dr Bastwick a reparation of L. 5000 out of the estates of the commissioners and lords who had prosecuted him, which the ensuing confusions prevented his receiving: however, his wife had, in 1644, an allowance ordered for her and her husband's maintenance. What became of him afterward is not known.

BAT, in zoology. See VESPERTILIO.

BAT-Fowling, a method of catching birds in the night, by lighting some straw, or torches, near the place where they are at roost; for upon beating them up, they fly to the flame, where, being amazed, they are easily caught in nets, or beat down with bushes fixed to the end of poles, &c.

Bat
||
Batavorum.

BAT, *Batz*, or *Batz*, a small copper coin, mixed with a little silver, current in several cities of Germany: it is worth four cruzers. It is also a coin in Switzerland, current at five livres, or 100 sols, French money.

BATABLE, or DEBATABLE, GROUND, that land which lay between Scotland and England, when the kingdoms were distinct, to which both nations pretended a right.

BATACALA, a small kingdom on the coast of Malabar in the East Indies. It had a very large town of the same name; but there is nothing now left, except 11 or 12 small pagods covered with copper and stone. The country produces a good deal of pepper: the English formerly had a factory here; but were all massacred by the natives, because one of their bull-dogs had killed a consecrated cow.

BATACALA, a fortified town and castle on the east coast of the island of Ceylon in the East Indies. The Dutch drove away the Portuguese, and possessed themselves of part of the adjacent country. E. Long. 18. 3. N. Lat. 7. 55.

BATANISTS, or BATENITES. See BATENITES.

BATASEK, a town of lower Hungary, seated on the Danube, in E. Long. 19. 50. N. Lat. 46. 30.

BATAVA, (*Castra* understood), a citadel of Viadecia, so called from the Cohors Batava, in garrison under the commander in Rætia: now *Passau*; being first called *Batau*, from the Batavi; then *Bassau*, and *Passau*; situated in Bavaria at the confluence of the Danube, Inn, and Ills. See PASSAU.

BATAVIA, the capital of the Dutch settlements in the East Indies; a city of the kingdom of Bantam in the island of Java. See JAVA.

BATAVORUM INSULA, the island of the Batavians, (anc. geog.). Of this island Tacitus gives the following description. "The Rhine flowing in one channel, or only broken by small islands, is divided at its entering Batavia, as it were into two rivers. One continues its course through Germany, retaining the same name, and violent current, till it falls into the ocean. The other washing the coast of Gaul, with a broader and more gentle stream, is called by the inhabitants *Vahalis*; which name it soon changes for that of *Mosa*, by the immense mouth of which river it discharges itself into the same ocean." According to Tacitus, therefore, the island of the Batavians was bounded by the ocean, the Rhine, and the *Vahalis*, now the *Wals*. Cæsar extends it to the *Mosa*, or *Meuse*; but Pliny agrees with Tacitus. However, this island was of greater extent in Tacitus's time than in Cæsar's; Drusus, the father of Germanicus, having by a new canal conveyed the waters of the Rhine into the ocean a considerable way north of the former mouth of that river. The Batavi were a branch of the Catti, who in a domestic sedition, being expelled their country, occupied the extremity of the coast of Gaul, at that time uninhabited, together with this island situated among shoals. Their name *Batavi* they carried with them from Germany; there being some towns in the territory of the Catti called *Battenberg*, and *Battenhausen*. The bravery of the Batavi, especially the horse, procured them not only great honour from the Romans, being called their *brothers* and *friends*; but

Batavorum
||
Bath.

an exemption from taxes, being obliged only to furnish men and arms. The modern name of this island is *Betu*, or *Betaw*.

BATAVORUM Oppidum (anc. geog.), a town in the island of the Batavi, mentioned by Tacitus, without any particular name; which has given rise to several fables about it, some supposing it to be *Nimeguen*, but Cluverius, *Batavodurum* or *Batemburg*, both without the island; which situation renders both these places inadmissible, since Tacitus places this nameless town within the island.

BATCHELOR. See **BACHELOR.**

BATE (George), an eminent physician, born at Maid's Morton, near Buckingham, in the year 1608. In 1629 he obtained a licence, and for some years practised in and about Oxford: his practice was chiefly amongst the puritans, who at that time considered him as one of their party. In 1637, he took his degree of doctor in physic, and became very eminent in his profession, so that when king Charles kept his court at Oxford, he was his principal physician. When the king's affairs declined, Dr Bate removed to London, where he accommodated himself so well to the times, that he became physician to the Charter-house, fellow of the college of physicians, and afterwards principal physician to Oliver Cromwell. Upon the restoration, he got into favour with the royal party, was made principal physician to the king, and fellow of the Royal Society; and this, we are told, was owing to a report raised on purpose by his friends, according to Mr Wood, that he gave the protector a dose which hastened his death. Dr Bate wrote in Latin an account of the late commotions in England, and some other pieces. He died at his house in Hatton-garden, and was buried at Kingston upon Thames in Surry.—There was another George Bate, who wrote a work intitled, "The Lives, Actions, and Execution, of the prime Actors and principal Contrivers of that horrid Murder of our late pious and sacred king Charles I."

BATENITES, a sect of apostates from Mahometanism dispersed through the East, who professed the same abominable practices with the Ismaelians and Karmatians. The word properly signifies *esoteric*, or people of inward or hidden light.

BATES (William), D. D. an eminent presbyterian divine, born in November 1625. He was admitted in Emanuel college, Cambridge, and from thence removed to King's college in 1644. He was one of the commissioners, at the conference in the Savoy, for reviewing the public liturgy, and was concerned in drawing up the exceptions against the common Prayer: however, soon after the restoration, he was appointed chaplain to king Charles II. and became minister of St Dunstan's in the west, but was deprived of that benefice for nonconformity. Dr Bates bore a good and amiable character; and was honoured with the friendship of the lord keeper Bridgman, the lord chancellor Finch, the earl of Nottingham, and archbishop Tillotson. He was offered, at the restoration, the deanery of Litchfield; which he refused. He published *Select Lives of illustrious and pious persons*, in Latin; and since his death all his works, except his *Select Lives*, have been printed in one volume in folio. He died in July 14. 1699, in the 74th year of his age.

BATH, a city of Somersetshire in England, seated

Bath.

in W. Long. 2. 30. N. Lat. 51. 27. All the different names that this city has borne in different ages and languages have been taken from its medicinal waters, as the *udara diguz*, or "hot waters," of Ptolemy; the *Aqua Solis*, or "waters of the sun," of Antoninus; the *Caer Baden*, and *Caer Eborant*, i. e. "the city of baths," and "the city of ointment," of the Britons; and the *Ackmanchesfer*, i. e. "the city of valetudinarians," of the Saxons. The baths consist of the King's bath, the Queen's-bath, the Cross-bath, the Hot-bath, the Leper's bath, and the duke of Kingston's-bath. This place was of old a resort only for cripples and diseased persons; but now it is more frequented by the found for pleasure than by the sick for health. The waters are very pleasant to the taste; and impregnated with a vitriolic principle, yielding, upon evaporation, a little neutral salt, and a calcareous earth and iron. They are very efficacious in strengthening the bowels and stomach, bracing the relaxed fibres, and invigorating the circulation. In bilious complaints they are counted specific; and prove serviceable in most nervous, paralytic, rheumatic, and gouty, complaints. At the King's bath is a handsome pump-room, where the gentlemen and ladies go in a morning to drink the waters; and there is a band of music that plays all the time. In the Cross-bath is a monument of marble, representing the descent of the Holy Ghost attended by angels, erected by the earl of Melfort (who was secretary of state for Scotland) when king James II. met his queen here. The King's-bath is a large basin of 65 feet 10 inches by 40 feet 10 inches, containing 346 tun 2 hogsheds and 36 gallons of water when filled to its usual height. In the middle is a wooden building with niches and seats for the accommodation of the bathers. There are also iron rings all round for them to hold by; and guides, both male and female, to attend them in the bath. The person intending to bathe puts on, at his own lodgings, a bathing dress of brown canvas hired for the purpose; and is carried in a close chair, of a particular make, to one of the slips which open into the bath. There he descends by steps into the water, where he is attended by a guide. Having staid his staid time in the bath, he ascends again into the slip, where he puts off his bathing-dress, and being wrapt up in blankets, is carried home to bed, where he lies for some time to encourage perspiration. The King's-bath is overlooked by the company in the pump-room; and adjoining to it are places furnished with pumps to pour the hot streams on any particular part of the body. The Queen's-bath communicates with the King's, from which it is filled; therefore the water of it is not so hot, being at a greater distance from the source. As the heat is here more moderate, the bathers descend first into the Queen's-bath, and advance gradually to the centre of the other. In the year 1755, the abbey-house, or priory, belonging to the duke of Kingston, was taken down, in order to erect a more commodious pile of building; and in digging for the foundation, the workmen discovered, about twenty feet below the surface of the earth, the remains of Roman baths and sudatories constructed upon an elegant plan, with floors suspended on pillars, and surrounded with tubulated bricks, for the conveyance of heat and vapour. These were supplied by a spring of hot water, of the same properties and temperature with those of the

Bath.

the King's-bath; and the sewer was found still entire, that conveyed the waste water into the river. The duke, having cleared the spring and the sewer, has erected several convenient baths and sudatories on the spot, where invalids may be accommodated at all hours, by night as well as by day. The two seasons are the spring and fall; but those who take the waters purely for their health do not regard the seasons, but drink them all the year round. There are a number of genteel sedan chairs, which carry people to any distance, not exceeding half a mile, for sixpence. The company assemble in the afternoon alternately, at two stately rooms, to converse together, or play at cards. At a very pretty new theatre near the parades, plays are acted every other night; and there are balls twice a week; for which and the rooms, and books at the libraries, the gentry generally subscribe. The city is surrounded with hills on all sides, except a little opening to the east and west, through which the Avon runs. This river, which has been made navigable to Bristol by act of parliament, washes the city on the east and south sides, and there is an elegant bridge over it. This city hath formerly had a slight wall, of which some part still remains, as well as one or two of its gates; but almost all the new buildings, and much the greatest and finest part of the city, is without the walls, particularly the fine square called *Queen's-square*, in the middle of which is a small garden, with gravel walks, and an obelisk in the centre. But the greatest ornament at Bath is the circus: it is of a circular form consisting of houses built on an uniform plan, with three openings at equal distances to the south, east, and west, leading into as many streets. The fronts of the houses, which are all three stories high, are adorned with three rows of columns in pairs, of the Doric, Ionic, and Corinthian orders, the frieze embellished with sculpture. The whole has an air of magnificence, which cannot fail to strike the most indifferent spectator. In the centre of the area is a reservoir, or basin, filled by two or three springs rising in the neighbouring hills; whence the streets in this district are supplied with water. On the south side of the town are the north and south parades, two noble walks, paved with hewn stone, raised upon arches, facing each an elegant row of houses on one side, and having a stone balustrade on the other. These, with the two streets that join them, were planned and executed by one Mr Wood, an able architect, who likewise built the square and projected the circus. The two public rooms stand betwixt the north parade and Orangegrove; which last is a square planted with trees, having in the middle a stone obelisk, inscribed in Latin to the late prince of Orange, who recovered his health in consequence of drinking the Bath waters, and gave his name to this part of the town. Several new streets and rows have of late years been built on the north-side of Bath, in the neighbourhood of the square, such as Gay-street, Milcom-street, Edgar-row, Harlequin-row, Bladud's-buildings, King's-mead-street, and Brock-street. Their advantages for building here are very great, having excellent free-stone, limestone, and slate, in the neighbourhood. One sort of their lime is as white as snow. The guild-hall of Bath stands in the market-place, and is said to be built on a plan of Inigo Jones, which however, exhibits nothing worthy of that great architect: besides, one end of it has been

rebuilt in a different style. The hall is ornamented with some portraits of the late prince of Wales and other remarkable personages; but the greatest curiosity of the place is a Minerva's head in bronze, a real antique, dug up in Stall-street, in the year 1725. Bath boasts a noble infirmary, or general hospital, for the reception of the sick and lame from all parts of the three kingdoms. It extends 100 feet in front, and 90 in depth, being capable of receiving 150 patients. Here was anciently a monastery, of which the present cathedral was the church. It is a venerable pile; the principal front of which is adorned with angels ascending and descending. There are three other churches in Bath, and several chapels and meeting-houses. Besides the infirmary, there are several other hospitals, almshouses, and charity schools. The corporation consists of a mayor; eight aldermen, of whom two are justices of the peace; and 24 common-council men. The city is extremely well provided with stage-coaches, post-coaches, chaises, machines, and waggons. Bath is the general hospital of the nation, and a great number of invalids find benefit from the waters: but as the city lies in a bottom surrounded by very high hills, the air is constantly surcharged with damps; and indeed this place is more subject to rain than any other part in England. The markets are remarkably well supplied with provisions of all kinds at reasonable rates, particularly fish and poultry. They also afford excellent mutton fed upon Lansdown, one of the highest hills that overlook the city. This down, remarkable for its pure air, extends about three miles; and at the extremity of it there is a stone monument, with an inscription, erected to the memory of Sir Beville Granville, who was here killed in a battle which he fought with the parliament's army in the reign of Charles I. Bath sends two members to parliament. The earldom of Bath was bestowed on William Pultney in the end of Sir Robert Walpole's administration as a reward for his patriotism, but is now extinct for want of heirs-male.

Bath is joined with Wells to form a bishopric, called the diocese of Bath and Wells. The bishop's seat is at Wells, whose cathedral church was built by Ina, king of the West Saxons in 704, and by him dedicated to St Andrew. Several other of the West Saxon kings endowed it, and was erected into a bishopric in 905, during the reign of king Edward the Elder. The present church was begun by Robert the 18th bishop of this see, and completed by his immediate successor. John de Villula, the 16th bishop, having purchased the city of Bath for 500 merks of king Henry I. transferred his seat to that city in 1088. From this, disputes arose between the monks of Bath and the canons of Wells, about the election of a bishop; but they were at last compromised by Robert the 18th bishop, who decreed, that from henceforward the bishop should be styled from both places, and that the precedence should be given to Bath; that in the vacancy of the see, the bishop should be elected by a certain number of delegates from both churches; and that he should be installed in them both; both of them to constitute the bishop's chapter; and all his grants and patents to be confirmed in both. So it stood till the reformation. But in the 35th of king Henry VIII. an act of Parliament passed for the dean and chapter of Wells to make one sole chapter for the bishop. This diocese hath yielded to the church of Rome one cardinal, and

Bath.

Bath.

to the civil state of England six lord chancellors, five lord treasurers, one lord privy seal, one lord president of Wales, and principal secretary of state. The diocese contains the whole county of Somerset, except a few churches in the city of Brilol; the number of parishes amounting to 388, and the churches and chapels to 503. Of the parishes 160 are impropriate. It is valued in the king's books at L. 535 : 1 : 3, and computed to be worth annually L. 2200. The clergy's tenth is L. 353 : 18 : 0½. To the cathedral belong a bishop, a dean, three archdeacons, a chancellor, a treasurer, a sub-dean, fifty-nine prebendaries, four priest-vicars, eight lay vicars, an organist, six choristers, and other officers.

Knights of the BATH, a military order in England, concerning the origin of which antiquaries differ in their accounts. The most probable deduction seems to be the following.

The knight-hood of the Bath is supposed to have been practised by the ancient Franks, the inhabitants of Lower Germany, with whom it is highly probable the Saxons, who invaded England, had the same common descent, and, with other customs, upon their settling here, introduced the same method of knight-hood. These ancient Franks, when they conferred knight-hood, observed, amongst other solemn rites, bathing before they performed their vigils; which custom continues to be practised in England: they were from thence denominated *Knights of the Bath*.

In the reign of Henry IV. there was a degree of knight-hood specified under the express appellation of *the Bath*. That king, on the day of his coronation in the tower of London, conferred the same upon 46 esquires, who had watched all the night before, and had bathed themselves. From that time it was customary with our kings to confer this dignity preceding their coronations, the coronations of their queens, the birth and marriage of the royal issue, and their first advancement to honours, upon their designed expeditions against their foreign enemies, upon installations of knights of the garter, and when some grand anniversary festivals were celebrated. The last knights of the Bath so made were at the coronation of King Charles II. in 1661; after which the order was neglected until the year 1725, when George I. was pleased to revive it, and to order a book of statutes for the government of the order. By this the number of knights is fixed to 38, viz. the Sovereign, and 37 knights-companions.

The apparel of a knight of the Bath is a red surcoat, lined and edged with white, girded about with a white girdle, without any ornament thereon; the mantle is of the same colour and lining, made fast about the neck with a lace of white silk, having a pair of white gloves tied therein, with tassels of silk and gold at the end; which mantles are adorned upon the left shoulders with the ensign of the order, being three imperial crowns or, surrounded with the ancient motto of this knight-hood, *Tria juncta in uno*, wrought upon a circle *gules*, with a glory or rays issuing from the centre, and under it the lace of white silk heretofore worn by the knights of the Bath. They have red breeches and stockings, and have white hats, with a plume of white feathers thereon. The king allowed the chapel of King Henry VII. to be the chapel of

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the order, and ordered that each knight's banner, with plates of his arms and styles, should be placed over their several stalls, in like manner as the knights of the Garter in St George Chapel in the castle of Windsor; and he allowed them supporters to their arms. His Royal Highness Prince William, second son to the Prince of Wales, on this occasion, was made the first knight-companion, and his Grace the Duke of Montagu grand master of the order, the dean of Westminster (for the time being) dean of the order; the other officers of which are, Bath king of arms, a genealogist, register and secretary, gentleman usher, and messenger.

BATH, Balneum, a convenient receptacle of water for persons to wash or plunge in, either for health or pleasure.—Baths are distinguished into *hot* and *cold*; and these again are either natural or artificial. The natural hot baths are formed of the water of hot springs, of which there are many in different parts of the world; especially in those countries where there are or have evidently been volcanoes. The artificial hot baths consist either of water or of some other fluid made hot by art. The cold bath consists of water, either fresh or salt, in its natural degree of heat; or it may be made colder by art, as by a mixture of nitre, sal-ammoniac, &c. The chief hot baths in our country are those of Bath and Bristol, in Somersetshire; and those others of Buxton and Matlock, in Derbyshire; which latter, however, are rather warm or tepid than hot. The use of these baths is found beneficial in diseases of the head, as palsy, &c. in cuticular diseases, as leprosy, &c. obstructions and constipations of the bowels, the scurvy and stone, and in most diseases of women and children. The baths have performed many cures, and are commonly used as a last remedy in obstinate chronic diseases; where they succeed well, if they agree with the constitution of the patient: but whether they will agree or not, cannot be known without trial.

As to the origin of those hot waters, of which the natural hot baths are formed, we are very much in the dark. All that can be affirmed with certainty is, that where there are volcanoes, there also there are hot springs in great abundance; but how the heat of the volcano should be constantly communicated to the waters of a spring for many ages, during a great part of which the volcano itself has lain in a dormant state, seems almost beyond the reach of investigation. Another thing that creates a great difficulty is, that the fire of a volcano must certainly lie very deep in the earth, and most probably shifts from place to place; but the waters of a spring must always issue from a place situated lower than the origin of the spring itself. Besides, though we should suppose the water to come from the top of a volcano itself, and consequently boiling hot, it could not be supposed to percolate far through cold earth, without losing all the heat it acquired from the volcano. From some observations, however, it certainly does appear, that there are some spots on the earth which have a power of producing heat within themselves, independent of any thing foreign; and that water is so far from being able to destroy this power, that it seems rather to promote and continue it. We know that water hath this effect upon a mixture of iron filings and sulphur; but whatever quantities of similar sub-

stances

Bath. stances we may suppose to be contained in the earth, we must also suppose to be destroyed by one great conflagration soon after they have begun to act upon each other, so that by their means no lasting heat in waters could be produced. Dr Stukely indeed would solve this, and several other phenomena, by making the fire and smoke of volcanoes the effects of electricity: but here sufficient proof is wanting; for electricity, even in its most powerful state, is not very apt to set bodies on fire. The thought, however, deserves attention; for if electricity is capable of setting a volcano on fire, it is undoubtedly capable of producing solfaterras where it meets with proper materials, and from them springs of any degree of heat.

The cold bath is found one of the most universal and innocent remedies yet discovered, though still its use is not to be adopted without precautions.

BATHS in vapour, the fume or steam of some decoction is received upon the body to promote a perspiration.—These are also by some called *Balnea Lascivica*.

Vapour baths are, when the patient is not plunged into what is prepared for the bath, but only receives its steam upon those parts of his body which require it: as in some distempers of the fundament and womb, where the patient sits and receives the fumes of some proper fomentation, &c. To these may be added the bagnio; where people are made to sweat by the heat of a room, and pouring on of hot water; after which they generally go into a hot bath or bagnio.

A peculiar sort of vapour-bath was much used by the ancient Mexicans, and is still in use among the present Indians their descendants. According to the Abbe Clavigero, these baths are built of raw bricks, and their form is similar to that of ovens for baking bread: but with this difference, that the pavement of the bath is a little convex, and lower than the surface of the earth; whereas that of most ovens is plain, and a little elevated for the accommodation of the baker. The greatest diameter of a bath is about eight feet, and its greatest height six. The entrance, like the mouth of an oven, is wide enough to allow a man to creep easily in. In the place opposite to the entrance there is a furnace of stone or raw bricks, with its mouth outwards to receive the fire, and a hole above it to carry off the smoke. The part which unites the furnace to the bath, and which is about two feet and a half square, is shut with a certain dry stone of a porous texture. In the upper part of the vault there is an air-hole, like that to the furnace. This is the usual structure of the temazcalli; but there are others that are without vault or furnace, mere little square chambers, yet well covered and defended from the air.—When any person goes to bathe, he first lays a mat within the temazcalli, a pitcher of water, and a bunch of herbs or leaves of maize. He then causes a fire to be made in the furnace, which is kept burning until the stones which join the bath and furnace are quite hot. The person who is to use the bath enters commonly naked, and generally accompanied for the sake of convenience, or on account of infirmity, by one of his domestics. As soon as he enters, he shuts the entrance close, but leaves the air-hole at top for a little time open, to let out any smoke which may have been introduced thro' the chinks of the stone; when it is all out he likewise

flops up the air-hole. He then throws water upon the hot stones, from which immediately arises a thick steam to the top of the temazcalli. While the sick person lies upon the mat, the domestic drives the vapour downwards, and gently beats the sick person, particularly on the ailing part, with the bunch of herbs; which are dipped for a little while in the water of the pitcher, which has then become a little warm. The sick person falls immediately into a soft and copious sweat, which is increased or diminished at pleasure, according as the case requires. When the evacuation desired is obtained, the vapour is let off, the entrance is cleared, and the sick person clothes himself, or is transported on the mat to his chamber; as the entrance to the bath is usually within some chamber of his habitation.—This sort of bath, called *temazcalli* by the natives, has been regularly used in several disorders, particularly in fevers occasioned by costiveness. The Indian women use it commonly after childbirth, and also those persons who have been stung or wounded by any poisonous animal. It is undoubtedly a powerful remedy for all those who have occasion to carry off gross humours; and certainly it would be most useful in Italy, where the rheumatism is so frequent and afflictive. When a very copious sweat is desired, the sick person is raised up and held in the vapour; as he sweats the more the nearer he is to it. The temazcalli is so common, that in every place inhabited by the Indians there are many of them.

BATHS (Dry), are those made of ashes, salt, sand, shreds of leather, and the like.—The ancients had divers ways of sweating by a dry heat; as by the means of a hot sand, stove-rooms, or artificial bagnios, and certain natural hot steams of the earth, received under a proper arch, or hot-house, as we learn from Celsus. They also had another kind of bath by insolation, where the body was exposed to the sun for some time, in order to draw forth the superfluous moisture from the inward parts; and to this day it is a practice in some nations to cover the body over with horse-dung, especially in chronic diseases, to digest and breathe out the humour that causes the distemper. In New England they make a kind of stoves of turf, wherein the sick are shut up to bathe or sweat.

The same name is sometimes also given to another kind of bath, made of kindled coals, or burning spirit of wine; the patient being placed in a convenient close chair for the reception of the fume, which rises and provokes sweat in a plentiful manner: care is here taken to keep the head out, and to secure respiration. This bath has been found very effectual in removing old obstinate pains in the limbs, and venereal complaints; and will often complete a cure left unperformed by salivation.

Some authors speak of bloody baths, *balnea sanguinolenta*, prepared especially of the blood of infants, anciently supposed to be a kind of specific for the leprosy.

BATHS (Metalline), those made of water impregnated with the *scoriae* of metals. The most common and useful of this kind are those prepared with the *scoriae* of iron, which abound with the earthy, saline, and sulphureous substance of the metal; and these are of excellent service for strengthening and bracing up the part to which they are applied, and recovering weak and decayed

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weakened limbs; stopping various kinds of bleeding; and restoring the menstrual and hemorrhoidal flux where obstructed; inasmuch, that they may well be substituted for the natural iron baths.

Adjacent to the smelting huts where metals are run from their ore, are to be found large quantities of the slag of copper, antimony, and cobalt, which abounding with sulphur, vitriolic salt, and an earthy principle, make serviceable baths for strengthening the lost tone of the fibres, and relaxing them when they are too stiff. These baths have likewise a detergent and cleansing virtue; so that with prudence, and due regard to circumstances, they may be used on many occasions. The way of making these artificial baths is, either to take the slags as they come hot from the furnace, or else to heat them afresh, and throw them into hot water; which is afterwards to be used either in the way of bath, or fomentation, occasionally. There are other artificial baths, prepared of alum and quicklime, by boiling them together in fine rain-water. Such baths are highly serviceable in paralytic disorders and weaknesses of the limbs.

The pepper bath, or pepper water, on the Alps, is one of the most celebrated in Europe, and has been the subject of treatises express, besides what has been said of it occasionally by Scheuchzer and others. It was first discovered in the year 1240, and is of the periodical kind. The water breaks forth in a dreadful place, scarce accessible to the sun-beams, or indeed to men, unless of the greatest boldness, and such as are not in the least subject to dizziness. These baths have this singularity above all others, that they commonly break forth in May, and that with a sort of impetuosity, bringing with them beech-leaves, crabs, or other wood-fruit; and that their course desists in September or October. Scheuchzer professes himself of opinion, that these waters are not impregnated with any minerals, or if they do contain any, that their virtues in curing distempers and preserving health do not proceed from them. They are exceeding clear, destitute of colour, taste, or smell.

BATHS, (*Balnea*), in architecture, denote large pompous buildings among the ancients, erected for the sake of bathing. Baths made a part of the ancient *gymnasia*, though they were frequented more for the sake of pleasure than health.

The most magnificent baths were those of Titus, Paulus Æmilius, and Dioclesian, of which there are some ruins still remaining. It is said that at Rome there were 856 public baths. Fabricius adds, that the excessive luxury of the Romans appeared in nothing more visible than in their baths. Seneca complains, that the baths of plebeians were filled from silver pumps; and that the freedmen trod on gems. Macrobius tells us of one Sergius Oratus, a voluptuary, who had pendant baths hanging in the air.

According to Dion, Mæcenus was the first who made a bath at Rome: yet there are instances of public baths prior to this: but they were of cold water, small, and poorly decorated. Agrippa, in his ædilate, built 160 places for bathing, where the citizens might be accommodated, either with hot or cold, *gratis*. After this example, Nero, Vespasian, Titus, Domitian, Severus, Gordian, Aurelian, Maximian, Dioclesian, and most of the emperors who studied to gain the af-

fections of the people, erected baths laid with the richest marble, and wrought according to the rules of the most delicate architecture. The rich had baths at home, and frequently very magnificent ones, especially after the time that the practice of pillaging the provinces had begun; but they only used them on extraordinary occasions. The great men, and even emperors themselves, sometimes bathed in public with the rest of the people. Alexander Severus was the first who allowed the public baths to be opened in the night-time during the heats of summer.

The Greek baths were usually annexed to *palestræ* or *gymnasia*, of which they were considered as a part. These baths consisted of seven different apartments, usually separated from each other, and intermixed with other buildings belonging to the other sorts of exercises. These were, first, the cold bath, *frigida lavatio*; 2dly, The *claothesium*, or room where they were anointed with oil; 3dly, The *frigidarium*, or cooling room; 4thly, The *propnigeum*, or entrance of the *hypocaustium*, or stove; 5thly, The vaulted room for sweating in, or vapour-bath, called *concamerata sudatio*, or *tepidarium*; 6thly, The *laconicum*, or dry stove; 7thly, The hot bath, called *callidum lavatio*.

As for the baths separate from the *palestræ*, they appear to have been usually double, one for men, the other for women; but so near, that the same furnace heated both. The middle part was possessed by a large basin that received water by several pipes, and was surrounded by a balustrade, behind which there was an area for the reception of those who waited to use the bath. They were vaulted over, and only received light from the top.

In the Roman baths, the first part that appeared was a large basin, called *νεκυστήρα* in Greek, and *natio* or *piscina* in Latin. In the middle was the *hypocaustium*, which had a row of four apartments on each side, called *balnearia*: these were the stove, the bath, cold bath, and *tepidarium*. The two stoves, called *laconicum* and *tepidarium*, were circular and joined together. Their floor was hollow and suspended, in order to receive the heat of a large furnace, which was communicated to the stoves through the vacuities of their floor. This furnace also heated another room called *vasarium*, in which were three large brazen vessels called *milliaria*, respectively containing hot, warm, and cold water; which were so disposed, that the water might be made to pass by syphons and pipes out of one or other of them into the bath, in order to adjust its temperature. The description is given by Vitruvius. At three in the afternoon, which is what Pliny calls *hora octava et nona*, the Romans all repaired to the baths, either the public or the private ones: this was called the *bath hour*, *hora balnei*, which in winter was at nine, in summer at eight. The public baths were all opened by the sound of a bell, and always at the same hour. Those who came too late, stood a chance for bathing in cold water.

They began with hot water; after which, as the pores were now opened, and might give room for too plentiful a perspiration, they thought it necessary for their health to close them again, either with the cold bath, or at least with a sprinkling of cold water. During the bath, the body was scraped with a kind of knives, or small strigils, such as are still found in the cabinets

Bath.

Bath. cabinets of the curious. After bathing succeeded unction and perfuming, from which they went fresh to supper.

The Romans, when they found their stomachs overcharged with meat, went to the bath, as we learn from Juvenal, who inveighs against those who, having gorged themselves with eating, were forced to go into the baths to give themselves relief. They found also that a bath was good to refresh themselves after some considerable fatigue or travel, as Celsus tells us; which makes Plautus say, that all the baths in this world were not sufficient to remove the weariness he felt. After Pompey's time, the humour of bathing was carried to great excess, by which many were ruined, several having brought themselves to such a pitch, that they could not bear food without bathing first. The emperor Titus is said to have lost his life thereby. Hence Pliny inveighs severely against those physicians who held, that hot baths digested the food. The emperor Hadrian first laid a restraint on the immoderate humour of bathing, by a public edict, prohibiting all persons to bathe before the eighth hour.

BATHS of Agrippa, (thermæ Agrippinæ.) were built of brick, but painted in enamel: those of Nero, *thermæ Neronianæ*, were not only furnished with fresh water, but even had the sea brought into them: those of Caracalla were adorned with 200 marble columns, and furnished with 1600 seats of the same matter. Lippius assures us they were so large, that 1800 persons might conveniently bathe in them at the same time. But the baths of Dioclesian, *thermæ Dioclesianæ*, surpassed all the rest in magnificence. One hundred and forty thousand men were employed many years in building them. Great part of these, as well as those of Caracalla, are still standing; and with the vast high arches, the beautiful and stately pillars, the extraordinary plenty of foreign marble, the curious vaulting of the roofs, the prodigious number of spacious apartments, and a thousand other ornaments, make one of the greatest curiosities of modern Rome.

BATH, in chemistry. Several matters employed to transmit heat are called baths; but the substances most frequently used by chemists for this purpose, are water and sand. When water is employed, it is called *Balneum Maris*, or *water bath*; which is very much used, very convenient for many operations, and may be employed successfully for all degrees of heat inferior to that of boiling water. As water, when exposed to fire in any vessel from which it can evaporate, does only receive a determinate degree of heat, which always remains the same when once it has arrived to the boiling heat, it follows, that by the water bath, a degree of heat always equal may be transmitted with certainty. Farther, this degree of heat being incapable of burning, or of communicating an empyreumatic quality to matters susceptible of it, the water bath has also the advantage of not exposing substances to this inconvenience. When vessels in which distillations and digestions are made, are placed in sand, then a sand bath is formed. This intermediate substance of sand is very convenient to moderate the too great activity of the naked fire, and to transmit any degree of heat, from the weakest to a red heat. As this bath is attended with less trouble, and requires less apparatus than the water bath, it is much used in laborato-

ries. Nothing is requisite for the sand bath, but an earthen or iron vessel filled with fine sand, which is fitted into a furnace, and capable of containing the cucurbits, retorts, matrasses, or other vessels containing the matter to be operated upon.

BATH, in metallurgy, is used to signify the fusion of metallic matter in certain operations. In refining or cupelling, for example, the metals are said to be in bath when they are melted. When gold is purified by antimony, this semi-metal melted, is called by some the *bath of gold*; alchemists, who consider gold as the king of metals, call antimony the *bath of the king o ly*; because in fact gold only can resist the action of antimony.

BATH, in Hebrew antiquity, a measure of capacity, containing the tenth part of an omar, or seven gallons and four pints, as a measure for things liquid; or three pecks and three pints, as a measure for things dry.

BATH-KOL, the daughter of a voice. So the Jews call one of their oracles, which is frequently mentioned in their books, especially the Talmud; being a fantastical way of divination invented by the Jews themselves, though called by them a revelation from God's will, which he made to his chosen people, after all verbal prophecies had ceased in Israel. It was in fact a method of divination similar to the *sortes Virgilianæ* of the Heathens. For as, with them, the first words they happened to dip into, in the works of that poet, were a kind of oracle whereby they predicted future events; so, with the Jews, when they appealed to Bath-kol, the first words they heard from any man's mouth were looked upon as a voice from heaven, directing them in the matter they inquired about. The Christians were not quite free from this superstition, making the same use of the book of the Scriptures as the Pagans did of the works of Virgil. It was practised by Heraclius, emperor of the East, in the beginning of the seventh century: for, being at war with Chosroes king of Persia, and in doubt, after a successful campaign, where to take up his winter quarters, he consulted the book of the Scriptures in this way of divination, and was determined thereby. In France, it was the practice for several ages to use this kind of divination at the consecration of a bishop, in order to discover his life, manners, and future behaviour. This usage came into England with the Norman conquest; for we are told, that at the consecration of William the second Norman bishop of the diocese of Norwich, the words which first occurred on dipping into the Bible were, *Not this man, but Barabbus*: soon after which, William died, and Herbert de Lozinga, chief simony-broker to King William Rufus, succeeded him; at whose consecration the words at which the Bible opened were the same which Jesus spoke to Judas the traitor; *Friend, wherfore art thou come?* This circumstance so affected Herbert, that it brought him to a thorough repentance of his crime; in expiation of which he built the cathedral church of Norwich, the first stone of which he laid in the year 1095.

BATHA, **BATH**, or *Bachia*, a town of Hungary, and capital of a county of the same name, seated on the Danube. E. Long. 20. 40. N. Lat. 46. 40.

BATHING, the act of using or applying a bath; that is, of immersing the body, or part of it, in water or other fluid.

Bath
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Bathing.

Bathing.

Bathing is a practice of great antiquity. The Greeks, as early as the heroic age, are said to have bathed themselves in the sea, in rivers, &c. We even find mention in Homer of hot baths in the Trojan times; but these seem to have been very rare, and only used on extraordinary occasions. Athenæus speaks of hot baths as unusual even in his age. In reality, public baths appear to have been discouraged, and even prohibited, by the ancient Greeks, who were contented to wash themselves at home in a sort of bathing-tubs. The method of bathing among the ancient Greeks was, by heating water in a large vessel with three feet, and thence pouring it on the head and shoulders of the person seated in a tub for that purpose, who at coming out was anointed with oil.

The Romans were also long before they came into the use of baths; the very name of which, *thermæ*, shows they borrowed it from the Greeks. As the ancient Romans were chiefly employed in agriculture, their custom was, every evening after work to wash their arms and legs, that they might sit down to supper with more decency: for it is to be observed, that the use of linen was then unknown; and the people of that age went with their arms and legs bare, and consequently exposed to dust and filth. But this was not all; for every ninth day, when they repaired to the city, either to the nundinæ or to attend at the assemblies of the people, they bathed all over in the Tiber, or some other river which happened to be nearest them. This seems to have been all the bathing known till the time of Pompey, when the custom began of bathing every day. See BATH.

The Celtic nations were not without the use of bathing: the ancient Germans bathed every day in warm water in winter, and in summer in cold. In England, the famous bath in Somersetshire it said by some to have been in use 800 years before Christ. Of this, however, it must be owned, we have but very slender evidence: but Dr Musgrave makes it probable that it was a place of considerable resort in Geta's time; there being still the remains of a statue erected to that general, in gratitude for some benefactions he had conferred upon it.

Although bathing, among the ancients, made, as it were, a part of diet, and was used as familiarly as eating or sleep; yet it was in high esteem among their physicians for the cure of diseases, as appears from Strabo, Pliny, Hippocrates, and Oribasius; whence frequent exhortations to washing in the sea, and plunging into cold water. The first instance of cold bathing, as a medicine, is Melampus's bathing the daughters of the king of Argos; and the first instance of warm bathing is Medea's use of it, who was said to boil people alive, because Pelias king of Thessaly died in a warm bath under her hands. The cold bath was used with success by Antonius Musa, physician to the emperor Augustus, for the recovery of that prince; but fell into neglect after the death of Marcellus, who was thought to have been destroyed by the improper use of it. It was again brought into request towards the close of the reign of Nero, by means of a physician of Marseilles named *Charmis*; but during the ignorance of the succeeding ages, the practice was again banished for a long time.—Both hot and cold bathing are now prescribed in many cases by the physicians,

though they are not agreed as to the manner in which they operate on the human body. See *MEDICINE-Index*.

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Bathing among the Turks, as among the ancients, makes a part of diet and luxury; and in every town, and even village, there is a public bath. Indeed, the necessity of cleanliness, in a climate where one perspires so copiously, has rendered bathing indispensable; the comfort it produces preserves the use of it; and Mahomet, who knew its utility, has reduced it to a precept. Of these baths, and the manner of bathing particularly at Cairo, the following account is given by M. Savary in his Letters on Egypt.

"The first apartment one finds in going to the bath, is a large hall, which rises in the form of a rotunda. It is open at the top, to give a free circulation to the air. A spacious estrade, or raised floor, covered with a carpet, and divided into compartments, goes around it, on which one lays one's clothes. In the middle of the building, a jet-d'eau spouts up from a basin, and agreeably entertains the eye. When you are undressed, you tie a napkin round your loins, take a pair of sandals, and enter into a narrow passage, where you begin to be sensible of the heat. The door shuts to; and, at 20 paces off, you open a second, and go along a passage, which forms a right angle with the former. Here the heat increases. They who are afraid of suddenly exposing themselves to a stronger degree of it, stop in a marble hall, in the way to the bath properly so called. The bath is a spacious and vaulted apartment, paved and lined with marble, around which there are four closets. The vapour incessantly rising from a fountain and cistern of hot water, mixes itself with the burning perfumes. These, however, are never burnt except the persons who are in the bath desire it. They mix with the steam of the water, and produce a most agreeable effect.

"The bathers are not imprisoned here, as in Europe, in a sort of tub, where one is never at one's ease. Extended on a cloth spread out, the head supported by a small cushion, they stretch themselves freely in every posture, whilst they are wrapped up in a cloud of odoriferous vapours, which penetrates into all their pores. After reposing there some time, until there is a gentle moisture over the whole body, a servant comes, presses you gently, turns you over, and when the limbs are become supple and flexible he makes all the joints crack without any difficulty. He masses* and seems to knead the flesh without making you feel the smallest pain. This operation finished, he puts on a stuff glove, and rubs you a long time. During this operation, he detaches from the body of the patient, which is running with sweat, a sort of small scales, and removes even the imperceptible dirt that stops the pores. The skin becomes soft and smooth like satin. He then conducts you into a closet, pours the lather of perfumed soap upon your head, and withdraws. The ancients did more honour to their guests, and treated them in a more voluptuous manner. Whilst Telemachus was at the court of Nestor, 'the beautiful Polycaста, the handsomest of the daughters of the king of Pylos, led the son of Ulysses to the bath; washed him with her own hands; and, after anointing his body with precious oils, covered him with rich habits and a splendid cloak.' Pisisstratus and Telemachus were not worse treated in

* "Maf." comes from the Arabic verb *masi*, which signifies touching in a delicate manner.

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the palace of Menelaus. 'When they had admired its beauties, they were conducted to basins of marble, where a bath was prepared: Beautiful female slaves washed them; and, after anointing them with oil, covered them with rich tunics and superb pellices.'

"The closet to which one is conducted is furnished with a cistern and two cocks; one for cold and the other for hot water. There you wash yourself. Soon after the servant returns with a depilatory pomatum, which in an instant makes the hair fall off the places it is applied to. Both men and women make general use of it in Egypt. It is composed of a mineral called *rufina*, which is of a deep brown. The Egyptians burn it lightly, knead it with water, mixing it with half the quantity of slaked lime. This greyish paste applied to the hair, makes it fall off in two or three minutes, without giving the slightest pain.

"After being well washed and purified, you are wrapped up in hot linen, and follow the guide through the windings that lead to the outer apartment. This insensible transition from heat to cold prevents one from suffering any inconvenience from it. On arriving at the estrade, you find a bed prepared for you; and scarcely are you laid down before a child comes to press every part of your body with his delicate fingers, in order to dry you thoroughly. You change linen a second time, and the child gently grates the callosity of your feet with pumice stone. He then brings you a pipe and Moka coffee.

"Coming out of a stove where one was surrounded by a hot and moist fog, where the sweat gushed from every limb, and transported into a spacious apartment open to the external air, the breast dilates, and one breathes with voluptuousness. Perfectly massed, and as it were regenerated, one experiences an universal comfort. The blood circulates with freedom; and one feels as if disengaged from an enormous weight, together with a suppleness and lightness to which one has been hitherto a stranger. A lively sentiment of existence diffuses itself to the very extremities of the body. Whilst it is lost in delicate sensations, the soul, sympathizing with the delight, enjoys the most agreeable ideas. The imagination, wandering over the universe, which it embellishes, sees on every side the most enchanting pictures, every where the image of happiness. If life be nothing but the succession of our ideas, the rapidity with which they then recur to the memory, the vigour with which the mind runs over the extended chain of them, would induce a belief that in the two hours of that delicious calm that succeeds the bath, one has lived a number of years."

Such are the baths, the use of which were so strongly recommended by the ancients, and which are still the delight of the Egyptians. It is by means of them that they prevent or dispel rheumatism, catarrhs, and such cutaneous disorders as are produced by want of perspiration. Hence likewise they find a radical cure for that fatal evil which attacks the forces of generation, the remedy for which is so dangerous in Europe. By the same resource they get rid of that uncomfortable feeling so common to all nations who do not pay so much attention to the cleanliness of their bodies.—Mr Tournefort, indeed, who had used steam baths at Constantinople, where there is less refinement in them than at Cairo, is of opinion that they injure the breast.

But, according to Mr Savary, this is an error which further experience would have corrected. There are no people who make more frequent use of them than the Egyptians, and there is no country where there are fewer asthmatic people. The asthma is scarcely known there.

The women are passionately fond of these baths. They frequent them at least once a-week, and take with them slaves properly qualified for the purpose. More luxurious than the men, after undergoing the usual preparations, they wash their bodies, and above all their heads, with rose-water. It is there that female head dressers form their long black hair into tresses, which they mix with precious essences instead of powder and pomatum. It is there that they blacken the edge of their eye-lids, and lengthen their eye-brows with coliel, a preparation of tin burnt with gall-nuts; it is there they stain the finger and toe nails with the leaves of henna, a shrub common in Egypt, and which gives them a golden colour. The linen and clothing they make use of are passed through the sweet steam of the wood of aloes; and when the work of the toilet is at an end, they remain in the outer apartment, and pass the day in entertainments. Females entertain them with voluptuous songs and dances, or tell them tales of love.

BATHURST (Ralph), M. D. an eminent physician, poet, and divine, born in the year 1620. He studied divinity in Trinity college, Oxford; but the times of confusion coming on, he changed the course of his studies, and applied himself to physic. He took a doctor's degree in that faculty; in which he rose to such eminence, that he was, in the time of the usurpation, appointed physician to the state. Upon the restoration, he quitted his profession of physic; was elected a fellow of the Royal Society, and president of his college; and having entered into holy orders, he was made chaplain to the king, and afterwards dean of Wells. Soon after, he served the office of vice-chancellor of Oxford, and was nominated by King William and Queen Mary to the see of Bristol; which he refused to accept. His learning and talents were various. He was an orator, a philosopher, and a poet: he possessed an inexhaustible fund of wit, and was a facetious companion at 80 years of age. Ridicule was the weapon with which he used to correct the delinquents of his college; and he was so absolute a master of it, that he had it always at hand. His poetical pieces in the *Musæ Anglicanæ* are excellent in their kind. He wrote several poems, both in English and Latin; and died June 14. 1704, in the 34th year of his age.

BATHURST (Allen), Earl of Bathurst, one of the last worthies of Queen Anne's reign, that shining period of triumph, taste, genius, and elegance, was born in the year 1684. His studies and his education were equally conducive to the brilliant figure he was destined to make in social life and in the senate, as a polite scholar, a patriot, and a statesman. These talents he had an opportunity to display as early as the year 1705; when, at the request of his father Sir Benjamin Bathurst, and the solicitation of the constituents of Cirencester, he served in parliament for that borough, his native soil, with reputation and integrity. He distinguished himself particularly in the struggles and debates relative to the union between the two kingdoms,

Bathing.

Bathurst.

Bathurst. firmly supporting this measure, calculated to strengthen the vigour of government by uniting its force. Though he was contented to act a subordinate character in the great opposition planned by Mr Harley and Mr St John, his intimate friends, to sap the credit of the Duke of Marlborough and his adherents, he was of infinite service to his party in arraigning, with spirit and eloquence, the conduct of the General and the Earl of Godolphin, who had long governed the Queen, and lavished the treasures of the nation on conquests more splendid than serviceable. The loss of the battle of Almanza seconded his efforts to dispel the intoxication of former successes. His personal regard for Lord Somers, president of the council, was never altered, though they were of different opinions in politics; and when he was divested of his office, Mr Bathurst acted with such tenderness and delicacy, as to preserve the esteem of Lord Somers in a private station. In consideration of his zeal and services, the Queen advanced him, in 1711, to the dignity of a peer, by the title of Baron Bathurst, of Batlesden, in Bedfordshire.

His Lordship continued to speak his sentiments with an undaunted freedom in the upper house; and stepped forth as a formidable opponent to the court-measures in the reign of George I. and during Sir Robert Walpole's administration. The acrimony of the prosecution carried on against the Earl of Oxford, Lord Bolingbroke, and the Duke of Ormond, stimulated his indignation and his eloquence against such vindictive proceedings; and he observed, "that the king of a faction was but the sovereign of half his subjects."

The south-sea scheme having infected the whole nation with a spirit of avaricious enterprize, the people awaked from their delirium, and an infinite number of families was involved in ruin. Lord Bathurst publicly impeached the directors, whose arts had enabled them by these vain expectations to amass surprising fortunes: he represented that the national honour was concerned in stripping them of their ill acquired wealth; and moved for having all the directors of the south-sea company punished by a forfeiture of their estates, for such a notorious act of sordid knavery.

When the bill was brought into the house of Lords against Dr Atterbury bishop of Rochester, that learned prelate, who joined to the graces of style and elocution all the elegance of a just delivery; among the many friends the bishop's eloquence, politeness, and ingenuity had procured him, was Lord Bathurst. He spoke against the bill with great vehemence and propriety; observing, "that if such extraordinary proceedings were countenanced, he saw nothing remaining for him and others to do, but to retire to their country-houses, and there, if possible, quietly enjoy their estates within their own families, since the least correspondence, or intercepted letter, might be made criminal." Then turning to the bishops, he said, he "could hardly account for the inveterate hatred and malice some persons bore the ingenious bishop of Rochester, unless it was that they were infatuated like the wild Americans, who fondly believe they inherit not only the spoils, but even the abilities, of the man they destroy." He was one of the Lords who entered his protest against the bill.

His Lordship was entirely averse to continental connections; and animadverted severely upon the monarch

whose thoughts were turned to foreign concerns and alliances which could never be useful; complaining of the immense sums lavished in subsidies to needy and rapacious princes.

The directors of the charitable corporation having embezzled 500,000 l. of the proprietors capital, Lord Bathurst declared, in the House of Lords, his abhorrence of this most iniquitous scene of fraud; asserting, that not one shilling of the money was ever applied to the proper service, but became the reward of avarice and venality.

His Lordship concurred, with all his power, in the opposition to Sir Robert Walpole, who now tottered on the brink of ruin. This minister, after obstinate struggles, having been forced to resign all his employments, Lord Bathurst was sworn of the privy-council, and made captain of the gentlemen-pensioners, which post he resigned in 1744. He was appointed treasurer to the present king, then Prince of Wales, in 1757, and continued in the list of privy-counsellors at his accession to the throne; but, on account of his great age, he chose to enjoy *otium cum dignitate*.

Lord Bathurst's integrity gained him the esteem even of his opponents; and his humanity and benevolence, the affection of all that knew him more intimately. He added to his public virtues all the good breeding, politeness, and elegance, of social intercourse. Dr Freind, Congreve, Vanbrugh, Swift, Prior, Rowe, Addison, Pope, Arbuthnot, Gay, and most men of genius in his own time, cultivated his friendship, and were proud of his correspondence.

Pope, in his Epistle to him on the Use of Riches; thus addresses him:

The sense to value riches, with the art
T' enjoy them, and the virtue to impart;
To balance fortune by a just expence,
Join with economy magnificence;
With splendor, charity; with plenty, health;
O teach us, Bathurst, yet unspoil'd by wealth!
That secret rare, between th' extremes to move,
Of mad good-nature, and of mean self-love.

And Sterne, in his letters to Eliza, thus speaks of him: "This nobleman is an old friend of mine: he was always the protector of men of wit and genius; and has had those of the last century always at his table. The manner in which his notice began of me, was as singular as it was polite.—He came up to me one day, as I was at the Princess of Wales's court, 'I want to know you, Mr Sterne; but it is fit you should know also who it is that wishes this pleasure: you have heard (continued he) of an old Lord Bathurst, of whom your Papes and Swifts have sung and spoken so much: I have lived my life with geniuses of that cast, but have survived them; and despairing ever to find their equals, it is some years since I have closed my accounts, and shut up my books, with thoughts of never opening them again: but you have kindled a desire in me of opening them once more before I die, which I now do; so go home, and dine with me.' This nobleman, I say, is a prodigy: for at 85 he has all the wit and promptness of a man of 30; a disposition to be pleased, and a power to please others beyond what ever I knew! added to which, a man of learning, courtesy, and feeling."

Bathurst
||
Batulle.

His Lordship, in the latter part of his life, preserved his natural cheerfulness and vivacity, always accessible, hospitable, and beneficent. Lately he delighted in rural amusements; and enjoyed, with a philosophical satisfaction, the shade of the lofty trees he had planted himself. Till within a month of his death he constantly rode out on horseback two hours before dinner, and constantly drank his bottle of claret or Madeira after dinner. He used to declare, in a jocose manner, he never could think of adopting Dr Cadogan's method, as Dr Cheyne had assured him, 50 years ago, he would never live seven years longer unless he abridged himself of his wine. Pursuant to this maxim, his Lordship having, some years ago, invited several of his friends to spend a few cheerful days with him at his seat at Cirencester, and being one evening very loth to part with them; on his son the late chancellor's objecting to their sitting up any longer, and adding that health and long life were best secured by regularity, he suffered him to retire: but, as soon as he was gone, the cheerful father said, "Come, my good friends, since the old gentleman is gone to bed, I think we may venture to crack another bottle."

His Lordship was advanced to the dignity of Earl in 1772; and lived to see the above nobleman, his eldest son, several years Lord High Chancellor of Great Britain, and promoted to the peerage in 1771 by the title of Baron Apsley. Lord Bathurst married Catherine daughter of Sir Peter Apsley, by whom he had two other sons, and five daughters. His death happened, after a few days illness, at his seat near Cirencester, in the 91st year of his age, and on the 16th of September 1775.

BATHYLLUS and **PYLADES**, inventors of pantomime entertainments on the stage. Bathyllus succeeded in representing comedy; Pylades, in tragedy. The art consisted in expressing the passions by gestures, attitudes, and dumb shew; not, as in modern times, in machinery, and the fooleries of Harlequin. They flourished at Rome, under Augustus, about A. D. 10. Each of them kept scholars, who perpetuated their master's name: for the followers of Bathyllus, who excelled in the comic part, called themselves *Bathylli*; and those of Pylades, who excelled in the tragic, called themselves *Pylade*.

BATILLUS, a musical instrument made of metal, in the form of a staff, furnished with metalline rings, which being struck, yielded a kind of harmonical sounds; used by the Armenians in their church-service.

BATIS; a genus of the tetrandria order, belonging to the diccia class of plants, the characters of which are: Of the male, the amentum is four ways imbricated, and both the calyx and corolla are wanting; of the female, the amentum is ovate, the involucre diphylloous; calyx and corolla wanting; the stigma is bilobate and sessile; the berries conduplicate and four-seeded. There is but one species, the *mantima*, a native of Jamaica.

BATISTE, in commerce, a fine white kind of linen cloth, manufactured in Flanders and Picardy.

There are three kinds of batiste; the first very thin; the second less thin; and the third much thicker, called *Holland batiste*, as coming very near the goodness of Hollands.

The chief use of Batulle is for neck-cloths, head-cloths, surplises, &c.

BATMAN, in commerce, a kind of weight used at Smyrna, containing six okes of 400 drams each, which amount to 16 pounds 6 ounces and 15 drams of English weight.

BATMANSON (John), prior of the Carthusian monastery, or Charter-house in the suburbs of London. He was some time a student at Oxford, but it does not appear that he took any degree in that university. He was intimately acquainted with Edward Lee archbishop of York, at whose request he wrote against Erasmus and Luther. He died in the year 1531, and was buried in the chapel belonging to the charter-house. According to Bale, he was a proud forward person; and he says that Erasmus, in one of his letters to the bishop of Winchester, calls him an ignorant fellow. Pits, on the contrary, gives him the character of a man of singular genius, zeal, piety, and learning. He wrote, 1. *Animaverfiones in annotationes Erasmi in Nov. Testamentum.* 2. *A treatise against some of Luther's works.* These two he afterwards retracted. 3. *Commentaria in proverbialia Salmonis.* 4. *In cantica canticorum.* 5. *De unica Magdalena.* 6. *Institutiones noviciorum.* 7. *De contemptu mundi.* 8. *Christo duedenni.* 9. *On the words, Missus est, &c.*

BATON, or **BASTON**. See **BASTON**.

BATRACHOMYOMACHIA, the battle of the frogs and the mice, the title of a fine burlesque poem generally ascribed to Homer.—The subject of the work is the death of Pylcharpax, a mouse, son to Toxartes, who, being mounted on the back of Physignathus, a frog, on a voyage to her palace, to which she had invited him, was seized with fear when he saw himself in the middle of the pond, so that he tumbled off and was drowned. Physignathus being suspected to have shaken him off with design, the mice demanded satisfaction, and unanimously declared war against the frogs.

BATTÆ, (anc. geog.), a people of Germany, formerly inhabitants of what is now called *Hesse*. Being dissatisfied with their situation there, they settled on the island formed by the Vahalis and Rhine, which from them took the name of *Batavia*, or *Batavorum Insula*. Their government was a mixture of monarchy, aristocracy, and democracy. Their chief was, properly speaking, nothing more than a principal citizen, whose business was rather to advise than to command. The principal men who exercised jurisdiction, and commanded the troops, in their respective districts, were chosen, as well as the kings, in an assembly of the people. A hundred persons selected from among the people presided over every county, and acted as chiefs in the different hamlets. The whole nation was, in some measure, an army always in readiness. Each family composed a body of militia, which served under a captain of their own choosing. See *BATAVORUM Insula*.

BATTALIA, an army ranged in order of battle, or ready for engagement. The word seems formed from the Latin *batuaha*, sometimes also written *batulia*, denoting a sort of military or gladiatorial exercise, as fighting with foils, or tilting at a post. In this sense, we meet with the depth of a battalia; to march in battalia, with the baggage in the middle; to break the battalia, &c. In the Roman battalia, the *hastati* made the front.

Batman
||
Battalia.

Battalion
||
Battel.

BATTALION, a small body of infantry, ranged in form of battle, and ready to engage.

A battalion usually contains from 500 to 800 men; but the number it consists of is not determined. They are armed with firelocks, swords, and bayonets; and divided into 12 companies, one of which is grenadiers. They are usually drawn up three men deep. Some regiments consist of but one battalion, others are divided into four or five.

BATTATAS, the Indian name of the potatoe. See CONVOLVULUS.

BATTEL, a town of Suffex, five miles north-west of Hastings, situated in E. Long. 0. 35. N. Lat. 50. 55. It was formerly called *Epiton*; and is the place where William the Conqueror vanquished Harold king of England on October 14th 1066. William, in memory of this victory, erected an abbey, which he called *Battel Abbey*; and if a criminal could but reach this abbey, he was dismissed from thence, and was afterwards in no danger for his past faults. The abbey was a large and noble structure, as may be judged by the gateway which is still entire, as well as from the other remains. This place is noted for making gunpowder equal to that of Dantzick; and the best goes by the name of *Battel gunpowder*.

BATTEL, in law, or *Trial by wager of Battel*, a species of trial of great antiquity, but now much disused. It seems to have owed its original to the military spirit of our ancestors, joined to a superstitious frame of mind; it being in the nature of an appeal to Providence, under an apprehension and hope (however presumptuous and unwarrantable), that heaven would give the victory to him who had the right. The decision of suits, by this appeal to the God of battels, is by some said to have been invented by the Burgundi, one of the northern or German clans that planted themselves in Gaul. And it is true, that the first written injunction of judiciary combats that we meet with, is in the laws of Gundebald, A. D. 501, which are preserved in the Burgundian code. Yet it does not seem to have been merely a local custom of this or that particular tribe, but to have been the common usage of all those warlike people from the earliest times. And it may also seem, from a passage in Velleius Paterculus, that the Germans, when first they became known to the Romans, were wont to decide all contests of right by the sword: for when Quintilius Varus endeavoured to introduce among them the Roman laws and method of trial, it was looked upon (says the historian) as a *novitas incognite discipline, ut solita armis decerni jure terminarentur*. And among the ancient Goths in Sweden we find the practice of judiciary duels established upon much the same footing as they formerly were in our own country.

This trial was introduced in England among other Norman customs by William the Conqueror; but was only used in three cases, one military, one criminal, and the third civil. The first in the court-martial, or court of chivalry and honour; the second in appeals of felony; and the third upon issue joined in a writ of right, the last and most solemn decision of real property. For in writs of right the *jus proprietatis*, which is frequently a matter of difficulty, is in question; but other real actions being merely questions of the *jus possessionis*, which are usually more plain and obvious, our ancestors did

not in them appeal to the decision of Providence. Another pretext for allowing it, upon these final writs of right, was also for the sake of such claimants as might have the true right, but yet by the death of witnesses or other defect of evidence be unable to prove it to a jury. But the most curious reason of all is given in the *Mirror*, that it is allowable upon warrant of the combat between David for the people of Israel of the one party, and Goliath for the Philistines of the other party: a reason which Pope Nicholas I. very seriously decides to be inconclusive. Of battel therefore on a writ of right we shall first speak: and although the writ of right itself, and of course this trial thereof, be at present disused; yet, as it is law at this day, it may be matter of curiosity, at least, to inquire into the forms of this proceeding, as we may gather them from ancient authors.

1. The last trial by battel that was waged in the court of common pleas at Westminster (though there was afterwards one in the court of chivalry in 1631, and another in the county palatine of Durham in 1638) was in the 13th year of Queen Elizabeth, A. D. 1571, as reported by Sir James Dyer; and was held in Tot-hill-fields, Westminster, "*non sine magna juris consultorum perturbatione*," saith Sir Henry Spelman, who was himself a witness of the ceremony. The form, as appears from the authors before cited, is as follows.

When the tenant in a writ of right pleads the general issue, viz. that he hath more right to hold than the demandant hath to recover; and offers to prove it by the body of his champion, which tender is accepted by the demandant; the tenant in the first place must produce his champion, who, by throwing down his glove as a gage or pledge, thus wages or stipulates battel with the champion of the demandant; who, by taking up the gage or glove, stipulates on his part to accept the challenge. The reason why it is waged by champions, and not by the parties themselves, in civil actions, is because, if any party to the suit dies, the suit must abate and be at an end for the present; and therefore no judgment could be given for the lands in question, if either of the parties were slain in battel: and also that no person might claim an exemption from this trial, as was allowed in criminal cases, where the battel was waged in person.

A piece of ground is then in due time set out, of 60 feet square, inclosed with lists, and on one side a court erected for the judges of the court of common pleas, who attend there in their scarlet robes; and also a bar is prepared for the learned serjeants at law. When the court sits, which ought to be by sunrising, proclamation is made for the parties and their champions; who are introduced by two knights, and are dressed in a coat of armour, with red sandals, barelegged from the knee downwards, bareheaded, and with bare arms to the elbows. The weapons allowed them are only batons, or staves, of an ell long, and a four-cornered leather target; so that death very seldom ensued this civil combat. In the court military, indeed, they fought with sword and lance, according to Spelman and Ruthworth; as likewise in France, only villeins fought with the buckler and baton, gentlemen armed at all points. And upon this, and other circumstances, the president Montesquieu hath with great ingenuity not only deduced the impious custom of private duels upon imagi-

Battel. nary points of honour, but hath also traced the heroic madnes of knight-errantry from the same original of judicial combats. But to proceed :

When the champions, thus armed with batons, arrive within the lists or place of combat, the champion of the tenant then takes his adversary by the hand, and makes oath that the tenements in dispute are not the right of the demandant ; and the champion of the demandant, then taking the other by the hand, swears in the same manner that they are ; so that each champion is, or ought to be, thoroughly persuaded of the truth of the cause he fights for. Next an oath against forcery and enchantment is to be taken by both the champions, in this or a similar form : “ Hear this, ye justices, that I have this day neither eat, drank, nor have upon me neither bone, stone, ne grass ; nor any incantment, forcery, or witchcraft, whereby the law of God may be abated, or the law of the devil exalted. So help me God and his saints ”

The battel is thus begun, and the combatants are bound to fight till the stars appear in the evening : and, if the champion of the tenant can defend himself till the stars appear, the tenant shall prevail in his cause ; for it is sufficient for him to maintain his ground, and make it a drawn battel, he being already in possession ; but, if victory declares itself for either party, for him is judgment finally given. This victory may arise from the death of either of the champions : which indeed hath rarely happened ; the whole ceremony, to say the truth, bearing a near resemblance to certain rural athletic diversions, which are probably derived from this original. Or victory is obtained if either champion proves recreant, that is, yields, and pronounces the horrible word of *craven* ; a word of disgrace and obloquy, rather than of any determinate meaning. But a horrible word it indeed is to the vanquished champion : since, as a punishment to him for forfeiting the land of his principal by pronouncing that shameful word, he is condemned as a recreant, *amittere liberam legem*, that is, to become infamous, and not to be accounted *liber et legalis homo* ; being supposed by the event to be proved forsworn, and therefore never to be put upon a jury, or admitted as a witness in any cause.

This is the form of a trial by battel ; a trial which the tenant, or defendant in a writ of right, has it in his election at this day to demand ; and which was the only decision of such writ of right after the conquest, till Henry II. by consent of parliament introduced the *grand assise*, a peculiar species of trial by jury, in concurrence therewith ; giving the tenant his choice of either the one or the other. Which example, of discountenancing these judicial combats, was imitated about a century afterwards in France, by an edict of Louis the Pious, A. D. 1260, and soon after by the rest of Europe. The establishment of this alternative, Glanvil. chief justice to Henry II. and probably his adviser herein, considers as a most noble improvement, as in fact it was, of the law.

2. In appeals * of felony, the trial by battel may be demanded, at the election of the appellee, in either an appeal or an approvement ; and it is carried on with equal solemnity as that on a writ of right ; but with this difference, that there each party hires a champion, but here they must fight in their proper persons. And

therefore, if the appellant or approver be a woman, a priest, an infant, or of the age of 60, or lame, or blind, he or she may counterplead and refuse the wager of battel ; and compel the appellee to put himself upon the country. Also peers of the realm, bringing an appeal, shall not be challenged to wage battel, on account of the dignity of their persons ; nor the citizens of London, by special charter, because fighting seems foreign to their education and employment. So likewise, if the crime be notorious ; as if the thief be taken with the *mainour*, or the murderer in the room with a bloody knife, the appellant may refuse the tender of battel from the appellee ; and it is unreasonable an innocent man should stake his life against one who is already half-convicted.

The form and manner of waging battel upon appeals are much the same as upon a writ of right ; only the oaths of the two combatants are vastly more striking and solemn. The appellee, when appealed of felony, pleads *not guilty* ; and throws down his glove, and declares he will defend the same by his body : the appellant takes up the glove ; and replies that he is ready to make good the appeal, body for body. And thereupon, the appellee taking the book in his right hand, and in his left the right hand of his antagonist, swears to this effect : *Hoc auli, homo, quem per manum teneo, &c.* “ Hear this, O man, whom I hold by the hand, who callest thyself *John* by the name of baptism, that I, who call myself *Thomas* by the name of baptism, did not feloniously murder thy father, *William* by name, nor an any way guilty of the said felony. So help me God, and the saints ; and this I will defend against thee by my body, as this court shall award.” To which the appellant replies, holding the bible and his antagonist’s hand in the same manner as the other : “ Hear this, O man, whom I hold by the hand, who callest thyself *Thomas* by the name of baptism, that thou art perjured ; and therefore perjured, because that thou feloniously didst murder my father, *William* by name. So help me God, and the saints : and this I will prove against thee by my body, as this court shall award.” The battel is then to be fought, with the same weapons, *viz.* batons, the same solemnity, and the same oath against amulets and forcery, that are used in the civil combat : and if the appellee be so far vanquished that he cannot or will not fight any longer, he shall be adjudged to be hanged immediately ; and then, as well as if he be killed in battel, Providence is deemed to have determined in favour of the truth, and his blood shall be attainted. But if he kills the appellant, or can maintain the fight from sunrise till the stars appear in the evening, he shall be acquitted. So also, if the appellant becomes recreant, and pronounces the horrible word *craven*, he shall lose his *liberam legem*, and become infamous ; and the appellee shall recover his damages, and also be for ever quit, not only of the appeal, but of all indictments likewise for the same offence.

BATTEN, a name that workmen give to a scantling of wooden stuff, from two to four inches broad, and about one inch thick ; the length is pretty considerable, but undetermined.—This term is chiefly used in speaking of doors and windows of shops, &c. which are not framed of whole deal, &c. with stiles, rails, and panels like wainscot ; but are made to appear as if they were

Battel,
Batten.

See Appals.

Battenburg
Battering.

were by means of these battens bradded on the plain board round the edges, and sometimes cross them, and up and down.

BATTENBURG, a town of Dutch Guelderland, seated on the north banks of the Meuse, almost opposite to Ravenstein. E. Long. 5. 35. N. Lat. 50. 55.

BATTERING, the attacking a place, work, or the like, with heavy artillery.

To batter in breach, is to play furiously on a work, as the angle of a half-moon, in order to demolish and make a gape therein. In this they observe never to fire a piece at the top, but all at the bottom, from three to six feet from the ground.

The battery of a camp is usually surrounded with a trench, and pallisadoes at the bottom, with two redoubts on the wings, or certain places of arms, capable of covering the troops which are appointed for their defence. See **BATTERY**.

BATTERING-RAM, in antiquity, a military engine used to batter and beat down the walls of places besieged. It is said to have been invented by Artemanes of Clazomene, a Greek architect who flourished 441 B. C.—The machine is thus described by Josephus. It is a vast beam, like the mast of a ship, strengthened at the one end with a head of iron, something resembling that of a ram, whence it took its name. This was hung by the middle with ropes to another beam, which lay across two posts; and hanging thus equally balanced, it was by a great number of men drawn backwards and pushed forwards, striking the wall with its iron head. But this engine did most execution when it was mounted on wheels, which is said to have been first done at the siege of Byzantium under Philip of Macedon.

Plutarch informs us, that Marc Anthony, in the Parthian war, made use of a ram fourscore feet long; and Vitruvius tells us, that they were sometimes 106, and sometimes 120, feet in length; and to this perhaps the force and strength of the engine was in a great measure owing. The ram was managed at one time by a whole century of soldiers; and they being spent were seconded by another century, so that it played continually without any intermission.

Plate XCV. fig. 1. represents the battering-ram suspended. 2. The ram. 3. The form of its head, fastened to the enormous beam by three or four bands of iron, four feet in breadth. At the extremity of each of these bands (4) was a chain (5) of the same metal, one end of which was fastened to a hook (6), and at the other extremity of each of these chains was a cable firmly bound to the last link. These cables ran the whole length of the beam to the end of the ram (7), where they were all bound together as fast as possible with small ropes. To the end of these cables another was fixed, composed of several strong cords platted together to a certain length, and then running single (8). At each of these several men were placed, to balance and work the machine. 10. The chain or cable by which it hung to the cross beam (11), fixed on the top of the frame. 12. The base of the machine.—The unsuspended ram differed from this only in the manner of working it: for instead of being slung by a chain or cable, it moved on small wheels on another large beam.

BATTERING-Rams, in heraldry, a bearing or coat
N^o 42.

of arms resembling the military engine of the same name. Battery

BATTERY, in the military art, a parapet thrown up to cover the gunners and men employed about the guns from the enemy's shot. This parapet is cut into embrasures, for the cannon to fire through. The height of the embrasures on the inside is about three feet; but they go sloping lower to the outside. Their widths are two or three feet, but open to six or seven on the outside. The mass of earth that is betwixt two embrasures, is called the *meishn*. The platform of a battery is a floor of planks and sleepers, to keep the wheels of the guns from sinking into the earth; and is always made sloping towards the embrasures, both to hinder there verse, and to facilitate the bringing back of the gun.

BATTERY of Mortars differs from a battery of guns; for it is sunk into the ground, and has no embrasures.

Cross-BATTERIES, are two batteries which play athwart one another upon the same object, forming there an angle, and beating with more violence and destruction; because what one bullet shakes, the other beats down.

BATTERY sunk or buried, is when its platform is sunk or let down into the ground, so that there must be trenches cut in the earth, against the muzzles of the guns, for them to fire out at; and to serve for embrasures.

BATTERY d'Enfilade, is one that scours or sweep the whole length of a straight line.

BATTERY en Echarpe is that which plays obliquely.

BATTERY de Reverse, that which plays upon the enemy's back.

Camerade BATTERY is when several guns play at the same time upon one place.

BATTERY, in law, is the unlawful beating of another. The least touching of another's person wilfully, or in anger, is a battery, for the law cannot draw the line between different degrees of violence, and therefore totally prohibits the first and lowest stage of it; every man's person being sacred, and no other having a right to meddle with it, in any the slightest manner. And therefore, upon a similar principle, the Cornelian law *de injuriis* prohibited *pulsation* as well as *verberation*; distinguishing verberation, which was accompanied with pain, from pulsation which was attended with none. But battery is in some cases justifiable or lawful; as where one who hath authority, a parent or master, gives moderate correction to his child, his scholar, or his apprentice. So also on the principle of self-defence: for if one strikes me first, or even only assaults me, I may strike in my own defence; and if sued for it, may plead *son assault demesne*, or that it was the plaintiff's own original assault that occasioned it. So likewise in defence of my goods or possession, if a man endeavours to deprive me of them, I may justify laying hands upon him to prevent him; and in case he persists with violence, I may proceed to beat him away. Thus too in the exercise of an office, as that of church-warden or beadle, a man may lay hands upon another to turn him out of church, and prevent his disturbing the congregation. And if sued for this or the like battery, he may set forth the whole case, and plead that he laid hands upon him gently, *molliter manus*

Fig. 1.
Battering Ram

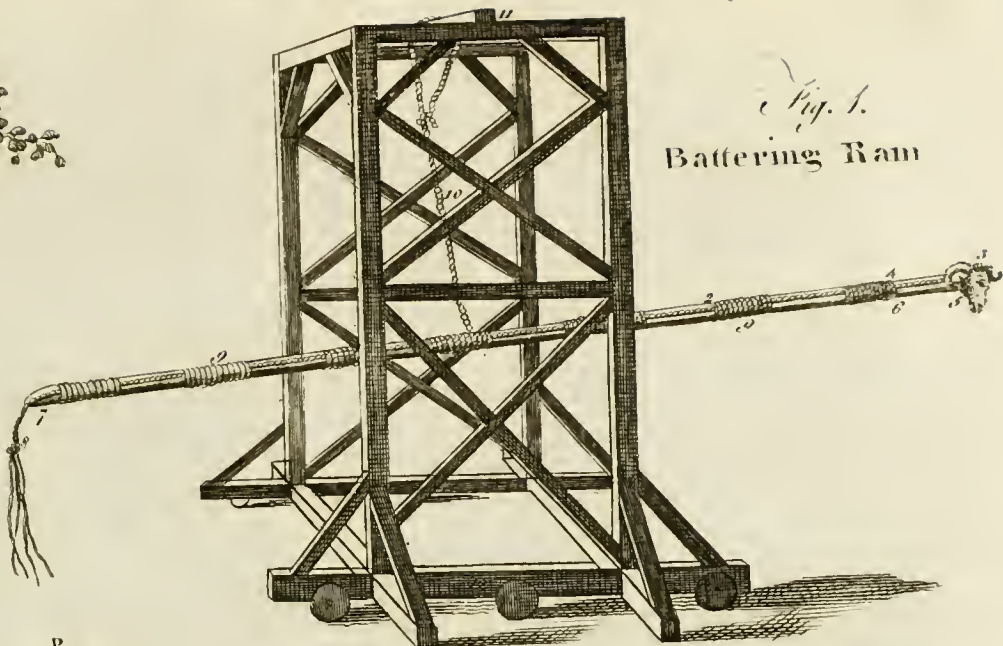


Fig. 2.
Bern
Machine,
N^o 1.



Fig. 5. Blocks

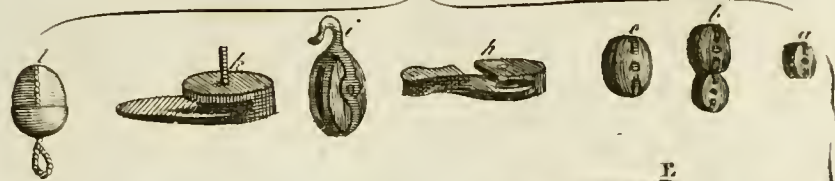


Fig. 3.
BIGNONIA RADICANS
or Trumpet Flower

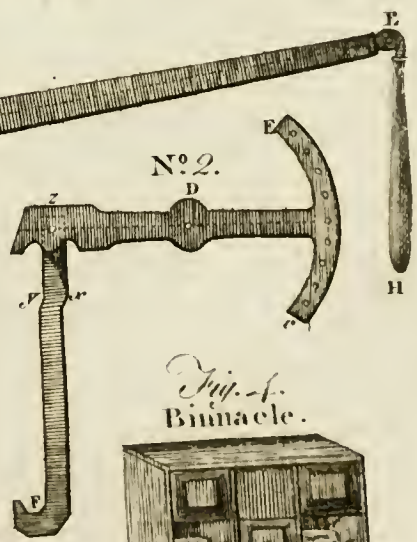
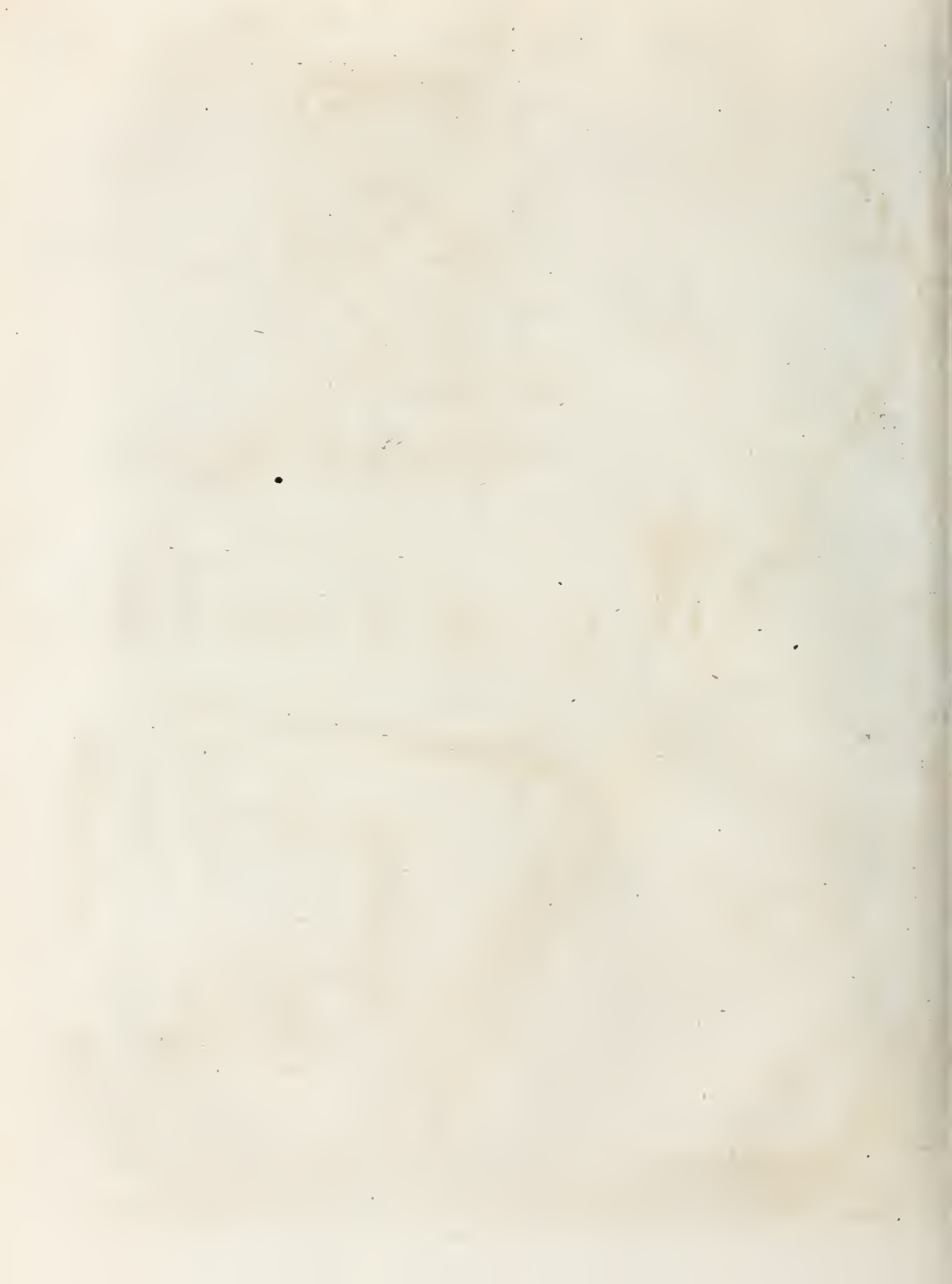


Fig. 4.
Binnacle.





Battista,
Battle.

manus imposuit, for this purpose. On account of these causes of justification, battery is defined to be the unlawful beating of another; for which the remedy is, as for assault, by action of *trepas vi et armis*: wherein the jury will give adequate damages.

BATTISTA (Franco), a celebrated painter, born at Venice, was one of the disciples of Michael Angelo, whose manner he followed so closely, that, in the correctness of his out-lines, he surpassed most of the masters of his time. His paintings are pretty numerous, and dispersed all over Italy and other parts of Europe; but his colouring being very dry, they are not much more esteemed than the prints etched by his hand. He died in 1561.

BATTLE, a general engagement between two armies, in a country sufficiently open for them to encounter in front and at the same time (see WAR). The word is also written *battel*, *battell*, and *battail*. It is formed from the French *bataille*, of the Latin verb *batuere*, to fence or exercise with arms: whence *batualia* and *batalia*, which properly denoted the action or exercise of those who learned to fence, and who were hence also denominated *batuatores*.

The ancients never joined battle without much ceremony and preparation; as taking auguries, offering sacrifice, haranguing the soldiers, giving the word or *attesera*, &c. The signals of battle were, sounding the *classicum* or general charge, and displaying a peculiar flag called by Plutarch a *purple robe*. To which may be added, singing pæans, raising military shouts, and the like. A Roman legion, ranged in order of battle, consisted of *hastati*, placed in the front; of *principes*, who were all old experienced soldiers, placed behind the former; and of *triarii*, heavy armed with large bucklers, behind the *principes*. The *hastati* were ranked close; the ranks of the *principes* were much opener, so that they could receive the *hastati*; and those of the *triarii* opener still, inasmuch that they could receive both the *principes* and the *hastati* within them, without any disorder, and still facing the enemy. When therefore the *hastati* found themselves unable to stand the enemy's charge, they retired gently within the *principes*, where joining with them, they renewed the combat. If these found themselves too weak to sustain the enemy, both retired among the *triarii*, where rallying, they formed a new corps, and charged with more vigour than ever. If these failed, the battle was lost; the Romans had no farther resource. The moderns are unacquainted with this method of inserting or embattling one company into another; without which the former cannot be well succoured or defended, and their places taken by others; which was a thing the Romans practised with great exactness. For the *velites*, and in later times the archers and slingers, were not drawn up in this regular manner, but either disposed of before the front of the *hastati*, or scattered up and down among the void spaces of the *hastati*, or sometimes placed in two bodies in the wings. These always began the combat, skirmishing in sly parties with the foremost troops of the enemy. If they were repulsed, which was usually the case, they fell back to the flanks of the army, or retired again in the rear. When they retired, the *hastati* advanced to the charge. As to the cavalry, it was posted at the two corners of the army, like the wings on a body; and fought some-

times on foot, sometimes on horseback. The auxiliary forces composed the two points of the battle, and covered the whole body of the Romans.—Other less usual forms of battle among the Romans were the *cuneus*, or wedge; *globus*, or round form; *forfex*, or pair of sheers; *turris*, or an oblong square figure; *ferra*, or saw. The Greeks were inferior to the Romans in marshalling their armies for battle, as they drew up their whole army in a front, and trusted the success of the day to a single force. They had three forms of battle for the horse, viz. the square, the wedge, and the rhombus or diamond form. The first held best for the defensive; the latter for the offensive; the wedge being preferred as bringing most hands to fight.

The Greeks notified the places of their battles and victories by adding the word *Nix*; whence Nicomedia, Nicopolis, Theffalonica, &c. The ancient Britons did the like, by adding the word *Mais*; whence Maiffeth, Malmaisbury, &c. The English by the word *Field*.—The Romans had their particular days, called *præliares dies*, wherein alone it was lawful to join battle; and others wherein it was unlawful, called *dies atri*. The Athenians, by the ancient laws of their country, were not to draw out their forces for battle till after the seventh day of the month: And Lucian relates of the Lacedæmonians, that by the laws of Lycurgus, they were not to fight before full moon. Among the Germans, it was reputed an impiety to fight in the wane of the moon; and Cæsar tells us, that Ariovistus was beaten by him, because, contrary to the laws of his country, he had fought when the moon was in her wane. The German soldiers were intimidated with the apprehension, and afforded Cæsar an easy victory; *acie commissa, impeditos religionis hostes vicit*. It is well known that Jerusalem was taken by Pompey in an attack on the sabbath-day, when by the Jewish superstitious notions, they were not allowed to fight, or even to defend themselves. The Romans did not carry their superstition so far: their *atri dies* were only observed in respect of attacking; no day was too holy for them to defend themselves in. Among the ancients, we find frequent instances of battles in the night; it was by the moonlight that Pompey beat Mithridates, and Scipio Asdrubal and Syphax.

The first pitched battle, of which we have any distinct account, is that between Cræsus and Cyrus, described by Xenophon, concerning which we have a dissertation expressly by M. Freret, wherein several points of the ancient tactics are well explained. In the modern war, we find few pitched or set battles: the chief view of the great commanders of late days is rather to harass or starve the enemy by frequent alarms, cutting off his provisions, carrying off his baggage, seizing his posts, &c. than to join issue with him, and put the whole on the event of one day; a battle generally deciding the fate of a campaign, sometimes of a whole war. Hence it is a rule, never to venture a general battle, unless either you fight to advantage, or be forced to it. Joining or giving battle should always be by design: a general should never suffer himself to be forced to fight. All the measures, movements, encampments, he makes, are to lead to the execution of his great design, which is to fight to advantage, till by some mistake of the enemy, he at length find the favourable

Battle-axe. A favourable opportunity. It is in this that a superior genius will at length prevail over an inferior: in the course of a campaign, he will take a number of advantages over him, which together are equivalent to a battle, the event of which is ever doubtful.

Bavaria.

BATTLE-AXE, an ancient military weapon. Axes were a principal part of the offensive armour of the Celts. At the siege of the Roman Capitol by the Gauls under Brennus, we find one of the most distinguished of their warriors armed with a battle-axe. And Ammiannus Marcellinus, many centuries afterwards, describing a body of Gauls, furnishes them all with battle-axes and swords. Some of these weapons have been found in the sepulchres of the Britons, on the downs of Wiltshire, and in the north of Scotland. Within these four or five centuries the Irish went constantly armed with an axe. At the battle of Bannockburn, king Robert Bruce clave an English champion down to the chine at one blow with a battle-axe. The axe of Lochaber hath remained a formidable implement of destruction in the hands of our Highlanders, even nearly to the present period; and it is still used by the city-guard of Edinburgh in quelling mobs, &c.

BATTLEMENTS, in architecture, are indentures or notches in the top of a wall or other building, in the form of embrasures, for the sake of looking through them.

BATTOLOGY, in grammar, a superfluous repetition of some words or things.

BATTON, in merchandize, a name given to certain pieces of wood or deal for flooring or other purposes.

BATTERY, a name given by the Hans Towns to their magazines or factories abroad. The chief of these batteries are those at Archangel, Novogrod, Berghmen, Lisbon, Venice, and Antwerp.

BATUA, **BUTUA**, *Buthoe*, or *Buthoece* (anc. geog.), a town of Dalmatia situated on the Adriatic; now *Budoa*; which see.

BATTUS, an order of penitents at Avignon and in Provence, whose piety carries them to exercise severe discipline upon themselves both in public and private.

BATZ, a copper coin mixed with some silver, and current at different rates, according to the alloy, in Nuremberg, Basil, Fribourg, Lucerne, and other cities of Germany and Switzerland.

BAVARIA, a duchy and formerly electorate of Germany. This duchy was once a kingdom, which extended from the mountains of Franconia to the frontiers of Hungary and the Adriatic Gulph. It comprehended the countries of Tirol, Carinthia, Carniola, Stiria, Austria, and other states, which are now fallen to different princes. At present it is bounded on the east by Bohemia and Austria, on the west by Suabia, on the north by Franconia, and on the south by Tirol. But the Duke of Bavaria is not absolute master of all this country; for within its bounds are situated many free cities, among which is Ratibon, and several lordships both ecclesiastical and secular. It is divided into Upper and Lower Bavaria; and these two provinces consist of 12 counties, which formerly sufficed to make a duchy, according to the laws of Franconia. The country is watered by five navigable rivers, besides several smaller ones, and 16 lakes.—It contains 35 cities, of which Munich is the capital; 94 towns; 720 castles; 4700 villages; eight great abbeys; and 75 cloisters or

monasteries, besides those of the mendicants.—It is divided into four great bailliages called *governments*. These are Munich, Landshut, Straubing, and Burkhaußen. The principal cities are Ingolstadt, Donawert, Landsberg, Freiberg, Straubingen, Wilshausen, Wallerberg, Eling, Rain, &c.

Bavaria.

Besides these two provinces, the Duke of Bavaria possesses the upper palatinate of Westphalia, which has been united to Bavaria, and comprehends several counties, cities, towns, and villages. On the other side of this province is Chamb, the chief city of the county of the same name, belonging likewise to the Duke of Bavaria. He also possesses the landgraviate of Leichtenberg, which fell to him by the death of Maximilian Adam, in consequence of family pacts made between the house of Bavaria and that of Leichtenberg for their mutual succession. In 1567, the county of Kaag fell to the Duke of Bavaria by the death of Ladillaus the last count of that name. There are likewise family pacts of mutual succession established betwixt the house of Bavaria and the Palatine of the Rhine.—The inhabitants of this country are strong and laborious, exercising themselves in shooting with rifled muskets at a mark, in order to render themselves more expert in war.

The house of Bavaria is universally allowed to be one of the most ancient in Germany. The counts of Scheyren, whose castle at present is a cloister, gave them the name. At that place are shown the tombs of more than 26 lords of Scheyren. The Emperor Otho I. established as counts-palatine of Bavaria and landgraves of Scheyren, Arnolph, and Herman, sons of Arnolph brother to the Duke of Berchtold of Carinthia, marquis of the county upon the Ens. After the death of Berchtold, the same emperor, instead of giving Bavaria to his son, gave it to Duke Henry his brother, who had married Judith sister to Arnolph and Herman. This Duke Henry of Bavaria had by his marriage Henry Hczillon, who was succeeded by his son Henry, afterwards chosen emperor by the name of Henry II. This emperor having no children by Saint Cunegond his wife, Bavaria passed again to the family of Franconia, and afterwards to that of Suabia under Henry IV. who possessed it till the year 1071, when this last emperor gave that county to Count Wolf, or Guelph, of Ravensburg in Suabia. To this Guelph, who died in the island of Cyprus, succeeded Guelph II. and to him his brother Duke Henry IX. who was succeeded by his son Henry the Proud. This last had married the only daughter of the emperor Lotharius, and after the death of his father-in-law became also Duke of Saxony; but refusing to deliver up the imperial ornaments of his father-in-law to the emperor Conrad III. Duke of Suabia, or to acknowledge him for emperor, he was put to the ban of the empire, and lost his states. After the death of Henry, Conrad made his brother Leopold Marquis of Austria and Duke of Bavaria; who, dying without issue, was succeeded by his brother Henry XI. whom the emperor Frederic I. made Duke of Austria, joining together the two counties above and below the Ens, and declaring them free and independent of the government of Bavaria. The same emperor gave Bavaria thus dismembered, with Saxony, to Henry the Lion, son of Henry the Proud. But Henry the Lion afterwards losing the favour of this emperor, was put to the ban of the empire; and lost all his possessions

except

Bavay
||
Baudius.

except Brunswick and Lunenburg, which still remain to his descendants. In 1182, the duchy of Bavaria was given by the emperor to Otho the Landgrave of Witeltsbach, count-palatine of the house of Bavaria. In the time of this Otho, the castle of Scheyren was changed into a monastery, in which the Duke was buried. From him are descended the two great families that remain to this day in Germany; *viz* the counts-palatine of the Rhine, and till lately electors of Bavaria. The elector palatine is now extinct, and sunk in the elector palatine; so that there are now only eight instead of nine electoral princes in Germany.

BAVAY, a small town of the province of Hainault in French Flanders; which has been often ruined by the wars of the Low Countries. E. Long. 3. 45. N. Lat. 50. 25.

BAUCIS, in fabulous history, an old woman who lived with Philemon her husband in a cottage in Phrygia. Jupiter and Mercury, travelling over that country, were well received by them, after having been refused entertainment by every body else. To punish the people for their inhumanity, these gods laid the country waste with water; but took Baucis and Philemon with them to the top of a mountain, where they saw the deluge, and their own little hut above the waters, turned into a temple. Having a wish granted them, they desired to officiate in this temple as priest and priestess, and also that they might die both together; which was granted them.

BAUCONICA (anc. geog.), a town of the Vangiones in Gallia Belgica; nine miles from Mogontiacum, and eleven from Borbitomagum; and therefore supposed to be *Oppenheim*, a town in the palatinate of the Rhine, and situated on that river.

BAUDELLOT (Charles Casar), a learned advocate in the parliament of Paris, distinguished himself by his skill in ancient monuments, and was received into the Academy of Belles Letters in 1705. He wrote a Treatise on the Advantages of Travelling; many Letters and Dissertations on Medals, &c.; and died in 1722, aged 74.

BAUDIER (Michael), a gentleman of Languedoc, lived in the reign of Louis XIII. and published several books, which procured him the character of a copious and laborious author; among which are, 1. An Inventory of the General History of the Turks. 2. The History of the Seraglio. 3. That of the Religion of the Turks. 4. That of the Court of the King of China. 5. The Life of Cardinal Ximenes, &c.

BAUDIUS (Dominic), professor of history in the university of Leyden, born at Lisse the 8th of August 1561. He began his studies at Aix la Chapelle, and continued them at Leyden. He removed from thence to Geneva, where he studied divinity. After residing here some time, he returned to Ghent, and from thence to Leyden, where he applied to the civil law, and was admitted doctor of law in June 1585. Soon after his admission, he accompanied the ambassadors from the States to England; and during his residence here became acquainted with several persons of distinction, particularly the famous Sir Philip Sidney. He was admitted advocate at the Hague the 5th of January 1587; but being soon tired of the bar, went to travel in France, where he remained 10 years. He was much esteemed in that kingdom, and gained many friends

there. Achilles de Harlai, first president of the parliament of Paris, got him to be admitted advocate of the parliament of Paris in the year 1592. In 1602, he went to England with Christopher de Harlai, the president's son, who was sent ambassador to the court of London by Henry the Great. This same year Baudius having been named professor of eloquence at Leyden, went and settled in that university. He read lectures on history after the death of Morula, and was permitted also to do the same on the civil law. In 1611, the States conferred upon him the office of historiographer in conjunction with Meurlius; and in consequence thereof he wrote *The History of the Truce*. Baudius is an elegant prose writer, as appears from his Letters, many of which were published after his death. He was also an excellent Latin poet. The first edition of his poems was printed in the year 1587: they consist of verses of all the different measures. He published separately a book of iambics in 1591, dedicated to Cardinal Bourbon. Some of his poems he dedicated to the King of England; others to the Prince of Wales, in the edition of 1607, and went over to England to present them. He died at Leyden in 1613.

BAUDOBRIGA (anc. geog.), a town of the Treviri in Germany; now *Boppard*, in the electorate of Triers. See *BOPPART*.

BAUDRAND (Michael Anthony), a celebrated geographer, born at Paris July 18th 1633. He travelled into several countries; and then applied himself to the revival of Ferrarius's Geographical Dictionary, which he enlarged by one-half. He wrote, 1. Notes to Papirius Masso's description of the Rivers of France. 2. A Geographical and Historical Dictionary. 3. Christian Geography, or an Account of the Archbishopsrics and Bishopsrics of the whole World; and made several maps. He died at Paris May 29th 1700.

BAUHIN (John), a great botanist, was born about the middle of the 16th century. He took his doctor's degree in physic in 1562, and afterwards became principal physician to Frederick Duke of Wirtemberg. The most considerable of his works is his *Universal History of Plants*.

BAUHIN (Caspar, or Gaspar), younger brother to the preceding, was born at Basil 1550; and distinguished himself by his skill in anatomy and botany. In 1580, he was chosen first professor of these sciences at Basil; and in 1614, was made first professor of physic and first physician of that city, which he held till his death, which happened in 1623, at the age of 63. He wrote, 1. *Anatomical Institutions*; 2. *Prodromus Theatri Botanici*; and other works.

BAUGE, a druggot manufactured in Burgundy, with thread spun thick and coarse wool.

BAUGE, a small town of Anjou in France, seated on the river Coesnon. E. Long. 0. 10. N. Lat. 47. 30.

BAUGE, a town of Bresse in France, with the title of a marquisate. It is pleasantly situated on a fruitful hill, in E. Long. 4. 54. N. Lat. 46. 20.

BAUINIUM, MOUNTAIN FRONY: A genus of the monogynia order, belonging to the decandria class of plants; and in the natural method ranking under the 33d order, *Lomentaceae*. The calyx is quinquefid and deciduous; the petals are oblong, expanded, and clawed, the superior one more distant, all inserted on the calyx; the capsule is a legumen.

Bauhinia,
Bavins

Species. 1. The aculeata, with a prickly stalk, is very common in Jamaica and other American sugar-islands, where it rises to the height of 16 or 18 feet, with a crooked stem, and divides into many irregular branches armed with strong short spines, garnished with compound winged leaves, each having two or three pair of lobes ending with an odd one, which are oblique, blunt, and indented at the top. The stalks are terminated by several long spikes of yellow flowers, which are succeeded by bordered pods about three inches long, containing two or three swelling seeds. These pods are glutinous, and have a strong balsamic scent, as have also the leaves when bruised. It is called in America the *favin-tree*, from its strong odour somewhat resembling the common favin. 2. The tomentosa, with heart-shaped leaves, is a native of Campeachy; and rises to the height of 12 or 14 feet, with a smooth stem dividing into many branches, garnished with heart-shaped leaves, having two smooth-pointed lobes. The extremity of every branch is terminated by a long spike of yellow flowers, so that when these trees are in flower they make a fine appearance. 3. The acuminata, with oval leaves, is a native of both the Indies; and rises with several pretty strong, upright, smooth stems, sending out many slender branches, garnished with oval leaves deeply divided into two lobes. The flowers come out at the extremities of the branches, three or four in a loose bunch; some of the petals are red, or striped with white, but others are plain upon the same branch; the stamina and style are white, and stand out beyond the petals. These flowers are succeeded by long pods of a dark brown colour, each containing five or six roundish compressed seeds. The wood of this tree is very hard, and veined with black; whence its name of *mountain ebony*. 3. The variegata, with heart-shaped leaves, and lobes joining together; this is likewise a native of both the Indies. It rises with a strong stem upwards of 20 feet high, dividing into many strong branches, garnished with heart-shaped leaves having obtuse lobes which close together. The flowers are large, and grow in loose panicles at the extremity of the branches. They are of a purplish red colour marked with white, and have a yellow bottom. The flowers have a very agreeable scent, and are succeeded by compressed pods about six inches long, and three quarters of an inch broad, containing three or four compressed seeds in each. 5. The divaricata, with oval leaves whose lobes spread different ways. This grows naturally in great plenty on the north side of the island of Jamaica. It is a low shrub, seldom rising more than five or six feet high, but divides into several branches garnished with oval leaves dividing into two lobes that spread out from each other. The flowers grow in loose panicles at the end of the branches, have a white colour, and a very agreeable scent. The flowers appear the greatest part of the summer, so the plant is one of the greatest beauties of the hot-house. The flowers are succeeded by taper pods about four inches long, each containing four or five roundish compressed seeds of a dark colour. Besides these, five other species of bauhinia are enumerated, but the above are the most remarkable. All the species of this plant are propagated by seeds, which must be sown on hot-beds, and the plants reared in a bark-stove.

BAVINS, in war, brush faggots, made with the

brush at length. See FASCINES; and FIRE-SHIP, note D.

BAUM, in botany. See MELISSA.

BAUME (St), a mountain of Provence in France, between Marseilles and Toulon. Here Mary Magdalen is said to have died, on which account it is much frequented.

BAUME-les-Nonnes, a town of Franche Comte, with a rich nunnery, seated on the river Doux, in E. Long. 6. 20. N. Lat. 47. 12. Five miles from this town is a remarkable cavern, whose entrance is 20 paces wide; and after descending 300 paces, the gate of a grotto is seen, twice as large as that of a city. The grotto is 35 paces deep, 60 wide, and is covered with a kind of a vaulted roof, from which water continually drops. There is also a small brook, said to be frozen in summer, but not in winter; and at the bottom are stones that exactly resemble candied citron-peel. When the peasants perceive a mist rising out of this cave, they affirm that it will certainly rain the next day.

BAUMEN, or BAUMAN, a cave of Lower Saxony in Germany, about a mile from Wernigerode, and 18 from Goslar. The entrance is through a rock; and so narrow, that not above one person can pass at a time. There are several paths in it, which the peasants have turned up, in searching for the bones of animals which they sell for unicorn's horns. Some think this cave reaches as far as Goslar; but be this as it will, the skeletons of men have been found in it, who are supposed to have been lost in the turnings and windings.

BAUR (William), an eminent Flemish painter, was born at Strasburg, and was the disciple of Brendel. He was some time at Rome, where his studies were wholly employed about architecture and landscapes, which prevented his studying the antique. He painted small figures in distemper on vellum. He etched with great spirit. His largest works are in the historical way. He has given us many of the sieges, and battles, which wasted Flanders in the 16th century. They may be exact, and probably they are; but they are rather plans than pictures; and have little to recommend them but historic truth, and the freedom of the execution. His best prints are some characters he has given us of different nations, in which the peculiarities of each are very well preserved. His Ovid is a poor performance. He died at Vienna in 1640.

BAUSK or БАУТКО, a small but important town in the duchy of Courland, on the frontiers of Poland, with a strong castle built on a rock. It was taken by the Swedes in 1625, and by the Russians in 1705, after a bloody battle between them and the Swedes. It is seated on the river Mufa, in E. Long. 24. 44. N. Lat. 56. 30.

BAUTRY, or BAWTRY, a town in the west riding of Yorkshire, on the road from London to York. It has long been noted for millstones and grindstones brought hither by the river Idle, on which it is seated. W. Long. 1. 0. N. Lat. 53. 27.

BAUTZEN, or BUDISSEN, a considerable town of Germany, and capital of Upper Lusatia, subject to the elector of Saxony, with a strong citadel. The Protestants as well as Papists have here the free exercise of their religion. E. Long. 14. 42. N. Lat. 51. 10

BAUX, a town of Provence in France, with the title

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title of a marquifate, feated on a rock, at the top of which is a ftrong caſtle. E. Long. 5. o. N. Lat. 43. 42.

BAWD, a perſon who keeps a place of prostitution, or makes a trade of debauching women, and procuring or conducting criminal intrigues. Some think the word is derived from the old French *baude*, bold or impudent; though Verſlegan has a conjecture which would carry it higher, viz. from *bathe* anciently written *lads*. In which ſenſe *bawd* originally imported no more than bath-holder, as if bagnios had anciently been the chief ſcenes of ſuch prostitution.

The Romans had their male as well as female bawds; the former denominated *lenones* and *proagogi*, among us *panders*; the latter, *lenæ*. Donatus, ſpeaking of the habits of the ancient characters in comedy, ſays, *Leno paliis varis coloris utitur*. But the ancient *lenones*, it is to be obſerved, furniſhed boys as well as girls for venereal ſervice. Another ſort of theſe merchants or dealers in human fleſh, were called *mangones*, by the Greeks *ανδρομαχανοι*, who ſold eunuchs, ſlaves, &c. By a law of Conſtantine, bawds were to be puniſhed by pouring melted lead down their throats. See the next article.

BAWDY-HOUſE, a houſe of ill fame, to which lewd perſons of both ſexes reſort, and there have criminal converſation.

The keeping a bawdy-houſe is a common nuisance, not only on account that it endangers the public peace by drawing together debauched and idle perſons, and promoting quarrels, but likewiſe for its tendency to corrupt the manners of the people. And therefore perſons convicted of keeping bawdy-houſes, are puniſhable by fine and imprifonment; alſo liable to ſtand in the pillory, and to ſuch other puniſhment as the court at their diſcretion ſhall inflict. Perſons reſorting to a bawdy-houſe are likewiſe puniſhable, and they may be bound to their good behaviour.—It was always held infamous to keep a bawdy-houſe; yet ſome of our hiſtorians mention bawdy-houſes publicly allowed here in former times till the reign of Henry VIII. and aſſign the number to be 18 thus allowed on the bank-ſide in Southwark. See **STEW**s and **BROTHER**.

Bawdy-houſes are licensed in Holland, and pay a conſiderable tax to the ſtate.

BAWLING, among ſportsmen, is ſpoke of the dogs when they are too buſy before they find the ſcent good.

BAXTER (Richard), an eminent divine among the nonconformiſts, was born at Rowton in Shropſhire, November 12. 1615; and diſtinguiſhed himſelf by his exemplary life, his pacific and moderate principles, and his numerous writings. He was remarkable for his piety even when he was very young. Upon the opening of the long parliament, he was choſen vicar of Kiddermiſter. In the heat of the civil war he withdrew from that town to Coventry, and preached to the gariſon and inhabitants. When Oliver Cromwell was made proteſtor, he would by no means comply with his meaſures, though he preached once before him. He came to London juſt before the depoſing of Richard Cromwell, and preached before the parliament the day before they voted the return of king Charles II. who upon his reſtoration appointed

him one of his chaplains in ordinary. He aſſiſted at the conference in the Savoy, as one of the commiſſioners for ſtating the fundamentals in religion, and then drew up a reformed liturgy. He was offered the biſhoprick of Hereford; which he reſuſed; affecting no higher preferment than the liberty of continuing miniſter of Kiddermiſter; which he could not obtain, for he was not permitted to preach there above twice or thrice after the reſtoration. Whereupon he returned to London, and preached occaſionally about the city, till the act of uniformity took place. In 1662, Mr Baxter was married to Margaret Charleton, daughter to Francis Charleton, Eſq; of the county of Salop, who was eſteemed one of the beſt juſtices of the peace in that county. She was a woman of great piety, and entered thoroughly into her husband's views concerning religion. During the plague in 1665 he retired into Buckinghamſhire; but afterward returned to Acton, where he ſtaid till the act againſt conventicles expired; and then his audience was ſo large that he wanted room. Upon this he was committed to priſon; but procuring an habeas corpus, he was diſcharged. After the indulgence in 1672, he returned to London; and in 1682 he was ſeized for coming within five miles of a corporation. In 1684 he was ſeized again; and in the reign of king James II. was committed priſoner to the king's bench, and tried before the lord chief juſtice Jefferies for his Paraphraſe on the New Teſtament, which was called a *ſcantulous* and *ſeditious* book againſt the government. He continued in priſon two years; from whence he was at laſt diſcharged, and had his fine remitted by the king. He died December the 8th 1691; and was buried in Chriſt-Church.

Mr Sylveſter ſays, that Mr Baxter's "perſon was tall and ſlender, and ſtooped much; his countenance compoſed and grave, ſomewhat inclining to ſmile. He had a piercing eye, a very articulate ſpeech, and deportment rather plain than complimentary." There is an original portrait of him at Dr Williams's library, founded for the uſe of Proteſtant Diſſenting Miniſters, in Red-croſs-ſtreet. Mr Sylveſter alſo ſays, that "he had a great command over his thoughts. He had that happy faculty, ſo as to answer the character that was given of him by a learned man diſſenting from him, after diſcourſe with him; which was, that *he could ſay what he would, and he could prove what he ſaid*. He was moſt intent upon the neceſſary things. Rational learning he moſt valued, and was a very extraordinary maſter of. And as to his expreſſive faculty, he ſpoke properly, plainly, pertinent, and pathetically. He could ſpeak ſuitably, both to mens capacities and to the things inſiſted on. He was a perſon wonderful at extempore preaching." But his common practice appears to have been to preach with notes; though he ſaid, "That he thought it very needful for a miniſter to have a body of divinity in his head." He was honoured with the friendſhip of ſome of the greateſt and beſt men in the kingdom (as the Earl of Lauderdale, the Earl of Balcarraſ, Lord Chief Juſtice Hales, Dr Tillotſon, &c. and held correſpondence with ſome of the moſt eminent foreign divines.—He wrote above 120 books, and had above 60 written againſt him. The former, however, it ſhould ſeem, were greatly preferable to the latter; ſince Dr Barrow, an excellent judge,

Baxter.

Baxter. says, that "his practical writings were never mended, his controverfial seldom confuted."

Mr Granger's character of him is too striking to be omitted. "Richard Baxter was a man famous for weaknefs of body and strength of mind; for having the ftrongeft fenfe of religion himfelf, and exciting a fenfe of it in the thoughtlefs and profligate; for preaching more fermons, engaging in more controverfies, and writing more books, than any other Nonconformift of his age. He fpoke, difputed, and wrote with eafe; and difcovered the fame intrepidity when he reproved Cromwell and expoftulated with Charles II. as when he preached to a congregation of mechanics. His zeal for religion was extraordinary; but it feems never to have prompted him to faction, or carried him to enthufiafm. This champion of the Prefbyterians was the common butt of men of every other religion, and of thofe who were of no religion at all. But this had very little effect upon him: his prefence and his firmnefs of mind on no occafion forfook him. He was juft the fame man before he went into a prifon, while he was in it, and when he came out of it; and he maintained an uniformity of character to the laft gasp of his life. His enemies have placed him in hell; but every man who has not ten times the bigotry that Mr Baxter himfelf had, muft conclude that he is in a better place. This is a very faint and imperfect fketeh of Mr Baxter's character: men of his fize are not to be drawn in miniature. His portrait, in full proportion, is in his *Narrative of his own Life and Times*; which though a rhapsody, compofed in the manner of a diary, contains a great variety of memorable things, and is itfelf, as far as it goes, a *History of Nonconformity*."—Among his moft famous works were, 1. *The Saints Everlafting Reft*. 2. *Call to the Unconverted*, of which 20,000 were fold in one year; and it was tranflated not only into all the European languages, but into the Indian tongue. 3. *Poor Man's Family Book*. 4. *Dying Thoughts*; and, 5. *A Paraphrafe on the New Teftament*. His practical works have been printed in four volumes folio.

BAXTER (William), nephew and heir to the former, was an eminent fchoolmafter and critic. He was born at Lanlugany in Shropfhire, in the year 1650; and it is remarkable, that at the age of 18, when he firft went to fchool, he knew not one letter nor underftood one word of any language but Welch; but he fo well improved his time, that he became a perfon of great and extenfive knowledge. His genius led him chiefly to the ftudy of antiquities and philology, in which he compofed feveral books. The firft he published was a Grammar, in 1679, intitled *De Analogia feu Arte Latine Lingue Commentariolus*. He alfo published a new and correct edition of *Anacreon*, with Notes; an edition of *Horace*; a *Dictionary of the British antiquities*, in Latin; and feveral other books. He was a great mafter of the ancient British and Irifh tongues, was particularly skilled in the Latin and Greek, and in the northern and eaftern languages. He died May 31. 1723, after being above 20 years mafter of Mercer's School in London.

BAXTER (Andrew), a very ingenious metaphyfical writer, was born in 1686 or 1687, at Old Aberdeen (where his father was a merchant), and educated in King's College there. His principal employment was

that of a private tutor to young gentlemen; and among others of his pupils were Lord Grey, Lord Blantyre, and Mr Hay of Drummelzier. About 1724 he married the daughter of a clergyman in the fhire of Berwick. A few years after he published in 4to, "An Inquiry into the Nature of the human Soul, wherein its immateriality is evinced from the principles of reafon and philofophy;" without date. In 1741 he went abroad with Mr Hay, and refided fome years at Utrecht; having there alfo Lord Blantyre under his care. He made excursions from thence into Flanders, France, and Germany; his wife and family refiding, in the mean time, chiefly at Berwick-upon-Tweed. He returned to Scotland in 1747, and refided till his death at Whittingham, in the fhire of Eaft Lothian. He drew up, for the ufe of his pupils and his fon, a piece intitled *Matho: five, Cofmoftheoria puerilis, Dialogus. In quo prima elementa de mundi ordine et ornatu proponuntur, &c.* This was afterwards greatly enlarged, and publifhed in Englifh, in two volumes 8vo. In 1750 was publifhed, "An Appendix to his Inquiry into the Nature of the human Soul;" wherein he endeavours to remove fome difficulties which had been ftarted againft his notions of the *vis inertiae* of matter by Maclaurin, in his "Account of Sir Ifaac Newton's Philofophical Discoveries." To this piece Mr Baxter prefixed a dedication to Mr John Wilkes, with whom he had commenced an acquaintance abroad. He died this year, April the 23d, after fuffering for fome months under a complication of diforders, of which the gout was the chief. He left a wife, three daughters, and one fon, Mr Alexander Baxter; from which laft the authors of *Biographia Britannica* received, as they inform us, fundry particulars of his life.

His learning and abilities are fufficiently difplayed in his writings. He was extremely ftudious, and fometimes fat up whole nights in reading and writing. His temper at the fame time was very cheerful, and he was a friend to innocent merriment. It is informed by his fon, that he entered with much good humour into the converfation and pleafures of young people, when they were of an innocent nature: and that he prefided, all the time of his abode at Utrecht, at the ordinary which was frequented by all the young Englifh gentlemen there, with much gaiety and politenefs, and in fuch a manner as gave univerfal fatisfaction. He alfo frequented the moft polite affemblies in that city, and his company and converfation were particularly acceptable to the ladies. So that Mr Baxter appears to have ftudied the graces, though without neglecting more valuable acquifitions and accomplifhments. He was at once the fcholar and the gentleman. In converfation he was modeft, and not apt to make much fhew of the extenfive knowledge of which he was poffeffed. In the difcharge of the feveral focial and relative duties of life, his conduct was exemplary. He had the moft reverential fentiments of the Deity, of whose prefence and immediate fupport he had always a ftrong impreffion upon his mind; and the general tenor of his life appears to have been conformable to the rules of virtue. Mr Baxter paid a ftrict attention to oeconomy, though he drefled elegantly, and was not parifimonious in his other expences. It is known alfo, that there were feveral occafions on which he acted with remarkable difintereftednefs; and fo

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so far was he from courting preferment, that he has repeatedly declined considerable offers of that kind which were made him, if he would have taken orders in the church of England. The French, German, and Dutch languages were spoken by him with much ease, and the Italian tolerably; and he wrote and read them all, together with the Spanish. His friends and correspondents were numerous and respectable; and among them are particularly mentioned Mr Pointz, precursor to the late Duke of Cumberland, and Dr Warburton, bishop of Gloucester. He was a man also of great benevolence and candour; which appears most strikingly from this, inasmuch as though Mr Wilkes had made himself so very obnoxious to the Scottish nation in general, yet Mr Baxter kept up with him an affectionate correspondence to the last, even after he was unable to write with his own hand. He left many manuscripts behind him; he would gladly have finished his work upon the human soul: "I own," says he, in a letter to Mr Wilkes, "if it had been the will of heaven, I would gladly have lived till I had put in order the second part of the Enquiry, showing the immortality of the human soul; but Infinite Wisdom cannot be mistaken in calling me sooner. Our blindness makes us form wishes." It was, indeed, what he considered it, his capital work: a second edition of it was published in two volumes 8vo in 1737, and a third in 1745. In another letter, speaking of his endeavours to establish the particular providence of the Deity, and to show his incessant influence and action on all the parts of matter, through the wide universe, from the inactivity of this dead substance; expresses his hope, that when the present party-zeal subsides a little, men will come more easily in to own such a plain truth. "His prediction," the editors of the Biographia Britannica observe, "hath not yet been accomplished. Several eminent names seem rather disposed to increase than to lessen the powers of matter; and they have expressly maintained that the soul of man is material. However, other names equally eminent have asserted the essential distinction between the mind and the body. Perhaps, in the revolutions of opinion, the doctrine of immateriality may again obtain the general suffrage of metaphysical and philosophical inquiry.

BAY, in geography, an arm of the sea shooting up into the land, and terminating in a nook. It is a kind of lesser gulph bigger than a creek, and is larger in its middle within than at its entrance. The largest and most noted bays in the world are those of Biscay, Bengal, Hudson's, Panama, &c.

BAY denotes likewise a pond-head made to keep in store of water for driving the wheels of the furnace or hammer belonging to an iron-mill, by the stream that comes thence through a flood-gate called the *pen-stock*.

Bay-colour denotes a sort of red inclining to chestnut, chiefly used in speaking of horses. In this sense, the word *bay* is formed from the Latin *baius*, or *badius*, and that from the Greek *βαῖος*, a *palm branch*; so that *badius* or *bay* properly denotes *color phœniceus*. Hence also, among the ancients, those now called *bay horses*, were denominated *equi palmati*. We have divers sorts and degrees of bays; as a light bay, a dapple bay, &c. All bay horses are said to have black manes; which distinguishes them from sorrels, which have red or white manes.

BAY, among huntsmen, is when the dogs have earthed a vermin, or brought a deer, boar, or the like, to turn head against them. In this case, not only the deer, but the dogs, are said to bay. It is dangerous going in to a hart at bay, especially at rutting-time; for then they are fiercest. There are bays at land, and others in the water.

Bay-Tree. See LAURUS.

Bay-Salt. See SALT.

BAYA, or BAJA, a town of Lower Hungary, in the county of Bath, situated near the Danube. E. Long. 19. 30. N. Lat. 46. 25.

BAYARD (Peter du Terrail de), esteemed by his contemporaries the model of soldiers and men of honour, and denominated *The knight without fear and without reproach*, was descended from an ancient and noble family in Dauphiné. He was with Charles VIII. at the conquest of the kingdom of Naples; where he gave remarkable proofs of his valour, especially at the battle of Fornoue. He was dangerously wounded at the taking of the city of Brescia; and there restored to the daughters of his host 2000 pistoles, which their mother had directed them to give him in order to prevent the house from being plundered; an action that has been celebrated by many historians. At his return to France, he was made lieutenant-general of Dauphiné. He fought by the side of Francis I. at the battle of Marignan; and that prince afterwards insisted on being knighted by his hand, after the manner of the ancient knights. The chevalier Bayard defended Meziens during six weeks, against Charles V.'s army. In 1524, at the retreat of Rebec † (the general Bonivet having † *Fig of Charles V. Book iii.* been wounded and obliged to quit the field), the conduct of the rear was committed to the chevalier Bayard, who, though so much a stranger to the arts of a court that he never rose to the chief command, was always called, in times of real danger, to the posts of greatest difficulty and importance. He put himself at the head of the men at arms; and animating them by his presence and example to sustain the whole shock of the enemy's troops, he gained time for the rest of his countrymen to make good their retreat. But in this service he received a wound which he immediately perceived to be mortal; and being unable to continue any longer on horseback, he ordered one of his attendants to place him under a tree, with his face towards the enemy; then fixing his eyes on the guard of his sword, which he held up instead of a cross, he addressed his prayers to God; and in this posture, which became his character both as a soldier and as a Christian, he calmly waited the approach of death. Bourbon, who led the foremost of the enemy's troops, found him in this situation, and expressed regret and pity at the sight. "Pity not me," cried the high-spirited chevalier, "I die as a man of honour ought, in the discharge of my duty: they indeed are objects of pity, who fight against their king, their country, and their oath." The marquis de Pescara, passing soon after, manifested his admiration of Bayard's virtue, as well as his sorrow for his fate, with the generosity of a gallant enemy; and finding that he could not be removed with safety from that spot, ordered a tent to be pitched there, and appointed proper persons to attend him. He died, notwithstanding their care, as his ancestors for several generations had done, in the field of battle. Pescara ordered

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ordered his body to be embalmed, and sent to his relations; and such was the respect paid to military merit in that age, that the duke of Savoy commanded it to be received with royal honours in all the cities of his dominions: in Dauphiné, Bayard's native country, the people of all ranks came out in a solemn procession to meet it.

BAYEUX, a considerable town of France in Normandy, and capital of Bessin, with a rich bishop's see. The cathedral church is accounted the finest in that province; and its front and three high steeples are said to be the best in France. W. Long. o. 33. N. Lat. 49. 16.

BAYLE (Peter), author of the Historical and Critical Dictionary, was born November 18. 1657, at Carla, a village in the county of Foix, in France, where his father John Bayle was a Protestant minister. In 1666, he went to the Protestant university at Puy-laureus, where he studied with the greatest application; and in 1669, removed to the university of Toulouse, whether the Protestants at that time frequently sent their children to study under the Jesuits; but here, to the great grief of his father, he embraced the Romish religion; however, being soon sensible of his error, he left that university, and went to study at Geneva. After which he was chosen professor of philosophy at Sedan: but that protestant university being suppressed by Lewis XIV. in 1681, he was obliged to leave the city; and was soon after chosen professor of philosophy and history at Rotterdam, with a salary of about L. 45 a-year. The year following he published his Letter concerning Comets. And Father Maimbourg having published about this time his History of Calvinism, wherein he endeavours to draw upon the Protestants the contempt and resentment of the Catholics, Mr Bayle wrote a piece to confute his history. The reputation which he had now acquired, induced the States of Friezland, in 1684, to offer him a professorship in their university; but he wrote them a letter of thanks, and declined the offer. This same year he began to publish his *Nouvelles de la republique des lettres*.

In 1686, he was drawn into a dispute in relation to the famous Christina queen of Sweden. In his Journal for April, he took notice of a printed letter, supposed to have been written by her Swedish majesty to the chevalier de Terlon, wherein she condemns the persecution of the Protestants in France. He inserted the letter itself in his Journal for May; and in that of June following he says, "What we hinted at in our last month, is confirmed to us from day to day, that Christina is the real author of the letter concerning the persecutions in France, which is ascribed to her: it is a remainder of Protestantism." Mr Bayle received an anonymous letter; the author of which says, that he wrote to him of his own accord, being in duty bound to it as a servant of the queen. He complains that Mr Bayle, speaking of her majesty, called her only *Christina*, without any title; he finds also great fault with his calling the letter "a remainder of Protestantism." He blames him likewise for inserting the words "I am," in the conclusion of the letter. "These words (says this anonymous writer) are not her majesty's; a queen, as she is, cannot employ these words but with regard to a very few persons, and Mr de Ter-

lon is not of that number." Mr Bayle wrote a vindication of himself as to these particulars, with which the author of the anonymous letter declared himself satisfied, excepting what related to "the remainder of Protestantism." He would not admit of the defence with regard to that expression; and in another letter, advised him to retract that expression. He adds in a postscript, "You mention, in your Journal of August, a second letter of the queen, which you scruple to publish. Her majesty would be glad to see that letter; and you will do a thing agreeable to her if you would send it to her. You might take this opportunity of writing to her majesty. This council may be of some use to you; do not neglect it." Mr Bayle took the hint, and wrote a letter to her majesty, dated the 14th of November 1686; to which the queen, on the 14th of December, wrote the following answer:—"Mr Bayle, I have received your excuses; and am willing you should know by this letter, that I am satisfied with them. I am obliged to the zeal of the person who gave you occasion of writing to me: for I am very glad to know you. You express so much respect and affection for me, that I pardon you sincerely; and I would have you know, that nothing gave me offence but that *remainder of Protestantism*, of which you accused me. I am very delicate on that head, because nobody can suspect me of it, without lessning my glory, and injuring me in the most sensible manner. You would do well if you should even acquaint the public with the mistake you have made, and with your regret for it. This is all that remains to be done by you, in order to deserve my being entirely satisfied with you. As to the letter which you have sent me, it is mine without doubt; and since you tell me that it is printed, you will do me a pleasure if you send me some copies of it. As I fear nothing in France, so neither do I fear any thing at Rome. My fortune, my blood, and even my life, are entirely devoted to the service of the church; but I flatter nobody, and will never speak any thing but the truth. I am obliged to those who have been pleased to publish my letter, for I do not at all disguise my sentiments. I thank God, they are too noble and too honourable to be disowned. However, it is not true that this letter was written to one of my ministers. As I have every where enemies and persons who envy me, so in all places I have friends and servants: and I have possibly as many in France, notwithstanding of the court, as any where in the world. This is purely the truth, and you may regulate yourself accordingly. But you shall not get off so cheap as you imagine. I will enjoin you a penance; which is, that you will henceforth take the trouble of sending me all curious books that shall be published in Latin, French, Spanish, or Italian, on whatever subject or science, provided they are worthy of being looked into; I do not even except romances or faires; and above all, if there are any books of chemistry, I desire you may send them to me as soon as possible. Do not forget likewise to send me your Journal. I shall order that you be paid for whatever you lay out, do but send me an account of it. This will be the most agreeable and most important service that can be done me. May God prosper you. CHRISTINA ALEXANDRA."

It now only remained that Mr Bayle should acquaint the public with the mistake he had made, in order to

Bayle.

Bayle.

merit that princess's entire satisfaction; and this he did in the beginning of his Journal of the month of January, 1687.

The persecution which the Protestants at this time suffered in France affected Mr Bayle extremely. He made occasionally some reflections on their sufferings in his Journal; and he wrote a pamphlet also on the subject. Some time afterwards he published his *Commentaire Philosophique* upon these words, "Compel them to come in:" but the great application he gave to this and his other works, threw him into a fit of sickness, which obliged him to discontinue his Literary Journal. Being advised to try a change of air, he left Rotterdam on the 8th of August, and went to Cleves; whence after having continued some time, he removed to Aix la Chapelle, and from thence returned to Rotterdam on the 18th of October. In the year 1690, the famous book, intitled, *Avis aux Refugez*, &c. made its appearance. Mr Jurieu, who took Mr Bayle for the author thereof, wrote a piece against it; and he prefixed an advice to the public, wherein he calls Mr Bayle a profane person, and a traitor engaged in a conspiracy against the state. As soon as Mr Bayle had read this libel against him, he went to the grand Schout of Rotterdam, and offered to go to prison; provided his accuser would accompany him, and undergo the punishment he deserved if the accusation was found unjust. He published also an answer to Mr Jurieu's charge; and as his reputation, nay his very life, was at stake in case the accusation of treason was proved, he therefore thought himself not obliged to keep any terms with his accuser, and attacked him with the utmost severity. Mr Jurieu lost all patience: he applied himself to the magistrates of Amsterdam, who advised him to a reconciliation with Mr Bayle, and enjoined them not to publish any thing against each other till it was examined by Mr Boyer, the pensioner of Rotterdam. But notwithstanding this prohibition, Mr Jurieu attacked Mr Bayle again with so much passion, that he forced him to write a new vindication of himself.

In November 1690, Mr de Beauval advertised in his Journal. *A scheme for a Critical Dictionary*. This was the work of Mr Bayle. The articles of the three first letters of the alphabet were already prepared; but a dispute happening betwixt him and Mr de Beauval, obliged him for some time to lay aside the work. Nor did he resume it till May 1692, when he published his scheme: but the public not approving of his plan, he threw it into a different form; and the first volume was published in August 1695, and the second in October following. The work was extremely well received by the public; but it engaged him in fresh disputes, particularly with Mr Jurieu and the abbe Renaudot. Mr Jurieu published a piece, wherein he endeavoured to engage the ecclesiastical assemblies to condemn the dictionary; he presented it to the senate sitting at Delft, but they took no notice of the affair. The consistory of Rotterdam granted Mr Bayle a hearing; and after having heard his answers to their remarks on his dictionary, declared themselves satisfied, and advised him to communicate this to the public. Mr Jurieu made another attempt with the consistory in 1698; and so far he prevailed with them, that they exhorted Mr Bayle to be more cautious with regard to his principles in the second edition of his dictionary; which was

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published in 1702, with many additions and improvements.

Mr Bayle was a most laborious and indefatigable writer. In one of his letters to Maizeux, he says, that since his 20th year he hardly remembers to have had any leisure. His intense application contributed perhaps to impair his constitution, for it soon began to decline. He had a decay of the lungs, which weakened him considerably; and as this was a distemper which had cut off several of his family, he judged it to be mortal, and would take no remedies. He died the 28th of December 1706, after he had been writing the greatest part of the day. He wrote several books besides what we have mentioned, many of which were in his own defence against attacks he had received from the abbe Renaudot, Mr Clerk, M. Jaquelot, and others. Among the productions which do honour to the age of Louis XIV. Mr Voltaire has not omitted the Critical Dictionary of our author: "It is the first work of the kind (he says) in which a man may learn to think." He censures indeed those articles which contain only a detail of minute facts, as unworthy either of Bayle, an understanding reader, or posterity. "In placing him (continues the same author) amongst the writers who do honour to the age of Louis XIV. notwithstanding his being a refugee in Holland, I only conform to the decree of the parliament of Thoulouse, which, when it declared his will valid in France, notwithstanding the rigour of the laws, expressly said, *that such a man could not be considered as a foreigner.*"

BAYLY (Lewis), author of that most memorable book, intitled *The Practice of Piety*. He was born at Caermarthen in Wales, educated at Oxford, made minister of Evesham in Worcestershire about 1611, became chaplain to king James, and promoted to the see of Bangor in 1616. His book is dedicated to the high and mighty prince, Charles prince of Wales; and the author tells his highness, that "he had endeavoured to extract out of the chaos of endless controversies the old practice of true piety, which flourished before these controversies were hatched." The design was good; and the reception this book has met with may be known from the number of its editions, that in 8vo, 1734, being the fifty-ninth. This prelate died in 1632.

BAYON, a town of France, in Lorraine, seated on the river Moselle. E. Long. 14. 42. N. Lat. 48. 30.

BAYON, or *Baysna*, a town of Galicia, in Spain, seated on a small gulph of the Atlantic ocean, about 12 miles from Tuy. It has a very commodious harbour, and the country about it is fertile. W. Long. 9. 30. N. Lat. 43. 3.

BAYONET, in the military art, a short broad dagger, formerly with a round handle fitted for the bore of a firelock, to be fixed there after the soldier had fired; but they are now made with iron handles and rings, that go over the muzzle of the firelock, and are screwed fast, so that the soldier fires with his bayonet on the muzzle of his piece, and is ready to act against the horse. This use of the bayonet fastened on the muzzle of the firelock was a great improvement, first introduced by the French, and to which, according to M. Folard, they owed a great part of their victories in the last century; and to the neglect of this in the next

Bayle

Bayonet.

Bayonne,
Bays.

succeeding war, and trusting to their fire, the same author attributes most of the losses they sustained. At the siege of Malta, a weapon called *pila ignea* was contrived to oppose the bayonets, being in some measure the converse thereof; as the latter consists of a dagger added to a fire-arm, the former consisted of a fire-arm added to a pilum or pike.

Of late the bayonet has come into very general use; and battles have been won by it without firing a shot. This way of fighting was chiefly restored by the late king of Prussia, who made his troops rush forward at once with bayonets on the enemy.

BAYONNE, a city of Gascony, in France; seated near the mouth of the river Adour, which forms a good harbour. It is moderately large, and of great importance. It is divided into three parts. The great town is on this side the river Nive: the little town is between the Nive and the Adour; and the suburbs of Saint Esprit is beyond this last river. Both the former are surrounded with an old wall and a dry ditch, and there is a small castle in each. That of Great Bayonne is flanked with four round towers, and is the place where the governor resides. The new castle is flanked with four towers, in the form of bastions. The first inclosure is covered with another, composed of eight bastions, with a great horn-work, and a half-moon; all which are encompassed with a ditch, and a covered way. There is a communication between the city and the suburbs by a bridge, and the suburbs is well fortified. The citadel is seated beyond the Adour, on the side of the suburbs abovementioned. The public buildings have nothing remarkable; it is the only city in the kingdom that has the advantage of two rivers, wherein the tide ebbs and flows. The river Nive is deeper than the Adour, but less rapid, by which means ships come up into the middle of the city. There are two bridges over this river, by which the old and new town communicate with each other. The trade of this town is the more considerable, on account of its neighbourhood to Spain, and the great quantity of wines which are brought hither from the adjacent country. The Dutch carry off a great number of pipes in exchange for spices and other commodities, which they bring thither. The inhabitants have the privilege of guarding two of their three gates, and the third is kept by the king. W. Long. 1. 20. N. Lat. 43. 20.

BAYS, in commerce, a sort of open woollen stuff, having a long nap, sometimes frized, and sometimes not. This stuff is without wale; and is wrought in a loom with two treddles, like flannel. It is chiefly manufactured at Colchester and Bockin in Essex, where there is a hall called the *Dutch-bay hall* or *raw-hall*. This manufacture was first introduced into England, with that of sars, farges, &c. by the Flemings; who being persecuted by the duke of Alva for their religion, fled thither about the fifth of Queen Elizabeth's reign; and had afterwards peculiar privileges granted them by act of parliament 12 Charles II. 1660, which the bays-makers in the above places still enjoy.—The exportation of bays was formerly much more considerable than at present when the French have learned to imitate them. However, the English bays are still sent in great quantities to Spain and Portugal, and even to Italy. Their chief use is for dressing the monks and nuns, and for linings, especially in the ar-

my. The looking-glass makers also use them behind their glasses, to preserve the tin or quicksilver; and the calemakers, to line their cases. The breadth of bays is commonly a yard and a half, a yard and three quarters, or two yards, by 42 to 48 in length. Those of a yard and three quarters are most proper for the Spanish trade.

BAZADOIS, a province of Guienne in France, which makes part of Lower Gascony. It is a barren heathy country. Its capital is Bazas.

BAZAR, or BASAR, a denomination among the Turks and Persians, given to a kind of exchanges, or places where their finest stuffs and other wares are sold. These are also called *bazestins*. The word *bazar* seems of Arabic origin, where it denotes sale, or exchange of goods. Some of the eastern bazars are open, like the market-places in Europe, and serve for the same uses, more particularly for the sale of the bulky and less valuable commodities. Others are covered with lofty ceilings, or even domes, pierced to give light; and it is in these the jewellers, goldsmiths, and other dealers in the richer wares, have their shops. The bazar or maidan of Ispahan is one of the finest places in Persia, and even surpasses all the exchanges in Europe; yet, notwithstanding its magnificence, it is excelled by the bazar of Tauris, which is the largest that is known, having several times held 30,000 men ranged in order of battle. At Constantinople, there is the old and the new bazar, which are large square buildings, covered with domes, and sustained by arches and pilastres; the former chiefly for arms, harnesses, and the like; the latter for goldsmiths, jewelers, furriers, and all sorts of manufacturers.

BAZAS, a town of Guienne in France, capital of the Bazadois, with a bishop's see. It is built on a rock, in W. Long. 0. 30. N. Lat. 44. 20.

BAZAT, or BAZA, in commerce, a long, fine, spun cotton, which comes from Jerusalem, whence it is also called *Jerusalem-cotton*.

BAZGENDGES, in natural history, the name of a substance used by the Turks and other eastern nations in their scarlet-dying. They mix it for this purpose with cochineal and tartar; the proportions being two ounces of the bazgendges to one ounce of cochineal. These are generally esteemed a sort of fruit, and are produced on certain trees in Syria and other places; and it is usually supposed, that the scarcity and dearth of them is the only thing that makes them not used in Europe. But the bazgendges seem to be no other than the horns of the turpentine-tree in the eastern parts of the world; and it is not only in Syria that they are found, but China also affords them. Many things of this kind were sent over to Mr Geoffroy at Paris from China as the substances used in the scarlet-dying of that country, and they all proved wholly the same with the Syrian and Turkish bazgendges, and with the common turpentine horns. The lentisk, or mastic-tree, is also frequently found producing many horns of a like kind with these, and of the same origin, all being owing to the pucerons, which make their way into the leaves to breed their young there.

BDELLIUM, a gummy resinous juice, produced by a tree in the East Indies, of which we have no satisfactory account. It is brought into Europe both from the East Indies and Arabia. It is in pieces of
different

Bazadois
||
Bdellium.

Beachy
||
Ecad.

different sizes and figures, externally of a dark reddish brown, somewhat like myrrh; internally it is clear, and not unlike to glue; to the taste it is slightly bitterish and pungent; its odour is very agreeable. If held in the mouth, it soon becomes soft and tenacious, sticking to the teeth. Laid on a red-hot iron, it readily catches flame, and burns with a crackling noise, and in proportion to its goodness it is more or less fragrant. Near half of its substance dissolves either in water or in spirit of wine; but the tincture made with spirit is somewhat stronger, and by much more agreeable. Vinegar, or verjuice, dissolves it wholly. The simple gum is a better medicine than any preparation from it. It is one of the weakest of the deobstruent gums, but it is used as a pectoral and an emmenagogue.

BEACHY-HEAD, a promontory on the coast of Suffolk, between Hastings and Shoreham, where the French defeated the English and Dutch fleet in 1690.

BEACON, a signal for the better securing the kingdom from foreign invasions. See **SIGNAL**.

On certain eminent places of the country are placed long poles erect, whereon are fastened pitch-barrels to be fired by night, and smoke made by day, to give notice in a few hours to the whole kingdom of an approaching invasion. These are commonly called *beacons*; whence also comes *beaconage*.—We find beacons familiarly in use among the primitive Britons and Western Highlanders. The besieged capital of one of our northern isles in the third century actually lighted up a fire upon a tower; and Fingal instantly knew “the green flame edged with smoke” to be a token of attack and distress*. And there are to this day several cairns or heaps of stones upon the heights along the coasts of the Harries, on which the inhabitants used to burn heath as a signal of an approaching enemy.

BEACONS are also marks and signs erected on the coasts, for guiding and preserving vessels at sea, by night as well as by day.

The erection of beacons, light-houses, and sea-marks, is a branch of the royal prerogative. The king hath the exclusive power, by commission under his great seal, to cause them to be erected in fit and convenient places, as well upon the lands of the subject as upon the demesnes of the crown: which power is usually vested by letters patent in the office of lord high admiral. And by statute 8 Eliz. c. 13. the corporation of the trinity-house are empowered to set up any beacons or sea-marks wherever they shall think them necessary; and if the owner of the land or any other person shall destroy them, or shall take down any steeple, tree, or other known sea-mark, he shall forfeit 100l. or, in case of inability to pay it, shall be *ipso facto* outlawed.

BEACONAGE, money paid towards the maintenance of a beacon. See **BEACON**.—The word is derived from the Saxon *beacninn*, to nod, or show by a sign; hence also the word *beckon*.

BEACONSFIELD, a town of Buckinghamshire in England, seated on a hill in the road between London and Oxford. It has several good inns, though not above 100 houses. W. Long. o. 25. N. Lat. 51. 36.

BEAD, a small globule or ball used in necklaces; and made of different materials, as pearl, steel, garnet, coral, diamond, amber, crystal, pallas, glais, &c.—The Romanists make great use of beads in rehearsing

their *Ave-Marias* and *Pater-nosters*; and the like usage is found among the dervises and other religious throughout the East, as well Mahometan as Heathen. The ancient Druids appear also to have had their beads, many of which are still found; at least, if the conjecture of an ingenious author may be admitted, who takes those antique glass globules, having a snake painted round them, and called *adder-beads*, or *snake-buttons*, to have been the beads of our ancient Druids. See **ANGUIS**.

BEADS are also used in speaking of those glass globules vended to the savages on the coast of Africa; thus denominated, because they are strung together for the convenience of traffic.

The common black glass of which beads are made for necklaces, &c. is coloured with manganese only: one part of manganese is sufficient to give a black colour to near twenty of glass.

BEAD, in architecture, a round moulding, commonly made upon the edge of a piece of stuff, in the Corinthian and Roman orders, cut or carved in short embossments, like beads in necklaces.

BEAD-Makers, called by the French *paternostriers*, are those employed in the making, stringing, and selling of beads. At Paris there are three companies of paternostriers, or bead-makers; one who make them of glass or crystal; another in wood and horn; and the third in amber, coral, jet, &c.

BEAD-Proof, a term used by our distillers to express that sort of proof of the standard strength of spirituous liquors, which consists in their having, when shaken in a phial, or poured from on high into a glass, a crown of bubbles, which stand on the surface some time after. This is esteemed a proof that the spirit consists of equal parts of rectified spirits and phlegm. This is a fallacious rule as to the degree of strength in the goods; because any thing that will increase the tenacity of the spirit, will give it this proof, though it be under the due strength. Our malt-distillers spoil the greater part of their goods, by leaving too much of the stinking oil of the malt in their spirit, in order to give it this proof when somewhat under the standard strength. But this is a great deceit on the purchasers of malt spirits, as they have them by this means not only weaker than they ought to be, but stinking with an oil that they are not easily cleared of afterwards. On the other hand, the dealers in brandy, who usually have the art of sophisticating it to a great nicety, are in the right when they buy it by the strongest bread-proof, as the grand mark of the best; for being a proof of the brandy containing a large quantity of its oil, it is, at the same time, a token of its high flavour, and of its being capable of bearing a very large addition of the common spirits of our own produce, without betraying their flavour, or losing its own. We value the French brandy for the quantity of this essential oil of the grape which it contains; and that with good reason, as it is with us principally used for drinking as an agreeably flavoured cordial: but the French themselves, when they want it for any curious purposes, are as careful in the rectifications of it, and take as much pains to clear it from this oil, as we do to free our malt spirit from that nauseous and fetid oil which it originally contains.

BEAD-Roll, among Papists, a list of such persons, for the rest of whose souls they are obliged to repeat a certain

Beads.

Beadle
||
Beam.

tain number of prayers, which they count by means of their beads.

BEAD-Tree. See MELIA.

BEADLE, (from the Saxon *lydel*, a messenger), a crier or messenger of a court, who cites persons to appear and answer. Called also a *summoner* or *apparitor*.—*Beadle* is also an officer at an university, whose chief business is to walk before the masters with a mace, at all public processions.—There are also *church-beadles*, whose office is well known.

BEAGLES, a small sort of hounds or hunting dogs. Beagles are of divers kinds; as the *southern beagle*, something less and shorter, but thicker, than the deep-mouthed hound; the *fleet northern* or *cat beagle*, smaller, and of a finer shape than the southern, and a larger runner. From the two, by crossing the strains, is bred a third sort held preferable to either. To these may be added a still smaller sort of beagles, scarce bigger than lap-dogs, which make pretty diversion in hunting the coney, or even small hare in dry weather; but otherwise unserviceable, by reason of their size.

BEAK, the bill or nib of a bird. See ORNITHOLOGY.

BEAK, or *Beak-head*, of a ship, that part without the ship, before the fore-castle, which is fastened to the stem, and is supported by the main knee.

The beak, called by the Greeks *μολον*, by the Latins *rostrum*, was an important part in the ancient ships of war, which were hence denominated *naves rostratæ*. The beak was made of wood; but fortified with brass, and fastened to the prow, serving to annoy the enemies vessels. Its invention is attributed to Pisasus an Italian. The first beaks were made long and high; but afterwards a Corinthian, named *Aristo*, contrived to make them short and strong, and placed so low, as to pierce the enemies vessels under water. By the help of these great havock was made by the Syracusians in the Athenian fleet.

BEAKED, in heraldry, a term used to express the beak or bill of a bird. When the beak and legs of a fowl are of a different tincture from the body, we say *beaked and membered of such a tincture*.

BEALE (Mary), particularly distinguished by her skill in painting, was the daughter of Mr Craddock, minister of Waltham upon Thames, and learned the rudiments of her art from Sir Peter Lely. She painted in oil, water-colours, and crayons, and had much business; her portraits were in the Italian style, which she acquired by copying pictures and drawings from Sir Peter Lely's and the royal collections. Her master, says Mr Walpole, was supposed to have had a tender attachment to her; but as he was reserved in communicating to her all the resources of his pencil, it probably was a gallant rather than a successful one. Dr Woodfall wrote several pieces to her honour, under the name of *B-lesta*. Mrs Beale died in Pall-mall, on the 28th of Dec. 1697, aged 65. Her paintings have much nature, but the colouring is stiff and heavy.

BEALT, **BEALTH**, or *Builth*, a town of Brecknockshire in South Wales, pleasantly seated on the river Wye. It consists of about 100 houses, whose inhabitants have a trade in stockings. W. Long. 4. 10. N. Lat. 52. 4.

BEAM, in architecture, the largest piece of wood in a building, which lies cross the walls, and serves to

support the principal rafters of the roof, and into which the feet of these rafters are framed. No building has less than two of these beams, viz. one at each end; and into these the girders of the garret roof are also framed. The proportion of beams in or near London, are fixed by statute, as follows: a beam 15 feet long, must be 7 inches on one side its square, and 5 on the other; if it be 16 feet long, one side must be 8 inches, the other 6, and so proportionably to their lengths. In the country, where wood is more plenty, they usually make their beams stronger.

BEAMS of a Ship are the great main cross-timbers which hold the sides of the ship from falling together, and which also support the decks and orlops: the main beam is next the main-mast, and from it they are reckoned by first, second, third beam, &c. the greatest beam of all is called the *midship beam*.

BEAM-Compass, an instrument consisting of a square wooden or brass beam, having sliding sockets, that carry steel or pencil points; they are used for describing large circles, where the common compasses are useless.

BEAM-Bird, or *Petty-chaps*. See MOTACILLA.

BEAM also denotes the lath, or iron, of a pair of scales; sometimes the whole apparatus for weighing of goods is so called: Thus we say, it weighs so much at the king's beam.

BEAM of a Plough, that in which all the parts of the plough-tail are fixed. See AGRICULTURE, n° 83. &c.

BEAM, or *Roller*, among weavers, a long and thick wooden cylinder, placed lengthwise on the back-part of the loom of those who work with a shuttle. That cylinder, on which the stuff is rolled as it is weaved, is also called the *beam* or *roller*, and is placed on the fore-part of the loom.

BEAMINSTER, a town of Dorsetshire in England, seated on the river Bert, in W. Long. 2. 50. N. Lat. 52. 45.

BEAN, in botany. See VICIA.

The ancients made use of beans in gathering the votes of the people, and for the election of magistrates. A white bean signified *absolution*, and a black one *condemnation*. Beans had a mysterious use in the *lemuralia* and *parentalia*; where the master of the family, after washing, was to throw a sort of black beans over his head, still repeating the words, "I redeem myself and family by these beans." Ovid * gives * *F. 2. lib. 5. v. 435.* Abstinence from beans was enjoined by Pythagoras, one of whose symbols is, *κυμων απαχεσθαι*, *abstine a fabis*. The Egyptian priests held it a crime to look at beans, judging the very sight unclean. The *flamen dialis* was not permitted even to mention the name. The precept of Pythagoras has been variously interpreted: some understand it of forbearing to meddle in trials and verdicts, which were then by throwing beans into an urn: others, building on the equivocal of the word *κυμων*, which equally signifies a *bean* and a human *testicle*, explain it by abstaining from venery. Clemens Alexandrinus grounds the abstinence from beans on this, that they render women barren; which is confirmed by Theophrastus, who extends the effect even to plants. Cicero suggests another reason for this abstinence, viz. that beans are great enemies to tranquillity of mind. For a reason of this kind it is, that Amphiarus is said

Bean
||
Bean.

Beans
||
Bear.

to have obtained from beans, even before Pythagoras, that he might enjoy a clearer divination by dreams.

BEANS, as food for horses. See FARRIERY, § i. 6.
BEAN-CAPER. See ZYGOPHYLLUM.

BEAN-COD, a small fishing vessel, or pilot-boat, common on the sea-coasts and in the rivers of Portugal. It is extremely sharp forward, having its stem bent inward above into a great curve: the stem is also plated on the fore-side with iron, into which a number of bolts are driven, to fortify it, and resist the stroke of another vessel, which may fall athwart-hause. It is commonly navigated with a large lateen sail, which extends over the whole length of the deck, and is accordingly well fitted to ply to windward.

BEAN-Flour, called by the Romans *lomentum*, was of some repute among the ancient ladies as a cosmetic, wherewith to smooth the skin, and take away wrinkles.

BEAN-Fly, in natural history, the name given by authors to a very beautiful fly, of a pale purple colour, frequently found on bean-flowers. It is produced from the worm or maggot called by authors *mida*.

BEAN-Goose, in ornithology. See ANAS.

Kidney-BEAN. See PHASEOLUS.

Malacca-BEANS, or *Anacardia*, the fruit of a tree growing in Malabar and other parts of the East Indies, supposed by some to be the *AVICENNIA tomentosa*; by others, the *BONTIA germinans*. The fruit is of a shining black colour, of the shape of a heart flattened, about an inch long, terminating at one end in an obtuse point, and adhering by the other to a wrinkled stalk: it contains within two shells a kernel of a sweetish taste: betwixt the shells is lodged a thick and acrid juice.

The medicinal virtues of anacardiæ have been greatly disputed. Many have attributed to them the faculty of comforting the brain and nerves, fortifying the memory, and quickening the intellect: and hence a confection made from them has been dignified with the title of *confectio sapientum*; others think it better deserves the name of *confectio stultorum*, and mention instances of its continued use having rendered people maniacal. But the kernel of anacardium is not different in quality from that of almonds. The ill effects attributed to this fruit belong only to the juice contained betwixt the kernels, whose acrimony is so great, that it is said to be employed by the Indians as a caustic. This juice is recommended externally for tetters, freckles, and other cutaneous deformities; which it removes only by exulcerating or excoriating the part, so that a new skin comes underneath.

BEAR, in zoology. See URSA.

Sea-BEAR. See PHOCA.

BEAR, in astronomy. See URSA.

Order of the BEAR was a military order in Switzerland, erected by the Emperor Frederick II. in 1213, by way of acknowledgment for the service the Swiss had done him, and in favour of the abbey of St. Gall. To the collar of the order hung a medal, on which was represented a bear raised on an eminence of earth.

BEAR'S-BREECH, in botany. See ACANTHUS.

BEAR'S-FLESH was much esteemed by the ancients: even at this day, the paw of a bear salted and smoked is served up at the table of princes.

BEAR'S-GREASE, was formerly esteemed a sovereign re-

medy against cold disorders, especially rheumatisms. It is now much used in dressing ladies and gentlemen's hair.

BEAR'S Skin makes a fur in great esteem, and on which depends a considerable article of commerce, being used in housings, on coach-boxes, &c. In some countries, clothes are made of it, more especially bags wherein to keep the feet warm in severe colds. Of the skins of bears cubs are made gloves, muffs, and the like.

BEARALSTON, a poor town of Devonshire, which, however, is a borough by prescription, and sends two members to parliament.

BEARD, the hair growing on the chin and adjacent parts of the face, chiefly of adults and males.

Various have been the ceremonies and customs of most nations in regard of the beard. The Tartars, out of a religious principle, waged a long and bloody war with the Persians, declaring them infidels, merely because they would not cut their whiskers after the rite of Tartary: and we find, that a considerable branch of the religion of the ancients consisted in the management of their beard. The Greeks wore their beards till the time of Alexander the Great; that prince having ordered the Macedonians to be shaved, for fear it should give a handle to their enemies. According to Pliny, the Romans did not begin to shave till the year of Rome 454, when P. Ticinius brought over a stock of barbers from Sicily.—Persons of quality had their children shaved the first time by others of the same or greater quality, who, by this means, became god-father or adoptive father of the children. Anciently, indeed, a person became god-father of the child by barely touching his beard: thus historians relate, that one of the articles of the treaty between Alaric and Clovis was, that Alaric should touch the beard of Clovis to become his god-father.

As to ecclesiastics, the discipline has been very different on the article of beards: sometimes they have been enjoined to wear them, from a notion of too much effeminacy in shaving, and that a long beard was more suitable to the ecclesiastical gravity; and sometimes again they were forbid it, as imagining pride to lurk beneath a venetable beard. The Greek and Roman churches have been long together by the ears about their beards: since the time of their separation, the Romanists seem to have given more into the practice of shaving, by way of opposition to the Greeks; and have even made some express constitutions *de radendis barbis*. The Greeks, on the contrary, espouse very zealously the cause of long beards, and are extremely scandalized at the beardless images of saints in the Roman churches. By the statues of some monasteries it appears, that the lay-monks were to let their beards grow, and the priests among them to shave; and that the beards of all that were received into the monasteries, were blessed with a great deal of ceremony. There are still extant the prayers used in the solemnity of consecrating the beard to God, when an ecclesiastic was shaven.

Le Comte observes, that the Chinese affect long beards extravagantly; but nature has balked them, and only given them very little ones, which, however, they cultivate with infinite care: the Europeans are strangely envied by them on this account, and esteemed the greatest men in the world. Chrysofom observes, that the kings of Persia had their beards wove or matted together

Bear
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Beard.

Beard.

gether with gold-thread; and some of the first kings of France had their beards knotted and buttoned with gold.

Among the Turks, it is more infamous for any one to have his beard cut off, than among us to be publicly whipt or branded with a hot iron. There are abundance in that country, who would prefer death to this kind of punishment. The Arabs make the preservation of their beards a capital point of religion, because Mahomet never cut his. Hence the razor is never drawn over the Grand Signior's face. The Persians, who clip them, and shave above the jaw, are reputed heretics. It is likewise a mark of authority and liberty among them, as well as among the Turks. They who serve in the seraglio, have their beards shaven, as a sign of their servitude. They do not suffer it to grow till the sultan has set them at liberty, which is bestowed as a reward upon them, and is always accompanied with some employment.

The most celebrated ancient writers, and several modern ones, have spoken honourably of the fine beards of antiquity. Homer speaks highly of the white beard of Nestor and that of old king Priam. Virgil describes Mezentius's to us, which was so thick and long as to cover all his breast; Chrysisippus praises the noble beard of Timothy, a famous player on the flute. Pliny the younger tells us of the white beard of Euphrates, a Syrian philosopher; and he takes pleasure in relating the respect mixed with fear with which it inspired the people. Plutarch speaks of the long white beard of an old Laconian, who, being asked why he let it grow so, replied, *'Tis that, seeing continually my white beard, I may do nothing unworthy of its whiteness.* Strabo relates, that the Indian philosophers, the Gymnosophists, were particularly attentive to make the length of their beards contribute to captivate the veneration of the people. Diodorus, after him, gives a very particular and circumstantial history of the beards of the Indians. Juvenal does not forget that of Antiochus the son of Nestor. Fenelon, in describing a priest of Apollo in all his magnificence, tells us, that he had a white beard down to his girdle. But Persius seems to outdo all these authors: this poet was so convinced that a beard was the symbol of wisdom, that he thought he could not bestow a greater encomium on the divine Socrates, than by calling him the bearded master, *Magistrum barbatum.*

While the Gauls were under their sovereignty, none but the nobles and Christian priests were permitted to wear long beards. The Franks having made themselves masters of Gaul, assumed the same authority as the Romans: the bondsmen were expressly ordered to shave their chins; and this law continued in force until the entire abolishment of servitude in France. So likewise, in the time of the first race of kings, a long beard was a sign of nobility and freedom. The kings, as being the highest nobles in their kingdom, were emulous likewise to have the largest beard: Eginard, secretary to Charlemain, speaking of the last kings of the first race, says, they came to the assemblies in the Field of Mars in a carriage drawn by oxen, and sat on the throne with their hair dishevelled, and a very long beard, *crines profuso, barba submissa, folio residerent, et speciem dominantis essingerent.*

To touch any one's beard, or cut off a bit of it, was, among the first French, the most sacred pledge of protection and confidence. For a long time all letters that came from the sovereign had, for greater sanction, three hairs of his beard in the seal. There is still in being a charter of 1121, which concludes with the following words: *Quod ut ratum et stabile perseveret in posterum, presentis scripto sigilli mei robur apposui cum tribus pilis barbe mee.*

Several great men have honoured themselves with the surname of *Bearded.* The Emperor Constantine is distinguished by the epithet of *Pogonate*, which signifies *the Bearded.* In the time of the Crusades, we find there was a *Geffrey the Bearded*: Baldwin IV. Earl of Flanders, was surnamed *Handsome-beard*; and, in the illustrious house of Montmorenci, there was a famous *Bouchard*, who took a pride in the surname of *Bearded*: he was always the declared enemy of the monks, without doubt, because of their being shaved.

In the tenth century, we find, that King Robert (of France) the rival of Charles the Simple, was not more famous for his exploits than for his long white beard. In order that it might be more conspicuous to the soldiers when he was in the field, he used to let it hang down outside his cuirass: this venerable sight encouraged the troops in battle, and served to rally them when they were defeated.

A celebrated painter in Germany, called *John Mayo*, had such a large beard that he was nicknamed *John the Bearded*: it was so long that he wore it fastened to his girdle; and though he was a very tall man, it would hang upon the ground when he stood upright. He took the greatest care of this extraordinary beard; sometimes he would untie it before the Emperor Charles V. who took great pleasure to see the wind make it fly against the faces of the lords of his court.

In England, the famous chancellor Thomas More, one of the greatest men of his time, being on the point of falling a victim to court intrigues, was able, when on the fatal scaffold, to procure respect to his beard in presence of all the people, and saved it, as one may say, from the fatal stroke which he could not escape himself. When he had laid his head on the block, he perceived that his beard was likely to be hurt by the axe of the executioner; on which he took it away, saying, *My beard has not been guilty of treason; it would be an injustice to punish it.*

But let us turn our eyes to a more flattering object, and admire the beard of the best of kings, the ever precious beard of the great Henry IV. of France, which diffused over the countenance of that prince a majestic sweetness and amiable openness, a beard ever dear to posterity, and which should serve as a model for that of every great king; as the beard of his illustrious minister should for that of every minister. But what dependence is there to be put on the stability of the things of this world? By an event, as fatal as unforeseen, the beard, which was arrived at its highest degree of glory, all of a sudden lost its favour, and was at length entirely proscribed. The unexpected death of Henry the Great, and the youth of his successor, were the sole cause of it.

Louis XIII. mounted the throne of his glorious ancestors without a beard. Every one concluded immediately, that the courtiers, seeing their young king

with

Beard. with a smooth chin, would look upon their own as too rough. The conjecture proved right; for they presently reduced their beards to whiskers, and a small tuft of hair under the nether lip.

The people at first would not follow this dangerous example. The Duke of Sully never would adopt this effeminate custom. This man, great both as a general and a minister, was likewise so in his retirement: he had the courage to keep his long beard, and to appear with it at the court of Louis XIII. where he was called to give his advice in an affair of importance. The young crop-bearded courtiers laughed at the sight of his grave look and old-fashioned phiz. The duke, nettled at the affront put on his fine beard, said to the king, "Sir, when your father, of glorious memory, did me the honour to consult me on his great and important affairs, the first thing he did was to send away all the buffoons and stage-dancers of his court."

The Czar Peter, who had so many claims to the surname of *Great*, seems to have been but little worthy of it on this occasion. He had the boldness to lay a tax on the beards of his subjects. He ordered that the noblemen and gentlemen, tradesmen and artificers (the priests and peasants excepted), should pay 100 rubles to be able to retain their beards; that the lower class of people should pay a copeck for the same liberty; and he established clerks at the gates of the different towns to collect these duties. Such a new and singular impost troubled the vast empire of Russia. Both religion and manners were thought in danger. Complaints were heard from all parts; they even went so far as to write libels against the sovereign; but he was inflexible, and at that time powerful. Even the fatal scenes of St Bartholomew were renewed against these unfortunate beards, and the most unlawful violences were publicly exercised. The razor and scissars were every where made use of. A great number, to avoid these cruel extremities, obeyed with reluctant sighs. Some of them carefully preserved the sad trimmings of their chins: and, in order to be never separated from these dear locks, ordered that they should be placed with them in their coffins.

Example, more powerful than authority, produced in Spain what it had not been able to bring about in Russia without great difficulty. Philip V. ascended the throne with a shaved chin. The courtiers imitated the prince, and the people, in turn, the courtiers. However, though this revolution was brought about without violence and by degrees, it caused much lamentation and murmuring; the gravity of the Spaniards lost by the change. The favourite custom of a nation can never be altered without incurring displeasure. They have this old saying in Spain: *Desfile que no hay barba, no hay mas alma*. "Since we have lost our beards, we have lost our souls."

Among the European nations that have been most curious in beards and whiskers, we must distinguish Spain. This grave romantic nation has always regarded the beard as the ornament which should be most prized; and the Spaniards have often made the loss of honour consist in that of their whiskers. The Portuguese, whose national character is much the same, are not the least behind them in that respect. In the reign of Catherine Queen of Portugal, the brave John de

Castro had just taken in India the castle of Diu: victorious, but in want of every thing, he found himself obliged to ask the inhabitants of Goa to lend him a thousand pistoles for the maintenance of his fleet; and, as a security for that sum, he sent them one of his whiskers, telling them, "All the gold in the world cannot equal the value of this natural ornament of my valour; and I deposite it in your hands as a security for the money." The whole town was penetrated with this heroism, and every one interested himself about this invaluable whisker: even the women were desirous to give marks of their zeal for so brave a man: several sold their bracelets to increase the sum asked for; and the inhabitants of Goa sent him immediately both the money and his whisker. A number of other examples of this kind might be produced, which do as much honour to whiskers as to the good faith of those days.

In Louis XIII.'s reign, whiskers attained the highest degree of favour, at the expence of the expiring beards. In those days of gallantry, not yet empoisoned by wit, they became the favourite occupation of lovers. A fine black whisker, elegantly turned up, was a very powerful mark of dignity with the fair sex. Whiskers were still in fashion in the beginning of Louis XIV.'s reign. This king, and all the great men of his reign, took a pride in wearing them. They were the ornament of Turenne, Condé, Colbert, Corneille, Moliere, &c. It was then no uncommon thing for a favourite lover to have his whiskers turned up, combed, and pomatumed, by his mistress; and, for this purpose, a man of fashion took care to be always provided with every little necessary article, especially whisker-wax. It was highly flattering to a lady to have it in her power to praise the beauty of her lover's whiskers; which, far from being disgusting, gave his person an air of vivacity: several even thought them an incitement to love. It seems the levity of the French made them undergo several changes both in form and name: there were *Spanish*, *Turkish*, *guard-jagger*, &c. whiskers; in short, *royal* ones, which were the last worn: their smallness proclaimed their approaching fall.

Consecration of the BEARD was a ceremony among the Roman youth, who, when they were shaved the first time, kept a day of rejoicing, and were particularly careful to put the hair of their beard into a silver or gold box, and make an offering of it to some god, particularly to Jupiter Capitolinus, as was done by Nero, according to Suetonius.

Kissing the BEARD. The Turkish wives kiss their husbands beards, and children their fathers, as often as they come to salute them. The men kiss one another's beards reciprocally on both sides, when they salute in the streets, or come off from any journey.

The Fashion of the BEARD has varied in different ages and countries; some cultivating and entertaining one part of it, some another. Thus the Hebrews wear a beard on their chin; but not on the upper-lip or cheeks. Moses forbids them to cut off entirely the angle or extremity of their beard; that is, to manage it after the Egyptian fashion, who left only a little tuft of beard at the extremity of their chin; whereas the Jews to this day suffer a little fillet of hair to grow from the lower end of their ears to their chins, where,

Beard.

Beard.

as well as on their lower-lips, their beards are in a pretty long bunch. The Jews, in time of mourning, neglected to trim their beards, that is, to cut off what grew superfluous on the upper-lips and cheeks. In time of grief and great affliction they also plucked off the hair of their beards.

Anointing the BEARD with unguents is an ancient practice both among the Jews and Romans, and still continues in use among the Turks; where one of the principal ceremonies observed in serious visits is to throw sweet-scented water on the beard of the visitant, and to perfume it afterwards with aloes-wood, which sticks to this moisture, and gives it an agreeable smell, &c. In middle-age writers we meet with *adlentare barbam*, used for stroking and combing it, to render it soft and flexible. The Turks, when they comb their beards, hold a handkerchief on their knees, and gather very carefully the hairs that fall; and when they have got together a certain quantity, they fold them up in paper, and carry them to the place where they bury the dead.

BEARD of a Comet, the rays which the comet emits towards that part of the heaven to which its proper motion seems to direct it; in which the beard of a comet is distinguished from the tail, which is understood of the rays emitted towards that part from whence its motion seems to carry it.

BEARD of a Horse, that part underneath the lower mandible on the outside and above the chin, which bears the curb. It is also called the *chuck*. It should have but little flesh upon it, without any chops, hardness, or swelling; and be neither too high raised nor too flat, but such as the curb may rest in its right place.

BEARD of a Muscle, oyster, or the like, denotes an assemblage of threads or hairs, by which those animals fasten themselves to stones. The hairs of this beard terminate in a flat spongy substance, which being applied to the surface of a stone, sticks thereto, like the wet leather used by boys.

BEARDS, in the history of insects, are two small, oblong, fleshy bodies, placed just above the trunk, as in the gnats, and in the moths and butterflies.

BEARDED, denotes a person or thing with a beard, or some resemblance thereof. The faces on ancient Greek and Roman medals are generally bearded. Some are denominated *pogonati*, as having long beards, e. g. the Parthian kings. Others have only a lanugo about the chin, as the Seleucid family. Adrian was the first of the Roman emperors who nourished his beard: hence all imperial medals before him are *beardless*; after him, *bearded*.

BEARDED Women have been all observed to want the menstrual discharge; and several instances are given by Hippocrates, and other physicians, of grown women, especially widows, in whom the menses coming to stop, beards appeared. Eusebius Nierembergius mentions a woman who had a beard reaching to her navel.

Of women remarkably bearded we have several instances. In the cabinet of curiosities of Stutgard in Germany, there is the portrait of a woman called *Bartel Graetje*, whose chin is covered with a very large beard. She was drawn in 1587, at which time she was but 25 years of age. There is likewise in the same cabinet another portrait of her when she was more advanced in life, but likewise with a beard.—It is said, that

the Duke of Saxony had the portrait of a poor Swiss woman taken, remarkable for her long bushy beard; and those who were at the carnival at Venice in 1726, saw a female dancer astonish the spectators not more by her talents than by her chin covered with a black bushy beard.—Charles XII. had in his army a female grenadier: it was neither courage nor a beard that she wanted to be a man. She was taken at the battle of Pul-towa, and carried to Petersburg, where she was presented to the Czar in 1724: her beard measured a yard and a half.—We read in the Trévoux Dictionary, that there was a woman seen at Paris, who had not only a bushy beard on her face, but her body likewise covered all over with hair. Among a number of other examples of this nature, that of Margaret, the governess of the Netherlands, is very remarkable. She had a very long stiff beard, which she prided herself on; and being persuaded that it contributed to give her an air of majesty, she took care not to lose a hair of it. This Margaret was a very great woman.—It is said, that the Lombard women, when they were at war, made themselves beards with the hair of their heads, which they ingeniously arranged on their cheeks, in order that the enemy, deceived by the likenesses, might take them for men. It is asserted, after Suidas, that in a similar case the Athenian women did as much. These women were more men than our Jemmy-Jessamy countrymen.—About a century ago, the French ladies adopted the mode of dressing their hair in such a manner that curls hung down their cheeks as far as their bosom. These curls went by the name of *whiskers*. This custom undoubtedly was not invented, after the example of the Lombard women, to fright the men. Neither is it with intention to carry on a very bloody war, that in our time they have affected to bring forward the hair of the temple on the cheeks. The discovery seems to have been a fortunate one: it gives them a tempting, roguish look.

BEARERS, in heraldry. See *SUPPORTERS*.

BEARING, in navigation, an arch of the horizon intercepted between the nearest meridian and any distinct object, either discovered by the eye, or resulting from the sinical proportion; as in the first case, at 4 P. M. Cape Spado, in the isle of Candia, bore S. by W. by the compass. In the second, the longitudes and latitudes of any two places being given, and consequently the difference of latitude and longitude between them, the bearing from one to the other is discovered by the following analogy:

As the meridional difference of latitude

Is to the difference of longitude;

So is radius

To the tangent bearing.

BEARING is also the situation of any distant object, estimated from some part of the ship according to her position. In this sense, an object so discovered must be either ahead, astern, abreast on the bow, or on the quarter. These bearings, therefore, which may be called *mechanical*, are on the beam, before the beam, abaft the beam, on the bow, on the quarter, ahead, or astern. If the ship sails with a side-wind, it alters the names of such bearings in some measure, since a distant object on the beam is then said to be to leeward or to windward; on the lee-quarter or bow, and on the weather-quarter or bow.

Bearing
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Beast.

BEARING, in the sea-language. When a ship sails towards the shore, before the wind, she is said to *bear in* with the land or harbour. To let the ship sail more before the wind, is to *bear up*. To put her right before the wind, is to *bear round*. A ship that keeps off from the land, is said to *bear off*. When a ship that was to windward comes under a ship's stern, and so gives her the wind, she is said to *bear under her lee*, &c. There is another sense of this word, in reference to the burden of a ship; for they say a ship *bears*, when, having too slender or lean a quarter, she will sink too deep into the water with an overlight freight, and thereby can carry but a small quantity of goods.

BEARINGS, in heraldry, a term used to express a coat of arms, or the figures of armories by which the nobility and gentry are distinguished from the vulgar and from one another. See **HERALDRY**.

BEARING-CLAWS, among cock-fighters, denote the foremost toes, on which the bird goes; and if they be hurt or gravelled, he cannot fight.

BEARING of a Stag, is used in respect of the state of his head, or the croches which he bears on his horns. If you be asked what a stag bears, you are only to reckon the croches, and never to express an odd number: as, if he have four croches on his near horn and five on his far, you must say he bears ten; a false right on his near horn: if but four on the near horn and six on the far horn, you must say he bears twelve; a double false right on the near horn.

BEARN, a province of France, bounded on the east by Bigorre, on the south by the mountains of Aragon, on the west by Soule and part of Navarre, and on the north by Gascony and Armagnac. It lies at the foot of the Pyrenean mountains, being about 16 leagues in length and 12 in breadth. In general it is but a barren country; yet the plains yield considerable quantities of flax, and a good quantity of Indian corn called *maïlloc*. The mountains are rich in mines of iron, copper, and lead; some of them also are covered with vines, and others with pine trees; and they give rise to several mineral springs, and two considerable rivers, the one called the *Gave of Oleron*, and the other the *Gave of Bearn*. Some wine is exported from this country; and the Spaniards buy up great numbers of the horses and cattle, together with most of their linen, of which there is a considerable manufactory. The principal places are Pau, Lescar, Outez, Navarreins, Sallies, and Oleron.

BEAST, in a general sense, an appellation given to all four-footed animals, fit either for food, labour, or sport.

Beasts of Burden, in a commercial sense, all four-footed animals which serve to carry merchandizes on their backs. The beasts generally used for this purpose, are elephants, dromedaries, camels, horses, mules, asses, and the sheep of Mexico and Peru.

Beasts of the Chase are five, *viz.* the buck, the doe, the fox, the roe, and the martin.

Beasts and Fowls of the Warren, are the hare, the coney, the pheasant, and partridge.

Beasts of the Forest are the hart, hind, hare, boar, and wolf.

BEAST, among gamesters, a game at cards, played in this manner: The best cards are the king, queen, &c. whereof they make three heaps, the king, the

play, and troilet. Three, four, or five, may play; and to every one is dealt five cards. However, before the play begins, every one stakes to the three heaps. He that wins most tricks, takes up the heap called the *ply*; he that hath the king, takes up the heap so called; and he that hath three of any sort, that is, three fours, three fives, three sixes, &c. takes up the troilet heap.

BEAT, in a general signification, signifies to chastise, strike, knock, or vanquish.

This word has several other significations in the manufactures, and in the arts and trades. Sometimes it signifies to forge and hammer; in which sense smiths and farriers say, to *beat iron*. Sometimes it means to pound, to reduce into powder: Thus we say, to *beat drugs*, to *beat pepper*, to *beat spices*; that is to say, to *pulverize them*.

BEAT, in fencing, denotes a blow or stroke given with the sword. There are two kinds of beats; the first performed with the foible of a man's sword on the foible of his adversary's, which in the schools is commonly called *baterie*, from the French *batre*, and is chiefly used in a pursuit, to make an open upon the adversary. The second and best kind of beat is performed with the fort of a man's sword upon the foible of his adversary's, not with a spring, as in binding, but with a jerk or dry beat; and is therefore most proper for the parades without or within the sword, because of the rebound a man's sword has thereby from his adversary's, whereby he procures to himself the better and surer opportunity of disposing.

BEAT, in the manege. A horse is said to *beat the dust*, when at each stroke or motion he does not take in ground or way enough with his fore-legs.—He is more particularly said to *beat the dust at terra à terra*, when he does not take in ground enough with his shoulders, making his strokes or motions too short, as if he made them all in one place. He *beats the dust at curvets*, when he does them too precipitantly and too low. He *beats upon a walk*, when he walks too short, and thus rides but little ground, whether it be in straight lines, rounds, or passings.

BEAT of Drum, in the military art, is to give notice by beat of drum of a sudden danger; or, that scattered soldiers may repair to their arms and quarters, is to beat an alarm, or to arms. Also to signify, by different manners of sounding a drum, that the soldiers are to fall on the enemy; to retreat before, in, or after, an attack; to move or march from one place to another; to permit the soldiers to come out of their quarters at break of day; to order to repair to their colours, &c.; is to beat a charge, a retreat, a march, &c.

BEAT (St), a town of France, in the county of Comminges, at the confluence of the Garonne and the Pique. It is seated between two mountains which are close to the town on each side. All the houses are built with marble, because they have no other materials. W. Long. 1. 6. N. Lat. 42. 50.

BEATER is applied, in matters of commerce, to divers sorts of workmen, whose business is to hammer or flatten certain matters, particularly metals.

Gold-BEATERS, are artificers, who, by beating gold and silver with a hammer on a marble in moulds of vellum and bullocks guts, reduce them to thin leaves fit for gilding, or silversing of copper, iron, steel, wood,

BEAT
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Beater.

Beatifica-
tion
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Beating.

&c. Gold-beaters differ from flatters of gold or silver; as the former bring their metal into leaves by the hammer, whereas the latter only flatten it by pressing it through a mill preparatory to beating.

There are also *Tin-BEATERS* employed in the looking-glass trade, whose business is to beat tin on large blocks of marble till it be reduced to thin leaves fit to be applied with quicksilver behind looking-glasses. See *FOLIATING, GOLD-Beating*.

BEATIFICATION, an act by which the pope declares a person beatified or blessed after his death. It is the first step towards canonization, or raising any one to the honour and dignity of a saint. No person can be beatified till 50 years after his or her death. All certificates or attestations of virtues and miracles, the necessary qualifications for sainthood, are examined by the congregation of rites. This examination often continues for several years; after which his holiness decrees the beatification. The corps and relics of the future saint are from thenceforth exposed to the veneration of all good Christians; his images are crowned with rays, and a particular office is set apart for him; but his body and relics are not carried in procession: indulgences likewise, and remission of sins, are granted on the day of his beatification; which though not so pompous as that of canonization, is however very splendid.

BEATING, or **PULSATION**, in medicine, the reciprocal agitation or palpitation of the heart or pulse.

BEATING Flax or Hemp, is an operation in the dressing of these matters, contrived to render them more soft and pliant.—When hemp has been swingled a second time, and the hurds laid by, they take the strikes, and dividing them into dozens and half dozens, make them up into large thick rolls, which being broached on long strikes, are set in the chimney-corner to dry; after which they lay them in a round trough made for the purpose, and there with beetles beat them well till they handle both without and within as pliant as possible, without any hardness or roughness to be felt: that done, they take them from the trough, open and divide the strikes as before; and if any be found not sufficiently beaten, they roll them up and beat them over as before.

Beating hemp is a punishment inflicted on loose or disorderly persons.

BEATING, in book-binding, denotes the knocking a book in quires on a marble block, with a heavy broad-faced hammer, after folding, and before binding or stitching it. On the beating it properly, the elegance and excellence of the binding, and the easy opening of the book, principally depends.

BEATING, in the paper-works, signifies the beating of paper on a stone with a heavy hammer, with a large smooth head and short handle, in order to render it more smooth and uniform, and fit for writing.

BEATING the Wind, was a practice in use in the ancient method of trial by combat. If either of the combatants did not appear in the field at the time appointed, the other was to beat the wind, or make so many flourishes with his weapon; by which he was intitled to all the advantages of a conqueror.

BEATING the Hands or Feet, by way of praise or approbation. See *APPLAUSE*.

BEATING Time, in music, a method of measuring

and marking the time for performers in concert, by a motion of the hand and foot up or down successively and in equal times. Knowing the true time of a crotchet, and supposing the measure actually subdivided into four crotchets, and the half measure into two, the hand or foot being up, if we put it down with the very beginning of the first note or crotchet, and then raise it with the third, and then down with the beginning of the next measure; this is called *beating the time*; and, by practice, a habit is acquired of making this motion very equal. Each down and up is sometimes called a *time* or *measure*. The general rule is, to contrive the division of the measure so, that every down and up of the beating shall end with a particular note, on which very much depends the distinctness, and, as it were, the sense of the melody. Hence the beginning of every time or beating in the measure is reckoned the accented part thereof.

Beating time is denoted, in the Italian music, by the term *à battuta*, which is usually put after what they call *recitativo*, where little or no time is observed, to denote, that here they are to begin again to mark or beat the time exactly.

The Romans aimed at somewhat of harmony in the strokes of their oars; and had an officer called *portifculus* in each galley, whose business was to beat time to the rowers, sometimes by a pole or mallet, and sometimes by his voice alone.

The ancients marked the rhyme in their musical compositions; but to make it more observable in the practice, they beat the measure or time, and this in different manners. The most usual consisted in a motion of the foot, which was raised from, and struck alternately against, the ground, according to the modern method. Doing this was commonly the province of the master of the music, who was thence called *μισοχορῶν* and *κορυφαῖος*, because placed in the middle of the choir of musicians, and in an elevated situation, to be seen and heard more easily by the whole company. These beaters of measure were also called by the Greeks *ποδοκλύτοι* and *π.δοφ.φοι*, because of the noise of their feet; and *συνῆναριοι*, because of the uniformity or monotony of the rhyme. The Latins denominated them *pedarii*, *podarii*, and *pedicularii*. To make the beats or strokes more audible, their feet were generally shod with a sort of sandals either of wood or iron, called by the Greeks *κρουπέζια*, *κρουτάλα*, *κρουπηλία*, and by the Latins *pedicula*, *scabella*, or *scabilla*, because like to little stools or foot-stools. Sometimes they beat upon sonorous foot-stools, with the foot shod with a wooden or iron sole. They beat the measure not only with the foot, but also with the right-hand, all the fingers whereof they joined together, to strike into the hollow of the left. He who thus marked the rhythm, was called *μανουδιστορ*. The ancients also beat time or measure with shells, as oyster-shells and bones of animals, which they struck against one another, much as the moderns now use castanets, and the like instruments. This the Greeks called *κρηκελαισαξιν*, as is noted by Hesychius. The scholiast on Aristophanes speaks much to the same purpose. Other noisy instruments, as drums, cymbals, citterns, &c. were also used on the same occasion. They beat the measure generally in two equal or unequal times; at least, this holds of the usual rhythm of a piece of music, marked either by the noise of sandals, or the flapping

Beating.

Beating
||
Beatorum.

of the hands. But the other rhythmic instruments last-mentioned, and which were used principally to excite and animate the dancers, marked the cadence after another manner; that is, the number of their percussions equalled, or even sometimes surpassed, that of the different sounds which composed the air or song played.

BEATING, with hunters, a term used of a stag, which runs first one way and then another. He is then said *to beat up and down*.—The noise made by conies in rutting time is also called *beating* or *tapping*.

BEATING, in navigation, the operation of making a progress at sea against the direction of the wind, in a zig-zag line, or traverse, like that in which we ascend a steep hill. See **TACKING**.

BEATITUDE, imports the supreme good, or the highest degree of happiness human nature is susceptible of; or the most perfect state of a rational being, wherein the soul has attained to the utmost excellency and dignity it is framed for. In which sense, it amounts to the same with what we otherwise call *blestness* and *sovereign felicity*; by the Greeks, *εὐδαιμονία*; and by the Latins, *summum bonum*, *beatitudo*, and *beatitas*.

BEATITUDE, among divines, denotes the beatific vision, or the fruition of God in a future life to all eternity.

BEATITUDE is also used in speaking of the theses contained in Christ's sermon on the mount, whereby he pronounces blessed the poor in spirit, those that mourn, the meek, &c.

BEATON (David), archbishop of St Andrew's, and a cardinal of Rome, in the early part of the 16th century, was born in 1494. Pope Paul III. raised him to the degree of a cardinal in December 1538; and being employed by James V. in negotiating his marriages with the court of France, he was there consecrated bishop of Mirepoix. Soon after his instalment as archbishop of St Andrew's, he promoted a furious persecution of the reformers in Scotland; when the king's death put a stop, for a time, to his arbitrary proceedings, he being then excluded from affairs of government, and confined. He raised however so strong a party, that, upon the coronation of the young queen Mary, he was admitted of the council, made chancellor, and procured commission as legate *a latere* from the court of Rome. He now began to renew his persecution of heretics; and among the rest, of the famous Protestant preacher Mr George Wishart, whose sufferings at the stake the cardinal viewed from his window with apparent exultation. It is pretended, that Wishart at his death foretold the murder of Beaton; which indeed happened shortly after, he being assassinated in his chamber, May 29th, 1547. He was a haughty bigotted churchman, and thought severity the proper method of suppressing heresy: he had great talents, and vices that were no less conspicuous. See **SCOTLAND**.

BEATORUM INSULA (anc. geog.), seven days journey to the west of Thebæ, a district of the Nomos Oafites; called an *island*, because surrounded with sand, like an island in the sea, (Ulpian); yet abounding in all the necessaries of life, though encompassed with vast sandy deserts, (Strabo); which some suppose to be a third Oasis, in the Regio Ammoniacæ; and the site of the temple of Ammon answers to the above

description, as appears from the writers on Alexander's expedition thither. It was a place of relegation or banishment for real or pretended criminals from which there was no escape, (Ulpian).

BEATS, in a watch or clock, are the strokes made by the fangs or pallets of the spindle of the balance, or of the pads in a royal pendulum.

BEUCAIRE, a town of Languedoc in France, situated on the banks of the river Rhone, in E. Long. 5. 49. N. Lat. 43. 39.

BEAUCE, a province of France, lying between the isle of France, Blafois, and Orleanois. It is so very fertile in wheat, that it is called the *Granary* of Paris. Chartres is the principal town.

BEAVER, in zoology. See **CASTOR**.

BEAVER-SKINS, in commerce. Of these, merchants distinguish three sorts; the new, the dry, and the fat.

The new beaver, which is also called the *white beaver*, or *Muscovy beaver*, because it is commonly kept to be sent into Muscovy, is that which the savages catch in their winter hunting. It is the best, and the most proper for making fine furs, because it has lost none of its hair by shedding.

The dry beaver, which is sometimes called *lean beaver*, comes from the summer hunting, which is the time when these animals lose part of their hair. Tho' this sort of beaver be much inferior to the former, yet it may also be employed in furs; but it is chiefly used in the manufacture of hats. The French call it *fourmer castor* or *beaver*.

The fat beaver is that which has contracted a certain gross and oily humour, from the sweat which exhales from the bodies of the savages, who wear it for some time. Though this sort be better than the dry beaver, yet it is used only in the making of hats.

Besides hats and furs, in which the beaver's hair is commonly used, they attempted in France, in the year 1699, to make other manufactures of it: and accordingly they made cloths, flannels, stockings, &c. partly of beaver's hair, and partly of Segovia wool. This manufactory, which was set up at Paris, in St Anthony's suburbs, succeeded at first pretty well; and according to the genius of the French, the novelty of the thing brought into some repute the stuffs, stockings, gloves, and cloth, made of beaver's hair. But they went out of fashion on a sudden, because it was found, by experience, that they were of a very bad wear, and besides that the colours faded very much: when they had been wet, they became dry and hard, like felt, which occasioned the miscarriage of the manufactory for that time.

When the hair has been cut off from the beavers skins, to be used in the manufacturing of hats, those skins are still employed by several workmen; namely, by the trunk-makers, to cover trunks and boxes; by the shoemakers, to put into slippers; and by turners, to make sieves for sifting grain and seeds.

BEAUFORT, a town of Anjou in France, with a castle, near the river Authion. It contains two parishes and a convent of Recolets, and yet has not 100 houses. W. Long. 0. 3. N. Lat. 47. 26.

BEAUFORT gives title of Duke in England to the noble family of Somerset, who are lineally descended from John of Gaunt duke of Lancaster, whose duchess resided in this town.

Beats
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Beaufort.

Beaufort
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Beaumaris. **BEAUFORT**, a strong town of Savoy in Italy, on the river Oron. E. Long. 6. 48. N. Lat. 45. 40.

BEAUGENCY, a town of the Orleanoisin France, seated on the river Loire, in E. Long. 1. 46. N. Lat. 47. 48.

BEAUJEU, a town of France in Beaujolois, with an old castle. It is seated on the river Ardieres, at the foot of a mountain, in E. Long. 4. 40. N. Lat. 46. 9.

BEAUJOLOIS, a district of France, bounded on the south by Lionnois proper, on the west by Forez, on the north by Burgundy, and on the west by the principality of Dombes. It is 25 miles in length, and 20 in breadth: Ville Franche is the capital town.

BEAULIEU (Sebastian de Pontault de), a celebrated French engineer, and field marshal under Louis XIV. He published plans of all the military expeditions of his master, with military lectures annexed. He died in 1674.

BEAUMARIS, a market-town of Anglesey in North Wales, which sends one member to parliament. W. Long. 4. 15 N. Lat. 53. 25.

It is, as the name implies, pleasantly seated on a low land at the water's edge; is neat and well built, and one street is very handsome. Edward I. created the place; for after founding the castles of Caernavon and Conway, he discovered that it was necessary to put another curb on the Welch. He therefore built a fortress here in 1295; and fixed on a marshy spot, near the chapel of St Meugan, such as gave him opportunity of forming a great foss round the castle, and of filling it with water from the sea. He also cut a canal, in order to permit vessels to discharge their lading beneath the walls: and as a proof of the existence of such a conveniency, there were within this century iron rings affixed to them, for the purpose of mooring the ships or boats. The marsh was in early times of far greater extent than at present, and covered with fine bulrushes. The first governor was Sir William Pickmore, a Gascon knight appointed by Edward I. There was a constable of the castle, and a captain of the town. The first had an annual fee of forty pounds, the last of twelve pounds three shillings and four pence; and the porter of the gate of Beaumaris had nine pounds two shillings and sixpence. Twenty-four soldiers were allowed for the guard of the castle and town, at fourpence a-day to each. The constable of the castle was always captain of the town, except in one instance: in the 36th of Henry VI. Sir John Boteler held the first office, and Thomas Norreys the other. The castle was extremely burthensome to the country: quarrels were frequent between the garrison and the country people. In the time of Henry VI. a bloody fray happened, in which David ap Evan ap Howel of Llwydiarth, and many others, were slain. From the time of Sir Rowland Villeville, *alias* Britayne, reputed base son of Henry VII. and constable of the castle, the garrison was withdrawn till the year 1642, when Thomas Cheadle, deputy to the earl of Dorset, then constable, put into it men and ammunition. In 1643, Thomas Bulkeley, Esq; soon after created Lord Bulkeley, succeeded: his son Colonel Richard Bulkeley, and several gentlemen of the country, held it for the king till June 1646, when it surrendered on honourable terms to general Mytton, who made captain Evans his deputy governor. In 1653,

the annual expence of the garrison was seventeen hundred and three pounds. Edward I. when he built the town, surrounded it with walls, made it a corporation, and endowed it with great privileges, and lands to a considerable value. He removed the ancient freeholders by exchange of property into other countries. Henllys, near the town, was the seat of Gwerydd ap Rhys Goch, one of fifteen tribes, and of his posterity till this period, when Edward removed them to Boddle Wyddan in Flintshire, and bestowed their ancient patrimony on the corporation. It sends one member to parliament. Its first representative was Maurice Griffith, who sat in the seventh year of Edward VI. There is very good anchorage for ships in the bay which lies before the town; and has seven fathom water even at the lowest ebb. Vessels often find security here in hard gales. The town has no trade of any kind, yet has its customhouse for the casual reception of goods. The ferry lies near the town, and is passable at low-water. It was granted by charter to the corporation in the 4th of Queen Elizabeth. There is an order from Edward II. to Robert Power, chamberlain of North Wales, to inspect into the state of the boat, which was then out of repair; and in case it was feasible, to cause it to be made fit for use, at the expence of the baileywick: but if the boat proved past repair, a new one was to be built, and the expence allowed by the king. It appears, that the people of Beaumaris payed annually for the privilege of a ferry thirty shillings into the exchequer; but by this order it seems that the king was to find the boat. After passing the channel, the distance over the sands to Aber in Caernarvonshire, the point the passenger generally makes for, is four miles. The sands are called *Tracth Telawan*, and *Wylefaen*, or the *place of weeping*, from the shrieks and lamentations of the inhabitants when it was overwhelmed by the sea, in the days of Helig ap Clunog. The church is dependant on Llandegvan, which is in the gift of lord Bulkeley. The former is called the *chapel of the blessed virgin*; yet in ancient writings one aisle is called *St Mary's chapel*, and another that of *St Nicholas*.

BEAUMONT (Sir John), the elder brother of Mr Francis Beaumont the famous dramatic poet, was born in the year 1582, and in 1626 had the dignity of a baronet conferred upon him by king Charles I. In his youth he applied himself to the Muses with good success; and wrote, *The Crown of Thorns*, a poem, in eight books: a miscellany, intitled, *Bosworth Field*: *Translations from the Latin Poets*: and several poems on religious and political subjects; as, *On the Festivals*; *On the Blessed Trinity*; *A Dialogue between the World, a Pilgrim, and Virtue*; *Of the miserable State of Man*; *Of Sickness*, &c. He died in 1628. His poetic genius was celebrated by Ben Jonson, Michael Drayton, and others.

BEAUMONT and FLETCHER, two celebrated English dramatic writers, who flourished in the reign of James I. and so closely connected both as authors and as friends, that it has been judged not improper to give them under one article.

Mr Francis Beaumont was descended from an ancient family of his name at Grace-dieu in Leicestershire, where he was born about the year 1585 or 1586, in the reign of Queen Elizabeth. His grandfather,
John

Beaumaris,
Beaumont.

Beaumont. John Beaumont, was master of the rolls, and his father Francis Beaumont one of the judges of the common-pleas. He was educated at Cambridge, and afterwards admitted of the Inner Temple. It is not, however, apparent that he made any great proficiency in the law, that being a study probably too dry and unentertaining to be attended to by a man of his fertile and sprightly genius. And indeed, we should scarcely be surpris'd to find that he had given no application to any study but poetry, nor attended on any court but that of the Muses: but on the contrary, our admiration might fix itself in the opposite extreme, and fill us with astonishment at the extreme assiduity of his genius and rapidity of his pen, when we look back on the voluminousness of his works, and then inquire into the time allowed him for them; works that might well have taken up a long life to have executed. For although, out of 53 plays which are collected together as the labours of these united authors, Mr Beaumont was concern'd in much the greatest part of them, yet he did not live to complete his 30th year, the king of terrors summoning him away in the beginning of March 1615, on the 9th day of which he was interred in the entrance of St Benedict's chapel in Westminster-Abbey. There is no inscription on his tomb: But there are two epitaphs to his memory; one by his elder brother Sir John Beaumont:

On death, thy murderer, this revenge I take;
I slight his terrors, and just question make,
Which of us two the best precedence have,
Mine to this wretched world, thine to the grave?
Thou should'st have followed me; but death, to blame,
Miscounted years, and measur'd age by fame.
So dearly hast thou bought thy precious lines;
Their praise grew swiftly, so thy life declines.
Thy muse, the hearer's queen, the reader's love,
All ears, all hearts (but death's), could please and move.
B. swarth Field, p. 164.

The other is by Bishop Corbet. (*Poems, p. 68.*)

He that hath such acuteness and such wit,
As would ask ten good heads to husband it:
He that can write so well, that no man dare
Resume it for the best; let him beware:
Beaumont is dead; by whose sole death appears,
Wit's a disease consumes men in few years.

He left a daughter, Frances Beaumont, who died in Leicestershire since the year 1700. She had in her possession several poems of her father's writing; but they were lost at sea in her voyage from Ireland, where she had lived for some time in the duke of Ormond's family.

Mr John Fletcher was not more meanly descended than his poetical colleague; his father, the reverend Dr Fletcher, having been first made bishop of Bristol by queen Elizabeth, and afterwards by the same monarch, in the year 1593, translated to the rich and honourable see of London. Our poet was born in 1576; and was, as well as his friend, educated at Cambridge, where he made a great proficiency in his studies, and was accounted a very good scholar. His natural vivacity of wit, for which he was remarkable, soon rendered him a devotee to the muses; and his close attention to their service, and fortunate connection with a genius

equal to his own, soon raised him to one of the highest places in the temple of poetical fame. As he was born near ten years before Mr Beaumont, so did he also survive him by an equal number of years; the general calamity of a plague, which happened in the year 1625, involving him in its great destruction, he being at that time 49 years of age.

During the joint lives of these two great poets, it appears that they wrote nothing separately, excepting one little piece by each, which seem'd of too trivial a nature for either to require assistance in, *viz.* The Faithful Shepherd, a pastoral, by Fletcher; and The Masque of Gray's-Inn Gentlemen, by Beaumont. Yet what share each had in the writing or designing of the pieces thus compos'd by them jointly, there is no possibility of determining. It is however generally allow'd, that Fletcher's peculiar talent was *wit*, and Beaumont's, though much the younger man, *judgment*. Nay, so extraordinary was the latter property in Mr Beaumont, that it is recorded of the great Ben Johnson, who seems moreover to have had a sufficient degree of self-opinion of his own abilities, that he constantly, so long as this gentleman lived, submitted his own writings to his censure, and, as it is thought, availed himself of his judgment at least in the correcting, if not even in the contriving all his plots. It is probable, therefore, that the forming the plots and contriving the conduct of the fable, the writing of the more serious and pathetic parts, and lopping the redundant branches of Fletcher's wit, whose luxuriance, we are told, frequently stood in need of castigation, might be in general Beaumont's portion in the work; while Fletcher, whose conversation with the *beau monde* (which indeed both of them from their births and stations in life had been ever accustomed to), added to the volatile and lively turn he possess'd, rendered him perfectly master of dialogue and polite language, might execute the designs form'd by the other, and raise the superstructure of those lively and spirited scenes which Beaumont had only laid the foundation of; and in this he was so successful, that though his wit and raillery were extremely keen and poignant, yet they were at the same time so perfectly genteel, that they us'd rather to please than disgust the very persons on whom they seem'd to reflect. Yet that Fletcher was not entirely excluded from a share in the conduct of the drama, may be gather'd from a story related by Winstanley, *viz.* that our two bards, having concert'd the rough draught of a tragedy over a bottle of wine at a tavern, Fletcher said, he would undertake to *kill the king*, which words being overheard by the waiter, who had not happen'd to have been witness to the context of their conversation, he lodg'd an information of treason against them. But on their explanation of it only to mean the destruction of a theatrical monarch, their loyalty moreover being unquestion'd, the affair ended in a jest.

On the whole, the works of these authors have undoubtedly very great merit, and some of their pieces deservedly stand on the list of the present ornaments of the theatre. The plots are ingenious, interesting, and well managed; the characters strongly marked, and the dialogue sprightly and natural; yet there is in the latter a coarseness which is not suitable to the politeness of the present age; and a fondness of repartee, which frequently runs into obscenity; and which we may suppose

Beaumont pose was the vice of that time, since even the delicate Shakespeare himself is not entirely free from it. But as these authors have more of that kind of wit than the last-mentioned writer, it is not to be wondered if their works were, in the licentious reign of Charles II. preferred to his. Now, however, to the honour of the present taste be it spoken, the tables are entirely turned; and while Shakespeare's immortal works are our constant and daily fare, those of Beaumont and Fletcher, though delicate in their kind, are only occasionally served up; and even then great pains are taken to clear them of that *fautes*, which the *haut gout* of their contemporaries considered as their supremest relish, but which the more undepraved taste of ours has been justly taught to look on as what it really is, no more than a corrupt and unwholesome taint.

Some of their plays were printed in quarto during the lives of the authors; and in the year 1645 there was published in folio a collection of such plays as had not been printed before, amounting to between 30 and 40. This collection was published by Mr Shirley, after the shutting up of the theatres; and dedicated to the Earl of Pembroke by ten of the most famous actors. In 1679 there was an edition of all their plays published in folio; another edition in 1711 by Mr Topham in seven volumes 8vo, and the last in 1751.

BEAUMONT, a town of the Netherlands, in Hainault, on the confines of the territory of Liege. It was ceded to the French in 1684; and taken in 1691 by the English, who blew up the castle. It is situated between the rivers Mæse and Sambre, in E. Long. 4. 1. N. Lat. 50. 12.

BEAUMONT *le Roger*, a town of Upper Normandy in France. E. Long. 0. 56. N. Lat. 49. 2.

BEAUMONT *le Vicomte*, a town of Maine in France. E. Long. 0. 10. N. Lat. 48. 12.

BEAUMONT *sur Oise*, a town in the Isle of France, seated on the declivity of a hill, with a bridge over the river Oise. E. Long. 2. 29. N. Lat. 49. 9.

BEAUNE, a handsome town of France, in Burgundy, remarkable for its excellent wine, and for an hospital founded here in 1443. Its collegiate church is also one of the finest in France: the great altar is adorned with a table enriched with jewels; and its organs are placed on a piece of architecture which is the admiration of the curious. E. Long. 4. 50. N. Lat. 47. 2.

BEAUSOBRE (Iſaac de), a very learned Protestant writer, of French original, was born at Niort in 1659. He was forced into Holland to avoid the execution of a sentence upon him, which condemned him to make the *amende honorable*; and this for having broken the royal signet, which was put upon the door of a church of the Reformed, to prevent the public profession of their religion. He went to Berlin in 1694; was made chaplain to the king of Prussia, and counsellor of the royal consistory. He died in 1738, aged 79, after having published several works: as, 1. *Defense de la Doctrine des Reformes*. 2. A Translation of the New Testament and Notes, jointly with M. Lenfant; much esteemed by the Reformed. 3. *Dissertation sur les Alamites de Boheme*; a curious work. 4. *Histoire Critique de Manichee et du Manicheisme*, 2 tom. in 4to. This has been deemed by philosophers an interesting question, and nobody has developed it

better than this author. 5. Several dissertations in the *Bibliothèque Britannique*.—Mr Beauſobre had strong sense with profound erudition, and was one of the best writers among the Reformed: he preached as he wrote, and he did both with warmth and spirit.

BEAUTY, in its native signification, is appropriated to objects of sight. Objects of the other senses may be agreeable, such as the sounds of musical instruments, the smoothness and softness of some surfaces; but the agreeableness called *beauty* belongs to objects of sight.

Objects of sight are more complex than those of any other sense: in the simplest, we perceive colour, figure, length, breadth, thickness. A tree is composed of a trunk, branches, and leaves; it has colour, figure, size, and sometimes motion: by means of each of these particulars, separately considered, it appears beautiful; but a complex perception of the whole greatly augments the beauty of the object. The human body is a composition of numberless beauties arising from the parts and qualities of the object, various colours, various motions, figures, size, &c. all united in one complex object, and striking the eye with combined force. Hence it is, that beauty, a quality so remarkable in visible objects, lends its name to every thing that is eminently agreeable. Thus, by a figure of speech, we say, a *beautiful sound*, a *beautiful thought*, a *beautiful discovery*, &c.

Considering attentively the beauty of visible objects, *Elements of Criticism*. two kinds are discovered. The first may be termed *intrinsic* beauty, because it is discovered in a single object, without relation to any other: the other may be termed *relative*, being founded on the relation of objects. Intrinsic beauty is a perception of sense merely; for to perceive the beauty of a spreading oak, or of a flowing river, no more is required but singly an act of vision. Relative beauty is accompanied with an act of understanding and reflection: for we perceive not the relative beauty of a fine instrument or engine until we learn its use and destination. In a word, intrinsic beauty is ultimate; and relative beauty is that of means relating to some good end or purpose. These different beauties agree in one capital circumstance, that both are equally perceived as belonging to the object; which will be readily admitted with respect to intrinsic beauty, but is not so obvious with respect to the other. The utility of the plough, for example, may make it an object of admiration or of desire; but why should utility make it beautiful? A natural propensity of the human mind will explain this difficulty: By an easy transition of ideas, the beauty of the effect is transferred to the cause, and is perceived as one of the qualities of the cause. Thus a subject void of intrinsic beauty appears beautiful by its utility; a dwelling-house void of all regularity is however beautiful in the view of convenience; and the want of symmetry in a tree will not prevent its appearing beautiful, if it be known to produce good fruit.

When these two beauties concur in any object, it appears delightful. Every member of the human body possesses both in a high degree.

The beauty of utility, being accurately proportioned to the degree of utility, requires no illustration: But intrinsic beauty, being more complex, cannot be handled distinctly without being analysed. If a tree be beautiful

tiful by means of its colour, figure, motion, size, &c. it is in reality possessed of so many different beauties. The beauty of colour is too familiar to need explanation. The beauty of figure is more: for example, viewing any body as a whole, the beauty of its figure arises from regularity and simplicity; viewing the parts with relation to each other, uniformity, proportion, and order, contribute to its beauty. The beauties of grandeur and motion are considered separately. See **GRANDEUR** and **MOTION**.

We shall here make a few observations on simplicity, which may be of use in examining the beauty of single objects. A multitude of objects crowding into the mind at once, disturb the attention, and pass without making any lasting impression: In the same manner, even a single object, consisting of a multiplicity of parts, equals not, in strength of impression, a more simple object comprehended in one view. This justifies simplicity in works of art, as opposed to complicated circumstances and crowded ornaments.

It would be endless to enumerate the effects that are produced by the various combinations of the principles of beauty. A few examples will be sufficient to give the reader some idea of this subject. A circle and a square are each perfectly regular: a square, however, is less beautiful than a circle; and the reason is, that the attention is divided among the sides and angles of a square; whereas the circumference of a circle, being a single object, makes one entire impression: And thus simplicity contributes to beauty. For the same reason a square is more beautiful than a hexagon or octagon. A square is likewise more beautiful than a parallelogram, because it is more regular and uniform. But this holds with respect to intrinsic beauty only: for in many instances, as in the doors and windows of a dwelling-house, utility turns the scales on the side of the parallelogram.

Again, a parallelogram depends, for its beauty, on the proportion of its sides: A great inequality of its sides annihilates its beauty: Approximation toward equality hath the same effect; for proportion there degenerates into imperfect uniformity, and the figure appears an unsuccessful attempt toward a square. And hence proportion contributes to beauty.

An equilateral triangle yields not to a square in regularity nor in uniformity of parts, and it is more simple. But an equilateral triangle is less beautiful than a square; which must be owing to inferiority of order in the position of its parts; the order arising from the equal inclination of the sides of such an angle is more obscure than the parallelism of the sides of a square. And hence order contributes to beauty not less than simplicity, regularity, or proportion.

Uniformity is singular in one circumstance, that it is apt to disgust by excess. A number of things destined for the same use, as windows, chairs, &c. cannot be too uniform. But a scrupulous uniformity of parts in a large garden or field is far from being agreeable.

In all the works of nature simplicity makes a capital figure. It also makes a figure in works of art: Profuse ornament in painting, gardening, or architecture, as well as in dress or in language, shows a mean or corrupted taste. Simplicity in behaviour and manners has an enchanting effect, and never fails to gain our affec-

tion. Very different are the artificial manners of modern times. A gradual progress from simplicity to complex forms and profuse ornament, seems to be the fate of all the fine arts; resembling behaviour, which from original candour and simplicity has degenerated into duplicity of heart and artificial refinements. At present, literary productions are crowded with words, epithets, figures: In music, sentiment is neglected for the luxury of harmony, and for difficult movement.

With regard to the final cause of beauty, one thing is evident, that our relish of regularity, uniformity, proportion, order, and simplicity, contributes greatly to enhance the beauty of the objects that surround us, and of course tends to our happiness. We may be confirmed in this thought, upon reflecting, that our taste for these particulars is not accidental, but uniform and universal, making a branch of our nature. At the same time, regularity, uniformity, order, and simplicity, contribute each of them to readiness of apprehension, and enable us to form more distinct ideas of objects than can be done where these particulars are wanting. In some instances, as in animals, proportion is evidently connected with utility, and is the more agreeable on that account.

Beauty, in many instances, promotes industry; and as it is frequently connected with utility, it proves an additional incitement to enrich our fields and improve our manufactures. These, however, are but slight effects, compared with the connections that are formed among individuals in society by means of beauty. The qualifications of the head and heart are undoubtedly the most solid and most permanent foundations of such connections: But as external beauty lies more in view, and is more obvious to the bulk of mankind, than the qualities now mentioned, the sense of beauty has a more extensive influence in forming these connections. At any rate, it concurs in an eminent degree with mental qualifications, in producing social intercourse, mutual good-will, and consequently mutual aid and support, which are the life of society: it must not however be overlooked, that the sense of beauty does not tend to advance the interests of society, but when in a due mean with respect to strength. Love, in particular, arising from a sense of beauty, loses, when excessive, its social character: the appetite for gratification, prevailing over affection for the beloved object, is ungovernable, and tends violently to its end, regardless of the misery that must follow. Love, in this state, is no longer a sweet agreeable passion: it becomes painful, like hunger or thirst; and produces no happiness, but in the instant of fruition. This suggests an important lesson, that moderation in our desires and appetites, which fits us for doing our duty, contributes at the same time the most to happiness; even social passions, when moderate, are more pleasant than when they swell beyond proper bounds.

Human or Personal Beauty, only slightly touched upon in the preceding article, merits more particular discussion; and may be considered under these four heads: Colour, Form, Expression, and Grace: the two former being, as it were, the Body, the two latter the Soul, of beauty.

1. *Colour*. Although this be the lowest of all the constituent parts of beauty, yet it is vulgarly the most striking, and the most observed. For which there is

Beauty. a very obvious reason to be given; that "every body can see, and very few can judge;" the beauties of colour requiring much less of judgment than either of the other three.

As to the colour of the body in general, the most beautiful perhaps that ever was imagined, was that which Apelles expressed in his famous Venus; and which, though the picture itself be lost, Cicero has in some degree preferred to us, in his excellent description of it. It was (as we learn from him) a fine red, beautifully intermixed and incorporated with white; and diffused, in its due proportions, through each part of the body. Such are the descriptions of a most beautiful skin, in several of the Roman poets; and such often is the colouring of Titian, and particularly in his sleeping Venus, or whatever other beauty that charming piece was meant to represent.

The reason why these colours please so much, is not only their natural liveliness, nor the much greater charms they obtain from their being properly blended together, but is also owing in some degree to the idea they carry with them of good health; without which all beauty grows languid and less engaging; and with which it always recovers an additional life and lustre.

As to the colour of the face in particular, a great deal of beauty is owing (beside the causes already mentioned) to variety; that being designed by nature for the greatest concurrence of different colours, of any part in the human body. Colours please by opposition; and it is in the face that they are the most diversified, and the most opposed.

It is an observation apparently whimsical, but perhaps not unjust, that the same thing which makes a fine evening, makes a fine face; that is, as to the particular part of beauty now under consideration.

The beauty of an evening sky, about the setting of the sun, is owing to the variety of colours that are scattered along the face of the heavens. It is the fine red clouds, intermixed with white, and sometimes darker ones, with the azure bottom appearing here and there between them, which makes all that beautiful composition that delights the eye so much, and gives such a serene pleasure to the heart. In the same manner, if you consider some beautiful faces, you may observe, that it is much the same variety of colours which gives them that pleasing look; which is so apt to attract the eye, and but too often to engage the heart. For all this sort of beauty is resolvable into a proper variation of flesh colour and red, with the clear blueness of the veins pleasingly intermixed about the temples and the going off of the cheeks, and set off by the shades of hill eye-brows; and of the hair, when it falls in a proper manner round the face.

It is for much the same reason that the best landscape-painters have been generally observed to choose the autumnal part of the year for their pieces, rather

N^o 43.

Beauty. than the spring. They prefer the variety of shades and colours, though in their decline, to all their freshness and verdure in their infancy; and think all the charms and liveliness even of the spring, more than compensated by the choice, opposition, and richness of colours, that appear almost on every tree in the autumn.

Though one's judgment is apt to be guided by particular attachments (and that more perhaps in this part of beauty than any other), yet the general persuasion seems well founded, that a complete brown beauty is really preferable to a perfect fair one; the bright brown giving a lustre to all the other colours, a vivacity to the eyes, and a richness to the whole look, which one seeks in vain in the whitest and most transparent skins. Raphael's most charming Madonna is a brunette beauty; and his earlier Madonnas (or those of his middle style) are generally of a lighter and less pleasing complexion. All the best artists in the noblest age of painting, about Leo the tenth's time, used this deeper and richer kind of colouring; and perhaps one might add, that the glaring lights introduced by Guido, went a great way towards the declension of that art; as the enfeebling of the colours by Carlo Marat (or his followers) hath since almost completed the fall of it in Italy.

Under this article colour, it seems doubtful whether some things ought not to be comprehended which are not perhaps commonly meant by that name: As that appearing softness or silkiness of some skins; that (A) Magdalen-look in some fine faces, after weeping; that brightness, as well as tint, of the hair; that lustre of health that shines forth upon the features; that luminousness that appears in some eyes, and that fluid fire, or glistening, in others: Some of which are of a nature so much superior to the common beauties of colour, that they make it doubtful whether they should not have been ranked under a higher class, and reserved for the expression of the passions. They are, however, mentioned here; because even the most doubtful of them appear to belong partly to this head, as well as partly to the other.

2. *Form.* This takes in the turn of each part, as well as the symmetry of the whole body, even to the turn of an eye-brow, or the falling of the hair. Perhaps, too, the attitude, while fixed, ought to be reckoned under this article: By which is not only meant the posture of the person, but the position of each part; as the turning of the neck, the extending of the hand, the placing of a foot; and so on to the most minute particulars.

The general cause of beauty in the form or shape in both sexes is a proportion, or an union and harmony, in all parts of the body.

The distinguishing character of beauty in the female form, is delicacy and softness; and in the male, either

6

apparent

(A) The look here meant is most frequently expressed by the best painters in their Magdalens; in which, if there were no tears on the face, you would see, by the humid redness of the skin, that she had been weeping extremely. There is a very strong instance of this in a Magdalen by Le Brun, in one of the churches at Paris; and several by Titian, in Italy; the very best of which is at the Barberino palace at Venice. In speaking of which, Rosalba hardly went too far, when she said, "It wept all over;" or (in the very words she used) "Elle pleure jusqu' aux bouts de doigts."

apparent strength or agility. The finest exemplars that can be seen for the former, is the Venus of Medici; and for the two latter, the Hercules Farnese and the Apollo Belvedere.

There is one thing indeed in the last of these figures which exceeds the bounds of our present inquiry; what an Italian artist called *Il fovera umano*; and what we may call the transcendent, or celestial. It is something distinct from all human beauty, and of a nature greatly superior to it; something that seems like an air of divinity: Which is expressed, or at least is to be traced out, in but very few works of the artists; and of which scarce any of the poets have caught any ray in their descriptions (or perhaps even in their imagination), except Homer and Virgil, among the ancients; and our Shakespear and Milton among the moderns.

The beauty of the mere human form is much superior to that of colour; and it may be partly for this reason, that when one is observing the finest works of the artists at Rome (where there is still the noblest collection of any in the world), one feels the mind more struck and more charmed with the capital statues, than with the pictures of the greatest masters.

One of the old Roman poets, in speaking of a very handsome man, who was candidate for the prize in some of the public games, says, that he was much expected and much admired by all the spectators at his first appearance; but that, when he slung off his robes, and discovered the whole beauty of his shape altogether, it was so superior, that it quite extinguished the

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beauties they had before so much admired in his face. Much the same effect may be felt in viewing the Venus of Medici. If you observe the face only, it appears extremely beautiful; but if you consider all the other elegancies of her make, the beauty of her face becomes less striking, and is almost lost in such a multiplicity of charms.

Whoever would learn what makes the beauty of each part of the human body, may find it laid down pretty much at large, by (c) *Felicien*; or may study it with more pleasure to himself, in the finest pictures and statues; for in life we commonly see but a small part of the human body, most of it being either disguised or altered by what we call dress.

In fact we do not only thus, in a great measure, hide beauty; but even injure, and kill it, by some parts of dress. A child is no sooner born into the world, than it is bound up, almost as firmly as an old Egyptian mummy, in several folds of linen. It is in vain for him to give all the signs of distress that nature has put in his power, to show how much he suffers whilst they are thus imprisoning his limbs; or all the signs of joy, every time they are set at liberty. In a few minutes, the old witch who presides over his infirmest days, falls to tormenting him afresh, and winds him up again in his destined confinement. When he comes to be dressed like a man, he has ligatures applied to his arms, legs, and middle; in short, all over him; to prevent the natural circulation of his blood, and make him less active and healthy: and if it be a child of the tenderer sex, she must be bound yet more straitly a-

O

bout

(c) In his *Entretiens*, vol. ii. p. 14—45. The chief of what he says there, on the beauty of the different parts of the female form, is as follows: That the head should be well rounded; and look rather inclining to small than large. The forehead, white, smooth, and open (not with the hair growing down too deep upon it); neither flat nor prominent, but like the head, well rounded; and rather small in proportion than large. The hair, either bright, black, or brown; not thin, but full and waving; and if it falls in moderate curls the better. The black is particularly useful for setting off the whiteness of the neck and skin. The eyes, black, chestnut, or blue; clear, bright, and lively; and rather large in proportion than small. The eye-brows, well divided, rather full than thin; semicircular, and broader in the middle than at the ends; of a neat turn, but not formal. The cheeks should not be wide; should have a degree of plumpness, with the red and white finely blended together; and should look firm and soft. The ear should be rather small than large; well folded, and with an agreeable tinge of red. The nose should be placed so as to divide the face into two equal parts; should be of a moderate size, strait, and well-squared; though sometimes a little rising in the nose, which is but just perceivable, may give a very graceful look to it. The mouth should be small; and the lips not of equal thickness: They should be well turned, small rather than gross; soft, even to the eye; and with a living red in them. A truly pretty mouth is like a rose-bud that is beginning to blow. The teeth should be middle-sized, white, well-ranged, and even. The chin of a moderate size; white, soft, and agreeably rounded. The neck should be white, straight, and of a soft, easy, and flexible make, rather long than short; less above, and encreasing gently toward the shoulders: The whiteness and delicacy of its skin should be continued, or rather go on improving to the bosom. The skin in general should be white, properly tinged with red; with an apparent softness, and a look of thriving health in it. The shoulders should be white, gently spread, and with a much softer appearance of strength than in those of men. The arm should be white, round, firm, and soft; and more particularly so from the elbow to the hands. The hand should unite insensibly with the arm; just as it does in the statue of the Venus of Medici. They should be long and delicate, and even the joints and nervous parts of them should be without either any hardness or dryness. The fingers should be fine, long, round, and soft; small, and lessening towards the tips of them: And the nails long, rounded at the ends, and pellucid. The bosom should be white and charming; and the breasts equal in roundness, whiteness, and firmness; neither too much elevated nor too much depressed; rising gently, and very distinctly separated; in one word, just like those of the Venus of Medici. The sides should be long, and the hips wider than the shoulders; and should turn off as they do in the same Venus; and go down rounding and lessening gradually to the knee. The knee should be even, and well rounded; the legs straight, but varied by a proper rounding of the more fleshy part of them; and the feet finely turned, white, and little.

Beauty. bout the waist and stomach, to acquire a disproportion that nature never meant in her shape.

The two other constituent parts of beauty, are expression and grace; the former of which is common to all persons and faces; and the latter is to be met with in very few.

3. *Expression.* By this is meant the expression of the passions; the turns and changes of the mind, so far as they are made visible to the eye by our looks or gestures.

Though the mind appears principally in the face and attitudes of the head; yet every part almost of the human body, on some occasion or other, may become expressive. Thus the languishing hanging of the arm, or the vehement exertion of it; the pain expressed by the fingers of one of the sons in the famous group of Laocoon, and in the toes of the dying gladiator. But this again is often lost among us by our dress; and indeed is of the less concern, because the expression of the passions passes chiefly in the face, which we (by good luck) have not as yet concealed.

The parts of the face in which the passions most frequently make their appearance, are the eyes and mouth; but from the eyes, they diffuse themselves very strongly about the eye-brows; as, in the other case, they appear often in the parts all round the mouth.

Philosophers may dispute as much as they please about the seat of the soul; but, where-ever it resides, we are sure that it speaks in the eyes. Perhaps it is injuring the eye-brows, to make them only dependents on the eye; for they, especially in lively faces, have, as it were, a language of their own; and are extremely varied, according to the different sentiments and passions of the mind.

Degree of displeasure may be often discerned in a lady's eye-brow, though she have address enough not to let it appear in her eyes; and at other times may be discovered so much of her thoughts, in the line just above her eye-brows, that she would probably be amazed how any body could tell what passed in her mind, and (as she thought) undiscovered by her face, so particularly and distinctly.

Homer makes the eye-brows the seat of (D) majesty, Virgil of (E) dejection, Horace of (F) modesty, and Juvenal of (G) pride; and it is not certain whether every one of the passions be not assigned, by one or other of the poets, to the same part.

Beauty. Having hitherto spoken only of the passions in general, we will now consider a little which of them add to beauty, and which of them take from it.

We may say, in general, that all the tender and kind passions add to beauty; and all the cruel and unkind ones add to deformity: And it is on this account that good nature may very justly be said to be "the best feature even in the finest face."

Mr Pope has included the principal passion of each sort in two very pretty lines:

Love, hope, and joy, fair pleasure's smiling train;
Hate, fear, and grief, the family of pain.

The former of which naturally give an additional lustre and enlivening to beauty; as the latter are too apt to sling a gloom and cloud over it.

Yet in these, and all the other passions, moderation ought perhaps to be considered in a great measure the rule of their beauty, almost as far as moderation in actions is the rule of virtue. Thus an excessive joy may be too boisterous in the face to be pleasing; and a degree of grief, in some faces, and on some occasions, may be extremely beautiful. Some degrees of anger, shame, surprize, fear, and concern, are beautiful; but all excess is hurtful, and all excess ugly. Dulness, austerity, impudence, pride, affectation, malice, and envy, are always ugly.

The finest union of passions that can perhaps be observed in any face, consists of a just mixture of modesty, sensibility, and sweetness; each of which when taken singly is very pleasing; but when they are all blended together, in such a manner as either to enliven or correct each other, they give almost as much attraction as the passions are capable of adding to a very pretty face.

The prevailing passion in the Venus of Medici is modesty: It is expressed by each of her hands, in her looks, and in the turn of her head. And by the way, it may be questioned, whether one of the chief reasons why side-faces please one more than full ones, be not from the former having more of the air of modesty than the latter. This at least is certain, that the best artists usually chosse to give a side-face rather than a full one; in which attitude, the turn of the neck too has more beauty, and the passions more activity and force. Thus, as to hatred and affection in particular, the look that was formerly supposed to carry an infection with it from malignant eyes, was a slanting regard; like that which

(D) Η, ἡ κυανερῶν ἐπ' ὀφρυγεύσει Κρονίαν
 Ἀμύροισι δ' ἀπ' ἀπὸ χεῖρας ἐπερωσάνη ἀνακτοῦ
 Κρόνος ἀπ' ἀθανάτοισ' ἔμιγαν δ' ἐλελίξεν Ὀλύμπου. *Il.* α. 528.

It was from this passage that Phidias borrowed all the ideas of that majesty which he had expressed so strongly in his famous statues of the Jupiter Olympus; and Horace, probably, his — *Cuncta supercilio moventis.* *Lib. iii. Od. 1. 8.*

(E) *Frons læta parum, et dejecto lumina vultu.* *Virgil, Æn. vi. 863.*

(F) *Deme supercilio nubem; plerumque modestus*
Occupat obseuri speciem. *Horat. lib. i. Epist. 18. 95.*

(G) *Malo Venusinam, quam te, Cornelia, mater*
Gracchorum; si cum magnis virtutibus affers
Grande superciliium, et numeras in dote triumphos. *Juvenal, Sat. vi. 168.*

It is here that the Romans used the word *superciliosus* (as we do from it the word *supercilious*) for proud and arrogant persons.

Beauty. which Milton gives to Satan, when he is viewing the happiness of our first parents in paradise; and the fascination, or stroke of love, is most usually conveyed, at first, in a side-glance.

It is owing to the great force of pleasingness which attends all the kinder passions, "that lovers do not only seem, but are really, more beautiful to each other than they are to the rest of the world;" because when they are together, the most pleasing passions are more frequently exerted in each of their faces than they are in either before the rest of the world. There is then (as a certain French writer very well expresses it) "A soul upon their countenances," which does not appear when they are absent from each other; or even when they are together conversing with other persons, that are indifferent to them, or rather lay a restraint upon their features.

The superiority which the beauty of the passions has over the two parts of beauty first mentioned, will probably be now pretty evident: or if this should appear still problematical to any one, let him consider a little the following particulars, of which every body must have met with several instances in their lifetime. That there is a great deal of difference in the same face, according as the person is in a better or worse humour, or in a greater or less degree of liveliness: That the best complexion, the finest features, and the exactest shape, without any thing of the mind expressed on the face, are as insipid and unmoving as the waxen figure of the fine Duchess of Richmond in Westminster-Abbey: That the finest eyes in the world, with an excess of malice or rage in them, will grow as shocking as they are in that fine face of Medusa on the famous seal in the Strozzi family at Rome: That a face without any good features in it, and with a very indifferent complexion, shall have a very taking air; from the sensibility of the eyes, the general good-humoured turn of the look, and perhaps a little agreeable smile about the mouth. And these three things perhaps would go a great way toward accounting for the *Je ne sçai quoi*, or that inexplicable pleasingness of the face (as they choose to call it), which is so often talked of and so little understood; as the greater part, and perhaps all the rest of it, would fall under the last article, that of grace.

Thus it appears that the passions can give beauty without the assistance of colour or form; and take it away where they have united the most strongly to give it. And hence the superiority of this part of beauty to the other two.

This, by the way, may help us to account for the justness of what Pliny asserts in speaking of the famous statue of Laocoon and his two sons: He says, it was the finest piece of art in Rome; and to be preferred to all the other statues and pictures, of which they had so noble a collection in his time. It had no beauties of colour to vie with the paintings and other statues there; as the Apollo Belvedere and the Venus of Medici, in particular, were as finely proportioned as the Laocoon: But this had much greater variety of expression even than those fine ones; and it must be on that account alone that it could have been preferable to them and all the rest.

Before quitting this head, two things before men-

tioned deserve to be repeated: That the chief rule of the beauty of the passions is moderation; and that the part in which they appear most strongly is the eyes. It is there that love holds all his tenderest language: It is there that virtue commands, modesty charms, joy enlivens, sorrow engages, and inclination fires the hearts of the beholders: It is there that even fear, and anger, and confusion, can be charming. But all these, to be charming, must be kept within their due bounds and limits; for too sullen an appearance of virtue, a violent and prostitute swell of passion, a rostatic and overwhelming modesty, a deep sadness, or too wild and impetuous a joy, become all either oppressive or disagreeable.

4. The last finishing and noblest part of beauty is *Grace*; which every body is accustomed to speak of as a thing inexplicable; and in a great measure perhaps it is so. We know that the soul is, but we scarce know what it is: every judge of beauty can point out grace; but no one seems even yet to have fixed upon a definition for it.

Grace often depends on some very little incidents in a fine face; and in actions it consists more in the manner of doing things than in the things themselves. It is perpetually varying its appearance, and is therefore much more difficult to be considered than in any thing fixed and steady. While you look upon one, it steals from under the eye of the observer; and is succeeded perhaps by another that slips away as soon and as imperceptibly. It is on this account that grace is better to be studied in Corregio's, Guido's, and Raphael's pictures, than in real life.

But though one cannot punctually say what grace is, we may point out the parts and things in which it is most apt to appear.

The chief dwelling-place of grace is about the mouth; though at times it may visit every limb or part of the body. But the mouth is the chief seat of grace, as much as the chief seat for the beauty of the passions is in the eyes. Thus, when the French use the expression of *une bouche fort gracieuse*, they mean it properly of grace: but when they say *des yeux tres gracieux*, it then falls to the share of the passions; and it means kind or favourable.

In a very graceful face, by which we do not so much mean a majestic as a soft and pleasing one, there is now and then (for no part of beauty is either so engaging or so uncommon) a certain deliciousness that almost always lives about the mouth, in something not quite enough to be called a smile, but rather an approach toward one, which varies gently about the different lines there like a little fluttering Cupid, and perhaps sometimes discovers a little dimple, that after just lightening upon you disappears and appears again by fits.

The grace of attitudes may belong to the position of each part, as well as to the carriage or disposition of the whole body: but how much more it belongs to the head than to any other part may be seen in the pieces of the most celebrated painters; and particularly in those of Guido, who has been rather too lavish in bestowing this beauty on almost all his fine women; whereas nature has given it in so high a degree but to very few.

Beauty.

The turns of the neck are extremely capable of grace, and are very easy to be observed, though very difficult to be accounted for.

How much of this grace may belong to the arms and feet, as well as to the neck and head, may be seen in dancing. But it is not only in genteel motions that a very pretty woman will be graceful; and Ovid (who was so great a master in all the parts of beauty) had very good reason for saying, That when Venus, to please her gallant, imitated the hobbling gait of her husband, her very lameness had a great deal of prettiness and grace in it.

De arte A-
mandi, ii.
570.

Tibullus,
lib. iv.
cl. 2. 8.

“Every motion of a graceful woman (says another writer of the same age) is full of grace.” She designs nothing by it perhaps, and may even not be sensible of it herself: and indeed she should not be so too much; for the moment that any gesture or action appears to be affected, it ceases to be graceful.

Horace and Virgil seem to extend grace so far as to the flowing of the hair, and Tibullus even to the dress of his mistress; but then he assigns it more to her manner of putting on and appearing in whatever she wears than to the dress itself. It is true, there is another wicked poet (Ovid) who has said (with much less decency) “that dress is the better half of the woman:”

— *Pars minima est ipsa puella sui.* Ovid.

There are two very distinct (and, as it were, opposite) sorts of grace; the majestic and the familiar. The former belongs chiefly to the very *fine* women, and the latter to the very *pretty* ones: *That* is more commanding, and *this* the more delightful and engaging. The Grecian painters and sculptors used to express the former most strongly in the looks and attitudes of their Minervas, and the latter in those of Venus.

Xenophon, in his Choice of Hercules (or at least the excellent translator of that piece) has made just the same distinction in the personages of wisdom and pleasure; the former of which he describes as moving on to that young hero with the majestic sort of grace; and the latter with the familiar:

Graceful, yet each with different grace they move;
This striking sacred awe, that softer winning love.

No poet seems to have understood this part of beauty so well as our own Milton. He speaks of these two sorts of grace very distinctly; and gives the majestic to his Adam, and both the familiar and majestic to Eve; but the latter in a less degree than the former:

Two of far nobler shape, erect and tall,
Godlike erect, with native honour clad,
In naked majesty, seem'd lords of all;
And worthy seem'd. For in their looks divine
The image of their glorious Maker shone:
Truth, wisdom, sanctitude severe and pure;
Severe, but in true filial freedom plac'd;
Whence true authority in men: Though both
Not equal, as their sex not equal, seem'd.
For contemplation he, and valour, form'd;
For softness she, and sweet attractive grace.

Milton's Par. Lost, B. iv. 298.

Beauty.

— — I spy'd thee, fair indeed and tall,
Under a plantain; yet methought less fair,
Less winning soft, less amiably mild,
Than that smooth wat'ry image. —

(*Eve, of Adam and herself*) *Ib. ver. 480.*

— — — — — Her heav'nly form
Angelic, but more soft and feminine;
Her graceful innocence; her ev'ry air
Of gesture, or least action. — B. ix. 461.

Grace was in all her steps: Heav'n in her eye;
In ev'ry gesture, dignity and love. B. viii. 489.

Speaking, or mute, all comeliness and grace
Attends thee; and each word, each motion, forms.
Ib. 223.

Though grace is so difficult to be accounted for in general, yet there are two particular things which seem to hold universally in relation to it.

The first is, “That there is no grace without motion;” that is, without some genteel or pleasing motion, either of the whole body or of some limb, or at least of some feature. And it may be hence that Lord Bacon calls grace by the name of decent motion; just as if they were equivalent terms: “In beauty, that of favour is more than that of colour; and that of gracious and decent motion, more than that of favour.”

Virgil in one place points out the majesty of Juno, *Æn. i. 46.* and in another the graceful air of Apollo, by only saying that they move; and possibly he means no more when he makes the motion of Venus the principal thing by which Æneas discovers her under all her disguise; though the commentators, as usual, would find out a more dark and mysterious meaning for it.

All the best statues are represented as in some action or motion; and the most graceful statue in the world (the Apollo Belvedere) is so much so, that when one faces it at a little distance, one is almost apt to imagine that he is actually going to move on toward you.

All the graceful heads, even in the portraits of the best painters, are in motion; and very strongly on those of Guido in particular; which are all either calling their looks up toward heaven, or down toward the ground, or side-way, as regarding some object. A head that is quite unactive, and slung flat upon the canvas (like the faces on medals after the fall of the Roman empire, or the Gothic heads before the revival of the arts), will be so far from having any grace, that it will not even have any life in it.

The second observation is, “That there can be no grace with impropriety;” or, in other words, that nothing can be graceful that is not adapted to the characters of the person.

The graces of a little lively beauty would become ungraceful in a character of majesty; as the majestic airs of an empress would quite destroy the prettiness of the former. The vivacity that adds a grace to beauty in youth would give an additional deformity to old age; and the very same airs which would be charming on some occasions may be quite shocking when extremely mistimed or extremely misplaced.

The inseparable union of propriety and grace seems to have been the general sense of mankind, as we may guess from the languages of several nations; in which some

Beauty. some words that answer to our proper or becoming, are used indifferently for beautiful or graceful. Thus, among the Greeks, the words *Περαιος* and *Καλός*, and among the Romans *pulchrum* and *decorus*, or *decorum*, are used indifferently for one another.

It appears wrong, however, to think (as some have done) that grace consists entirely in propriety; because propriety is a thing easy enough to be understood, and grace (after all we can say about it) very difficult. Propriety, therefore, and grace are no more one and the same thing than grace and motion are. It is true, it cannot subsist without either; but then there seems to be something else, which cannot be explained, that goes to the composition, and which possibly may give its greatest force and pleasingness.

Whatever are the causes of it, this is certain, that grace is the chief of all the constituent parts of beauty; and so much so, that it seems to be the only one which is absolutely and universally admired: All the rest are only relative. One likes a brunette beauty better than a fair one; I may love a little woman, and you a large one, well; a person of a mild temper will be fond of the gentler passions in the face, and one of a bolder cast may choose to have more vivacity and more vigorous passions expressed there: But grace is found in few, and is pleasing to all. Grace, like poetry, must be born with a person, and is never wholly to be acquired by art. The most celebrated of all the ancient painters was Apelles; and the most celebrated of all the modern Raphael: And it is remarkable, that the distinguishing character of each of them was grace. Indeed, that alone could have given them so high a pre-eminence over all their other competitors.

Grace has nothing to do with the lowest part of beauty or colour; very little with shape, and very much with the passions; for it is she who gives their highest zest, and the most delicious part of their pleasingness to the expressions of each of them.

All the other parts of beauty are pleasing in some degree, but grace is pleasingness itself. And the old Romans in general seem to have had this notion of it, as may be inferred from the original import of the names which they used for this part of beauty: *Gratia* from *gratus*, or "pleasing;" and *decor* from *decens*, or "becoming."

The Greeks as well as the Romans must have been of this opinion; when in settling their mythology, they made the graces the constant attendants of Venus or the cause of love. In fact, there is nothing causes love so generally and so irresistibly as grace. It is like the Cestus of the same goddess, which was supposed to comprehend every thing that was winning and engaging in it; and beside all, to oblige the heart to love by a secret and inexplicable force like that of some magic charm.

She said, with awe divine, the queen of love
Obey'd the sister and the wife of Jove:
And from her fragrant breast the zone unbrac'd,
With various skill and high embroidery grac'd.
In this was every art, and every charm,
To win the wisest, and the coldest warm:
Fond love, the gentle vow, the gay desire,
The kind deceit, the still reviving fire.

Beauty. Persuasive speech, and more persuasive sighs,
Silence that spoke, and eloquence of eyes.
This on her hand the Cyprian goddess laid;
Take this, and with it all thy wish, she said:
With smiles she took the charm; and smiling prest
The pow'rful Cestus to her snowy breast.

Pope, *Il.* xiv. 256.

Although people in general are more capable of judging right of beauty, at least in some parts of it, than they are of most other things; yet there are a great many causes apt to mislead the generality in their judgments of beauty. Thus, if the affection is entirely engaged by any one object, a man is apt to allow all perfections to that person, and very little in comparison to any body else; or if they ever commend others highly, it is for some circumstance in which they bear some resemblance to their favourite object.

Again, people are very often misled in their judgments, by a similitude either of their own temper or personage in others. It is hence that a person of a mild temper is more apt to be pleased with the gentler passions in the face of his mistress; and one of a very lively turn would choose more of spirit and vivacity in his; that little people are inclined to prefer pretty women, and larger people majestic ones; and so on in a great variety of instances. This may be called falling in love with ourselves at second hand; and self-love (whatever other love may be) is sometimes so false-sighted, that it may make the most plain, and even the most disagreeable things, seem beautiful and pleasing.

Sometimes an idea of usefulness may give a turn to our ideas of beauty; as the very same things are reckoned beauties in a coach-horse which would be so many blemishes in a race-horse.

But the greatest and most general misleader of our judgments, in relation to beauty, is custom, or the different national tastes for beauty, which turn chiefly on the two lower parts of it, colour and form.

It was from the most common shape of his country-women, that Rubens, in his pictures, delights so much in plumpness; not to give it a worse name. Whenever he was to represent the most beautiful women, he is sure to give them a good share of corpulence. It seems as if nobody could be a beauty with him under two hundred weight. His very graces are all fat.

But this may go much farther than mere bulk; it will reach even to very great deformities; which sometimes grow into beauties, where they are habitual and general. One of our own countrymen (who was a particularly handsome man) in his travelling over the Alps, was detained by a fever in one of those villages, where every grown person has that sort of swellings in the neck which they call *goitres*; and of which some are very near as big as their heads. The first Sunday that he was able, he went to their church (for he was a Roman catholic) to return thanks to heaven for his recovery. A man of so good a figure, and so well dressed, had probably never before been within the walls of that chapel. Every body's eyes were fixed upon him; and as they went out, they cried out loud enough for him to hear them, "O how completely handsome would that man be, if he had but a *goitre*!"

In some of the most military nations of Africa, no man is reckoned handsome that has not five or six scars

Beauty. in his face. This cu^om might possibly at first be introduced among them to make them less afraid of wounds in that part in battle: but however that was, it grew at last to have so great a share in their idea of beauty, that they now cut and slash the faces of their poor little infants, in order to give them those graces, when they are grown up, which are so necessary to win the hearts of their mistresses; and which, with the assistance of some jewels or ingots of gold in their noses, ears, and lips, must certainly be irresistible to the ladies of that country.

The covering each cheek all over with a burning sort of red colour, has long been looked upon in a neighbouring country to be as necessary to render a fine lady's face completely beautiful, as these scars are for the beaux in Africa.

The natural complexion of the Italian ladies is of a higher glow than ours usually are; and yet Mr Addison is very just, in making a Numidian call the ladies of the same country *pale, unripened, beauties*.

The glowing dames of Zama's royal court
Have faces flush'd with more exalted charms:
The sun, that rolls his chariot o'er their heads,
Works up more fire and colour in their cheeks:
Were you with these, my prince, you'd soon forget
The pale, unripen'd beauties of the north!

Syphax to Juba; in Cato, Act i. Scene 4.

The prince of Anamaboo, who had been so long and laterally so much used to the European complexion, yet said of a certain lady a little before he left London, "That she would be the most charming woman in the world if she was but a negro."

In an account of some of the farthest travels that any of our people have made up the river Gambia, we are informed, that when they came to some villages where probably no Europeans had ever been before, the women ran frightened and screaming from them, on taking them to be devils, merely on account of the whiteness of their complexion.

We cannot avoid observing, however, that heaven is very good and merciful to mankind, even in making us capable of all this variety of mistakes. If every person judged exactly right of beauty, every man that was in love in such a district, would be in love with the same woman. The superior beauty of each hamlet would be the object of the hate and malice of all the rest of her own sex in it, and the cause of dissension and murders among all of the other. If this would hold in one town, it would hold for the same reasons in every other town or district; and of course there would be nothing more wanting than this universal right judgement of beauty, to render the whole world one continued scene of blood and misery.

But now that fancy has perhaps more to do with beauty than judgment, there is an infinity of tastes, and consequently an infinity of beauty; for to the mind of the lover, supposed beauty is full as good as real. Every body may now choose out what happens to hit his own turn and cast. This increases the extent of beauty vastly, and makes it in a manner universal: for there are but few people in comparison that are truly beautiful; but every body may be beautiful in the imagination of some one or other. Some may delight themselves in a black skin, and others in a white;

some in a gentle natural rosiness of complexion, others in a high exalted artificial red; some nations in waists disproportionably large, and another in waists as disproportionably small. In short, the most opposite things imaginable may each be looked upon as beautiful in whole different countries, or by different people in the same country.

We should perhaps make a distinction here again, as to the two former parts of beauty and the two latter. Fancy has much more to do in the articles of form and colour than in those of the passions and grace. The good passions, as they are visible on the face, are apparent goodness; and that must be generally amiable: and true grace, wherever it appears to any degree, one should think must be pleasing to every human creature; or perhaps this may never appear in the women of any nation, where the men are grown so savage and brutal as to have lost all taste for it.

Yet even as to grace itself, under the notion of pleasingness, it may become almost universal, and be as subject to the dominion of fancy as any of the less significant parts of beauty. A parent can see gentleness in the most awkward child perhaps that ever was born; and a person who is truly in love, will be pleased with every motion and air of the person beloved; which is the most distinguishing character that belongs to grace. It is true, this is all a mistaken grace; but as to that particular person, it has all the effects of the true.

BEAUTY, in architecture, painting, and other arts, is the harmony and justness of the whole composition taken together.

BEAUVAIS, an episcopal city in the Isle of France, and capital of the Beauvoisis. The cathedral church is dedicated to St Peter, and is much admired for its fine architecture. It contains a great number of relics, and a library of curious books. There are several other churches, among which is one dedicated to St Stephen, remarkable for its curious windows. The town was ineffectually besieged by the English in 1443, and by the Duke of Burgundy with an army of 80,000 men. In this last siege the women signaized themselves under the conduct of Jeane Hachette, who set up a standard yet preserved in the church of the Jacobins. The Duke was obliged to raise the siege; and in memory of the womens exploits, they walk first in a procession on the 10th of July, the anniversary of their deliverance. The inhabitants carry on a good trade in beautiful tapestry. Beauvais is situated on the river Therin, in E. Long. 2. 15. N. Lat. 49. 26.

BEAUVAIS, a town of France in Upper Languedoc, seated on the river Tescou. E. Long. 1. 43. N. Lat. 44. 2.

BEAUVIN, a city of Burgundy in France, in E. Long. 4. 50. N. Lat. 47.

BEAUVOIR *sur Mer*, a maritime town of Poictou, in France, with the title of Marquisate. W. Long. 1. 5. N. Lat. 46. 45.

BEAUVOISIS, a territory of France, formerly part of Picardy, but now of the Isle of France. Beauvais is the capital.

BEBELINGUEN, a town of Germany, in the duchy of Wirtemberg, seated on a lake from which proceeds the river Worm. E. Long. 9. 8. N. Lat. 48. 45.

BEBRYCIA, (anc. geog.), an ancient name of Bi-

Bithynia, so called from the *Bebryces* its inhabitants. The *Bebryces* were afterwards driven out by the Thracians, viz. the *Bithyni* and *Thyni*; from whom, in process of time, the country took the name of *Bithynia*. See **BITHYNIA**.

BEC, a town of France, in Normandy, seated on a tongue of land, at the confluence of two rivers, in E. Long. 0. 52. N. Lat. 48. 45.

BECAH, or **BEKAH**, a Jewish coin, being half a shekel. In Dr Arbuthnot's table of reductions, the *bekah* amounts to $13\frac{1}{2}$ d. in Dr Prideaux's computation to 1s. 6d. Every Israelite paid an hundred *bekahs* a head annually for the support of the temple.

BECALM, in a general sense, signifies to appease, to allay.

BECALM, in the sea language. A ship is said to be *becalmed*, when there is not a breath of wind to fill the sails.

BECANOR, a town of India, in Asia, seated on the river Ganges, in E. Long. 83. 5. N. Lat. 27. 40.

BECCABUNGA, **BROOKLIME**; the trivial name of a species of *veronica*. See **VERONICA**.

BECCLES, a large town of Suffolk in England, in E. Long. 1. 30. N. Lat. 52. 38.

BECHER (John Joachim), a celebrated chemist, was born at Spire, in 1645. He was connected with the most learned men in Europe; and the emperor, the electors of Mentz and Bavaria, and other persons of high rank, furnished him with the means of making experiments in mathematics, natural philosophy, medicine, and chemistry. As his thoughts were very judicious and uncommon with respect to œconomy and to increasing the revenues of a state, he was invited to Vienna, where he contributed greatly to the establishment of several manufactures, a chamber of commerce, and an India company; but the jealousy of some of the ministers occasioned his disgrace and ruin. He was not less unhappy at Mentz, Munich, and Wurtzburg; which determined him to go to Harlem, where he invented a machine for working a great quantity of silk in a little time, and with few hands: but new misfortunes made him come to England, and he died at London in 1685. He wrote many works; the principal of which are, 1. *Physica Subterranea*, which was reprinted at Leipzig in 1703, and in 1739, in octavo, with a small treatise, by E. Stahl, intitled *Specimen Becherianum*. 2. *Experimentum chymicum novum*, 8vo. 3. *Character pro Notitia Linguarum universalis*. 4. *Institutiones Chymice, seu Manuductio ad Philosophiam Hermeticam*, 4to. 5. *Institutiones Chymice prodromæ*, 12mo. 6. *Experimentum novum ac curiosum de Minera arenaria perpetua*, &c.

BECHIN, a town of Bohemia, in a circle of the same name. It was taken and burnt by General Bequol in 1619. It is seated on the river Lausnitz, in E. Long. 15. 12. N. Lat. 49. 14.

BECK, or **BEKE**, a word which imports a small stream of water issuing from some burn or spring. Hence *Hell becks*, little brooks in the rough and wild mountains about Richmond near Lancashire, so called on account of their ghatlines and depth.

BECK is chiefly used among us in the composition of names of places originally situated on rivulets: hence *Walbeck*, *Bourbeck*, &c. The Germans use *beck* in the same manner.

BECK, (David) an eminent portrait-painter, was born at Ainhem in Guelderland in 1621, and became a disciple of Vandyck; from whom he acquired a fine manner of penciling, and that sweet style of colouring which is peculiar to that great master and to all the disciples trained up under his direction. He possessed besides, that freedom of hand, and readiness, or rather rapidity of execution, for which Vandyck was so remarkably famous; and King Charles I. when he observed the expeditious manner of Beck's painting, was so exceedingly surpris'd, that he told Beck, it was his opinion, he could paint if he was riding post. He was appointed portrait-painter and chamberlain to Queen Christina of Sweden; and by her recommendation, most of the illustrious persons in Europe sat to him for their pictures. He was agreeable, handsome, and polite, and lived in the highest favour with his royal mistress: but, having an earnest desire to visit his friends in Holland, and leaving the court of Sweden much against the Queen's inclination, she apprehended that he intended never to return; and, as he died soon after at the Hague, it was suspected that he was poisoned. This happened in 1656, when he was aged only 35 years.—A very singular adventure happened to this painter as he travelled through Germany, which seems not unworthy of being recited. He was suddenly and violently taken ill at the inn where he lodged, and was laid out as a corpse, seeming to all appearance quite dead. His valets expressed the strongest marks of grief for the loss of their master, and while they sat beside his bed, they drank very freely, by way of consolation. At last one of them, who grew much intoxicated, said to his companions, our master was fond of his glass while he was alive, and out of gratitude let us give him a glass now he is dead. As the rest of the servants assented to the proposal, he raised up the head of his master and endeavoured to pour some of the liquor into his mouth. By the fragrance of the wine, or probably by a small quantity that imperceptibly got down his throat, Beck opened his eyes; and the servant being excessively drunk, and forgetting that his master was considered as dead, compelled him to swallow what wine remained in the glass. The painter gradually revived, and by proper management and care recovered perfectly, and escaped a premature interment.—How highly the works of this master were esteemed, may appear from the many marks of distinction and honour which were shewn him; for he received from different princes, as an acknowledgment of his singular merit, nine gold chains, and several medals of gold of a large size.

BECKET (Thomas), lord chancellor of England, archbishop of Canterbury in the 12th century. The story of his birth is as extraordinary as that of his life. It is related, that his father Gilbert Becket, some time sheriff of London, went on a pilgrimage to Jerusalem, where being surpris'd and enslaved by a party of Saracens, his master's daughter fell in love with him; and that when he made his escape, she followed him to London. So singular an instance of heroic affection struck him; and after consulting with some bishops, he baptized her by the name of *Matilda*, and married her; from which marriage proceeded the haughty Thomas Becket. Being raised to the archbishopric, he began

Becket. the great dispute between the crown and the mitre, and sided with the pope: at which King Henry II. was greatly offended; and calling an assembly of the bishops at Wellminster, offered six articles against papal encroachments, which he urged Becket to assent to. Becket, at the importunities of several lords, signed them; but relapsing, he was ordered to be tried as a traitor; upon which he fled into Flanders. The king banished all his relations, and Becket excommunicated all his opposers. At last, after seven years, by the intercession of the French king and the pope, he returned; but refused to absolve these bishops and others he had excommunicated: whereupon the king grew enraged; and is reported to have dropped these expressions: "That he was an unhappy prince, who maintained a great number of lazy insignificant persons about him, none of whom had gratitude or spirit enough to revenge him on a single insolent prelate who gave him so much disturbance." These words of the king put four gentlemen of his court on forming a design against the archbishop's life, which they executed in the cathedral church of Canterbury, on the 29th of December 1171. They endeavoured to drag him out of the church; but finding they could not do this without difficulty, killed him there. The assassins being afraid they had gone too far, durst not return to the king's court at Normandy, but retired to Knaresburgh in Yorkshire; where every body avoided their company, hardly any person even choosing to eat or drink with them. They at length took a voyage to Rome, and being admitted to penance by pope Alexander III. they went to Jerusalem; where, according to the pope's order, they spent their lives in penitential austerities, and died in the Black Mountain. They were buried at Jerusalem, without the church door belonging to the Templars. King Henry was, or affected to be, much disturbed at the news of Becket's death, and dispatched an embassy to Rome to clear himself from the imputation of being the cause of it. Immediately all divine offices ceased in the church of Canterbury, and this for a year, excepting nine days; at the end of which, by order of the pope, it was reconsecrated. Two years after, Becket was canonized; and the following year, Henry returning to England, went to Canterbury, where he did penance as a testimony of his regret for the murder of Becket. When he came within sight of the church where the archbishop was buried, he alighted off his horse, and walked barefoot, in the habit of a pilgrim, till he came to Becket's tomb; where, after he had prostrated himself and prayed for a considerable time, he submitted to be scourged by the monks, and passed all that day and night without any refreshment, and kneeling upon the bare stone. In 1221 Becket's body was taken up, 50 years after his murder, in the presence of king Henry III. and a great concourse of the nobility and others, and deposited in a rich shrine, erected at the expence of Stephen Langton archbishop of Canterbury, which was soon visited from all parts, and enriched with the most costly gifts and offerings; and the miracles said to be wrought at his tomb were so numerous, that Gervase of Canterbury tells us, there were two large volumes of them kept in that church. The monks used to raise his body every year; and the day on which this ceremony was performed, which was called the *day of*

his translation, was a general holiday: every 50th year there was celebrated a jubilee to his honour, which lasted 15 days: plenary indulgences were then granted to all that visited his tomb; and 100,000 pilgrims have been registered at a time in Canterbury. The devotion towards him had quite effaced in that town the adoration of the Deity; nay, even that of the Virgin. At God's altar, for instance, there were offered in one year 3l. 2s. 6d. at the Virgin's, 63l. 5s. 6d. at St Thomas's, 832l. 12s. 3d. But next year the disproportion was still greater: there was not a penny offered at God's altar; the Virgin's gained only 4l. 1s. 8d. but St Thomas's had got for his share 954l. 6s. 3d. Louis VII. of France had made a pilgrimage to this miraculous tomb, and had bestowed on the shrine a jewel which was esteemed the richest in Christendom. Henry VIII. to whom it may easily be imagined how obnoxious a saint of this character behoved to appear, and how much contrary to all his projects for degrading the authority of the court of Rome, not only pillaged the rich shrine dedicated to St Thomas, but made the saint himself be cited to appear in court, and be tried and condemned as a traitor: he ordered his name to be struck out of the calendar; the office for his festival to be expunged from all breviaries; and his bones to be burnt, and the ashes thrown in the air. From Mr Thomas Warton we learn, that Becket was the subject of poetical legends. *The Lives of the Saints* in verse, in Bennet's library (Numb. CLXV.), contain his martyrdom and translation. This manuscript is supposed to be of the 14th century. The same ingenious writer informs us, from Peter de Blois, that the palace of Becket was perpetually filled with bishops highly accomplished in literature, who passed their time there in reading, disputing, and deciding important questions of the state. "These prelates, though men of the world, were a society of scholars; yet very different from those who frequented the universities, in which nothing was taught but words and syllables, unprofitable subtleties, elementary speculations, and trifling distinctions. De Blois was himself eminently learned, and one of the most distinguished ornaments of Becket's attendants. We know that John of Salisbury, his intimate friend, the companion of his exile, and the writer of his life, was scarcely exceeded by any man of his time for his knowledge in philological and polite literature."

BECKINGHAM (Charles), an English dramatic writer, was the son of a linen-draper in London, and born in 1699. He was educated at that great nursery of learning Merchant-Taylor's school, under the learned Dr Smith, where he made a very great proficiency in all his studies, and gave the strongest testimonials of very extraordinary abilities. In poetry more particularly he very early discovered an uncommon genius, two dramatic pieces of his writing being represented on the stage before he had completed his 20th year: and those not such as required the least indulgence or allowance on account of his years; but such as bore evidence to a boldness of sentiment, an accuracy of diction, an ingenuity of conduct, and a maturity of judgement, which would have done honour to a much more ripened age. The titles of his plays, both of which are tragedies, are, 1. *Henry IV. of France*. 2. *Scipio Africanus*. At the representation of the last mentioned piece

Beckum
||
Bed.

Bed.

piece, which indeed was the first he wrote, his school-maſter Dr Smith, as a peculiar mark of diſtinction and regard to the merit of his pupil, gave all his boys a holiday on the afternoon of the author's benefit, in order to afford an opportunity to ſuch of them as pleaſed to pay their compliments to their ſchool-fellow on that occaſion. Beſides theſe dramatic pieces, he wrote ſeveral other poems: but his genius was not permitted any very long period to expand itſelf in; for he died on the 18th of February 1730, in the 32d year of his age.

BECKUM, a town of the biſhopric of Munſter, in Germany, ſeated at the ſource of the river Verſe, in E. Long. 8. 18. N. Lat. 51. 46.

BECSANGIL, anciently Bithynia, a province of Natolia in Aſia; bounded on the north by the Black Sea; on the weſt, by the Sea of Marmora; on the ſouth, by Natolia Proper; and on the eaſt, by the province of Bolli. The principal town is Burſa.

BECTASSE, an order or ſect of religious among the Turks, denominated from their founder *Beſtaſſe*, preacher to Sultan Amurath. All the janizaries belonging to the Porte are of the religion of Beſtaſſe, being even ſaid to have derived their origin from the founder of this ſect. The habit of the Beſtaſſe is white: on their heads they wear white caps of ſeveral pieces, with turbans of wool twiſted rope-fashion. They obſerve conſtantly the hour of prayer, which they perform in their own aſſemblies, and make frequent declarations of the unity of God.

BED, a convenience for ſtretching and compoſing the body on, for eaſe, reſt, or ſleep, conſiſting generally of feathers incloſed in a ticken caſe. There are varieties of beds, as a ſtanding-bed, a fettee-bed, a tent-bed, a truckle-bed, &c.

It was univerſally the practice, in the firſt ages, for mankind to ſleep upon ſkins of beaſts. It was originally the cuſtom of the Greeks and Romans. It was particularly the cuſtom of the ancient Britons before the Roman invaſion; and theſe ſkins were ſpread on the floor of their apartments. Afterwards they were changed for looſe ruſhes and heather, as the Welch a few years ago lay on the former, and the Highlanders of Scotland ſleep on the latter to this preſent moment. In proceſs of time, the Romans ſuggeſted to the interior Britons the uſe, and the introduction of agriculture ſupplied them with the means, of the neater conveniency of ſtraw beds. The beds of the * Roman gentry at this period were generally filled with feathers, and thoſe of the inns with the ſoft down of reeds. But for many ages the beds of the Italians had been conſtantly compoſed of ſtraw; it ſtill formed thoſe of the ſoldiers and officers at the conqueſt of Lancaſhire; and from both, our countrymen learnt their uſe. But it appears to have been taken up only by the gentlemen, as the common Welch had their beds thinly ſtuſſed with ruſhes as late as the concluſion of the 12th century; and with the gentlemen it continued many ages afterwards. Straw was uſed even in the royal chambers of England as late as the cloſe of the 13th. Moſt of the peaſants about Mancheſter lie on chaſſ at preſent, as do likewise the common people all over Scotland: In the Highlands heath alſo is very generally uſed as bedding even by the gentry; and the reſpoſe on a heath bed has been celebrated by travellers as a peculiar luxury, ſu-

perior to that yielded by down: In France and Italy, ſtraw beds remain general to this day. But after the above period, beds were no longer ſuffered to reſt upon the ground. The better mode, that had anciently prevailed in the eaſt, and long before been introduced into Italy, was adopted in Britain; and they were now mounted on pedeſtals†. This, however, was equally confined to the gentlemen. The bed ſtill continued on the floor among the common people. And the groſs cuſtom, that had prevailed from the beginning, was retained by the lower Britons to the laſt; and theſe ground-beds were laid along the walls of their houſes, and formed one common dormitory for all the members of the family. The faſhion continued univerſally among the inferior ranks of the Welch within theſe four or five ages, and with the more uncivilized part of the Highlanders down to our own times. And even at no great diſtance from Mancheſter, in the neighbouring Buxton, and within theſe 60 or 70 years, the perſons that repaired to the bath are all ſaid to have ſlept in one long chamber together; the upper part being allotted to the ladies, and the lower to the gentlemen, and only partitioned from each other by a curtain.

Dining-BED, lectus tricliniaris, or diſcubitarius, that whereon the ancients lay at meals. The dining or diſcubitary beds were four or five feet high. Three of theſe beds were ordinarily ranged by a ſquare table (whence both the table and the room where they eat were called *triclinium*) in ſuch a manner, that one of the ſides of the table remained open and acceſſible to the waiters. Each bed would hold three or four, rarely five perſons. Theſe beds were unknown before the ſecond Punic war: the Romans, till then, ſat down to eat on plain wooden benches, in imitation of the heroes of Homer, or, as Varro expreſſes it, after the manner of the Lacedemonians and Cretans, Scipio Africanus firſt made an innovation: he had brought from Carthage ſome of theſe little beds called *punicani*, or *archaici*; being of a wood common enough, very low, ſtuſſed only with ſtraw or hay, and covered with goats or ſheeps ſkins, *hædinis pellibus ſtrati*. In reality, there was no great difference, as to delicacy, between theſe new beds and the ancient benches; but the cuſtom of frequent bathing, which began then to obtain, by ſoftening and relaxing the body, put men on trying to reſt themſelves more commodiouſly by lying along than by ſitting down. For the ladies, it did not ſeem at firſt conſiſtent with their modeſty to adopt the mode of lying; accordingly they kept to the old cuſtom all the time of the commonwealth; but, from the firſt Cæſars, they eat on their beds. For the youth, who had not yet put on the *toga virilis*, they were long kept to the ancient diſcipline. When they were admitted to table, they only ſat on the edge of the beds of their neareſt relations. Never, ſays Suetonius, did the young Cæſars, Caius and Lucius, eat at the table of Auguſtus; but they were ſet *in imo loco*, or, as Tacitus expreſſes it, *ad læſi fulcra*. From the greateſt ſimplicity, the Romans by degrees carried their dining-beds to the moſt ſurpriſing magnificence. Pliny aſſures us, it was no new thing to ſee them covered over with plates of ſilver, adorned with the ſoftest mats, and the richeſt counterpanes. Lampridius, ſpeaking of Heliogabalus, ſays, he had beds of ſolid ſilver, *ſolido argento hæuit lectos & tricliniaries, & cubiculares*. We may add,

Whittaker's
Hiſtory of
Mancheſter.

* Pliny,
lib. viii.
c. 48. and
xvi. c. 36.

† Gen. xlix.

Bed,
Beda.

that Pompey, in his third triumph, brought in beds of gold.—The Romans had also beds whereon they studied, and beds whereon the dead were carried to the funeral pile.

BED-Moulding, in architecture, a term used for those members of a cornice which are placed below the coronet; and now usually consists of an ogee, a list, a large boustine, and another list under the coronet.

BED of Justice, in the French customs, a throne upon which the king is seated when he goes to the parliament. The king never holds a bed of justice unless for affairs that concern the state, and then all the officers of parliament are clothed in scarlet robes.

BED of the Carriage of a Great Gun, a thick plank, that lies under the piece; being, as it were, the body of the carriage.

BED, in masonry, a course or range of stones; and the joint of the bed is the mortar between two stones, placed over each other.

BED, in gardening, square or oblong pieces of ground in a garden, raised a little above the level of the adjoining ground, and wherein they sow seeds or plant roots.

Hot-BED. See *HOT-Bed.*

Lords of the BED-Chamber, in the British court, are 12 noblemen who attend in their turns, each a month; during which time they lie in the king's bed-chamber, and wait on him when he dines in private. Their salary is 100*l.* per annum.

BEDA, commonly called *Venerable Bede*, one of our most ancient historians, was born in the year 672, in the neighbourhood of Weremouth, in the bishopric of Durham. He was educated by the abbot Benedict in the monastery of St Peter, near the mouth of the river Wyre. At the age of 19 he was ordained deacon, and priest in the year 702. About this time he was invited to Rome by Pope Sergius; but there is no sufficient reason to believe that he accepted the invitation. In the year 731 he published his *Ecclesiastical History*; a work of so much merit, notwithstanding the legendary tales it contains, that it were alone sufficient to immortalize the author. He died in the year 735 of a lingering consumption, probably occasioned by a sedentary life, and a long uninterrupted application to study and literary compositions, of which he left an incredible number. He was buried in the church of his convent at Jarrow; but his bones were afterwards removed to Durham, and there deposited in the same coffin with those of St Cuthbert. Bede was undoubtedly a singular phenomenon in an ignorant and illiterate age. His learning, for the times, was extensive, his application incredible, his piety exemplary, and his modesty excessive. He was universally admired, consulted, and esteemed, during his life; and his writings are deservedly considered as the foundation of our ecclesiastical history. His language is neither elegant nor pure, but perspicuous and easy.—All his works are in Latin. The first general collection of them appeared at Paris in 1544, in three volumes in folio. They were printed again at the same place in 1554, in eight volumes. They were also published in the same size and number of volumes at Basil in 1563, reprinted at Cologne in 1612, and at the same place in 1688. Besides this general collection, there are several of his

Beda
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Bedell.

compositions, which have been printed separately, or amongst the collections of the writings of ancient authors; and there are several manuscripts ascribed to him, which are preserved in the different libraries in Oxford and Cambridge.

BEDALL, a town in the north riding of Yorkshire. Through this town passes a Roman causeway to Richmond, Barnard-castle, &c. The parts adjacent are noted for hunting and road horses. W. Long. 31. 0. N. Lat. 54. 30.

BEDARIEUX, or **BEC D'ARIEUX**, a town of Languedoc in France, seated on the river Obe, in E. Long. 3. 24. N. Lat. 43. 29.

BEDEL. See **BEADLE.**

BEDEL, a small town in the north riding of Yorkshire, seated on a little brook, in W. Long. 1. 30. N. Lat. 54. 30.

BEDELI (Dr William), a learned prelate, born in Essex in 1570. He went with Sir Henry Wotton the English ambassador to the republic of Venice, as his chaplain, in 1604; and continuing eight years in that city, contracted an intimate acquaintance with the famous Father Paul, of whom he learned Italian so well as to translate the English Common-Prayer Book into that language: in return he drew up an English grammar for Father Paul, who declared he had learned more from him in all parts of divinity than from any one beside. He was accordingly much concerned when Bedell left Venice; and at his departure presented him with his picture, the MSS. of his History of the Council of Trent, his History of the Interdict and Inquisition, with other literary donations. In 1629, he obtained the bishopric of Kilmore and Adragh in Ireland; and finding these dioceses in great disorder, applied himself vigorously to reform the abuses there. He was no persecutor of Papists, but laboured with great success to convert the better sort of the Popish clergy: he procured an Irish translation of the common-Prayer Book, which he caused to be read in his cathedral every Sunday; and the New Testament having been translated by Archbishop Daniel, he procured one of the Old Testament; which he having been prevented from printing himself, was afterwards executed at the expence of the great Mr Robert Boyle. He published, in 1624, a controversial book against the Roman-catholics, which he dedicated to Charles prince of Wales; and assisted the archbishop of Spalatro in finishing his famous work *De Republica Ecclesiastica*.—When the bloody rebellion broke out in Ireland in Oct. 1641, the bishop at first did not feel the violence of its effects; for the very rebels had conceived a great veneration for him, and they declared he should be the last Englishman they would drive out of Ireland. His was the only house in the county of Cavan that was unviolated, and it was filled with the people who fled to him for shelter. About the middle of December, however, the rebels, pursuant to orders received from their council of state at Kilkenny, required him to dismiss the people that were with him; which he refused to do, declaring he would share the same fate with the rest. Upon this they seized him, his two sons, and Mr Clogy who had married his daughter-in-law, and carried them prisoners to the castle of Cloughboughter, surrounded by a deep water, where they put them all, except the bishop, in irons; after some time, however,

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this part of their severity was abated. After being confined for about three weeks, the bishop and his two sons, and Mr Clogy, were exchanged for some of the principal rebels: but the bishop died soon after, on the 7th of February 1642, his death being chiefly occasioned by his late imprisonment, and the weight of sorrows which lay upon his mind. The Irish did him unusual honours at his burial; for the chief of the rebels gathered their forces together, and with them accompanied his body to the church-yard.

BEDER, a strong town of Asia, in the dominions of the Great Mogul. E. Long. 95. 10. N. Lat. 16. 50.

BEDFORD, the county town of Bedfordshire in England, seated on both sides of the river Ouse, over which there is a stone bridge; in W. Long. 0. 20. N. Lat. 52. 6. It is an ancient town, and pleasantly situated, but not very large nor well built; though the buildings are much improved of late, and the river made navigable. It sends two members to parliament, and gives title of *duke* to the noble family of Russell. At this place the Britons were overthrown in a great battle in 572, by Cuthwulf the Saxon king; and here was a strong castle, built in the time of the Normans by Pagan de Beauchamp, the third Baron of Bedford. It was reduced by King Stephen after a long siege; and afterwards taken by King John, after a siege of 60 days, from Fulco de Brent, who rebelled against his sovereign, notwithstanding he had taken this castle before from the barons, and had it bestowed upon him by the king. The town is a very ancient corporation, and has long sent members to parliament. It is governed at present by a mayor, recorder, two bailiffs, twelve aldermen, two chamberlains, a town clerk, and three sergeants. The neighbouring country is very fruitful in wheat, great quantities of which are carried from hence to Hitchen and Hertford markets, sold, ground, and conveyed to London. The town has five churches, a free school, and several hospitals, and enjoys a good trade in corn by the way of Lynn. When the river is swelled by rains, especially in winter, it is usual in Cambridgeshire to say, *the bailiff of Bedford is coming*; meaning, that it is going to lay their fens under water.

BEDFORDSHIRE is a small inland county. When the Romans landed in Britain, 55 years before Christ, it was included in the district inhabited by the Caticuchlani, whose chief or governor Cassibelinus headed the forces of the whole island against Cæsar, and the year following was totally defeated. In 310 the emperor Constantine divided Britain into five Roman provinces, when this county was included in the third division, called *Flavia Casariensis*; in which state it continued 426 years, when the Romans quitted Britain. At the establishment of the kingdom of Mercia (one of the divisions of the Saxon heptarchy) it was considered as part of that kingdom; and so continued from 582 to 827, when with the other petty kingdoms of the island it became subject to the Well Saxons under Egbert, and the whole was named *England*. In 889, Alfred held the sovereignty, when England was divided into counties, hundreds, and tythings, and Bedfordshire first received its present name. It is in the Norfolk circuit, the province of Canterbury, and bishopric of Lincoln. Its form is oval, being about 33 miles long, 16 broad, and nearly 73 in circumference; containing

an area of about 323 square miles, or 260,000 square acres. It supplies 400 men to the national militia. It contains 124 parishes, 58 vicarages, and 10 market-towns, *viz.* Bedford, Ampthill, Biggleswade, Dunstable, Leighton, Beaufort, Luton, Potton, Shefford, Tuddington, and Weburn, and 55 villages. The inhabitants by computation are 67,350, and it has 7,204 houses that pay taxes. It is divided into nine hundreds, sends two members to parliament, and pays seven parts of 513 of the land-tax. Its principal river, the Ouse, is navigable to Bedford; and divides the county into two parts, of which that to the south is the most considerable. In its course, which is very meandering, it receives several small streams; the principal one is the Ivel, which takes its rise in the southern part of the county. The air is healthy, and the soil in general a deep clay. The north side of the Ouse is fruitful and woody, but the south side is less fertile; yet producing great quantity of wheat and barley, excellent in their kind, and wood for dyers. The soil yields plenty of fullers-earth for our woollen manufactory. The chief manufactures of the county are thread, lace, and straw ware. In this county there are many remains of Roman, Saxon, and Norman antiquities; but few Roman stations, *viz.* Sandy near Potton, and the Magiovinum of Antoninus, by others supposed to be the ancient Salenæ, containing 30 acres, where many urns, coins, &c. have been dug up. Another at Madining-bowre, or Maiden-bower, one mile from Dunstable, containing about nine acres, which Camden supposes to have been a Roman station, from the coins of the emperors having been frequently dug up there, and calls it *Magintum*. Leighton Beaufort is supposed to have been a Roman camp, and another is at Arlesey near Shefford, and a Roman amphitheatre may be traced near Bradford Magna. The Roman road, Icknield-street, crosses this county, entering at Leighton Beaufort, from whence it passes Dunstable, where it inclines northward over Wardon-hills to Baldock in Hertfordshire. The Watling-street enters this county near Luton from St Albans, passes a little north of Dunstable, where it crosses the Icknield-street, and from thence to Stoney Stratford in Buckinghamshire. A Roman road also enters near Potton, passes on to Sandy, and from thence to Bedford, where it crosses the Ouse, and proceeds to Newport Pagnell in Buckinghamshire. The following antiquities in this county are worthy of notice: Bedford Bridge and Priory; Chicksand Abbey near Shefford; Dunstable Priory near Luton; Eaton Park House, or Eaton Bray; Five Knolls near Dunstable; Newnham Priory near Bedford; Northill Church, three miles from Biggleswade; Summeris Tower near Luton; Wardon Abbey near Shefford; Woburn Abbey; Woodhill Cattle, or Oddhill Castle, near Harewood.

BEDLOE (William), who assumed the title of *Captain*, was an infamous adventurer of low birth, who had travelled over a great part of Europe under different names and disguises, and had passed among several ignorant persons for a man of rank and fortune. Encouraged by the success of Oats, he turned evidence, gave an account of Godfrey's murder, and added many circumstances to the narrative of the former. These villains had the boldness to accuse the Queen of entering into a conspiracy against the King's life. A reward of

Bedouins. 500l. was voted to Bedloe by the Commons. He is said to have asserted the reality of the plot on his death-bed: but it abounds with absurdity, contradiction, and perjury; and still remains one of the greatest problems in the British annals. He died at Bristol 20th August 1680. Giles Jacob informs us, that he was author of a play called *The Excommunicated Prince, or the False Relict*, 1679. The printer of it having, without the author's knowledge, added a second title, and called it *The Popish Plot in a Play*, greatly excited the curiosity of the public, who were however much disappointed when they found the plan of the piece to be founded on a quite different story. Auth. a Wood will not allow the Captain the merit of this play; but asserts that it was written partly, if not entirely, by one Tho. Walter, M. A. of Jesus College, Oxford.

BEDOUINS, or BEDOUIS, a modern name of the wild Arabs, whether in Asia or Africa. When speaking of the Arabs, we should distinguish whether they are cultivators or pastors; for this difference in their mode of life occasions so great a one in their manners and genius, that they become almost foreign nations with respect to each other. In the former case, leading a sedentary life, attached to the same soil, and subject to regular governments, the social state in which they live, very nearly resembles our own. Such are the inhabitants of the Yemen; and such also are the descendants of those ancient conquerors, who have either entirely, or in part, given inhabitants to Syria, Egypt, and the Barbary states. In the second instance, having only a transient interest in the soil, perpetually removing their tents from one place to another, and under subjection to no laws, their mode of existence is neither that of polished nations nor of savages; and therefore more particularly merits our attention. Such are the Bedouins, or inhabitants of the vast deserts which extend from the confines of Persia to Morocco. Tho' divided into independent communities or tribes, not unfrequently hostile to each other, they may still be considered as forming one nation. The resemblance of their language is a manifest token of this relationship. The only difference that exists between them is, that the African tribes are of a less ancient origin, being posterior to the conquest of these countries by the khalifs or successors of Mahomet; while the tribes of the desert of Arabia, properly so called, have descended by an uninterrupted succession from the remotest ages. To these the orientals are accustomed to appropriate the name of *Arabs*, as being the most ancient and the purest race. The term *Bedacui* is added as a synonymous expression, signifying, "inhabitant of the Desert."

It is not without reason that the inhabitants of the desert boast of being the purest and the best preserved race of all the Arab tribes: for never have they been conquered, nor have they mixed with any other people by making conquests; for those by which the general name of Arabs has been rendered famous, really belong only to the tribes of the Hedjas and the Yemen. Those who dwelt in the interior of the country, never emigrated at the time of the revolution effected by Mahomet; or if they did take any part in it, it was confined to a few individuals, detached by motives of ambition. Thus we find the prophet in his Koran continually styling the Arabs of the desert *rebels* and *infidels*;

Bedouins. nor has so great a length of time produced any very considerable change. We may assert they have in every respect retained their primitive independence and simplicity. See ARABIA, n° 186.

The wandering life of these people arises from the very nature of their deserts. To paint to himself these deserts (says M. Volney), the reader must imagine a sky almost perpetually inflamed, and without clouds, immense and boundless plains, without houses, trees, rivulets, or hills, where the eye frequently meets nothing but an extensive and uniform horizon like the sea, though in some places the ground is uneven and stony. Almost invariably naked on every side, the earth presents nothing but a few wild plants thinly scattered, and thickets, whose solitude is rarely disturbed but by antelopes, hares, locusts, and rats. Such is the nature of nearly the whole country, which extends six hundred leagues in length and three hundred in breadth, and stretches from Aleppo to the Arabian sea, and from Egypt to the Persian gulph. It must not, however, be imagined that the soil in so great an extent is every where the same; it varies considerably in different places. On the frontiers of Syria, for example, the earth is in general fat and cultivable, nay even fruitful. It is the same also on the banks of the Euphrates: but in the internal parts of the country, and towards the south, it becomes white and chalky, as in the parallel of Damascus; rocky, as in the Tih and the Hedjaz; and a pure sand, as to the eastward of the Yemen. This variety in the qualities of the soil is productive of some minute differences in the condition of the Bedouins. For instance, in the more sterile countries, that is, those which produce but few plants, the tribes are feeble and very distant; which is the case in the desert of Sucz, that of the Red Sea, and the interior of the great desert called the *Najd*. When the soil is more fruitful, as between Damascus and the Euphrates, the tribes are more numerous and less remote from each other; and, lastly, in the cultivable districts, such as the Pachalics of Aleppo, the Hauran, and the neighbourhood of Gaza, the camps are frequent and contiguous. In the former instances, the Bedouins are purely pastors, and subsist only on the produce of their herds, and on a few dates and flesh meat, which they eat either fresh or dried in the sun and reduced to a powder. In the latter, they sow some land, and add cheefe, barley, and even rice, to their flesh and milk meats.

In those districts where the soil is stony and sandy, as in the Tih, the Hedjaz, and the Najd, the rains make the seeds of the wild plants shoot, and revive the thickets, ranunculi, wormwood, and kali. They cause marshes in the lower grounds, which produce reeds and grass; and the plain assumes a tolerable degree of verdure. This is the season of abundance both for the herds and their masters; but on the return of the heats, every thing is parched up, and the earth converted into a grey and fine dust, presents nothing but dry stems as hard as wood, on which neither horses, oxen, nor even goats, can feed. In this state the desert would become uninhabitable, and must be totally abandoned, had not nature formed an animal no less hardy and frugal than the soil is sterile and ungrateful. No creature seems so peculiarly fitted to the climate in which it exists. Designing the camel to dwell in a

[country:

Bedouins. country where he can find little nourishment, Nature (says M. Volney) has been sparing of her materials in the whole of his formation. She has not bestowed on him the plump fleshiness of the ox, horse, or elephant; but limiting herself to what is strictly necessary, she has given him a small head without ears at the end of a long neck without flesh. She has taken from his legs and thighs every muscle not immediately requisite for motion; and in short, has belloxed on his withered body only the vessels and tendons necessary to connect its frame together. She has furnished him with a strong jaw, that he may grind the hardest aliments; but lest he should consume too much, she has straitened his stomach, and obliged him to chew the cud. She has lined his foot with a lump of flesh, which sliding in the mud, and being no way adapted to climbing, fits him only for a dry, level, and sandy soil like that of Arabia: she has evidently destined him likewise to slavery, by refusing him every sort of defence against his enemies. Destitute of the horns of the bull, the hoof of the horse, the tooth of the elephant, and the swiftness of the stag, how can the camel resist or avoid the attacks of the lion, the tiger, or even the wolf? To preserve the species, therefore, nature has concealed him in the depth of the vast deserts, where the want of vegetables can attract no game, and whence the want of game repels every voracious animal. Tyranny must have expelled man from the habitable parts of the earth before the camel could have lost his liberty. Become domestic, he has rendered habitable the most barren soil the world contains. He alone supplies all his master's wants. The milk of the camel nourishes the family of the Arab under the varied forms of curd, cheese, and butter; and they often feed upon his flesh. Slippers and harness are made of his skin, tents and clothing of his hair. Heavy burdens are transported by his means; and when the earth denies forage to the horse, so valuable to the Bedouin, the camel supplies that deficiency by her milk at no other cost, for so many advantages, than a few stalks of brambles or wormwood and pounded date kernels. So great is the importance of the camel to the desert, that were it deprived of that useful animal, it must infallibly lose every inhabitant.

Such is the situation in which nature has placed the Bedouins, to make of them a race of men equally singular in their physical and moral character. This singularity is so striking, that even their neighbours the Syrians regard them as extraordinary beings; especially those tribes which dwell in the depths of the deserts, such as the Anaza, Kaibar, Tai, and others, which never approach the towns. When in the time of Shaik Dagher, some of their horsemen came as far as Acre, they excited the same curiosity there as a visit from the savages of America would among us. Every body viewed with surprise these men, who were more diminutive, meagre, and swartly, than any of the known Bedouins. Their withered legs were only composed of tendons, and had no calves. Their bellies seemed to cling to their backs, and their hair was frizzled almost as much as that of the negroes. They on the other hand were no less astonished at every thing they saw; they could neither conceive how the houses and minarets could stand erect, nor how men ventured to dwell beneath them, and always in the same spot; but above

all, they were in an ecstasy on beholding the sea, nor could they comprehend what that desert of water could be.

We may imagine that the Arabs of the frontiers are not such novices; there are even several small tribes of them, who living in the midst of the country, as in the valley of Bekaa, that of the Jordan, and in Paelline, approach nearer to the condition of the peasants; but these are despised by the others, who look upon them as bastard Arabs and Rayas, or slaves of the Turks.

In general, the Bedouins are small, meagre, and tawny; more so, however, in the heart of the desert than on the frontiers of the cultivated country; but they are always of a darker hue than the neighbouring peasants. They also differ among themselves in the same camp; and M. Volney remarked, that the shaiks, that is, the rich, and their attendants, were always taller and more corpulent than the common class. He has seen some of them above five feet five and six inches high; though in general they do not (he says) exceed five feet two inches. This difference can only be attributed to their food, with which the former are supplied more abundantly than the latter: And the effects of this are equally evident in the Arabian and Turkmen camels; for these latter, dwelling in countries rich in forage, are become a species more robust and fleshy than the former. It may likewise be affirmed, that the lower class of Bedouins live in a state of habitual wretchedness and famine. It will appear almost incredible to us, but it is an undoubted fact, that the quantity of food usually consumed by the greatest part of them does not exceed six ounces a day. This abstinence is most remarkable among the tribes of the Najd and the Hedjaz. Six or seven dates soaked in melted butter, a little sweet milk or curds, serve a man a whole day; and he esteems himself happy when he can add a small quantity of coarse flour or a little ball of rice. Meat is reserved for the greatest festivals; and they never kill a kid but for a marriage or a funeral. A few wealthy and generous shaiks alone can kill young camels, and eat baked rice with their victuals. In times of dearth, the vulgar, always half famished, do not disdain the most wretched kinds of food; and eat locusts, rats, lizards, and serpents broiled on briars. Hence are they such plunderers of the cultivated lands and robbers on the high-roads: hence also their delicate constitution and their diminutive and meagre bodies, which are rather active than vigorous. It may be worth while to remark, that their evacuations of every kind, even perspiration, are extremely small; their blood is so destitute of serosity, that nothing but the greatest heat can preserve its fluidity. This, however, does not prevent them from being tolerably healthy in other respects; for maladies are less frequent among them than among the inhabitants of the cultivated country.

From these facts we are by no means justified in concluding that the frugality of the Bedouins is a virtue purely of choice, or even of climate. The extreme heat in which they live unquestionably facilitates their abstinence, by destroying that activity which cold gives to the stomach. Their being habituated also to so sparing a diet, by hindering the dilatation of the stomach, becomes doubtless a means of their supporting such abstemiousness; but the chief and primary motive of this habit is with them, as with the
rest

Bedouins. rest of mankind, the necessity of the circumstances in which they are placed, whether from the nature of the soil, as has been before explained, or that state of society in which they live, and which remains now to be examined.

It has been already remarked, that the Bedouin Arabs are divided into tribes, which constitute so many distinct nations. Each of these tribes appropriates to itself a tract of land forming its domain; in this they do not differ from cultivating nations, except that their territory requires a greater extent, in order to furnish subsistence for their herds throughout the year. Each tribe is collected in one or more camps, which are dispersed through the country, and which make a successive progress over the whole, in proportion as it is exhausted by the cattle; hence it is, that within a great extent a few spots only are inhabited, which vary from one day to another; but as the entire space is necessary for the annual subsistence of the tribe, whoever encroaches on it is deemed a violator of property; this is with them the law of nations. If, therefore, a tribe, or any of its subjects, enter upon a foreign territory, they are treated as enemies and robbers, and a war breaks out. Now, as all the tribes have affinities with each other by alliances of blood or conventions, leagues are formed, which render these wars more or less general. The manner of proceeding on such occasions is very simple. The offence made known, they mount their horses and seek the enemy; when they meet, they enter into a parley, and the matter is frequently made up; if not, they attack either in small bodies, or man to man. They encounter each other at full speed with fixed lances, which they sometimes dart, notwithstanding their length, at the flying enemy: the victory is rarely contested; it is decided by the first shock, and the vanquished take to flight full gallop over the naked plain of the desert. Night generally favours their escape from the conqueror. The tribe which has lost the battle strikes its tents, removes to a distance by forced marches, and seeks an asylum among its allies. The enemy, satisfied with their success, drive their herds farther on, and the fugitives soon after return to their former situation. But the slaughter made in these engagements frequently sows the seeds of hatreds which perpetuate these dissensions. The interest of the common safety has for ages established a law among them, which decrees that the blood of every man who is slain must be avenged by that of his murderer. This vengeance is called *Tar*, or retaliation; and the right of exacting it devolves on the nearest of kin to the deceased. So nice are the Arabs on this point of honour, that if any one neglects to seek his retaliation he is disgraced for ever. He therefore watches every opportunity of revenge: if his enemy perishes from any other cause, still he is not satisfied, and his vengeance is directed against the nearest relation. These animosities are transmitted as an inheritance from father to children, and never cease but by the extinction of one of the families, unless they agree to sacrifice the criminal, or *purchase the blood* for a stated price, in money or in flocks. Without this satisfaction, there is neither peace, nor truce, nor alliances, between them, nor sometimes even between whole tribes: *There is blood between us*, say they on every occasion; and this expression is an

insurmountable barrier. Such accidents being necessarily numerous in a long course of time, the greater part of the tribes have ancient quarrels, and live in an habitual state of war; which, added to their way of life, renders the Bedouins a military people, though they have made no great progress in war as an art.

Their camps are formed in a kind of irregular circle, composed of a single row of tents, with greater or less intervals. These tents, made of goat or camels hair, are black or brown, in which they differ from those of the Turkmen, which are white. They are stretched on three or four pickets, only five or six feet high, which gives them a very flat appearance; at a distance, one of these camps seems only like a number of black spots; but the piercing eye of the Bedouin is not to be deceived. Each tent inhabited by a family is divided by a curtain into two apartments, one of which is appropriated to the women. The empty space within the large circle serves to fold their cattle every evening. They never have any intrenchments; their only advanced guards and patrols are dogs; their horses remain saddled and ready to mount on the first alarm; but as there is neither order nor regularity, these camps, always easy to surprise, afford no defence in case of an attack: accidents, therefore, very frequently happen, and cattle are carried off every day; a species of marauding war in which the Arabs are very experienced.

The tribes which live in the vicinity of the Turks are still more accustomed to attacks and alarms; for these strangers, arrogating to themselves, in right of conquest, the property of the whole country, treat the Arabs as rebel vassals, or as turbulent and dangerous enemies. On this principle, they never cease to wage secret or open war against them. The pachas study every occasion to harass them. Sometimes they contest with them a territory which they had let them, and at others demand a tribute which they never agreed to pay. Should a family of shaiks be divided by interest or ambition, they alternately succour each party, and conclude by the destruction of both. Frequently too they poison or assassinate those chiefs whose courage or abilities they dread, though they should even be their allies. The Arabs, on their side, regarding the Turks as usurpers and treacherous enemies, watch every opportunity to do them injury. Unfortunately, their vengeance falls oftener on the innocent than the guilty. The harmless peasant generally suffers for the offences of the soldier. On the slightest alarm, the Arabs cut their harvests, carry off their flocks, and intercept their communication and commerce. The peasant calls them thieves, and with reason; but the Bedouins claim the right of war, and perhaps they also are not in the wrong. However this may be, these depredations occasion a misunderstanding between the Bedouins and the inhabitants of the cultivated country, which renders them mutual enemies.

Such is the external situation of the Arabs. It is subject to great vicissitudes, according to the good or bad conduct of their chiefs. Sometimes a feeble tribe raises and aggrandizes itself, whilst another, which was powerful, falls into decay, or perhaps is entirely annihilated; not that all its members perish, but they incorporate themselves with some other; and this is the consequence of the internal constitution of the tribes.

Each

Bedouins

Each tribe is composed of one or more principal families, the members of which bear the title of shaiks, *i. e.* chiefs or lords. These families have a great resemblance to the patricians of Rome and the nobles of modern Europe. One of the shaiks has the supreme command over the others. He is the general of their little army; and sometimes assumes the title of *emir*, which signifies commander and prince. The more relations, children, and allies, he has, the greater is his strength and power. To these he adds particular adherents, whom he studiously attaches to him, by supplying all their wants. But besides this, a number of small families, who, not being strong enough to live independent, stand in need of protection and alliances, range themselves under the banners of this chief. Such an union is called *kabila*, or tribe. These tribes are distinguished from each other by the name of their respective chiefs, or by that of the ruling family; and when they speak of any of the individuals who compose them, they call them the *children* of such a chief, though they may not be all really of his blood, and he himself may have been long since dead. Thus they say, *Beni Temin*, *Oulad Tai*, the children of Temin and of Tai. This mode of expression is even applied, by metaphor, to the names of countries: the usual phrase for denoting its inhabitants being to call them *the children of such a place*. Thus the Arabs say, *Oulad Majr*, the Egyptians; *Oulad Sham*, the Syrians; they would also say, *Oulad Franfa*, the French; *Oulad Mejkou*, the Russians; a remark which is not unimportant to ancient history.

The government of this society is at once republican, aristocratical, and even despotic, without exactly corresponding with any of these forms. It is republican, inasmuch as the people have a great influence in all affairs, and as nothing can be transacted without the consent of a majority. It is aristocratical, because the families of the shaiks possess some of the prerogatives which every where accompany power; and, lastly, it is despotic, because the principal shaik has an indefinite and almost absolute authority, which, when he happens to be a man of credit and influence, he may even abuse; but the state of these tribes confines even this abuse to very narrow limits: for if a chief should commit an act of injustice; if, for example, he should kill an Arab, it would be almost impossible for him to escape punishment; the resentment of the offended party would pay no respect to his dignity; the law of retaliation would be put in force; and, should he not pay the blood, he would be infallibly assassinated, which, from the simple and private life the shaiks lead in their camps, would be no difficult thing to effect. If he harasses his subjects by levity, they abandon him and go over to another tribe. His own relations take advantage of his misconduct to depose him and advance themselves to his station. He can have no resource in foreign troops; his subjects communicate too easily with each other to render it possible for him to divide their interests and form a faction in his favour. Besides, how is he to pay them, since he receives no kind of taxes from the tribe; the wealth of the greater part of his subjects being limited to absolute necessities, and his own confined to very moderate possessions, and those too loaded with great expences?

The principal shaik in every tribe, in fact, defrays

the charges of all who arrive at or leave the camp. He receives the visits of the allies, and of every person who has business with them. Adjoining to his tent is a large pavilion for the reception of all strangers and passengers. There are held frequent assemblies of the shaiks and principal men, to determine on encampments and removals; on peace and war; on the differences with the Turkish governors and the villages; and the litigations and quarrels of individuals. To this crowd, which enters successively, he must give coffee, bread baked on the ashes, rice, and sometimes roasted kid or camel; in a word, he must keep open table; and it is the more important to him to be generous, as this generosity is closely connected with matters of the greatest consequence. On the exercise of this depend his credit and his power. The famished Arab ranks the liberality which feeds him before every virtue; nor is this prejudice without foundation; for experience has proved that covetous chiefs never were men of enlarged views: hence the proverb, as just as it is brief, *A close fist, a narrow heart*. To provide for these expences, the shaik has nothing but his herds, a few spots of cultivated ground, the profits of his plunder, and the tribute he levies on the high-roads; the total of which is very inconsiderable. The shaik with whom M. Volney resided in the country of Gaza, about the end of 1784, passed for one of the most powerful of those districts; yet it did not appear to our author that his expenditure was greater than that of an opulent farmer. His personal effects, consisting in a few pelisses, carpets, arms, horses, and camels, could not be estimated at more than 50,000 livres (a little above L. 2000); and it must be observed, that in this calculation four mares of the breed of racers are valued at 6000 livres (L. 250), and each camel at L. 10 Sterling. We must not therefore, when we speak of the Bedouins, asix to the words *Prince* and *Lord* the ideas they usually convey; we should come nearer the truth by comparing them to substantial farmers in mountainous countries, whose simplicity they resemble in their dress as well as in their domestic life and manners. A shaik who has the command of 500 horse does not disdain to saddle and bridle his own, nor to give him barley and chopped straw. In his tent, his wife makes the coffee, kneads the dough, and superintends the dressing of the victuals. His daughters and kinswomen wash the linen, and go with pitchers on their head and veils over their faces to draw water from the fountain. These manners agree precisely with the descriptions in Homer and the history of Abraham in Genesis. But it must be owned that it is difficult to form a just idea of them without having ourselves been eye-witnesses.

The simplicity, or perhaps more properly the poverty, of the lower class of the Bedouins is proportionate to that of their chiefs. All the wealth of a family consists of moveables; of which the following is a pretty exact inventory: A few male and female camels; some goats and poultry; a mare and her bridle and saddle; a tent; a lance 16 feet long; a crooked sabre; a rusty musket with a flint or matchlock; a pipe; a portable mill; a pot for cooking; a leathern bucket; a small coffee roaster; a mat; some clothes; a mantle of black wool; and a few glass or silver rings, which the women wear upon their legs and arms. If none of these are wanting their furniture is complete.

Bedouins

Bedouins.

But what the poor man stands most in need of, and what he takes most pleasure in, is his mare; for this animal is his principal support. With his mare the Bedouin makes his excursions against hostile tribes, or seeks plunder in the country and on the high-ways. The mare is preferred to the horse, because she is more docile, and yields milk, which on occasion satisfies the thirst and even the hunger of her master.

Thus confined to the most absolute necessities of life, the Arabs have as little industry as their wants are few; all their arts consist in weaving their clumsy tents and in making mats and butter. Their whole commerce only extends to the exchanging camels, kids, stallions, and milk; for arms, clothing, a little rice or corn, and money, which they bury. They are totally ignorant of all science; and have not even any idea of astronomy, geometry, or medicine. They have not a single book; and nothing is so uncommon among the Shaiks as to know how to read. All their literature consists in reciting tales and histories in the manner of the Arabian Nights Entertainments. They have a peculiar passion for such stories, and employ in them almost all their leisure, of which they have a great deal. In the evening they seat themselves on the ground, at the threshold of their tents, or under cover, if it be cold; and there, ranged in a circle round a little fire of dung, their pipes in their mouths, and their legs crossed, they sit a while in silent meditation, till on a sudden one of them breaks forth with, *Once upon a time*,—and continues to recite the adventures of some young Shaik and female Bedouin: he relates in what manner the youth first got a secret glimpse of his mistress; and how he became desperately enamoured of her: he minutely describes the lovely fair; boasts her black eyes, as large and soft as those of the gazelle; her languid and impassioned looks, her arched eye-brows, resembling two bows of ebony; her waist straight and supple as a lance: he forgets not her steps, light as those of the young filly; nor her eye-lashes, blackened with *kohl*; nor her lips painted blue; nor her nails, tinged with the golden coloured *henna*; nor her breasts, resembling two pomegranates; nor her words, sweet as honey. He recounts the sufferings of the young lover, *so swayed with desire and passion, that his body no longer yields any shadow*. At length, after detailing his various attempts to see his mistress, the obstacles of the parents, the invasions of the enemy, the captivity of the two lovers, &c. he terminates, to the satisfaction of the audience, by restoring them, united and happy, to the paternal tent, and by receiving the tribute paid to his eloquence, in the *Ma cha allah* (an exclamation of praise, equivalent to *admirably well!*) he has merited. The Bedouins have likewise their love songs, which have more sentiment and nature in them than those of the Turks and inhabitants of the towns; doubtless, because the former, whose manners are chaste, know what love is; while the latter, abandoned to debauchery, are acquainted only with enjoyment.

When we consider how much the condition of the Bedouins, especially in the depths of the desert, resembles in many respects that of the savages of America, we shall be inclined to wonder why they have not the same ferocity; why, though they so often experience the extremity of hunger, the practice of devouring human flesh was never heard of among them; and

why, in short, their manners are so much more sociable and mild. The following reasons are proposed by M. Volney as the true solution of this difficulty.

It seems at first view (he observes), that America, being rich in pasturage, lakes, and forests, is more adapted to the pastoral mode of life than to any other. But if we consider that these forests, by affording an easy refuge to animals, protect them more surely from the power of man, we may conclude that the savage has been induced to become a hunter instead of a shepherd, by the nature of the country. In this state, all his habits have concurred to give him a ferocity of character. The great fatigues of the chase have hardened his body; frequent and extreme hunger, followed by a sudden abundance of game, has rendered him voracious. The habit of shedding blood, and tearing his prey, has familiarised him to the sight of death and sufferings. Tormented by hunger, he has desired flesh; and finding it easy to obtain that of his fellow-creature, he could not long hesitate to kill him to satisfy the cravings of his appetite. The first experiment made, this cruelty degenerates into a habit; he becomes a cannibal, sanguinary and atrocious; and his mind acquires all the insensibility of his body.

The situation of the Arab is very different. Amid his vast naked plains, without water and without forests, he has not been able, for want of game or fish, to become either a hunter or a fisherman. The camel has determined him to a pastoral life, the manners of which have influenced his whole character. Finding at hand a light, but constant and sufficient nourishment, he has acquired the habit of frugality. Content with his milk and his dates, he has not desired flesh; he has shed no blood: his hands are not accustomed to slaughter, nor his ears to the cries of suffering creatures; he has preserved a humane and sensible heart.

No sooner did the savage shepherd become acquainted with the use of the horse, than his manner of life must considerably change. The facility of passing rapidly over extensive tracts of country, rendered him a wanderer. He was greedy from want, and became a robber from greediness; and such is in fact his present character. A plunderer, rather than a warrior, the Arab possesses no sanguinary courage; he attacks only to despoil; and if he meets with resistance, never thinks a small booty is to be put in competition with his life. To irritate him, you must shed his blood; in which case he is found to be as obstinate in his vengeance as he was cautious in avoiding danger.

The Bedouins have often been reproached with this spirit of rapine; but without wishing to defend it, we may observe that one circumstance has not been sufficiently attended to, which is, that it only takes place towards reputed enemies, and is consequently founded on the acknowledged laws of almost all nations. Among themselves they are remarkable for a good faith, a disinterestedness, a generosity, which would do honour to the most civilized people. What is there more noble than that right of asylum so respected among all the tribes? A stranger, nay even an enemy, touches the tent of the Bedouin, and from that instant his person becomes inviolable. It would be reckoned a disgraceful meanness, an indelible shame, to satisfy even a just vengeance at the expence of hospitality. Has the Bedouin consented to eat bread and salt with

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his guest, nothing in the world can induce him to betray him. The power of the Sultan himself would not be able to force a refugee from the protection of a tribe, but by its total extermination. The Bedouin, so rapacious without his camp, has no sooner set his foot within it, than he becomes liberal and generous. What little he possesses he is ever ready to divide. He has even the delicacy not to wait till it is asked: when he takes his repast, he affects to seat himself at the door of his tent, in order to invite the passengers; his generosity is so sincere, that he does not look upon it as a merit, but merely as a duty; and he therefore readily takes the same liberty with others. To observe the manner in which the Arabs conduct themselves towards each other, one would imagine that they possessed all their goods in common. Nevertheless they are no strangers to property; but it has none of that selfishness which the increase of the imaginary wants of luxury has given it among polished nations. Deprived of a multitude of enjoyments which nature has lavished upon other countries, they are less exposed to temptations which might corrupt and debase them. It is more difficult for their Shaiks to form a faction to enslave and impoverish the body of the nation. Each individual, capable of supplying all his wants, is better able to preserve his character and independence; and private poverty becomes at once the foundation and bulwark of public liberty.

This liberty extends even to matters of religion. We observe a remarkable difference between the Arabs of the towns and those of the desert; since, while the former crouch under the double yoke of political and religious despotism, the latter live in a state of perfect freedom from both: it is true, that on the frontiers of the Turks, the Bedouins, from policy, preserve the appearance of Mahometanism; but so relaxed is their observance of its ceremonies, and so little fervour has their devotion, that they are generally considered as infidels, who have neither law nor prophets. They even make no difficulty in saying that the religion of Mahomet was not made for them: "For (add they) how shall we make ablutions who have no water? How can we bestow alms who are not rich? Why should we fast in the Ramadan, since the whole year with us is one continual fast? and what necessity is there for us to make the pilgrimage to Mecca, if God be present every where?" In short, every man acts and thinks as he pleases, and the most perfect toleration is established among them.

BEDRIACUM, (anc. geog.), a village of Italy, situated, according to Tacitus, between Verona and Cremona, but nearer the latter than the former. From the account given by that historian, Cluverius conjectures that the ancient Bedriacum stood in the place where the city of Caneto now stands. This village was remarkable for the defeat of the emperor Galba by Otho, and afterwards of Otho by Vitellius.

BEDWIN-MAGNA, a village five miles south of Hungerford in Berkshire in England. It has neither market nor fair; but is a borough by prescription, and sends two members to parliament. It is said to have been a considerable place in the time of the Saxons, and that the traces of its fortifications are still extant.

BEE, in natural history, a genus of insects, the characters of which are given under the Latin or Lin-

naean name *Apis*. The principal species are there also described; excepting the mellifera, or domestic honey-bee, the history and management of which was referred to this article.

This species is furnished with downy hairs; has a dusky-coloured breast, and brownish belly; the tibiae of the hind-legs are ciliated, and transversely streaked on the inside. Each foot terminates in two hooks, with their points opposite to each other; in the middle of these hooks there is a little thin appendix, which when unfolded, enables the insects to fasten themselves to glass or the most polished bodies. This part they likewise employ for transmitting the small particles of crude wax which they find upon flowers to the cavity in their thigh, hereafter described. The queen and drones, who never collect wax in this manner, have no such cavity. This species is also furnished with a proboscis or trunk, which serves to extract the honey from flowers; and has, besides, a real mouth situated in the forepart of the head, with which it is able to feed on the farina of flowers, from which afterwards is made wax. The belly is divided into six rings or joints; which sometimes shorten the body, by slipping the one over the other. In the inside of the belly there is a small bladder or reservoir, in which the honey is collected, after having passed through the proboscis and a narrow pipe which runs through the head and breast. This bladder, when full of honey, is about the size of a small pea.

The sting, which is situated at the extremity of the belly, is a very curious weapon; and, when examined by the microscope, appears of a surprising structure. It has a horny sheath or scabbard, which includes two bearded darts. This sheath ends in a sharp point, near the extremity of which a slit opens, through which, at the time of stinging, the two bearded darts are protruded beyond the end of the sheath: one of these is a little longer than the other, and fixes its beard first; and the other instantly following, they penetrate alternately deeper and deeper, taking hold of the flesh with their beards or hooks, till the whole sting is buried in the flesh; and then a venomous juice is injected through the same sheath, from a little bag at the root of the sting. Hence the wound occasions an acute pain and swelling of the part, which sometimes continue several days. These effects are best remedied by enlarging the wound directly, to give it some discharge. This poison seems to owe its mischievous efficacy to certain pungent salts. Let a bee be provoked to strike its sting against a plate of glass, and there will be a drop of the poison discharged and left upon the glass. This being placed under a double microscope, as the liquor evaporates, the salts will be seen to congregate, forming oblong, pointed, clear crystals.—Mr Derham counted on the sting of a wasp eight beards on the side of each dart, somewhat like the beards of fish-hooks; and the same number is to be counted on the darts of the bee's sting. When these beards are struck deep in the flesh, if the wounded person starts, or discomposes the bee before it can disengage them, the sting is left behind sticking in the wound; but if he have patience to stand quiet, the creature brings the hooks down close to the sides of the darts, and withdraws the weapon; in which case, the wound is always much less painful. The danger of being stung by bees may be in a great

Bee.

1
Description
of the honey-bee.

2
Its sting.

Bee. measure prevented by a quiet composed behaviour. A thousand bees will fly and buzz about a person without hurting him, if he stand perfectly still, and forbear disturbing them even when near his face; in which case he may observe them for hours together without danger: but if he molests or beats them away, he usually suffers for it. It has been lately affirmed *, that a person is in perfect safety in the midst of myriads of bees, if he but carefully keep his mouth shut, and breathe gently through the nostrils only; the human breath, it would seem, being peculiarly offensive to their delicate organs: and merely with this precaution, it is said, the very hives may be turned up, and even part of the comb cut out, while the bees are at work.

* See Edinburgh Medical Commentaries, Vol. IV. p. 352.

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abled me to seize her instantly, with a tenderness that does not in the least endanger her person. This is of the utmost importance; for the least injury done to her brings immediate destruction to the hive, if you have not a spare queen to put in her place, as I have too often experienced in my first attempts. When possessed of her, I can without injury to her, or exciting that degree of resentment that may tempt her to sting me, slip her into my other hand, and, returning the hive to its place, hold her there, till the bees missing her, are all on wing, and in the utmost confusion. When the bees are thus distressed, I place the queen where-ever I would have the bees to settle. The moment a few of them discover her, they give notice to those near them, and those to the rest; the knowledge of which soon becomes so general, that in a few minutes they all collect themselves round her; and are so happy in having recovered this sole support of their state, that they will long remain quiet in their situation. Nay, the scent of her body is so attractive of them, that the slightest touch of her, along any place or substance, will attach the bees to it, and induce them to pursue any path she takes." This was the only witchcraft used by Mr Wildman, and is that alone which is practised by others who have since made similar exhibitions. In short, seize on the queen, and you are sure of leading all the bees of a hive to any place you please.

I. OECONOMY, INSTINCTS, &c. of the HONEY-BEE.

We may consider a hive of bees as a well peopled city, in which are commonly found from 15,000 to 18,000 inhabitants. This city is in itself a monarchy; —composed of a queen; of males, which are the *drones*; and of *working bees*, which have been supposed and called neuters. The combs, which are of pure wax, serve as their magazine of stores, and for the nursing places of their young offspring. There is between the combs a space sufficient for two bees to march abreast, without embarrassing each other; and in some parts it is more spacious. There are also holes, or narrow passages, which cross the combs transversely, and are intended to shorten the way when the bees pass from one comb to another.

³ Queen bee

The QUEEN is easily distinguished from the other bees, by the form of her body: she is longer and larger than they are, and her wings are much shorter than theirs in proportion to her body; for the wings of the other bees cover their whole body, whereas those of the queen hardly reach beyond her middle, or end at about the third ring of her belly. Her hinder parts are more taper than those of the other bees, terminating sharper. Her belly and legs are of a deep yellow, much resembling the purest gold. She is unwieldy in her flight, a reason for her seldom flying but when she leaves the parent-hive to go and settle a colony. All the bees form her retinue, and like dutiful subjects repair to the place she chooses. She is armed with a vigorous sting. Less passionate however than her subjects, she only uses her sting when long provoked, or when in contest for imperial sway. Never more than one remains in a hive, and that is the conqueror.

⁴ Attachment of her subjects.

A hive of bees cannot subsist without a queen, as she alone produces their numerous posterity; and on this account their fidelity and attachment to their sovereign is admirable.

⁵ Mr Wildman's feats by means of the queen.

Mr Wildman, by his dexterity in the management of bees, some years ago, surpris'd the whole kingdom. He can cause a swarm to light where he pleases, almost instantaneously; he can order them to settle on his head, then remove them to his hand; command them to depart and settle on a window, table, &c. at pleasure. We shall subjoin his method of performing these feats, in his own words:

“ Long experience has taught me, that as soon as I turn up a hive, and give it some taps on the sides and bottom, the queen immediately appears, to know the cause of this alarm; but soon retires again among her people. Being accustomed to see her so often, I readily perceive her at first glance; and long practice has en-

When a queen dies by any accident, the bees of her hive immediately cease working, consume their own honey, fly about their own and other hives at unusual hours when other bees are at rest, and pine away if not soon supplied with another sovereign. Her loss is proclaimed by a clear and interrupted humming. This sign should be a warning to the owner of the bees, to take what honey remains in the hive, or to procure them another queen. In this last case, the flock instantly revives; pleasure and activity are apparent through the whole hive; the presence of the sovereign restores vigour and exertion, and her voice commands universal respect and obedience: of such importance is the queen to the existence and prosperity of the other members of this community.

⁶ Consequences of her death, &c.

The dissection of the queen-bee shows evidently that she lays many thousand eggs. It is computed that the ovaria of a queen-bee contain more than 5000 eggs at one time; and therefore it is not difficult to conceive that a queen-bee may produce 10,000 or 12,000 bees, or even more, in the space of two months.

The common *DROES* are smaller than the queen, and larger than the working bees; and in flying they make a greater noise. The dissection of the drone gives as great proof of its being the male, as that of the queen does of her being female. In this creature there is no appearance of ovaries or eggs, nor any thing of the structure of the common working bees, but the whole abdomen is filled with transparent vessels, winding about in various sinuosities, and containing a white or milky fluid. This is plainly analogous to that fluid in the males of other animals, which is destined to render the eggs of the female prolific; and this whole apparatus of vessels, which much resembles the turnings and windings of the seminal vessels in other animals, is plainly intended only for the preparation and retention of this matter, till the destined time of its being emitted. On squeezing the hinder parts, also, may be forced out the penis, a small and slender fleshy body, contained between

⁷ Of the drones.

Bee.

tween two horns of a somewhat harder substance, which join at their base, but gradually part asunder as they are continued in length. These parts, found in all the drones, and none of them in any other bees except these, seem to prove very evidently the difference of sex. If a hive is opened in the beginning of spring, not a single drone will be found in it; from the middle of May till the end of June, hundreds of them will be found, commonly from 200 or 300 to 1000; and from thence to the following spring it would be in vain to seek for them. They go not out till 11 in the morning, and return before six in the evening. But their expeditions are not those of industry. They have no sting, their rostrum and feet are not adapted for collecting wax and honey, nor indeed are they obliged to labour. They only hover upon flowers to extract the sweets, and all their thoughts are pleasure. Their office is, to impregnate the eggs of the queen after they are deposited in the cells. And while their presence is thus necessary, they are suffered to enjoy the sweets of love and life; but as soon as they become useless in the hive, the working bees declare the most cruel war against them, and make terrible slaughter of them. This war affects not only the bees already in life, but even the eggs and maggots; for the law which has pronounced the destruction of the males has no exception, it extends equally to those which do not yet breathe and to those which do; the hive is cleared of every egg, maggot, or nymph; the whole is torn away and carried off. After the season proper for increasing the number of bees is past, and when they should attend only to the supplying of their magazines sufficiently with winter-stores, every vestige of the drones is destroyed, to make room for honey. Whenever these drones are observed to remain in a hive late in the autumn, it is held to be a bad sign of the state of the hive.

But besides these larger drones, Maraldi and Reaumur had long ago discovered that there were others of a lesser size, not exceeding that of the common working bees. This fact, however, was not fully ascertained before the late experiments of Mr Debray, to be afterwards mentioned. It is well known, as has been already noticed, that the large drones never appear in the hive before the middle of April; that they are all dead before the end of August, when the principal breeding season terminates; and that they are destroyed, together with all their worms or nymphs, by the working bees, probably by order of the queen, to save honey: yet it is equally certain, that the bees begin to breed early in the spring, sometimes in February, if the weather is mild; and that many broods are completed before these drones appear. But if drones of a smaller size are suffered to remain, which in a time of scarcity consume less honey than the others, these will answer the purpose of supplying the early broods, and the larger drones are produced against a time of greater plenty. Some observers affirm, that the smaller drones are all dead before the end of May, when the larger species appear and supersede their use. These circumstances accord with the suggestion of Abbe Le Pluche in his *Speclacle de la Nature*, That a small number of drones are reserved to supply the necessities of the ensuing year; and that these drones are very little, if at all, larger than the common bees.

Bee.

The work-
ing bees.

The WORKING BEES compose the greatest body of the state. Columella informs us, that the ancients distinguished several kinds of them. He joins in opinion with Virgil, who approves of those which are small, oblong, smooth, bright, and shining, of a gentle and mild disposition: "for," continues he, "by how much the larger and rounder the bee is, by so much the worse it is; but if it be fierce and cruel, it is the worst of all. The angry disposition of bees of a better character is easily softened by the frequent intercourse of those who take care of them, for they grow more tame when they are often handled." The experience of ages has now established the sort of bees which have been found to answer best the purposes of keeping them.

The working bees have the care of the hive, collect the wax and honey, fabricate and work up the wax, build the cells, feed the young, keep the hive clean, drive from thence strangers, and employ themselves in all other concerns relating to the hive.

The working bee has two stomachs; one which contains the honey, and a second in which is contained the crude wax. The working bees have no parts analogous to the ovaria of the queen, or that resemble the male organs of the drones. Hence they have generally been supposed to be neutral or of neither sex. But a different doctrine has lately been established; which there will be occasion to notice in the sequel.

The sting is very necessary for a working bee, both as an offensive and as a defensive weapon: for their honey and wax excite the envy of many greedy and lazy insects; and they have also to defend themselves against enemies, who are fonder of eating them than their honey. There is likewise a time when the drones must be sacrificed and exterminated for the good of the society; and as they are larger and stronger than the working bees, these last would have a very unequal match, were it not for this poisonous sting.

There happen also among bees, either of the same ^{Of their} or of different hives, most deadly feuds, in which their ^{battles.} stings are their chief weapons. In these contests, great skill may be discerned in their manner of pointing the sting between the scaly rings which cover their bodies, or to some other easily vulnerable part. The bee which first gains the advantage remains the conqueror: tho' the victory costs the victor his life, if he has left his sting in the body of the enemy; for, with the sting, so much of his body is torn out, that death inevitably follows. Bees have very severe conflicts when whole hives engage in a pitched battle, and many are slain on both sides. Their fighting and plundering one another ought chiefly to be imputed, as Mr Thorley observes, either to their perfect abhorrence of sloth and idleness, or to their insatiable thirst for honey; for when, in spring or autumn, the weather is fair, but no honey can be collected from plants, and is to be found only in the hives of other bees, they will venture their lives to get it there.

Dr Warder assigns another cause of their fighting; which is, the necessity that the bees are reduced to when their own hive has been plundered, at a season when it is too late for them to repair the loss by any industry in the fields.

Sometimes one of the queens is killed in battle. In this case, the bees of both hives unite as soon as her death

^{Bee.} death is generally known among them. All then become one people; the vanquished go off with the robbers, richly laden with their own spoils, and return every day with their new associates to pillage their old habitation. This causes a throng, unusual for the season, at the door of the hive they are plundering; and if the owner lifts it up at night, when all are gone home, he will find it empty of inhabitants; though there perhaps will remain in it some honey, which he takes as his property.

When two swarms take flight at the same time, they sometimes quarrel, and great numbers are destroyed on both sides, till one of the queens is slain. This ends the contest, and the bees of both sides unite under the surviving sovereign.

⁷⁰
Their la-
bours.

When the bees begin to work in their hives, they divide themselves into four companies: one of which roves in the fields in search of materials; another employs itself in laying out the bottom and partitions of their cells; a third is employed in making the inside smooth from the corners and angles; and the fourth company brings food for the rest, or relieves those who return with their respective burdens. But they are not kept constant to one employment; they often change the tasks assigned them: those that have been at work, being permitted to go abroad; and those that have been in the fields already, take their places. They seem even to have signs, by which they understand each other: for when any of them want food, it bends down its trunk to the bee from whom it is expected, which then opens its honey-bag, and lets some drops fall into the other's mouth, which is at that time opened to receive it. Their diligence and labour is so great, that, in a day's time, they are able to make cells which lie upon each other numerous enough to contain 3000 bees.

⁷¹
Of the
cells.

In the plan and formation of these cells they discover a most wonderful sagacity. In constructing habitations within a limited compass, an architect would have three objects in view: first, to use the smallest quantity that can be of materials; next, to give to the edifice the greatest capacity on a determined space; and thirdly, to employ the spot in such a manner that none of it may be lost. On examination, it will be found that the bees have obtained all these advantages in the hexagonal form of their cells: for, first, there is an economy of wax, as the circumference of one cell makes part of the circumferences of those contiguous to it; secondly, the economy of the spot, as these cells which join to one another leave no void between them; and thirdly, the greatest capacity or space; as, of all the figures which can be contiguous, that with six sides gives the largest area. This thriftiness prompts them to make the partitions of their cells thin; yet they are constructed so as that the solidity may compensate for the scantiness of materials. The parts most liable to injury are the entrance of the cells. These the bees take care to strengthen, by adding quite round the circumference of the apertures a fillet of wax, by which means this mouth is three or four times thicker than the sides: and they are strengthened at the bottom by the angle formed by the bottom of three cells falling in the middle of an opposite cell. The combs lie parallel to each other; and there is left between every

^{Bee.} one of them a space which serves as a street, broad enough for two bees to pass by each other. There are holes which go quite through the combs, and serve as lanes for the bees to pass from one comb to another, without being obliged to go a great way about. When they begin their combs, they form at the top of the hive a root or stay to the whole edifice, which is to hang from it. Though they generally lay the foundations of the combs so that there shall be no more between them than what is sufficient for two bees to pass, yet they sometimes place those beginnings of two combs too far asunder; and, in this case, in order to fill up part of the void space arising from that bad disposition, they carry their combs on obliquely, to make them gradually approach each other. This void space is sometimes to considerable, that the bees build in it an intermediate comb, which they terminate as soon as the original combs have only their due distances. As the combs would be apt, when full, to overcome by their weight all the security which the bees can give them against falling; they who prepare hives, set in them, crosswise, sticks, which serve as props to the combs, and save the bees a great deal of labour. It is not easy to discover the particular manner of their working; for, notwithstanding the many contrivances used for this purpose, there are such numbers in continual motion, and succeed one another with such rapidity, that nothing but confusion appears to the sight. Some of them, however, have been observed carrying pieces of wax in their talons, and running to the places where they are at work upon the combs. These they fasten to the work by means of the same talons. Each bee is employed but a very short time in this way: but there is so great a number of them that go on in a constant succession, that the comb increases very perceptibly. Besides these, there are others that run about beating the work with their wings and the hinder part of their body, probably with a view to make it more firm and solid.

Whilst part of the bees are occupied in forming the cells, others are employed in perfecting and polishing those that are new modelled. This operation is performed by their talons, taking off every thing that is rough and uneven. These polishers are not so desultory in their operations as those that make the cells; they work long and diligently, never intermitting their labour, excepting to carry out of the cell the particles of wax which they take off in polishing. These particles are not allowed to be lost; others are ready to receive them from the polishers, and to employ them in some other part of the work.

⁷²
Of their
building-
materials,
and provi-
sions.

The balls which we see attached to the legs of bees returning to the hives are not wax, but a powder collected from the stamina of flowers, and yet brought to the state of wax. The substance of these balls, heated in any vessel, does not melt as wax would do, but becomes dry, and hardens: it may even be reduced to a coal. If thrown into water, it will sink; whereas wax swims. To reduce this crude substance into wax, it must first be digested in the body of the bee.

Every bee, when it leaves the hive to collect this precious store, enters into the cup of the flower, particularly such as seem charged with the greatest quantities of this yellow farina. As the animal's body is covered

Bee.

covered over with hair, it rolls itself within the flower, and quickly becomes quite covered with the dust, which it soon after brushes off with its two hind legs, and kneads into two little balls. In the thighs of the hind-legs there are two cavities, edged with hair; and into these, as into a basket, the animal sticks its pellets. Thus employed, the bee flits from flower to flower, increasing its store, and adding to its stock of wax, until the ball upon each thigh becomes as big as a grain of pepper; by this time having got a sufficient load, it returns, making the best of its way to the hive.

After the bees have brought home this crude substance, they eat it by degrees; or, at other times, three or four bees come and ease the loaded bee, by eating each of them a share. the loaded bee giving them a hint so to do. Hunger is not the motive of their thus eating the balls of waxy matter, especially when a swarm is first hived; but it is their desire to provide a speedy supply of real wax for making the combs. At other times, when there is no immediate want of wax, the bees lay this matter up in repositories, to keep it in store.

When this waxy matter is swallowed, it is, by the digestive powers of the bee, converted into real wax, which the bees again disgorge as they work it up into combs; for it is only while thus soft and pliant from the stomach that they can fabricate it properly. That the wax thus employed is taken from their stomachs, appears from their making a considerable quantity of comb soon after they are hived, and even on any tree or shrub where they have rested but a short while before their being hived, though no balls were visible on their legs, excepting those of a few which may be just returned from the field. This is farther confirmed by what happened in a swarm newly hived. for two days together from the time of their quitting their former home it rained constantly, infomuch that not one bee was able to stir out during that time; yet at the end of the two days they had made a comb 15 or 16 inches long, and thick in proportion.

The crude wax, when brought home by the bees, is often of as different colours as are the flowers from which it is collected: but the new combs are always of a white colour, which is afterwards changed only by the impurities arising from the steam, &c. of the bees.

Bees collect crude wax also for food; for if this was not the case, there would be no want of wax after the combs are made: but they are observed, even in old hives, to return in great numbers loaded with such matter, which is deposited in particular cells, and is known by the name of *bee-bread*. We may guess that they consume a great deal of this substance in food by the quantity collected; which, by computation, may in some hives, amount to an hundred weight in a season, whilst the real wax in such a hive does not perhaps exceed two pounds.

It is well known that the habitation of bees ought to be very close; and what their hives want from the negligence or unkindness of man, these animals supply by their own industry: so that it is their principal care, when first hived, to stop up all the crannies. For this purpose they make use of a resinous gum, which is more tenacious than wax, and differs greatly from it. This the ancients called *propolis*. It will grow consider-

ably hard in the hive, though it will in some measure soften by heat; and is often found different in consistence, colour, and smell. It has generally an agreeable aromatic odour when it is warmed; and by some it is considered as a most grateful perfume. When the bees begin to work with it, it is soft; but it acquires a firmer consistence every day, till at length it assumes a brown colour, and becomes much harder than wax. The bees carry it on their hinder legs; and some think it is met with on the birch, the willow, and poplar. However it is procured, it is certain that they plaster the inside of their hives with this composition.

Honey is originally a juice digested in plants, which sweats through their pores, and chiefly in their flowers, or is contained in reservoirs in which nature stores it. The bees sometimes penetrate into these stores, and at other times find the liquor exsuded. This they collect in their stomachs; so that, when loaded with it, they seem, to an inattentive eye, to come home without any booty at all.

Besides the liquor already mentioned, which is obtained from the flowers of plants, another substance, called *honey-dew**, has been discovered, of which the bees are equally fond. Of this substance there are two kinds, both deriving their origin from vegetables, tho' in very different ways.

The first kind, the only one known to husbandmen, and which passes for a dew that falls on trees, is no other than a mild sweet juice, which having circulated through the vessels of vegetables, is separated in proper reservoirs in the flowers, or on the leaves, where it is properly called the *honey-dew*: sometimes it is deposited in the pith, as in the sugar-cane; and, at other times, in the juice of pulpy summer-fruits when ripe. Such is the origin of the manna which is collected on the ash and maple of Calabria and Briançon, where it flows in great plenty from the leaves and trunks of these trees, and thickens into the form in which it is usually seen.

The second kind of honey-dew, which is the chief resource of bees after the spring-flowers and dew by transpiration on leaves are past, owes its origin to a small mean insect †, the excrement thrown out by which makes a part of the most delicate honey we ever taste.

From whatever source the bees have collected their honey, the instant they return home, they seek cells in which they may disgorge and deposit their loads. They have two sort of stores: one which consists of honey laid up for the winter; and the other of honey intended for accidental use in case of bad weather, and for such bees as do not go abroad in search of it. Their method of securing each of these is different. They have in each cell a thicker substance, which is placed over the honey, to prevent its running out of the cell; and that substance is raised gradually as the cell is filled, till the bees, finding that the cell cannot contain any more, close it with a covering of wax, not to be opened till times of want, or during the winter.

It has been already observed, that the cells are intended for other purposes besides being places of store for honey. One of the chief uses is, their being nurseries for the young. The cells for those which are to be working bees, are commonly half an inch deep; those for drones, three quarters of an inch; and those which are intended for keeping of honey only, still deeper.

Bee.

14
The bee-

* See the article Honey-dew.

† See the articles *Aphis* and *Honey-dew*.15
Of the manner in which bees breed.13
The propolis.

Sec. deeper. This accounts for the inequalities observed in the surface of combs.

The queen-bee is generally concealed in the most secret part of the hive, and is never visible but when she lays her eggs in such combs as are exposed to light. When she does appear, she is always attended by ten or a dozen of the common sort, who form a kind of retinue, and follow her wherever she goes with a sedate and grave tread. Before she lays her eggs, she examines the cells where she designs to lay them; and if she finds that they contain neither honey, wax, nor any embryo, she introduces the posterior part of her body into a cell, and fixes to the bottom of it a small white egg, which is composed of a thin white membrane, full of a whitish liquor. In this manner she goes on, till she fills as many cells as she has eggs to lay, which are generally many thousands. Sometimes more than one egg has been deposited in the same cell; when this is the case, the working bees remove the supernumerary eggs, and leave only one in each cell. On the first or second day after the egg is lodged in the cell, the drone bee injects a small quantity of whitish liquid, which in about a day is absorbed by the egg. On the third or fourth day is produced a worm or maggot; which, when it is grown so as to touch the opposite angle, coils itself up in the shape of a semicircle, and floats in a proper liquid, whereby it is nourished and enlarged in its dimensions. This liquor is of a whitish colour, of the thickness of cream, and of an insipid taste like flour and water. Naturalists are not agreed as to the origin and qualities of this liquid. Some have supposed, that it consists of some generative matter, injected by the working bees into each cell, in order to give fecundity to the egg; but the most probable opinion is, that it is the same with what some writers have called the *bee-bread*; and that it is a mixture of water with the juices of plants and flowers collected merely for the nutrition of the young, whilst they are in their weak and helpless state. Whatever be the nature of this aliment, it is certain that the common working bees are very industrious in supplying the worms with a sufficient quantity of it. The worm is fed by the working bees for about eight days, till one end touches the other in the form of a ring; and when it begins to feel itself uneasy in its first posture, it ceases to eat, and begins to unroll itself, thrusting that end forward towards the mouth of the cell which is to be the head. The attendant bees, observing these symptoms of approaching transformation, desist from their labours in carrying proper food, and employ themselves in fastening up the top of the cell with a lid of wax, formed in concentric circles, and by their natural heat in cherishing the brood and hastening the birth. In this concealed state the worm extends itself at full length, and prepares a web of a sort of silk, in the manner of the silk-worm. This web forms a complete lining for the cell, and affords a convenient receptacle for the transformation of the worm into a nymph or chrysalis. Some naturalists suppose, that as each cell is destined to the successive breeding of several worms, the whole web, which is composed of many cruils or doubles, is in reality a collection of as many webs as there have been worms. M. Maraldi apprehends, that this lining is formed of the skin of the worm thrown off at its entrance into the nymph state:

but it is urged, that if the cells are opened when newly covered by the bees, the worm within will be found in its own form, and detected in the art of spinning its web; and by means of glasses it will be found composed of fine threads regularly woven together, like those of other spinning animals. In the space of 18 or 20 days the whole process of transformation is finished, and the bee endeavours to discharge itself from confinement by forcing an aperture with its teeth through the covering of the cell. The passage is gradually dilated; so that one horn first appears, then the head, and afterwards the whole body. This is usually the work of three hours, and sometimes of half a day. The bee, after it has disengaged itself, stands on the surface of the comb, till it has acquired its natural complexion, and full maturity and strength, so as to become fit for labour. The rest of the bees gather round it in this state, congratulate its birth, and offer it honey out of their own mouths. The exuviae and scattered pieces of wax which are left in the cell are removed by the working bees; and the matrix is no sooner cleansed and fit for new fecundation, but the queen deposits another egg in it; inasmuch that, Mr Maraldi says, he has seen five bees produced in the same cell in the space of three months. The young bees are easily distinguished from the others by their colour: they are grey, instead of the yellowish brown of the common bees. The reason of this is, that their body is black, and the hairs that grow upon it are white, from the mixture of which seen together results a grey; but this colour forms itself into a brownish yellow by degrees, the rings of the body becoming more brown and the hairs more yellow.

The eggs from which drones are to proceed, are, as already observed, laid in larger cells than those of the working bees. The coverings of these cells, when the drones are in the nymph state, are convex or swelling outward, whilst the cells of the working bees are flat. This, with the privilege of leading idle effeminate lives, and not working for the public stock, is what distinguishes the drones.

The bees depart from their usual style of building when they are to raise cells for bringing up such maggots as are destined to become queens. These are of a longish oblong form, having one end bigger than the other, with their exterior surface full of little cavities. Wax, which is employed with so geometrical a thriftiness in the raising of hexagonal cells, is expended with profusion in the cell which is to be the cradle of a royal maggot. They sometimes fix it in the middle, and at other times on one side of a comb. Several common cells are sacrificed to serve as a basis and support to it. It is placed almost perpendicular to the common cells, the largest end being uppermost. The lower end is open till the season for closing it comes, or till the maggot is ready for transformation. It would be difficult to conceive how a tender maggot can remain in a cell turned bottom upmost, if we did not find it buried in a substance scarcely fluid, and if it was not in itself, at first, small and light enough to be suspended in this clammy paste. As it grows it fills all the upper and larger part of the cell. As soon as the young queen comes out of her cell, that cell is destroyed, and its place is supplied by common cells; but as the foundation of the royal cell is left, this part of the comb is found

Bee.

found thicker than any other. There are several such cells prepared: for if there was only one reared in each hive, the swarms might often want a conductress. Many accidents may also destroy the little maggot before it becomes a bee. It is therefore necessary that a number of such cells should be provided; and accordingly there are observed several young queens in the beginning of the summer, more than one of which often takes flight when a swarm departs.

A young queen is in a condition to lead a swarm from a hive in which she was born in four or five days after she has appeared in it with wings. The bees of a swarm are in a great hurry when they know that their queen is ready to lay. In this case, they give to their new cells but part of the depth they are to have, and defer the finishing of them till they have traced the number of cells requisite for the present time. The cells first made are intended only for working bees; these being the most necessary.

16
Of their
swarming.

When the hive is become too much crowded by the addition of the young brood, a part of the bees think of finding themselves a more commodious habitation, and with that view single out the most forward of the young queens. A new swarm is therefore constantly composed of one queen at least, and of several thousand working bees, as well as of some hundreds of drones. The working bees are some old, some young.

Scarcely has the colony arrived at its new habitation, when the working bees labour with the utmost diligence to procure materials for food and building. Their principal aim is not only to have cells in which they may deposit their honey: a stronger motive seems to animate them. They seem to know that their queen is in haste to lay her eggs. Their industry is such, that in twenty-four hours they will have made combs twenty inches long, and wide in proportion. They make more wax during the first fortnight, if the season is favourable, than they do during all the rest of the year. Other bees are at the same time busy in stopping all the holes and crevices they find in their new hive, in order to guard against the entrance of insects which covet their honey, their wax, or themselves; and also to exclude the cold air, for it is indispensably necessary that they be lodged warm.

When the bees first settle in swarming, indeed when they at any time rest themselves, there is something very particular in their method of taking their repose. It is done by collecting themselves in a heap, and hanging to each other by their feet. They sometimes extend these heaps to a considerable length. It would seem probable to us, that the bees from which the others hang must have a considerable weight suspended to them. All that can be said is, that the bees must find this to be a situation agreeable to themselves. They may perhaps have a method of distending themselves with air, thereby to lessen their specific gravity; in the same manner as fishes do, in order to alter their gravity compared with water.

When a swarm divides into two or more bands, which settle separately, this division is a sure sign that there are two or more queens among them. One of these clusters is generally larger than the other. The bees of the smaller cluster, or clusters, detach themselves by little and little, till at last the whole, together with the queen or queens, unite with the larger cluster.

Bee.

As soon as the bees are settled, the supernumerary queen, or queens, must be sacrificed to the peace and tranquillity of the hive. This execution generally raises a considerable commotion in the hive; and several other bees, as well as the queen or queens, lose their lives. Their bodies may be observed on the ground, near the hive. The queen that is chosen is of a more reddish colour than those which are destroyed: so that fruitfulness seems to be a great motive of preference in bees; for the nearer they are to the time of laying their eggs, the bigger, larger, and more shining are their bodies. The method of hiving these swarms will be explained hereafter.

Besides the capital instincts above mentioned, bees are possessed of others, some of which are equally necessary for their preservation and happiness.—They anxiously provide against the entrance of insects into the hive, by gluing up with wax the smallest holes in the skep. Some stand as sentinels at the mouth of the hive, to prevent insects of any kind from getting in. But if a snail, or other large insect should get in, notwithstanding all resistance, they sting it to death; and then cover it over with a coat of propolis, to prevent the bad smell or maggots which might proceed from the putrefaction of such a large animal.—Bees seem to be warned of the appearance of bad weather by some particular feeling. It sometimes happens, even when they are very assiduous and busy, that they on a sudden cease from their work; not a single one flits out; and those that are abroad hurry home in such prodigious crowds, that the doors of their habitations are too small to admit them. On this occasion, look up to the sky, and you will soon discover some of those black clouds which denote impending rain. Whether they see the clouds gathering for it, as some imagine, or whether (as is much more probable) they feel some other effects of it upon their bodies, is not yet determined; but it is alleged, that no bee is ever caught even in what we call a sudden shower, unless it have been at a very great distance from the hive, or have been before injured by some accident, or be sickly and unable to fly so fast as the rest.—Cold is a great enemy to them. To defend themselves against its effects during a hard winter, they crowd together in the middle of the hive, and buzz about, and thereby excite a warmth which is often perceptible by laying the hand upon the glass-windows of the hive.—They seem to understand one another by the motions of their wings: When the queen wants to quit the hive, she gives a little buzz; and all the others immediately follow her example, and retire along with her.

As to the age of bees, the large drones live but a little while, being destroyed without mercy by the working bees, probably to save honey, as already noticed. But of the other sort lately discovered, no larger than the working bees, and not easily to be distinguished from them, the age has not yet been ascertained. Writers are not agreed as to the age of the working bees. Some maintain that they are annual, and others suppose that they live many years. Many of them, it is well known, die annually of hard labour; and though they may be preserved by succession in hives or colonies for several years, the most accurate observers are of opinion that their age is but a year, or at the longest no more than two summers.

18

Age of bees.

Opinions concerning the sex and fecundation of bees.
 Concerning the sex and fecundation of bees, various experiments have been made of late years, by which new light has been thrown upon the subject, and several difficulties which embarrassed the process of generation among these curious insects seem to have been removed.

Swammerdam, and after him Maraldi, discovered in the structure of the drones some resemblance to the male organs of generation, as has already been described; and from thence concluded that they were the males; but neither of those accurate and industrious observers could detect them in the act of copulation. Swammerdam, therefore, entertained a notion, that the female or queen-bee was fecundated without copulation; that it was sufficient for her to be near the males; and that her eggs were impregnated by a kind of vivifying aura, exhaled from the body of the males, and absorbed by the female. However, M. Reaumur thought that he had discovered the actual copulation of the drones with the female bee, and he has very minutely described the process of it. A very ingenious naturalist* of the present day, without taking any notice of recent discoveries, seems to have given into the same idea. "The office of the males or drones (says he) is to render the queen pregnant. One single female should in the midst of seven or eight hundred males, one would think, be incessantly assailed. But nature has provided against that inconvenience, by making them of a constitution extremely frigid. The female chooses out one that pleases her; she is obliged to make the first advances, and excite him to love by her caresses. But this favour proves fatal to him: scarce has he ceased from amorous dalliance, but he is seen to perish. The pleasure of these observations may be taken, by putting a female with several males into a bottle."

Others again, as M. Schirach and M. Hattorff, reject the drones as bearing no share at all in the business of propagation, and assert the queen-bee to be self-prolific. But for what purpose then should wise nature have furnished the drones with that large quantity of femal liquor; to what use so large an apparatus of fecundating organs so well described by Reaumur and Maraldi? The fact is, that the above gentlemen have founded their opinion upon observations that hives are peopled at a time of the year when (as they supposed) there are no drones in being. But we have already noticed, that nature has provided drones of different sizes for the purpose of impregnation, adapted to different times, occasions, and circumstances: And the mistake of Messrs Schirach and Hattorff seems to have proceeded from their missing the large-sized drones, and not being acquainted with or not adverting to the other sort so hardly distinguishable from the working bees.

Lastly, many of the ancients as well as moderns have supposed that the eggs of the female bee are not impregnated with the male sperm, while in the body of the creature, but that they are deposited unimpregnated in the cells; and that the male afterwards ejects the male sperm on them as they lie in the cells, in the same manner as the generation of fishes is supposed to be performed by the males impregnating the spawn after it is cast out by the females. M. Maraldi† long since conjectured that this might be the case; and he

was confirmed in his opinion, by observing a liquid whitish substance surrounding each egg at the bottom of the cell a little while after it has been laid, and that a great number of eggs, which were not encompassed by this liquor, remained barren in the cell.

This method of impregnation has been lately established beyond all contradiction by the observations of Mr Debraw of Cambridge*. Having put some bees into glass-hives with a large number of drones, he observed on the first or second day (always before the third) from the time in which the eggs were placed in the cells, which the queen generally lays on the fourth or fifth day after they are put into the hive, that a great number of bees fastened themselves to one another, and formed a kind of curtain from the top to the bottom of the hive, probably in order to conceal the process of generation. Mr Debraw, however, could soon perceive several bees, whose size he was not able to distinguish, inserting the posterior part of their bodies each into a cell, and sinking into it; after a little while they retired, and he could see with the naked eye a small quantity of whitish liquor left in the angle of the base of each cell, containing an egg; this liquor was less liquid than honey, and had no sweet taste.

In order to prove further that the eggs are fecundated by the males, and that their presence is necessary at the time of breeding, Mr Debraw made the following experiments. They consist in leaving in a hive the queen, with only the common or working bees, without any drones, to see whether the eggs she laid would be prolific. To this end, he took a swarm, and shook all the bees into a tub of water, leaving them there till they were quite senseless; by which means he could distinguish the drones, without any danger of being stung: Leaving these out, therefore, he restored the queen and working-bees to their former state, by spreading them on a brown paper in the sun; after this he replaced them in a glass hive, where they soon began to work as usual. The queen laid eggs, which, to his great surprise, were impregnated; for he imagined he had separated all the drones or males, and therefore omitted watching them; at the end of twenty days he found several of his eggs had, in the usual course of changes, produced bees, while some had withered away, and others were covered with honey. Hence he inferred, that some of the males had escaped his notice, and impregnated part of the eggs. To convince himself of this, he took away all the brood comb that was in the hive, in order to oblige the bees to provide a fresh quantity, being determined to watch narrowly their motions after new eggs should be laid in the cells. On the second day after the eggs were placed in the cells, he perceived the same operation that was mentioned before, namely, that of the bees hanging down in the form of a curtain, while others thrust the posterior part of the body into the cells. He then introduced his hand into the hive, and broke off a piece of the comb, in which there were two of these insects: he found in neither of them any sting (a circumstance peculiar to the drones): upon dissection, with the assistance of a microscope, he discovered the four cylindrical bodies which contain the glutinous liquor, of a whitish colour, as observed by Maraldi in the large drones. He was therefore now under a necessity

* *Barbut, Genera of Insects, p. 268.*

† *Hist. Acad. Sc. 1712, p. 337.*

Bee. necessity of repeating his experiments, in destroying the males, and even those which might be suspected to be such.

He once more immersed the same bees in water; and when they appeared in a senseless state, he gently pressed every one, in order to distinguish those armed with stings from those which had none, and which of course he supposed to be males: of these last he found fifty-seven, and replaced the swarm in a glass hive, where they immediately applied again to the work of making cells; and on the fourth or fifth day, very early in the morning, he had the pleasure to see the queen-bee deposit her eggs in those cells: he continued watching most part of the ensuing days, but could discover nothing of what he had seen before.

The eggs after the fourth day, instead of changing in the manner of caterpillars, were found in the same state they were the first day, except that some were covered with honey. A singular event happened the next day about noon: all the bees left their own hive, and attempted to get into a neighbouring hive, probably in search of males; but the queen was found dead, having been killed in the engagement.

To be further satisfied, Mr Debraw took the brood-comb, which had not been impregnated, and divided it into two parts: one he placed under a glass bell, N^o 1. with honey-comb for the bees food, taking care to leave a queen, but no drones, among the bees confined in it: the other piece of brood-comb he placed under another glass bell, N^o 2. with a few drones, a queen, and a proportionable number of common bees. The result was, that in the glass N^o 1. there was no impregnation, the eggs remained in the same state they were in when put into the glass; and on giving the bees their liberty on the seventh day, they all flew away, as was found to be the case in the former experiment: whereas in the glass N^o 2. the very day after the bees had been put into it, the eggs were impregnated by the drones, the bees did not leave their hives on receiving their liberty, the eggs at the usual time underwent the necessary transformations, and a numerous young colony was produced.

Naturalists have observed, that the queen bees are produced in a manner peculiar to themselves, and different from the drones and working bees. Some have supposed, that the eggs laid by the queen in a hive, and destined for the production of queen bees, are of a peculiar kind: but though this is not the case, as M. Schirach has lately discovered, yet there are particular cells appropriated for this purpose. These cells are generally near the edges, and at the bottom of the combs, and sometimes on the sides of a honey-comb: they are of an oblong orbicular form, and very strong; and are more or less numerous in different hives as occasion seems to require. It has been also supposed, that the matter with which they are nourished is of a different kind and quality from that employed for the nourishment of the other bees; that which has been collected out of the royal cells being of a gummy glutinous nature, of a deep transparent red, and dissolving in the fire rather than crumbling to powder.

It has been generally supposed, that the queen-bee is the only female contained in the hive; and that the working bees are neutral, or of neither sex. But M. Schirach* has lately established a different doc-

trine, which has been also confirmed by the later observations of Mr Debraw †. According to Mr Schirach, all the working or common bees are females in disguise; and the queen-bee lays only two kinds of eggs, viz. those which are to produce the drones, and those from which the working bees are to proceed: and from any one or more of these, one or more queens may be produced; so that every worm of the latter or common kind, which has been hatched about three days, is capable, under certain circumstances, of becoming the queen, or mother of a hive. In proof of this doctrine, new and singular as it may seem, he alleges a number of satisfactory and decisive experiments, which have been since verified by those of Mr Debraw. In the early months of the spring, and in any preceding month, even so late as November, he cut off from an old hive, a piece of that part of the comb which contains the eggs of the working bees; taking care, however, that it contained likewise worms which had been hatched about three days. He fixed this in an empty hive, or box, together with a portion of honey-comb, &c. or, in other words, with a sufficiency of food and building materials, or wax, for the use of the intended colony. He then put into, and confined within, the same box, a sufficient number of common working bees, taken from the same or any other hive. As soon as the members of this small community found themselves deprived of their liberty, and without a queen, a dreadful uproar ensued, which continued generally, with some short intervals of silence, for the space of about twenty-four hours; during which time it is to be supposed they were alternately meditating and holding council on the future support of the new republic. On the final cessation of this tumult, the general and almost constant result was, that they betook themselves to work; first proceeding to the construction of a royal cell, and then taking the proper measures for hatching and feeding the brood inclosed with them. Sometimes even on the second day the foundations of one or more royal cells were to be perceived; the view of which furnished certain indications that they had elected one of the inclosed worms to the sovereignty.

The operation has been hitherto conducted in the house. This new colony may now be safely trusted in the garden, if the weather be warm, and have the liberty allowed them of passing out of the box; of which they instantly avail themselves, and are seen in a short time almost totally to desert their new habitation. In about two hours, however, they begin to re-enter it. We should not neglect to observe, that if they should be placed near the old hive, from which they were taken, they will very often attempt to enter it, but are as constantly repulsed by their former companions and brethren. It is prudent, therefore, to place them at a distance from the mother state, in order to avoid the inconveniences of a civil war. The final result of the experiment is, that the colony of working bees thus shut up, with a morsel of common brood, not only hatch it, but are found, at the end of eighteen or twenty days, to have produced from thence one or two queens; which have apparently proceeded from worms of the common sort, pitched upon by them for that purpose; and which, under other circumstances, that is, if they had remained in the old hive, there is reason to suppose would have been changed into com-

B. c.
† Phil.
Transf. vol.
67. Part i.
Mr Schirach's discovery.

* *Hist. Nat. de la Reine des Abeilles, &c.*

Bee.

men working bees. In the present instance, the common worm appears to be converted by them into a queen bee, merely because the hive was in want of one. Hence we may justly infer, that the kingdom of the bees is not, if the expression may be used, a *jure divino* or hereditary monarchy, but an elective kingdom; in which the choice of their future ruler is made by the body of the people, while she is yet in the cradle, or in embryo; and who are determined by motives of preference which will perhaps for ever elude the penetration of the most sagacious naturalists.

The conclusions drawn by M. Schirach, from experiments of the preceding kind, often repeated by himself and others with the same success, are, that all the common or working bees were originally of the female sex; but that when they have undergone their last metamorphosis, they are condemned to a state of perpetual virginity, and the organs of generation are obliterated; merely because they have not been lodged, fed, and brought up in a particular manner, while they were in the worm state. He supposes that the worm, designed by the community to be a queen, or mother, owes its metamorphosis into a queen, partly to the extraordinary size of its cell, and its peculiar position in it; but principally to a certain appropriate nourishment found there, and carefully administered to it by the working bees while it was in the worm state; by which, and possibly other means unknown, the development and extension of the germ of the female organs, previously existing in the embryo, is effected; and those differences in its form and size are produced, which afterwards so remarkably distinguish it from the common working bees.

This discovery is capable of being applied towards forming artificial swarms, or new colonies of bees, by which means their number might be increased, and their produce in honey and wax proportionably augmented.

Explanation of Plate XCVI. Fig. 1. is the queen-bee. 2. Is the drone. 3. Is the working bee. 4. Represents the bees hanging to each other by the feet, which is the method of taking their repose. 5. The proboscis or trunk, which is one of the principal organs of the bees, wherewith they gather the honey and take their nourishment. 6. One of the hind-legs of a working-bee, loaded with wax. 7. A comb, in which the working bees are bred. The cells are the smallest of any. Two of them have the young bees inclosed. A royal cell is suspended on one side. 8. A comb in which the drones are bred, being larger than the former; the young drones being included in several of them; with two royal cells suspended on the side. 9. A similar comb, in which the royal cell is fixed in the middle of the comb; and several common cells are sacrificed to serve as a basis and support to it. In general, the royal cells are suspended on the side of a comb, as in fig. 7, 8. To the side of fig. 9. two royal cells are begun, when they resemble pretty much the cup in which an acorn lies. The other royal cells have the young queens included in them. Fig. 10. exhibits the sting and all its parts. The sting is composed of a sheath or case, and two shanks, united to each other, and terminating in a sharp point, so as to look like a single part. *b*, The poisonous bag.

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c, The tube that serves to convey the poison from its bag to the thickest part of the sting's sheath. *dd*, The two shanks of the sting, mutually conveying to each other. *ee*, The sheath of the sting. *ff*, The thickest end of the sheath, where the tube opens into it, by which it receives the insect's poison. *g*, The extreme point of the sting, formed by the two shanks of that organ, that are in this place closely united. *hh*, The beards with which the shanks of the sting are armed at their extremities. *i*, The tube that serves to secrete the poison, which it discharges into the poison-bag. *kk*, The two blind extremities of the said tube. *lll*, Two pair of cartilages, of different forms, which are for the most part of a deep black, and articulated among themselves and with the shanks of the sting. *mm*, Two other cartilages less conspicuous than the former, with one pair of which they are articulated. These two cartilages *mm*, are almost entirely of a membranaceous substance. *nnnnnnnn*, Eight places in which the foregoing cartilages are articulated among themselves, and with the shanks of the sting. *ooo*, Four muscles serving to move the sting different ways, by the assistance of the same cartilages. *pp*, Two muscles which draw the shanks of the sting into its sheath. *qq*, Two appendages of the sting which are moved along with it, and seem to answer no other purpose but that of ornament.—Fig. 11. The ovary.—Fig. 12. Six eggs drawn after nature, and placed on their ends: These eggs are oblong, very slender, but somewhat thicker on their upper parts.—Fig. 13. An egg viewed with a microscope: it resembles the skin of a fish, divested of its scale, but still retaining the marks of their insertion.—Fig. 14. Worms of bees of different sizes, drawn after nature. *a*, A worm newly hatched. *bcdc*, Four worms that received more nourishment, and are more grown. *fg*, Two worms still bigger than the former, having had more time to make use of the nourishment provided for them. They are here represented as they lie doubled in their cells. *h*, A worm placed on its belly, so as to show on its back a black line, inclining to a light blue or grey. This line denotes the stomach, which appears in this place through the transparent parts that lie over it. *i*, A worm lying on its back, and beginning to draw in the hinder part of its body, and move its head.—Fig. 15. A full-grown worm viewed with a microscope. *aa*, Its 14 annular incisions or divisions. *b*, The head and eyes, &c. *ccc*, Ten breathing-holes.—Fig. 16. The worm forming its web. *aa*, The sides of the cell that contain it. *b*, The bottom of the cell. *c*, The entrance or door of the cell. The worm is here represented as making its web in the properest manner to shut up this entrance.—Fig. 17. Worm taken out of the web in which it had inclosed itself, and just ready to cast its skin.—Fig. 18. A cell containing the worm changed into a nymph, and perfectly lined with the said worm's web. Likewise the said web entire, with the nymph contained in it, as they appear on opening the cell. *aa*, The sides of the cell, lined with the worm's web. *b*, The mouth of the cell, perfectly closed by the web. *c*, The bottom of the cell. *d*, The web entire, as it appears on opening the cell, which it greatly resembles in form. *e*, The upper part of the web, of a convex form. This part

part shows its filaments pretty distinctly. *f*, The inclosed nymph appearing through the transparent sides of the web. *g*, The bottom of the web, answering to that of the wax-cell.—Fig. 19. Worm changed to a nymph, of its natural size and form, yet so as to exhibit its limbs, which are folded up in a most wonderful manner.—Fig. 20. The nymph of the bee viewed with the microscope, displaying in a distinct manner all the parts of the inclosed insect, and the beautiful manner in which they are laid up. *a*, The head, bloated with humours. *bb*, The eyes, projecting considerably. *cc*, The horns, or antennæ. *d*, The lip. *ee*, The teeth, or jaw-bones. *ff*, The first pair of joints belonging to the proboscis. *h*, The proboscis itself. *ii*, The first pair of legs. *kk*, Two transparent stiff little parts, lying against the lowest joints of the first pair of legs. These little parts are not to be found as they remain in the skin it sheds on quitting the nymph state. *ll*, The second pair of legs. *mm*, The wings. *nn*, The blade-bones. *oo*, The last pair of legs. *pp*, The abdominal rings. *q*, (*g*) The hinder part of the body. The sting projects a little in this place. *r*, Two little parts accompanying the sting. *s*, The anus.—Fig. 21. *a*, A cell full of bees-bread, placed in layers. *b*, Little grains, of which the said substance, viewed with the microscope, appears to consist.

II. *Of the MANAGEMENT of BEES, and most approved Inventions for saving their Lives while we take their Honey and Wax.*

²²
Of the api-
ary. I. *Of the Apiary, and Hives.* Columella directs that the apiary face the south, and be situated in a place neither too hot nor too much exposed to the cold: that it be in a valley, in order that the loaded bees may with the greater ease descend to their homes: that it be near the mansion-house, on account of the conveniency of watching them; but so situated as not to be exposed to noisome smells, or to the din of men or cattle: that it be surrounded with a wall, which however should not rise above three feet high: that, if possible, a running stream be near them; or, if that cannot be, that water be brought near them in troughs, with pebbles or small stones in the water, for the bees to rest on while they drink; or that the water be conducted within gently declining banks, in order that the bees may have safe access to it; they not being able to produce either combs, honey, or food for their maggots, without water: that the neighbourhood of rivers or basons of water with high banks be avoided, because winds may whirl the bees into them, and they cannot easily get on shore from thence to dry themselves; and that the garden in which the apiary stands be well furnished with such plants as afford the bees plenty of good pasture. The trees in this garden should be of the dwarf kind, and their heads bushy, in order that the swarms which settle on them may be the more easily hived.

The proprietor should be particularly attentive that the bees have also in their neighbourhood such plants as yield them plenty of food. Columella enumerates many of these fitted to a warm climate: among them he mentions thyme, the oak, the pine, the sweet-smelling cedar, and all fruit-trees. Experience has taught us, that furze, broom, mustard, clover, heath, &c. are

excellent for this purpose. Pliny recommends broom, in particular, as a plant exceedingly grateful and very profitable to bees.

With regard to hives, those made of straw are generally preferred, on several accounts: they are not liable to be over-heated by the rays of the sun; they keep out cold better than wood or any other materials; and the cheapness renders the purchase of them easy. As the ingenious Mr Wildman's hives are reckoned to be of a preferable construction to any other, we shall give an account of them in his own words.

“ My hives (says he) are seven inches in height and ten in width. The sides are upright, so that the top and bottom arc of the same diameter. A hive holds nearly a peck. In the upper row of straw there is a hoop of about half an inch in breadth; to which are nailed five bars of deal, full a quarter of an inch in thickness, and an inch and quarter wide, and half an inch asunder from one another; a narrow short bar is nailed at each side, half an inch distant from the bars next them, in order to fill up the remaining parts of the circle; so that there are in all seven bars of deal, to which the bees fix their combs. The space of half an inch between the bars allows a sufficient and easy passage for the bees from one comb to another. In order to give great steadiness to the combs, so that, upon moving the hive, the combs may not fall off, or incline out of their direction, a sliok should be run thro' the middle of the hive, in a direction directly across the bars, or at right angles with them. When the hives are made, a piece of wood should be worked into the lower row of straw, long enough to allow a door for the bees, of four inches in length, and half an inch in height.

“ The proprietor of the bees should provide himself with several flat covers of straw, worked of the same thickness as the hives, and a foot in diameter, that so it may be of the same width as the outside of the hives. Before the cover is applied to the hive, a piece of clean paper, of the size of the top of the hive, should be laid over it; and a coat of cow dung, which is the least apt to crack or any cement easily to be obtained, should be laid all round the circumference of the hive. Let the cover be laid upon this, and made fast to the hive with a packing-needle and pack-thread, so that neither cold nor vermin may enter.

“ Each hive should stand single on a piece of deal, or other wood, somewhat larger than the bottom of the hive: That part of the stand which is at the mouth of the hive should project some inches, for the bees to rest on when they return from the field. This stand should be supported upon a single post, two and a half feet high; to which it should be screwed very securely, that high winds, or other accidents, may not blow down both stand and hive. A quantity of foot mixed with barley chaff should be strewed on the ground round the post; which will effectually prevent ants, slugs, and other vermin, from rising up to the hive. The foot and chaff should from time to time be renewed as it is blown or washed away; though, as it is sheltered by the stand, it remains a considerable time, especially if care be taken that no weeds rise through it. Weeds, indeed, should not be permitted to rise near the hive; for they may give shelter to vermin which may be hurtful to the bees.

Bee.

“ The stands for bees should be four yards asunder ; or, if the apiary will not admit of so much, as far asunder as may be, that the bees of one hive may not interfere with those of another hive, as is sometimes the case when the hives are near one another or on the same stand ; for the bees, mistaking their own hives, light sometimes at the wrong door, and a fray ensues, in which one or more may lose their lives.

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Of the pro-
per season
for purcha-
sing hives
of bees.

“ The person who intends to erect an apiary should purchase a proper number of hives at the latter part of the year, when they are cheapest. The hives should be full of combs, and well stored with bees. The purchaser should examine the combs, in order to know the age of the hives. The combs of that season are white, those of the former year are of a darkish yellow ; and where the combs are black, the hives should be rejected, because old hives are most liable to vermin and other accidents.

“ If the number of hives wanted were not purchased in the autumn, it will be necessary to remedy this neglect after the severity of the cold is past in the spring. At this season, bees which are in good condition will get into the fields early in the morning, return loaded, enter boldly, and do not come out of the hive in bad weather ; for when they do, this indicates they are in great want of provisions. They are alert on the least disturbance, and by the loudness of their humming we judge of their strength. They preserve their hives free from all filth, and are ready to defend it against every enemy that approaches.

“ The summer is an improper time for buying bees, because the heat of the weather softens the wax, and thereby renders the combs liable to break, if they are not very well secured. The honey, too, being then thinner than at other times, is more apt to run out of the cells ; which is attended with a double disadvantage, namely, the loss of the honey, and the daubing of the bees, whereby many of them may be destroyed. A first and strong swarm may indeed be purchased ; and, if leave can be obtained, permitted to stand in the same garden till the autumn ; but, if leave is not obtained, it may be carried away in the night after it has been hived.

“ I suppose, that, in the stocks purchased, the bees are in hives of the old construction. The only direction here necessary is, that the first swarm from these stocks should be put into one of my hives ; and that another of my hives should in a few days be put under the old stock, in order to prevent its swarming again.”

25
Of hiving
the swarms.

2. *Of Hiving.* Bees, as has been already observed, never swarm till the hive be too much crowded by the young brood. They first begin to swarm in May, or in the end of April, but earlier or later according to the warmth of the season. They seldom swarm before ten in the morning, and seldom later than three in the afternoon. We may know when they are about to swarm, by clusters of them hanging on the outside of the hive, and by the drones appearing abroad more than usual : But the most certain sign is, when the bees refrain from flying into the fields, though the season be inviting. Just before they take flight, there is an uncommon silence in the hive ; after this, as soon as one takes flight, they all follow. Before the subsequent swarmings, there is a great noise in the hive, which

Bee.

is supposed to be occasioned by a contest whether the young or the old queen should go out. When the bees of a swarm fly too high, they are made to descend lower, by throwing handfuls of sand or dust among them, which they probably mistake for rain. For the same purpose, it is usual to beat on a kettle or frying-pan : This practice may have taken its rise from observing that thunder or any great noise prompts such bees as are in the fields to return home.

As soon as the swarm is settled, the bees which compose it should be got into a hive with all convenient speed, to prevent their taking wing again. If they settle on a small branch of a tree, easy to come at, it may be cut off and laid upon a cloth ; the hive being ready immediately to put over them. If the branch cannot be conveniently cut, the bees may be swept from off it into a hive. Lodge but the queen into the hive, and the rest will soon follow. If the bees must be considerably disturbed in order to get them into a hive, the most advisable way is to let them remain in the place where they have pitched till the evening, when there is less danger of their taking wing. If it be observed that they still hover about the place they first alighted upon, the branches there may be rubbed with rue, or elder-leaves, or any other thing distasteful to them, to prevent their returning to it.

The hive employed on this occasion should be cleaned with the utmost care, and its inside be rubbed very hard with a coarse cloth, to get off the loose straws, or other impurities, which might cost them a great deal of time and labour to gnaw away. It may then be rubbed with fragrant herbs or flowers, the smell of which is agreeable to the bees ; or with honey.

The hive should not be immediately set on the stool where it is to remain ; but should be kept near the place at which the bees settled, till the evening, lest some stragglers should be lost. It should be shaded either with boughs or with a cloth, that the too great heat of the sun may not annoy the bees.

We sometimes see a swarm of bees, after having left their hive, and even alighted upon a tree, return to their first abode. This never happens but when the young queen did not come forth with them, for want of strength, or perhaps courage to truit to her wings for the first time ; or possibly from a consciousness of her not being impregnated.

When a swarm is too few in number for a hive, another may be added. The usual method of thus uniting swarms is very easy. Spread a cloth at night upon the ground close to the hive in which the two casts or swarms are to be united ; lay a stick across this cloth ; then fetch the hive with the new swarm, set it over the stick, give a smart stroke on the top of the hive, and all the bees will drop down upon the cloth in a cluster. This done, throw aside the empty hive, take the other from off the stool, and set this last over the bees, who will soon ascend into it, mix with those already there, and become one and the same family. Others, instead of striking the bees down upon the cloth, place with its bottom upmost the hive in which the united swarms are to live, and strike the bees of the other hive down into it. The former of these hives is then restored to its natural situation, and the bees of both hives soon unite. If some bees still adhere to the other hive, they may be brushed off on the cloth, and they

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Of uniting
swarms.

Bee.

they will soon join their brethren. Or one may take the following method, which gives less disturbance to the bees. Set with its mouth upon the hive into which the young swarm has been put, and set upon it the other hive. The bees in the lower hive, finding themselves in an inverted situation, will soon ascend into the upper.

Though all writers acknowledge, that one of the queens is constantly slain on these occasions, and generally a considerable number of the working bees; yet none of them, Columella excepted, has proposed the easy remedy of killing the queen of the latter cast or swarm before the union is made; a means by which the lives of the working bees may be preserved. This may be done either by intoxicating them and then picking her out, or by searching her out when the bees are beaten down upon the cloth; for this being done in the night, to prevent the battle which might otherwise ensue, there will be no great difficulty in finding her.

A large swarm may weigh eight pounds, and so gradually less, to one pound: consequently a very good one may weigh five or six pounds. All such as weigh less than four pounds should be strengthened, by uniting to each of them a less numerous swarm. The size of the hive should be proportioned to the number of the bees; and, as a general rule, it should be rather under than over sized, because bees require to be kept warmer than a large hive will admit of.

In the *Letters from an American Farmer*, we have the following entertaining account of the swarming of bees, their flight into the woods, and the method of discovering them there. A little experience renders it easy to predict the time of their swarming: but the "difficult point is, when on the wing, to know whether they want to go to the woods or not. If they have previously pitched in some hollow trees, it is not the allurements of salt and water, of fennel, hickory leaves, &c. nor the insect box, that can induce them to fly. They will prefer those rude, rough, habitations, to the best polished mahogany hive. When that is the case with mine, I seldom thwart their inclinations. It is in freedom that they work. Were I to confine them, they would dwindle away and quit their labour. In such excursions we only part for a while. I am generally lure to find them again the following fall.

This elopement of theirs only adds to my recreations. I know how to deceive even their superlative instinct. Nor do I fear losing them, though 18 miles from my house, and lodged in the most lofty trees in the most impervious of our forests. After I have done sowing, by way of recreation I prepare for a week's jaunt in the woods, not to hunt either the deer or the bears, as my neighbours do, but to catch the more harmless bees. I cannot boast that this chase is so noble or so famous among men: but I find it less fatiguing, and so full as profitable; and the last consideration is the only one that moves me. I take with me my dog, as a companion, for he is useless as to this game; my gun, for no man ought to enter the woods without one; my blanket, some provisions, some wax, vermilion, honey, and a small pocket-compass. With these implements I proceed to such woods as are at a considerable distance from any settlements. I carefully examine whether they abound with large trees; if so, I make

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a small fire, on some flat stones, in a convenient place. On the fire I put some wax: close by this fire, on another stone, I drop honey in distinct drops, which I surround with small quantities of vermilion, laid on the stone; and then I retire carefully to watch whether any bees appear. If there are any in that neighbourhood, I rest assured that the smell of the burnt wax will unavoidably attract them. The will soon find out the honey, for they are fond of preying on that which is not their own; and, in their approach, they will necessarily tinge themselves with some particles of vermilion, which will adhere long to their bodies. I next fix my compass, to find out their course; which they keep invariably straight, when they are returning home loaded. By the assistance of my watch, I observe how long those are returning which are marked with vermilion. Thus possessed of the course, and, in some measure, of the distance, which I can easily guess at, I follow the trail, and seldom fail of coming to the tree where those republics are lodged. I then mark it; and thus, with patience, I have found out sometimes 14 swarms in a season; and it is inconceivable what a quantity of honey these trees will sometimes afford. It entirely depends on the size of the hollow, as the bees never rest nor swarm till it is replenished; for, like men, it is only the want of room that induces them to quit the maternal hive. Next I proceed to some of the nearest settlements, where I procure proper assistance to cut down the trees, get all my prey secured, and then return home with my prize. The first bees I ever procured were thus found in the woods by mere accident; for, at that time, I had no kind of skill in this method of tracing them. The body of the tree being perfectly found, they had lodged themselves in the hollow of one of its principal limbs, which I carefully saved off, and, with a good deal of labour and industry, brought it home, where I fixed it up in the same position in which I found it growing. This was in April. I had five swarms that year, and they have been ever since very prosperous. This business generally takes up a week of my time every fall, and to me it is a week of solitary ease and relaxation."

3. *Of shifting the Abode of Bees.* Great improvements may certainly be made in the essential article of the bees, providing plenty of pasture for bees, whenever this subject shall be more carefully attended to than has hitherto been. A rich corn country is well-known to be a barren desert to them during the most considerable part of the year; and therefore the practice of other nations, in shifting the places of abode of their bees, well deserves our imitation.

Columella informs us, that, as few places are so happily situated as to afford the bees proper pasture both in the beginning of the season and also in the autumn, it was the advice of Celsus, that, after the vernal pastures are consumed, the bees should be transported to places abounding with autumnal flowers; as was practiced by conveying the bees from Achaia to Attica, from Eubœa and the Cyclad islands to Syrus; and also in Sicily, where they were brought to Hybla from other parts of the island.

We find by Pliny, that this was likewise the practice of Italy in his time. "As soon," says he, "the spring-food for bees has failed in the valleys near

Bee. our towns, the hives of bees are put into boats, and carried up against the stream of the river, in the night, in search of better pasture. The bees go out in the morning in quest of provisions, and return regularly to their hives in the boats, with the stores they have collected. This method is continued, till the sinking of the boats to a certain depth in the water shows that the hives are sufficiently full; and they are then carried back to their former homes, where their honey is taken out of them." And this is still the practice of the Italians who live near the banks of the Po, (the river which Pliny insinuated particularly in the above-quoted passage).

*Fol. 11.
P. 24.*

M. Maillet relates, in his curious Description of Egypt, that, "spite of the ignorance and rusticity which have got possession of that country, there yet remain in it several footsteps of the industry and skill of the ancient Egyptians. One of their most admirable contrivances is, their sending their bees annually into distant countries, in order to procure them sustenance there, at a time when they could not find any at home; and their afterwards bringing them back, like shepherds who should travel with their flocks, and make them feed as they go. It was observed by the ancient inhabitants of Lower Egypt, that all plants blossomed, and the fruits of the earth ripened, above six weeks earlier in Upper Egypt than with them. They applied this remark to their bees; and the means then made use of by them, to enable these usefully industrious insects to reap advantage from the more forward state of nature there, were exactly the same as are now practised, for the like purpose, in that country. About the end of October, all such inhabitants of the Lower Egypt as have hives of bees, embark them on the Nile, and convey them up that river quite into Upper Egypt; observing to time it so that they arrive there just when the inundation is withdrawn, the lands have been sown, and the flowers begin to bud. The hives thus sent are marked and numbered by their respective owners, and placed pyramidically in boats prepared for the purpose. After they have remained some days at their farthest station, and are supposed to have gathered all the wax and honey they could find in the fields within two or three leagues around; their conductors convey them in the same boats two or three leagues lower down, and there leave the laborious insects so long time as is necessary for them to collect all the riches of this spot. Thus, the nearer they come to the place of their more permanent abode, they find the productions of the earth, and the plants which afford them food, forward in proportion. In fine, about the beginning of February, after having travelled through the whole length of Egypt, gathering all the rich produce of the delightful banks of the Nile, they arrive at the mouth of that river, towards the ocean; from whence they set out, and from whence they are now returned to their several homes: for care is taken to keep an exact register of every district from whence the hives were sent in the beginning of the season, of their numbers, of the names of the persons who sent them, and likewise of the mark or number of the boat in which they were placed."

In many parts of France, floating bee-houses are very common. They have on board one barge, three-score or an hundred bee-hives, well defended from the inclemency of an accidental storm. With these the

Bee. owners suffer themselves to float gently down the river, the bees continually choosing their flowery pasture along the banks of the stream; and thus a single-floating bee-house yields the proprietor a considerable income.

They have also a method of transporting their bees by land, well worth our imitation in many parts of this kingdom. Their first care is, to examine those hives, some of whose honey-combs might be broken or separated by the jolting of the vehicle; they are made fast one to the other, and against the sides of the hive, by means of small sticks, which may be disposed differently as occasion will point out. This being done, every hive is set upon a packing-cloth, or something like it, the threads of which are very wide; the sides of this cloth are then turned up and hid on the outside of each hive, in which state they are tied together with a piece of small pack-tread wound several times round the hive. As many hives as a cart built for that purpose will hold, are afterwards placed in this vehicle. The hives are set two and two, the whole length of the cart. Over these are placed others; which make, as it were, a second story or bed of hives. Those which are stored with combs should always be turned topsyturvy. It is for the sake of their combs, and to fix them the better, that they are disposed in this manner; for such as have but a small quantity of combs in them, are placed in their natural situation. Care is taken in this stowage not to let one hive stop up another, it being essentially necessary for the bees to have air; and it is for this reason they are wrapped up in a coarse cloth, the threads of which were wove very wide, in order that the air may have a free passage, and lessen the heat which these insects raise in their hives, especially when they move about very tumultuously, as often happens in these carts. Those used for this purpose in Yevre, hold from 30 to 48 hives. As soon as all are thus stowed, the caravan sets out. If the season is sultry, they travel only in the night; but a proper advantage is made of cool days. These caravans do not go fast. The horses must not be permitted even to trot: they are led slowly, and through the smoothest roads. When there are not combs in the hives sufficient to support the bees during their journey, the owner takes the earliest opportunity of resting them wherever they can collect wax. The hives are taken out of the cart, then set upon the ground, and after removing the cloth from over them, the bees go forth in search of food. The first field they come to serves them as an inn. In the evening, as soon as they are all returned, the hives are shut up; and being placed again in the cart, they proceed in their journey. When the caravan is arrived at the journey's end, the hives are distributed in the gardens, or in the fields adjacent to the houses of different peasants, who, for a very small reward, undertake to look after them. Thus it is that, in such spots as do not abound in flowers at all seasons, means are found to supply the bees with food during the whole year.

These instances of the great advantages which attend shifting of bees in search of pasture, afford an excellent lesson to many places in this kingdom: they direct particularly the inhabitants of the rich vales, where the harvest for bees ends early, to remove their flocks to places which abound in heath, this plant continuing

See.

in bloom during a considerable part of autumn, and yielding great plenty of food to bees. Those in the neighbourhood of hills and mountains will save the bees a great deal of labour, by taking also the advantage of shutting their places of abode.

4. *Of feeding and defending Bees in Winter.* Providence has ordained, that insects which feed on leaves, flowers, and green succulent plants, are in an insensible or torpid state from the time that the winter's cold has deprived them of the means of subsistence. Thus the bees during the winter are in so lethargic a state, that little food supports them: but as the weather is very changeable, and every warm or sunny day revives them, and prompts them to return to exercise, food becomes necessary on these occasions.

Many hives of bees, which are thought to die of cold in the winter, in truth die of famine; when a rainy summer has hindered the bees from laying in a sufficient store of provisions. The hives should therefore be carefully examined in the autumn, and should then weigh at least 18 pounds.

Columella describes an annual distemper which seizes bees in the spring, when the spurge blossoms, and the elm discloses its seeds; for that, being allured by the first flowers, they feed so greedily upon them, that they surfeit themselves, and die of looseness, if they are not speedily relieved.

The authors of the *Maison Rustique* impute this purging to the bees feeding on pure honey, which does not form a food sufficiently substantial for them, unless they have bee-bread to eat at the same time; and advise giving them a honey-comb taken from another hive, the cells of which are filled with crude wax or bee-bread.

There is still, however, a want of experiments to ascertain both the time and the manner in which bees should be fed. The common practice is to feed them in the autumn, giving them as much honey as will bring the whole weight of the hive to near 20 pounds. To this end, the honey is diluted with water, and then put into an empty comb, split reeds, or, as Columella directs, upon clean wool, which the bees will suck perfectly dry. But the dilution with water makes the honey apt to be candied, and honey in that state is prejudicial to bees.

The following directions given in the *Maison Rustique* seem to be very judicious. Replenish the weak hives in September with such a portion of combs full of honey taken from other hives as shall be judged to be a sufficient supply for them. In order to do this, turn up the weak hive, after taking the precaution of defending yourself with the smoke of rags, cut out the empty combs, and put the full ones in their place; where secure them with pieces of wood run a-cross, in such manner that they may not fall down when the hive is returned to its place. The bees will soon fix them more effectually. If this method be thought too troublesome, set under the hive a plate of liquid honey, unmixed with water, with straws laid across it, and over these a paper pierced full of holes, through which the bees will suck the honey without daubing themselves. This should be done in cloudy or rainy weather, when the bees stir least abroad; and the hive should be covered, to protect the bees from robbers, who might be allured to it by the smell of the honey.

Another circumstance which may render it very ne-

cessary to feed the bees is, when several days of bad weather ensue immediately after they have swarmed; for then, being destitute of every supply beyond what they carried with them, they may be in great danger of starving. In this case, honey should be given them in proportion to the duration of the bad weather.

The degree of cold which bees can endure has not been ascertained. We find that they live in the cold parts of Russia, and often in hollow trees, without any care being taken of them. Their hives are frequently made of the bark of trees, which does not afford them much protection from cold. Mr White, therefore, judiciously observes, that bees which stand on the north side of a building whose height intercepts the sun's beams all the winter, will waste less of their provisions (almost by half) than others which stand in the sun: for coming seldom forth, they eat little; and yet in the spring are as forward to work and swarm as those which had twice as much honey in the autumn before. The owner should, however, examine their state in the winter; and if he finds, that, instead of being clustered between the combs, they fall down in numbers on the floor or bottom of the hive, the hive should be carried to a warmer place, where they will soon recover. He must be cautious in returning them again to the cold, lest the honey be candied.

Where the winters are extremely severe, the authors of the *Maison Rustique* advise to lay on the bottom of an old cask the depth of half a foot of very dry earth, powdered, and pressed down hard, and to set on this the floor with the hive; then, to preserve a communication with the air, which is absolutely necessary, to cut a hole in the cask, opposite to the mouth of the hive, and place a piece of reed, or of alder made hollow, from the mouth of the hive to the hole in the cask; and after this to cover the hive with more of the same dry earth. If there be any room to fear that the bees will not have a sufficiency of food, a plate with honey, covered as before directed, may be put under the hive. If the number of hives be great, boxes may be made of deals nailed together, deep enough to contain the hives when covered with dry earth. The bees will thus remain all the winter free from any danger from cold, hunger, or enemies.

5. *Of taking the Honey and Wax.* In this country it is usual, in seizing the stores of these little animals, to rob them also of their lives. The common method is, That when those which are doomed for slaughter have been marked out (which is generally done in September), a hole is dug near the hive, and a flick at the end of which is a rag that has been dipped in melted brimstone, being stuck in that hole, the rag is set on fire, the hive is immediately set over it, and the earth is instantly thrown up all around, so that none of the smoke can escape. In a quarter of an hour, all the bees are seemingly dead; and they will soon after be irrecoverably so, by being buried in the earth that is returned back into the hole. By this last means it is that they are absolutely killed: for it has been found by experiment, that all the bees which have been affected only by the fume of the brimstone, recover again, excepting such as have been singed or hurt by the flame. Hence it is evident, that the fume of brimstone might be used for intoxicating the bees, with some few precautions. The heaviest and the lightest
hives

See.

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Manner of
management of
bees in
winter.

Tom I.
p. 435.

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Methods of
taking the
honey and
the wax.
Common
method in
this coun-
try.

Bee. hives are alike treated in this manner: the former, because they yield the most profit, with an immediate return; and the latter, because they would not be able to survive the winter. Those hives which weigh from 15 to 20 pounds are thought to be the fittest for keeping.

† Vide *Colu-
mella, lib. ix.
c. 15.* and
*Varro de Re
Rustica,
lib. iii. c. 16.*
³¹
Greek meth-
od of sta-
ring the ho-
ney with the
bees. See
*Wheeler's
Journey into
Greece,
p. 412.*

More humane and judicious methods were practised by the ancients †; and the following simple method is at this day practised in Greece, degenerate as it is. "Mount Hymethus is celebrated for the best honey in all Greece. This mountain was not less famous in times past for bees and admirable honey; the ancients believing that bees were first bred here, and that all other bees were but colonies from this mountain; which if so, we assured ourselves that it must be from this part of the mountain that the colonies were sent; both because the honey here made is the best, and that here they never destroy the bees. It is of a good consistence, of a fair gold-colour, and the same quantity sweetens more water than the like quantity of any other doth. I no sooner knew that they never destroy or impair the flock of bees in taking away their honey, but I was inquisitive to understand their method of ordering the bees; which being an art so worthy the knowledge of the curious, I shall not think it beside the purpose, to relate what I saw, and was informed of to that effect by such as had skill in that place.

Pl. XCVII

"The hives they keep their bees in are made of willows or osiers, fashioned like our common dust-baskets, wide at top and narrow at the bottom, and plastered with clay or loam within and without. They are set as in fig. 1. with the wide end uppermost. The tops are covered with broad flat sticks, which are also plastered over with clay; and, to secure them from the weather, they cover them with a tuft of straw, as we do. Along each of these sticks, the bees fasten their combs; so that a comb may be taken out whole, without the least bruising, and with the greatest ease imaginable. To increase them in spring-time, that is in March or April, until the beginning of May, they divide them; first separating the sticks on which the combs and bees are fastened, from one another, with a knife: so, taking out the first comb and bees together on each side, they put them into another basket, in the same order as they were taken out, until they have equally divided them. After this, when they are both again accommodated with sticks and plaster, they set the new basket in the place of the old one, and the old one in some new place. And all this they do in the middle of the day, at such time as the greatest part of the bees are abroad; who at their coming home, without much difficulty, by this means divide themselves equally. This device hinders them from swarming and flying away. In August, they take out their honey. This they do in the day-time also, while they are abroad; the bees being thereby, say they, disturbed least: at which time they take out the combs laden with honey, as before; that is, beginning at each outside, and so taking away, until they have left only such a quantity of combs, in the middle, as they judge will be sufficient to maintain the bees in winter; sweeping those bees that are on the combs into the basket again, and then covering it with new sticks and plaster."

The Greek method above related was introduced into France in 1754, as we are informed by M. de Reau-
N^o 44.

mur and Du Hamel, in the Memoirs of the Royal Academy for that year, p. 331.

Attempts have been made in our own country, to attain the desirable end of getting the honey and wax without destroying the bees; the most approved of which we shall now relate as concisely as possible.

Mr Thorley, in his *Inquiry into the Nature, Order, and Government of Bees*, thinks colonies preferable to hives, for the following reasons: *First*, The more certain preservation of very many thousands of these useful creatures; *secondly*, Their greater strength (which consists in numbers), and consequently their greater safety from robbers; *thirdly*, Their greater wealth, arising from the united labours of the greater number. He tells us, that he has in some summers taken two boxes filled with honey from one colony; and yet sufficient store has been left for their maintenance during the winter; each box weighing 40 pounds. Add to these advantages, the pleasure of viewing them, with the greatest safety, at all seasons, even in their busiest time of gathering, and their requiring a much less attendance in swarming time. The bees thus managed are also more effectually secured from wet and cold, from mice and other vermin.

His boxes are made of deal, which, being spongy, sucks up the breath of the bees sooner than a more solid wood would do. Yellow dram-deal thoroughly seasoned is the best.

An octagon, being nearer to a sphere, is better than a square form; for as the bees, in winter, lie in a round body near the centre of the hive, a due heat is then conveyed to all the out-parts, and the honey is kept from candying.

The dimensions which Mr Thorley, after many years experience, recommends for the boxes, are ten inches depth, and 12 or 14 inches breadth in the inside. He has tried boxes containing a bushel or more, but found them not to answer the design like those of a lesser size. The larger are much longer in filling; so that it is later ere you come to reap the fruits of the labour of the bees: nor is the honey there so good and fine, the effluvia even of their own bodies tainting it.

The best and purist honey is that which is gathered in the first five or six weeks: and in boxes of less dimensions you may take in a month or little more, provided the season be favourable, a box full of the finest honey.

The top of the box should be made of an entire board a full inch thick after it has been planed; and it should project on all sides at least an inch beyond the dimensions of the box. In the middle of this top there must be a hole five inches square, for a communication between the boxes; and this hole should be covered with a sliding shutter, of deal or elm, running easily in a groove over the back window. The eight pannels, nine inches deep, and three quarters of an inch thick when planed, are to be let into the top so far as to keep them in their proper places; to be secured at the corners with plates of brass, and to be cramped with wires at the bottom to keep them firm; for the heat in summer will try their strength. There should be a glass-window behind, fixed in a frame, with a thin deal-cover, two small brass hinges, and a button to fasten it. This window will be sufficient for inspecting the progress of the bees. Two brass handles, one on
each

Bee. each side, are necessary to lift up the box: these should be fixed in with two thin plates of iron, near three inches long, so as to turn up and down, and put three inches below the top-board, which is nailed close down with sprigs to the other parts of the box.

Those who choose a frame within, to which the bees may fasten their combs, need only use a couple of deal sticks of an inch square, placed across the box, and supported by two pins of brass; one an inch and half below the top, and the other two inches below it; by which means the combs will quickly find a rest. One thing more, which perfects the work, is, a passage, four or five inches long, and less than half an inch deep, for the bees to go in and out at the bottom of the box.

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Management of
bees in colonies, and
method of
taking their
honey and
wax.

1. In keeping bees in colonies, an house is necessary, or at least a shade; without which the weather, especially the heat of the sun, would soon rend the boxes to pieces.

Your house may be made of any boards you please, but deal is the best. Of whatever sort the materials are, the house must be painted, to secure it from the weather.

The length of this house, we will suppose for six colonies, should be full 12 feet and an half, and each colony should stand a foot distance from the other. It should be three feet and an half high, to admit four boxes one upon another; but if only three boxes are employed, two feet eight inches will be sufficient. Its breadth in the inside should be two feet. The four corner-posts should be made of oak, and well fixed in the ground, that no stormy winds may overturn it; and all the rails should be of oak, supported by several uprights of the same, before and behind, that they may not yield or sink under 6, 7, or 800 weight, or upwards. The floor of the house (about two feet from the ground) should be strong and smooth, that the lowest box may stand close to it.

This floor may be made with boards or planks of deal the full length of the bee-house; or, which is preferable, with a board or plank to each colony, of two feet four inches long, and fixed down to the rails; and that part which appears at the front of the house may be cut into a semicircle, as a proper alighting place for the bees. Plane it to a slope, that the wet may fall off. When this floor to a single colony wants to be repaired, it may easily be removed, and another be placed in its room, without disturbing the other colonies, or touching any other part of the floor.

Upon this floor, at equal distances, all your colonies must be placed, against a door or passage cut in the front of the house.

Only observe farther, to prevent any false step, that as the top-board of the box (being a full inch broader than the other part) will not permit the two mouths to come together, you must cut a third in a piece of deal of a sufficient breadth, and place it between the other two, so close, that not a bee may get that way into the house. And fixing the said piece of deal down to the floor with two lath-nails, you will find afterwards to be of service, when you have occasion either to raise a colony, or take a box of honey, and may prove a means of preventing a great deal of trouble and mischief.

The house being in this forwardness, you may cover
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it to your own mind, with boards, fine slates, or tiles. But contrive their position so as to carry off the wet, and keep out the cold, rain, snow, or whatever might any way hurt and prejudice them.

Bee.

The back-doors may be made of half-inch deal, two of them to shut close in a rabbet, cut in an upright pillar, which may be so contrived, as to take in and out, by a mortise in the bottom rail, and a notch in the inside of the upper rail, and fastened with a strong hasp. Place these pillars in the spaces between the colonies.

Concluding your house made after this model, without front doors, a weather-board will be very necessary to carry the water off from the places where the bees settle and rest.

Good painting will be a great preservative. Forget not to paint the mouths of your colonies with different colours, as red, white, blue, yellow, &c. in form of a half-moon, or square, that the bees may the better know their own home. Such diversity will be a direction to them.

Thus your bees are kept warm in the coldest winter; and in the hottest summer greatly refreshed by the cool air, the back-doors being set open, without any air-holes made in the boxes.

Dr Warder observes, that in June, July, and August, when the colonies come to be very full, and the weather proves very hot, the appearance of a shower drives the bees home in such crowds, that pressing to get in, they stop the passage so close, that those within are almost suffocated for want of air; which makes these last so uneasy, that they are like mad things. In this extremity, he has lifted the whole colony up a little on one side; and by thus giving them air, has soon quieted them. He has known them, he says, come pouring out, on such an occasion, in number sufficient to have filled at once two or three quarts; as if they had been going to swarm. To prevent this inconvenience, he advises cutting a hole two inches square in about the middle of one of the hinder panels of each box. Over this hole, nail, in the inside of the box, a piece of tin-plate punched full of holes so small that a bee cannot creep through them; and have over it, on the outside, a very thin slider, made to run in grooves: so that, when it is thrust home, all may be close and warm; and when it is opened, in very hot weather, the air may pass through the holes, and prevent the suffocating heat. Or holes may be bored in the panels themselves, on such an emergency, in a colony already settled.

Such a thorough passage for the air may be convenient in extreme heat, which is sometimes so great as to make the honey run out of the combs. The Memoirs of the truly laudable Berne Society, for the year 1764, give us a particular instance of this, when they say, that, in 1761, many in Switzerland were obliged to smother their bees, when they saw the honey and wax trickling down; not knowing any other remedy for the losses they daily sustained. Some shaded their hives from the sun, or covered them with clothes wet several times a-day, and watered the ground all around.

The best time to plant the colonies is, either in spring with new hocks full of bees, or in summer with swarms. If swarms are used, procure if possible two of the same day: live them either in two boxes or in

Bee.

a hive and a box: at night, place them in the bee-house, one over the other; and with a knife and a little lime and hair, stop close the mouth of the hive or upper box, so that not a bee may be able to go in or out but at the front-door. This done, you will in a week or ten days with pleasure see the combs appear in the boxes; but if it be an hive, nothing can be seen till the bees have wrought down into the box. Never plant a colony with a single swarm, as Mr Thorley says he has sometimes done, but with little success.

When the second box, or the box under the hive, appears full of bees and combs, it is time to raise your colony. This should be done in the dusk of the evening, and in the following manner.

Place your empty box, with the sliding shutter drawn back, behind the house, near the colony that is to be raised, and at nearly the height of the floor: then lifting up the colony with what expedition you can, let the empty box be put in the place where it is to stand, and the colony upon it; and shut up the mouth of the then upper box with lime and hair, as before directed.

When, by the help of the windows in the back of the boxes, you find the middle box full of combs, and a quantity of honey sealed up in it, the lowest box half full of combs, and few bees in the uppermost box, proceed thus.

About five o'clock in the afternoon, drive close with a mallet the sliding shutter under the hive or box that is to be taken from the colony. If the combs are new, the shutter may be forced home without a mallet; but be sure it be close, that no bees may ascend into the hive or box to be removed. After this, shut close the doors of your house, and leave the bees thus cut off from the rest of their companions, for the space of half an hour or more. In this space of time, having lost their queen, they will fill themselves with honey, and be impatient to be set at liberty.

If, in this interval, you examine the box or boxes beneath, and observe all to be quiet in them, you may be confident that the queen is there, and in safety. Hereupon raise the back part of the hive or box so far, by a piece of wood slipped under it, as to give the prisoners room to come out, and they will return to their fellows: then lifting the box from off the colony, and turning its bottom upmost, cover it with a cloth all night; and the next morning, when this cloth is removed, the bees that have remained in it will return to the colony. Thus you have a hive or box of honey, and all your bees safe.

If the bees do not all come out in this manner, Dr Warder's method may be followed, especially if it be with a hive. It is to place the hive with the small end downward in a pail, peck, or flower-pot, so as to make it stand firm; then to take an empty hive, and set it upon the former, and to draw a cloth tight round the joining of the two hives, so that none of the bees may be able to get out: after this, to strike the full hive so smartly as to disturb the bees that are in it, but with such pauses between the strokes as to allow them time to ascend into the empty hive, which must be held fast whilst this is doing, lest it fall off by the shaking of the other. When you perceive by the noise of the bees in the upper hive, that they are got into this last, carry it to a cloth spread for this purpose before the

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colony, with one end fastened to the landing-place, and knock them out upon it: they will soon crawl up the cloth, and join their fellows, who will gladly receive them.

Mr Thorley next gives an account of his narcotic, and of the manner of using it.

The method which he has pursued with great success for many years, and which he recommends to the public as the most effectual for preserving bees in common hives, is incorporation, or uniting two stocks into one, by the help of a peculiar fume or opiate, which will put them entirely in your power for a time to divide and dispose of at pleasure. But as that dominion over them will be of short duration, you must be expeditious in this business.

The queen is immediately to be searched for, and killed. Hives which have swarmed twice, and are consequently reduced in their numbers, are the fittest to be joined together, as this will greatly strengthen and improve them. If a hive which you would take is both rich in honey and full of bees, it is but dividing the bees into two parts, and putting them into two boxes instead of one. Examine whether the stock to which you intend to join the bees of another, have honey enough in it to maintain the bees of both: it should weigh full 20 pounds.

The narcotic, or stupifying fume, is made with the *fungus maximus* or *pulverulentus*, the large mushroom, commonly known by the name of *bunt*, *puckfish*, or *frog-cheese*. It is as big as a man's head, or bigger: when ripe; it is of a brown colour, turns to powder, and is exceeding light. Put one of these pucks into a large paper, press it therein to two-thirds or near half the bulk of its former size, and tie it up very close; then put it into an oven some time after the household bread has been drawn, and let it remain there all night: when it is dry enough to hold fire, it is fit for use. The manner of using it is thus:

Cut off a piece of the puck, as large as a hen's egg, and fix it in the end of a small stick slit for that purpose, and sharpened at the other end; which place so that the puck may hang near the middle of an empty hive. This hive must be set with the mouth upward, in a pail or bucket which should hold it steady, near the stock you intend to take. This done, set fire to the puck, and immediately place the stock of bees over it, tying a cloth round the hives, that no smoke may come forth. In a minute's time, or little more, you will hear the bees fall like drops of hail into the empty hive. You may then beat the top of the full hive gently with your hand, to get out as many of them as you can: after this, loosing the cloth, lift the hive off to a table, knock it several times against the table, several more bees will tumble out, and perhaps the queen among them. She often is one of the last that falls. If she is not there, search for her among the main body in the empty hive, spreading them for this purpose on a table.

You must proceed in the same manner with the other hive, with the bees of which these are to be united. One of the queens being secured, you must put the bees of both hives together, mingle them thoroughly, and drop them among the combs of the hive which they are intended to inhabit. When they are all in, cover it with a packing or other coarse cloth which will admit

Bee. admit air, and let them remain shut up all that night and the next day. You will soon be sensible that they are awaked from this sleep.

The second night after their union, in the dusk of the evening, gently remove the cloth from off the mouth of the hive (taking care of yourself), and the bees will immediately sally forth with a great noise; but being too late, they will soon return: then inserting two pieces of tobacco-pipes to let in air, keep them confined for three or four days, after which the door may be left open.

The best time for uniting bees is, after their young brood are all out, and before they begin to lodge in the empty cells. As to the hour of the day, he advises young practitioners to do it early in the afternoon, in order that having the longer light, they may the more easily find out the queen. He never knew such combined stocks conquered by robbers. They will either swarm in the next summer, or yield an hive full of honey.

³⁴ **Glass-hives.** Mr N. Thornley, son of the abovementioned clergyman, has added to the edition which he has given of his father's book, a postscript, purporting, that persons who choose to keep bees in glass-hives may, after uncovering the hole at the top of a flat-topped straw-hive, or box, place the glass over it so close that no bee can go in or out but at the bottom of the live or box. The glass-hive must be covered with an empty hive or with a cloth, that too much light may not prevent the bees from working. As soon as they have filled the straw-hive or box, they will begin to work up into the glass-hive. He tells us, that he himself has had one of these glass-hives filled by the bees in 30 days in a fine season; and that it contained 38 pounds of fine honey. When the glass is completely filled, slide a tin-plate between it and the hive or box, so as to cover the passage, and in half an hour the glass may be taken off with safety. What few bees remain in it, will readily go to their companions. He has added a glass window to his straw-hives, in order to see what progress bees make; which is of some importance, especially if one hive is to be taken away whilst the season still continues favourable for their collecting of honey: for when the combs are filled with honey, the cells are sealed up, and the bees forsake them, and reside mostly in the hive in which their works are chiefly carried on. Observing also that the bees were apt to extend their combs thro' the passage of communication in the upper hive, whether glass or other, which rendered it necessary to divide the comb when the upper hive was taken away, he now puts in that passage a wire screen or netting, the meshes of which are large enough for a loaded bee to go easily through them. This prevents the joining of the combs from one box to the other, and consequently obviates the necessity of cutting them, and of spilling some of the honey, which running down among **Pl. XCVII.** a crowd of bees, used before to incommode them much, it being difficult for them to clear their wings of it. **Fig. 2.** is a drawing of one of his colonies.

³⁵ **Of bees in boxes, and method of taking their honey and wax.** 2. The reverend Mr White informs us, that his fondness for these little animals soon put upon him an endeavour if possible to save them from *fire* and *brimstone*; that he thought he had reason to be content to share their labours for the present, and great reason to

rejoice if he could at any time preserve their lives, to work for him another year; and that the main drift of his observations and experiments has therefore been, to discover an easy and cheap method, suited to the abilities of the common people, of taking away so much honey as can be spared, without destroying or starving the bees; and by the same means to encourage seasonable swarms.

In his directions how to make the bee-boxes of his inventing, he tells us, speaking of the manner of constructing a single one, that it may be made of deal or any other well-seasoned boards which are not apt to warp or split. The boards should be near an inch thick; the figure of the box square, and its height and breadth nine inches and five eighths, every way measuring within. With these dimensions it will contain near a peck and an half. The front-part must have a door cut in the middle of the bottom-edge, three inches wide, and near half an inch in height, which will give free liberty to the bees to pass through, yet not be large enough for their enemy the mouse to enter. In the back-part you must cut a hole with a rabbet in it, in which you are to fix a pane of the clearest and best crown-glass, about five inches in length and three in breadth, and fasten it with putty: let the top of the glass be placed as high as the roof within-side, that you may see the upper part of the combs, where the bees with their riches are mostly placed. You will by this means be better able to judge of their state and strength, than if your glass was fixed in the middle. The glass must be covered with a thin piece of board, by way of shutter, which may be made to hang by a string, or turn upon a nail, or slide sideways between two mouldings. Such as are desirous of seeing more of the bees works, may make the glass as large as the box will admit without weakening it too much; or they may add a pane of glass on the top, which must likewise be covered with a shutter, fastened down with pegs, to prevent accidents.

The side of the box which is to be joined to another box of the same form and dimensions, as it will not be exposed to the internal air, may be made of a piece of slit deal not half an inch thick. This he calls the *side of communication*, because it is not to be wholly included: a space is to be left at the bottom the whole breadth of the box, and a little more than an inch in height; and a hole or passage is to be made at top, three inches long, and more than half an inch wide. Through these the bees are to have a communication from one box to the other. The lower communication being on the floor, our labourers, with their burdens, may readily and easily ascend into either of the boxes. The upper communication is only intended as a passage between the boxes, resembling the little holes or narrow passages which may be observed in the combs formed by our sagacious architects, to save time and shorten the way when they have occasion to pass from one comb to another; just as in populous cities, there are narrow lanes and alleys passing transversely from one large street to another.

In the next place you are to provide a loose board, half an inch thick, and large enough to cover the side where you have made the communications. You are likewise to have in readiness several little iron staples,

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an inch and half long, with the two points or ends lended down more than half an inch. The use of these will be seen presently.

You have now only to fix two sticks crossing the box from side to side, and crossing each other, to be a stay to the combs; one about three inches from the bottom, the other the same distance from the top; and when you have painted the whole, to make it more durable, your box is finished.

The judicious bee-master will here observe, that the form of the box now described is as plain as possible for it to be. It is little more than five square pieces of board nailed together; so that a poor cottager who has but ingenuity enough to saw a board into the given dimensions, and to drive a nail, may make his own boxes well enough, without the help or expence of a carpenter.

No directions are necessary for making the other box, which must be of the same form and dimensions. The two boxes differ from each other only in this, that the side of communication of the one must be on your right hand; of the other, on your left. Fig. 3. represents two of these boxes, with their openings of communication, ready to join to each other.

Mr White's manner of hiving a swarm into one or both of these boxes is thus:

You are to take the loose board, and fasten it to one of the boxes, so as to stop the communications. This may be done by three of the staples before mentioned; one on the top of the box near the front; the two others on the back, near the top and near the bottom. Let one end of the staple be thrust into a gimlet-hole made in the box, so that the other end may go as tight as can be over the loose board, to keep it from slipping when it is handled. The next morning, after the bees have been hived in this box, the other box should be added, and the loose board should be taken away. This will prevent a great deal of labour to the bees, and save to the proprietor.

Be careful to fasten the shutter so close to the glass, that no light may enter through it; for the bees seem to look upon such light as a hole or breach in their house, and on that account may not so well like their new habitation. But the principal thing to be observed at this time is, to cover the box as soon as the bees are hived with a linnen cloth thrown closely over it, or with green boughs to protect it from the piercing heat of the sun. Boxes will admit the heat much sooner than straw-hives; and if the bees find their house too hot for them, they will be wise enough to leave it. If the swarm be larger than usual, instead of fastening the loose board to one box, you may join two boxes together with three staples, leaving the communication open from one to the other, and then hive your bees into both. In all other respects, they are to be hived in boxes after the same manner as in common hives.

The door of the second box should be carefully stopped up, and be kept constantly closed, in order that the bees may not have an entrance but through the first box.

When the boxes are set in the places where they are to remain, they must be screened from the summer's sun, because the wood will otherwise be heated to a greater degree than either the bees or their works can bear; and they should likewise be screened from the

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winter's sun, because the warmth of this will draw the bees from that lethargic state which is natural to them, as well as many other insects in the winter-season. For this purpose, and also to shelter the boxes from rain, our ingenious clergyman has contrived the following frame.

Fig. 4. represents the front of a frame for twelve colonies. *a, a*, are two cells of oak lying flat on the ground, more than four feet long. In these cells are fixed four oaken posts, about the thickness of such as are used for drying linen. The two posts *b, b*, in the front, are about six feet two inches above the cells: the other two, standing backward, five feet eight inches. You are next to nail some boards of slit deal horizontally from one of the fore-posts to the other, to screen the bees from the sun. Let these boards be seven feet seven inches in length, and nailed to the inside of the posts; and be well seasoned, that they may not shrink or gape in the joints. *c, c*, Are two splints of deal, to keep the boards even, and strengthen them.

Fig. 5. represents the back of the frame. *d, d, d, d*, Are four strong boards of the same length with the frame, on which you are to place the boxes. Let the upper side of them be very smooth and even, that the boxes may stand true upon them: or it may be still more advisable, to place under every pair of boxes a smooth thin board, as long as the boxes, and about a quarter of an inch wider. The bees will soon fasten the boxes to this board in such manner that you may move or weigh the boxes and board together, without breaking the wax or resin, which for many reasons ought to be avoided. These floors must be supported by pieces of wood or bearers, which are nailed from post to post at each end. They are likewise to be well nailed to the frame, to keep them from sinking with the weight of the boxes. *f* Represents the roof, which projects backward about seven or eight inches beyond the boxes, to shelter them from rain. You have now only to cut niches or holes in the frame, over against each mouth or entrance into the boxes, at *h, h, h*, in fig. 4. Let these niches be near four inches long; and under each you must nail a small piece of wood for the bees to alight upon. The morning or evening sun will shine upon one or both ends of the frame, let its aspect be what it will: but you may prevent its over-heating the boxes, by a loose board set up between the posts, and kept in by two or three pegs.

The same gentleman, with great humanity, observes, that no true lover of bees ever lighted the fatal match without much concern; and that it is evidently more to our advantage, to spare the lives of our bees, and be content with part of their stores, than to kill and take possession of the whole.

About the latter end of August, says he, by a little inspection through your glasses, you may easily discover which of your colonies you may lay under contribution. Such as have filled a box and an half with their works, will pretty readily yield you the half box. But you are not to depend upon the quantity of combs without examining how they are stored with honey. The bees should, according to him, have eight or nine pounds left them, by way of wages for their summer's work.

The most proper time for this business is the middle of the day; and as you stand behind the frame, you will

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will need no armour, except a pair of gloves. The operation itself is very simple, and easily performed, thus: Open the mouth of the box you intend to take; then with a thin knife cut through the resin with which the bees have joined the boxes to each other, till you find that you have separated them; and after this, thrust a sheet of tin gently in between the boxes. The communication being hereby stopped, the bees in the fullest box, where it is most likely the queen is, will be a little disturbed at the operation; but those in the other box where we suppose the queen is not, will run to and fro in the utmost hurry and confusion, and send forth a mournful cry, easily distinguished from their other notes. They will issue out at the newly opened door; not in a body as when they swarm, nor with such calm and cheerful activity as when they go forth to their labours; but by one or two at a time, with a wild flutter and visible rage and disorder. This, however, is soon over: for as soon as they get abroad and spy their fellows, they fly to them instantly and join them at the mouth of the other box. By this means, in an hour or two, for they go out slowly, you will have a box of pure honey, without leaving a bee in it to molest you; and likewise without dead bees, which, when you burn them, are often mixed with your honey, and both waste and damage it.

Mr White acknowledges, that he has sometimes found this method fail, when the mouth of the box to be taken away has not been constantly and carefully closed: the bees will in this case get acquainted with it as an entrance; and when you open the mouth in order to their leaving this box, many of them will be apt to return, and the communication being stopped, will in a short time carry away all the honey from this to the other box; so much do they abhor a separation. When this happens, he has recourse to the following expedient, which he thinks infallible. He takes a piece of dead, a little larger than will cover the mouth of the box, and cuts in it a square nich somewhat more than half an inch wide. In this nich he hangs a little trap-door, made of a thin piece of tin, turning upon a pin, with another pin crossing the nich a little lower so as to prevent the hanging door from opening both ways. This being placed close to the mouth, the bees which want to get out will easily thrust open the door outwards, but cannot open it the other way to get in again; so must, and will readily, make to the other box, leaving this in about the space of two hours, with all its store, justly due to the tender hearted bee-master as a ransom for their lives.

What led Mr White to prefer collateral boxes to those before in use, was, to use his own words, his "compassion for the poor bees, who, after traversing the fields, return home weary and heavy laden, and must perhaps deposit their burden up two pair of stairs, or in the garret. The lower room, it is likely, is not yet furnished with stairs: for, as is well known, our little architects lay the foundation of their structures at the top, and build downward. In this case, the weary little labourer is to drag her load up the sides of the walls: and when she has done this, she will travel many times backward and forward, as I have frequently seen, along the roof, before she finds the door or passage into the second story; and here again she is perplexed with a like puzzling labyrinth, before she

gets into the third. What a waste is here of that precious time which our bees value so much, and which they employ so well! and what an expence of strength and spirits, on which their support and sustenance depend! In the collateral boxes, the rooms are all on the ground-floor; and because I know my bees are wise enough to value convenience more than state, I have made them of such a moderate, though decent, height, that the bees have much less way to climb to the top of them than they have to the crown of a common hive."

Mr Wildman's hives have been already described ³⁵ Of the management of bees in Mr Wildman's hives. (n^o 23, 24.) A good swarm will soon fill one of these hives, and therefore another hive may be put under it the next morning. The larger space allowed the bees will excite their industry in filling them with combs. The queen will lay some eggs in the upper hive; but so soon as the lower hive is filled with combs, she will lay most of them in it. In little more than three weeks, all the eggs laid in the upper hive will be turned into bees; and if the season is favourable, their cells will be soon filled with honey.

As soon as they want room, a third hive should be placed under the two former; and in a few days after the end of three weeks from the time the swarm was put into the hive, the top hive may be taken away at noon of a fair day; and if any bees remain in it, carry it to a little distance from the stand, and turning its bottom up, and striking it on the sides, the bees will be alarmed, take wing, and join their companions in the second and third hives. If it is found that the bees are very unwilling to quit it, it is probable that the queen remains among them. In this case, the bees must be treated in the manner that shall be directed when we describe Mr Wildman's method of taking the honey and the wax. The upper hive now taken away should be put in a cool place, in which no vermin, mice, &c. can come at the combs, or other damage can happen to them, and be thus preserved in reserve.

When the hives seem to be again crowded, and the upper hive is well stored or filled with honey, a fourth hive should be placed under the third, and the upper hive be taken off the next fair day at noon, and treated as already directed. As the honey made during the summer is the best, and as it is needless to keep many full hives in store, the honey may be taken out of the combs of this second hive for use.

If the season is very favourable, the bees may still fill a third hive. In this case, a fifth hive must be put under the fourth, and the third taken away as before. The bees will then fill the fourth for their winter store.

As the honey of the first hive is better than the honey collected so late as that in the third, the honey may be taken out of the combs of the first, and the third may be preserved with the same care as directed for that.

In the month of September, the top hive should be examined: if full, it will be a sufficient provision for the winter; but if light, that is, not containing 20 pounds of honey, the more the better, then, in the month of October, the fifth hive should be taken away, and the hive kept in reserve should be put upon the remaining one, to supply the bees with abundant provisions for the winter. Nor need the owner grudge them this ample store; for they are faithful stewards, and will

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will be proportionally richer and more forward in the spring and summer, when he will reap an abundant profit. The fifth hive which was taken away should be carefully preserved during the winter, that it may be restored to the same flock of bees, when an additional hive is wanted next summer; or the first swarm that comes off may be put into it. The combs in it, if kept free from filth and vermin, will save much labour, and they will at once go to the collecting of honey.

It is almost needless to observe, that when the hives are changed, a cover, as already directed (see no 23.) should be put upon every upper hive; and that when a lower hive becomes an upper hive, the door of it should be shut up, that so their only passage out shall be by the lower hive; for otherwise the queen would be apt to lay eggs in both indiscriminately. The whole of the above detail of the management of one hive may be extended to any number: it may be proper to keep a register to each set; because, in restoring hives to the bees, they may be better pleased at receiving their own labours than that of other flocks.

If in the autumn the owner has some weak hives, which have neither provision nor numbers sufficient for the winter, it is advisable to join the bees to richer hives: for the greater number of bees will be a mutual advantage to one another during the winter, and accelerate their labours much in the spring. For this purpose, carry a poor and a richer hive into a room, a little before night: then force the bees out of both hives into two separate empty hives, in a manner that shall be hereafter directed: shake upon a cloth the bees out of the hive which contains the fewest; search for the queen; and as soon as you have secured her with a sufficient retinue, bring the other hive which contains the greater number, and place it on the cloth on which the other bees are, with a support under one side, and with a spoon shovel the bees under it. They will soon ascend; and, while under this impression of fear, will unite peaceably with the other bees; whereas, had they been added to the bees of the richer hive, while in possession of their castle, many of the new-comers must have paid with their lives for their intrusion.

It appears from the account of the management of bees in Mr Wildman's hives, that there is very little art wanting to cause the bees to quit the hives which are taken away, unless a queen happens by chance to be among them. In that case, the same means may be used as are necessary when we would rob one of the common hives of part of their wealth. The method is as follows:

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This method
of taking
the honey
and wax.

Remove the hive from which you would take the wax and honey into a room, into which admit but little light, that it may at first appear to the bees as if it was late in the evening. Gently invert the hive, placing it between the frames of a chair or other steady support, and cover it with an empty hive, keeping that side of the empty hive raised a little, which is next the window, to give the bees sufficient light to get up into it. While you hold the empty hive steadily supported on the edge of the full hive, between your side and your left arm, keep striking with the other hand all round the full hive from top to bottom, in the manner of beating a drum, so that the bees may be frightened by the continued noise from all quarters; and they will in consequence mount out of the full hive in-

to the empty one. Repeat the strokes rather quick than strong round the hive, till all the bees are got out of it, which in general will be in about five minutes. It is to be observed, that the fuller the hive is of bees, the sooner they will have left it. As soon as a number of them have got into the empty hive, it should be raised a little from the full one, that the bees may not continue to run from the one to the other, but rather keep ascending upon one another.

So soon as all the bees are out of the full hive, the hive in which the bees are must be placed on the stand from which the other hive was taken, in order to receive the absent bees as they return from the fields.

If this is done early in the season, the operator should examine the royal cells, that any of them that have young in them may be saved, as well as the combs which have young bees in them, which should on no account be touched, though by sparing them a good deal of honey be left behind. Then take out the other combs with a long, broad, and pliable knife, such as the apothecaries make use of. The combs should be cut from the sides and crown as clean as possible, to save the future labour of the bees, who must lick up the honey spilt, and remove every remains of wax; and then the sides of the hive should be scraped with a table-spoon, to clear away what was left by the knife. During the whole of this operation, the hive should be placed inclined to the side from which the combs are taken, that the honey which is spilt may not daub the remaining combs. If some combs were unavoidably taken away, in which there are young bees, the parts of the combs in which they are should be returned into the hive, and secured by sticks in the best manner possible. Place the hive then for some time upright, that any remaining honey may drain out. If the combs are built in a direction opposite to the entrance, or at right angles with it, the combs which are the furthest from the entrance are to be preferred; because there they are best stored with honey, and have the fewest young bees in them.

Having thus finished taking the wax and honey, the next business is to return the bees to their old hive; and for this purpose place a table covered with a clean cloth near the stand, and giving the hive in which the bees are a sudden shake, at the same time striking it pretty forcibly, the bees will be shaken on the cloth. Put their own hive over them immediately, raised a little on one side, that the bees may the more easily enter; and when all are entered, place it on the stand as before. If the hive in which the bees are be turned bottom uppermost, and their own hive be placed over it, the bees will immediately ascend into it, especially if the lower hive is struck on the sides to alarm them.

As the chief object of the bees during the spring and beginning of the summer is the propagation of their kind, honey during that time is not collected in such quantity as it is afterwards: and on this account it is scarcely worth while to rob a hive before the latter end of June; nor is it safe to do it after the middle of July, lest rainy weather may prevent their restoring the combs they have lost, and laying in a stock of honey sufficient for the winter, unless there is a chance of carrying them to a rich pasture.

BEE is also used figuratively to denote sweetness, industry,

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Beer.

dustry, &c. Thus Xenophon is called the *Attic bee*, on account of the great sweetness of his style. Antonius got the denomination *Melissus* or *Bee*, on account of his collection of common-places.—Leo Allatius gave the appellation *apex urbanae* to the illustrious men at Rome from the year 1630 to the year 1632.

BEER'S-BREAD. See BEE, n° 12. par. ult.

BEER-EATER, in zoology. See MEROPS.

BEER-FLOWER. See OPHRYS.

BEER-GLUE, called by the ancients *propolis*, is a soft, unctuous, glutinous matter, employed by bees to cement the combs to the hives, and to close up the cells. See BEE, n° 13.

BEER-HIVES. See BEE, n° 19, 34, 36.

BEECH-TREE, in botany. See FAGUS.

BECH-MUST, the fruit of the beech tree, said to be good for fattening hogs, deer, &c.—It has sometimes, even to men, proved an useful substitute for bread. Chios is said to have endured a memorable siege by means of it.

BECH-OIL, an oil drawn by expression from the mast of the beech-tree, after it has been shelled and pounded. This oil is very common in Picardy, and used there and in other parts of France instead of butter; but most of those who take a great deal of it complain of pains and a heaviness in the stomach.

BEEF, the flesh of black-cattle prepared for food. According to Dr Cullen †, beef, though of a more firm texture and less soluble than mutton, is equally alkaliescent, perspirable, and nutritious: and if in the southern countries it is not esteemed so, it is on account of its imperfection there.

BEELE, a kind of pick-axe, used by the miners for separating the ores from the rocks in which they lie: this instrument is called a *tubber* by the miners of Cornwall.

BEER, is a spirituous liquor made from any farinaceous grain, but generally from barley. It is, properly speaking, the wine of barley. The meals of any of these grains being extracted by a sufficient quantity of water, and remaining at rest in a degree of heat requisite for the spirituous fermentation, naturally undergo this fermentation, and are changed into a vinous liquor. But as all these matters render the water mucilaginous, fermentation proceeds slowly and imperfectly in such liquors. On the other side, if the quantity of farinaceous matter be so diminished that its extract or decoction may have a convenient degree of fluidity, this liquor will be impregnated with so small a quantity of fermentable matter, that the beer or wine of the grain will be too weak, and have too little taste.

These inconveniences are remedied by preliminary operations which the grain is made to undergo.—These preparations consist in steeping it in cold water, that it may soak and swell to a certain degree; and in laying it in a heap with a suitable degree of heat, by means of which, and of the imbibed moisture, a germination begins, which is to be stopped by a quick drying, as soon as the bud shows itself. To accelerate this drying, and render it more complete, the grain is slightly roasted, by making it pass down an inclined canal sufficiently heated. This germination, and this slight roasting, changes considerably the nature of the mucilaginous fermentable matter of the grain. The germi-

nation attenuates much, and in some measure totally destroys, the viscosity of the mucilage; and it does this, when not carried too far, without depriving the grain of any of its disposition to ferment. On the contrary, it changes the grain into a saccharine substance, as may be perceived by mashing grains beginning to germinate. The slight roasting contributes also to attenuate the mucilaginous fermentable matter of the grain. When the grain is thus prepared, it is fit to be ground, and to impregnate water with much of its substance without forming a glue or viscous mass. The grain thus prepared is called *malt*. This malt is then to be ground; and all its substance, which is fermentable and soluble in water, is to be extracted by means of hot water. This extract or infusion is sufficiently evaporated by boiling in caldrons; and some plant of an agreeable bitterness, such as hops, is at that time added, to heighten the taste of the beer, and to render it capable of being longer preserved. Lastly, this liquor is put into casks, and allowed to ferment; nature performs the rest of the work, and is only to be assisted by the other most favourable circumstances for the spirituous fermentation. See FERMENTATION.

Foreigners have framed divers conjectures to account for the excellency of the British beer, and its superiority to that of other countries, even of Bremen, Mons, and Rostoch. It has been pretended our brewers throw dead dogs sea'd into their wort, and boil them till the flesh is all consumed. Others, more equitable, attribute the excellency of our beer to the quality of our malt and water, and the skill of our brewers in preparing it.

Sour beer may be restored divers ways; as by salt made of the ashes of barley straw, put into the vessel and stirred; or by three or four handfuls of beech-ashes thrown into the vessel, and stirred; or, where the liquor is not very sour, by a little put in a bag, without stirring: chalk calcined, oyster shells, egg-shells burnt, sea-shells, crabs eyes, alkazized coral, &c. do the same, as they imbibe the acidity, and unite with it into a sweetness.—Beer, it is said, may be kept from turning sour in summer, by hanging into the vessel a bag containing a new-laid egg, pricked full of little pin-holes, some laurel-berries, and a few barley-grains; or by a new-laid egg and walnut-tree leaves. Glauber commends his sal mirabile and fixed nitre, put in a linen bag, and hung on the top of the cask so as to reach the liquor, not only for recovering sour beer, but preserving and strengthening it.

Laurel-berries, their skin being peeled off, will keep beer from *deadness*; and beer already dead may be restored by impregnating it with fixed air.

Beer tasting of the cask may be freed from it by putting a handful of wheat in a bag, and hanging it in the vessel.

BEEROTH, a village of Judea, situated at the foot of Mount Gabaon, seven miles from Ælia or Jerusalem, on the road to Nicopolis (Jerome).

BEER-SHEBA (Moses), a city to the south of the tribe of Judah, adjoining to Idumea (Josephus). See BERSABE.

BEESTINGS, or BREASTINGS, a term used by country-people for the first milk taken from a cow after calving.—The beestings are of a thick consistence, and yellow colour, seeming impregnated with sulphur.

Beer
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Beestings.

Beet

Beglerbeg

Dr Morgan imagines them peculiarly fitted and intended by nature to cleanse the young animal from the recrement gathered in its stomach and intestines during its long habitation *in utero*. The like quality and virtue he supposes in womens first milk after delivery; and hence infers the necessity of the mother's suckling her own child, rather than committing it to a nurse whose first milk is gone.

BEET, in botany. See BETA.

BEETLE, in the history of insects. See SCARABÆUS.

BEETLE also denotes a wooden instrument for diving piles, &c. It is likewise called a *flamper*, and by sailors a *rammer*.

BEEVES, a general name for oxen. See BOS.

BEFORT, a small but strong town of France, and capital of Santgaw in Alsace. It was ceded to France by the treaty of Westphalia in 1648. There are not above 100 houses in this town, but it is important on account of the great road by this place from Franche Comte. The fortifications were greatly augmented by Louis XIV. It is seated at the foot of a mountain. E. Long. 6. 2. N. Lat. 47. 38.

BEG, or BEY, in the Turkish affairs. See BEY.

Beg is more particularly applied to the lord of a banner, called also in the same language *sanglak-beg*. A beg has the command of a certain number of the spahis, or horse, maintained by the province under the denomination of *timariots*. All the begs of a province obey one governor-general called *begler-beg*, or *beyler-beg*, q. d. lord of lords, or of the beys of the province.

BEGS, or BEGHS, of Egypt, denote twelve generals, who have the command of the militia or standing forces of the kingdom; and are to secure the country from the insults of Arabs, as well as to protect the pilgrims in their annual expeditions to Mecca. The begs, several of whom are descended from the ancient race of the Mamalukes, are very rich and powerful, maintaining each 500 fighting men for their own guard, and the service of their court. On discontents, they have frequently risen in rebellion. They are often at variance with the bashaw, whom they have more than once plundered and imprisoned.

BEGA (Cornelius), painter of landscape, cattle, and conversations, was born at Haerlem in 1620, and was the disciple of Adrian Ostade. Falling into a dissipated way of life, he was disinherited by his father: for which reason he cast off his father's name, which was Begtyn, and assumed that of Bega; his early pictures being marked with the former, and his latter works with the other. He had a fine pencil, and a delicate manner of handling his colours, so as to give them a look of neatness and transparence; and his performances are so much esteemed in the Low Countries as to be placed among the works of the best artists. He took the plague from a woman with whom he was deeply enamoured; and he showed so much sincerity of affection, that, notwithstanding the expectations of all his friends and physicians, he would attend her to the last moments of her life, and died a few days after, aged 44.

BEGHARDS. See BEGUARDS.

BEGLERBEG, a governor of one of the principal governments in the Turkish empire, and next in

Nº 44.

dignity to the grand vizier. To every beglerbeg the grand signior gives three ensigns or staves, trimmed with a horse-tail; to distinguish them from the bashaws, who have but two; and from simple begs, or sangiac begs, who have but one.

The province or government of beglerbeg is called *beglerbeglik*, or *beglierbeglik*. These are of two sorts; the first called *bajilo begierbeglik*, which have a certain rent assigned out of the cities, countries, and signories allotted to the principality; the second called *sahane beglerbeglik*, for maintenance of which is annexed a salary or rent, collected by the grand signior's officers with the treasure of the empire. The beglerbegs of the first sort are in number 22, viz. those of Anatolia, Caramania, Diarbekir, Damascus, Aleppo, Tripoli, Trebizond, Buda, Temiswar, &c. The beglerbegs of the second sort are in number six, viz. those of Cairo, Babylon, &c. Five of the beglerbegs have the title of *viziers*, viz. those of Anatolia, Babylon, Cairo, Romania, and Buda.

The beglerbegs appear with great state, and a large retinue, especially in the camp, being obliged to bring a soldier for every 5000 aspers of rent which they enjoy. Those of Romania brought 10,000 effective men into the field.

The beglerbegs are become almost independent, and have under their jurisdiction several sangiacs or particular governments, and begs, agas, and other officers who obey them.

BEGUARDS, or BEGHARDS, religious of the third order of St Francis in Flanders. They were established at Antwerp in the year 1228, and took St Begghe for their patroness, whence they had their name. From their first institution they employed themselves in making linen cloth, each supporting himself by his own labour, and united only by the bonds of charity, without having any particular rule. But, when Pope Nicholas IV. had confirmed that of the third order of St Francis in 1289, they embraced it the year following. They were greatly favoured by the Dukes of Brabant, particularly John II. and John III. who exempted them from all contributions and taxes. In the year 1425, they began to live in common, and made solemn vows in 1467, after having taken the habit of the Terciaries (or religious of the third order of St Francis) of Liege. At last, in 1472, they became subject to the general of the congregation of Zepperen in the diocese of Liege, to which they were united by Pope Sixtus IV. As the convent of Antwerp is since become very considerable, the name of *Beguards* has been given to all the other religious of the same congregation. But, in 1650, Pope Innocent X. having suppressed the general of the congregation of Zepperen, all the convents of the third order of St Francis, in the dioceses of Liege, Malines, and Antwerp, were submitted to the visitation, jurisdiction, and correction, of the general of Italy, and erected into a province, under the title of *the province of Flanders*. This province has at present 10 or 12 convents, the principal of which are those of Antwerp, Brussels, Maestricht, and Trouvain.

BEGUINES, a congregation of religious or nuns founded either by St Begghe, founder likewise of the Beguards, or by Lambert le Begue; of whom the former died about the end of the seventh century, the latter

Begu
Begu

Beguines, latter about the end of the 12th. They were established first at Liege, and afterwards at Neville, in 1207; and from this last settlement sprang the great number of Beguinages, which are spread over all Flanders, and which have passed from Flanders into Germany. In the latter country, some of these religious fell into extravagant errors, persuading themselves that it was possible, in the present life, to arrive at the highest perfection, even to impeccability, and a clear view of God; in short, to fo eminent a degree of contemplation, that there was no necessity, after this, either to observe the faults of the church, or submit to the direction and laws of mortal men. The council of Vienna, in 1113, condemned these errors, and abolished the order of Beguines; permitting, nevertheless, those among them, who continued in the true faith, to live in chastity and penitence, either with or without vows. It is by favour of this latter clause, that there still subsist so many communities of Beguines in Flanders; who, since the council of Vienna, have conducted themselves with so much wisdom and piety, that Pope John XXII. by his decretal, which explains that of his predecessor made in the council of Vienna, took them under his protection; and Boniface VIII. in another, exempted them from the secular tribunal, and put them under the jurisdiction of the bishops.

There is scarce a town in the Low-Countries, in which there is not a society of Beguines; and, notwithstanding the change of religion at Amsterdam, there is a very flourishing one in that city. These societies consist of several houses placed together in one inclosure, with one or more churches, according to the number of Beguines. There is in every house a prioress, or mistress, without whose leave they dare not stir out. They make a sort of vow, which is conceived in the following terms: "I. N. promise to be obedient and chaste as long as I continue in this Beguinage." They observe a three years noviciate before they take the habit. The rector of the parish is superior of the Beguinage; and he does nothing without the advice of eight Beguines. They were formerly habited in different manners; some in grey, others in blue; but at present they all wear black. When they go abroad, in Amsterdam, they put on a black veil. Formerly they had as many different statutes as there were societies. In the visitations of the year 1600 and 1601, by the archbishop Matthias Hovius, they were forbidden, under the penalty of a fine, to have lap-dogs. The finest Beguinage in Flanders is that of Malines. That of Antwerp likewise is very spacious, and has two separate churches.

BEHEADING, a capital punishment, wherein the head is severed from the body by the stroke of an axe, sword, or other cutting instrument.

Beheading was a military punishment among the Romans, known by the name of *decollatio*. Among them the head was laid on a *cippus* or block, placed in a pit dug for the purpose; in the army, without the *vallum*; in the city, without the walls, at a place near the *porta decumana*. Preparatory to the stroke, the criminal was tied to a stake, and whipped with rods. In the early ages the blow was given with an axe; but in after-times with a sword, which was thought the more reputable manner of dying. The execution was but clumsily performed in the first times; but after-

wards they grew more expert, and took the head off clean, with one circular stroke.

In England and France, beheading is the punishment of nobles; being reputed not to derogate from nobility, as hanging does.

In Scotland they do not behead with an axe, as in England; nor with a sword, as in Holland and France; but with an edged instrument called the MAIDEN.

BEHEMOTH, the hippopotamus or river-horse. See HIPPOPOTAMUS.

BEHEN, in botany. See CUCUBALUS.

BEHMEN. See BOEHMEN.

BEHN (Aphara), a celebrated authoress, descended from a good family in the city of Canterbury, was born some time in Charles I.'s reign, but in what year is uncertain. Her father's name was *Johnson*, who through the interest of the Lord Willoughby, to whom he was related, being appointed lieutenant-general of Surinam and 36 islands, undertook a journey to the West-Indies, taking with him his whole family, among whom was our poetess, at that time very young. Mr Johnson died in the voyage; but his family reaching Surinam, settled there for some years. Here it was that she learned the history of, and acquired a personal intimacy with, the American prince Oroonoko and his beloved Imoinda, whose adventures she hath so pathetically related in her celebrated novel of that name, and which Mr Southerne afterwards made such an admirable use of in adopting it as the ground-work of one of the best tragedies in the English language.

On her return to London, she became the wife of one Mr Behn, a merchant, residing in that city, but of Dutch extraction. How long he lived after their marriage, is not very apparent, probably not very long; for her wit and abilities having brought her into high estimation at court, King Charles II. fixed on her as a proper person to transact some affairs of importance abroad during the course of the Dutch war. To this purpose she went over to Antwerp, where, by her intrigues and gallantries, she so far crept into the secrets of state, as to answer the ends proposed by sending her over. Nay, in the latter end of 1666, she, by means of the influence she had over one Vander Albert, a Dutchman of eminence, whose heart was warmly attached to her, she wormed out of him the design formed by De Ruyter, in conjunction with the family of the De Wits, of sailing up the Thames and burning the English ships in their harbours, which they afterwards put in execution at Rochester. This she immediately communicated to the English court: but though the event proved her intelligence to be well grounded, yet it was at that time only laughed at; which, together probably with no great inclination shown to reward her for the pains she had been at, determined her to drop all further thoughts of political affairs, and during the remainder of her stay at Antwerp to give herself up entirely to the gaiety and gallantries of the place. Vander Albert continued his addresses, and after having made some unsuccessful attempts to obtain the possession of her person on easier terms than matrimony, at length consented to make her his wife; but while he was preparing at Amsterdam for a journey to England with that intent, a fever carried him off, and left her free from any amorous engagements. In her voyage back to England, she was very near being lost, the vessel she was in being driven

Behn
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Beichlingen.
gen.

on the coast by a storm; but happening to founder within sight of land, the passengers were, by the timely assistance of boats from the shore, all fortunately preserved.

From this period she devoted her life entirely to pleasure and the muses. Her works are extremely numerous, and all of them have a lively and amorous turn. It is no wonder then that her wit should have gained her the esteem of Mr Dryden, Southerne, and other men of genius, as her beauty, of which in her younger part of life she possessed a great share, did the love of those of gallantry. Nor does she appear to have been any stranger to the delicate sensations of that passion, as appears from some of her letters to a gentleman, with whom she corresponded under the name of Lycida, and who seems not to have returned her flame with equal ardour, or received it with that rapture her charms might well have been expected to command.

She published three volumes of Miscellany Poems; two volumes of Histories and Novels; translated Fontenelle's Plurality of Worlds, and annexed a Criticism on it; and her Plays make four volumes. In the dramatic line, the turn of her genius was chiefly to comedy. As to the character her plays should maintain in the records of dramatic history, it will be difficult to determine, since their faults and perfections stand in strong opposition to each other. In all, even the most indifferent of her pieces, there are strong marks of genius and understanding. Her plots are full of business and ingenuity, and her dialogue sparkles with the dazzling lustre of genuine wit, which every where glitters among it. But then she has been accused, and that not without great justice, of interlarding her comedies with the most indecent scenes, and giving an indulgence in her wit to the most indelicate expressions. To this accusation she has herself made some reply in the Preface to the Lucky Chance; but the retorting the charge of prudery and preciseness on her accusers, is far from being a sufficient exculpation of herself. The best and perhaps the only true excuse that can be made for it is, that, as she wrote for a livelihood, she was obliged to comply with the corrupt taste of the times.

After a life intermingled with numerous disappointments, she departed from this world on the 16th of April 1689, and lies interred in the cloysters of Westminster-Abbey.

BEJA, an ancient town of Portugal, in the province of Alentejo. It is seated in a very agreeable and fruitful plain, remarkable for excellent wine. There are three gates remaining, which are of Roman architecture, and a great many Roman antiquities are dug out of the earth. The town has a strong castle for its defence, and is situated W. Long. 7. 20. N. Lat. 37. 58. It was taken from the Moors in 1162.

BEJAR, a town of Estremadura in Spain, famous for its baths. It is seated in a very agreeable valley surrounded with high mountains whose tops are always covered with snow. Here the dukes of Bejar have an handsome palace. In this neighbourhood are forests filled with game, and watered by fine springs; also a lake abounding with excellent fish, particularly trouts. They pretend that this lake makes such a noise before a storm, that it may be heard 15 miles off.

BEICHLINGEN, a town of Thuringia in Upper Saxony, in E. Long. 11. 50. N. Lat. 51. 20.

BEILA, a town of Italy, in Piedmont. E. Long. 7. 45. N. Lat. 45. 2.

BEILSTEIN, a town of the landgraviate of Hesse in Germany, in E. Lon. 8. 0. N. Lat. 50. 30.

BEINASCHI (Giovanni Battista), called *Cavalier Beinaschi*, history painter, was a Piedmontese, and born in 1634. He studied in Rome, under the direction of Pietro del Po; and some authors affirm, that he was afterwards the disciple of Lanfranc. It is certain that he was peculiarly fond of the works of Lanfranc, and at last became so thoroughly acquainted with the style, manner, and touch of that excellent master, than many of the pictures of Beinaschi are at this day accounted the work of Lanfranc's own hand. He was an admirable designer; his lively invention furnished him with a surprising variety; his thought was noble: he was not only expeditious but correct; and as a public acknowledgment of his merit, the honour of knighthood was conferred upon him.

BEINHEIM, a fort of Alsace in France, seated on the river Sur, near its confluence with the Rhine, in E. Long. 8. 12. N. Lat. 45. 2.

BEIRA, a province of Portugal, bounded on the west by the ocean, on the south by the Portuguese Estramadura, on the south-east by the Spanish province of the same name, on the east by the province of Trallos Montos, and on the north by the river Douro. It extends in length about 34 leagues, and in breadth about 30 leagues, and is divided into six commarcas. Within this province lies Lamego, where the first assembly of the states was held; the chief Episcopal city of Coimbra, or Coimbra, which is likewise an university; and Viseo, also a bishopric, and formerly the capital of a dukedom. The country is equally agreeable and fruitful, producing corn, wines, &c. in abundance, and the hills affording excellent pasture to cattle and sheep. The settled militia consists of about 10,000 men.

BEIRÁM, or BAIRAM. See BAIRAM.

BEIRALSTON, a town in Devonshire, which sends two members to parliament.

BEIZA, or BEIZATH, in Hebrew antiquity, a word signifying an egg; as also a certain measure in use among the Jews. The beiza was likewise a gold coin, weighing 40 drachms, among the Persians, who gave out, that Philip of Macedon owed their king Darius 1000 beizaths or golden eggs, for tribute-money; and that Alexander the Great refused to pay them, saying, that the bird which laid these eggs was flown into the other world.

BEKKER (Balthazar), one of the most famous Dutch divines, and author of the celebrated book, *The World bewitched*, an ingenious piece against the vulgar notion of spirits. This raised a terrible clamour against him. He was deposed from the office of minister; but the magistrates of Amsterdam continued him his pension. He died in 1698.

BEL (MATTHIAS), was born in Hungary, and became a Lutheran minister at Presburg, and historiographer to the Emperor Charles VI. He wrote, among others works, a *History of Hungary*, which was so much admired, that the emperor sent him letters of nobility; and notwithstanding his being a Lutheran, the Pope, in 1736, sent him his picture, and many large gold medals. He was a member of the Royal Society.

Beiza
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Bcl.

Bel of London, and of the academies of Berlin and Peterburg; and died in 1749, at 66 years of age.

BEL, or *Belus*, the supreme god of the ancient Chaldeans, or Babylonians. He was the founder of the Babylonian empire; and is supposed to be the Nimrod of Scripture, and the same as the Phœnician Baal. This god had a temple erected to him in the city of Babylon, on the very uppermost range of the famous tower of Babel, or Babylon, wherein were many statues of this deity; and one, among the rest, of massy gold, 40 feet high. The whole furniture of this magnificent temple was of the same metal, and valued at 800 talents of gold.—This temple, with its riches, was in being till the time of Xerxes, who, returning from his unfortunate expedition into Greece, demolished it, and carried off the immense wealth which it contained. It was the statue of this god which Nebuchadnezzar, being returned to Babylon after the end of the Jewish war, set up and dedicated in the plain of Dura; the story of which is related at large in the third chapter of Daniel.

BEL and the Dragon (the history of); an apocryphal, and uncanonical, book of Scripture. It was always rejected by the Jewish church, and is extant neither in the Hebrew nor the Chaldee language, nor is there any proof that it ever was so. St Jerom gives it no better title than *the Fable of Bel and the Dragon*. It is however permitted to be read, as well as the other apocryphal writings, for the instruction and improvement of manners.

BELAC, a small city of France, in the province of the Lyonnais, and district of La Marche. E. Long. 1. 15. N. Lat. 46. 15.

BELAY, on board a ship, signifies the same as fasten.—Thus they say, belay the sheet, or tack, that is, fasten it to the keel, by winding it several times round a post, &c.

BELCASTRO, an episcopal city of Italy in the farther Calabria, and kingdom of Naples. It is seated on a mountain, in E. Long. 17. 15. N. Lat. 39. 6.

BELCHITE, a town of Spain, in the kingdom of Arragon, seated on the river Almonazir, in W. Long. 0. 30. N. Lat. 41. 19.

BELCHOE, a town of Ireland, in the province of Ulster, and county of Fermanagh, seated on Lough Nilly, in W. Long. 6. 6. N. Lat. 54. 2.

BELEM, a town of Eilremadura in Portugal, about a mile from Lisbon. It is seated on the north side of the river Tajo, and is designed to defend the entrance to Lisbon; and here all the ships that sail up the river must bring to. In this place they inter the kings and queens of Portugal.

BELEMNTES, vulgarly called *thunder-bolts* or *thunder-stones*. They are composed of several crusts of stone encircling each other, of a conical form, and various sizes; usually a little hollow, and somewhat transparent, formed of several striz radiating from the axis to the surface of the stone; and when burnt or rubbed against one another, or scraped with a knife, yield an odour like rasped horn. Their size is various, from a quarter of an inch to eight inches; and their colour and shape differ. They are supposed to be originally either a part of some sea production; or a stone formed in the cavity of some worm-shell, which being of a tender and brittle nature, has perished, after giving its

form to the stone. They are very frequently found in many parts of England; and the common people have a notion, that they are always to be met with after a storm. They are often inclosed in, or adhere to, other stones; and are most frequent amongst gravel, or in clay: they abound in Gloucestershire; and are found near Dedington in Oxfordshire, where they sometimes contain the silver marcasite.

BELERIUM, (anc. geog.), a promontory of the Dumnonii or Damnonii, the westmost Britons. Now called the *land's end*, in Cornwall.

BELËSIS, or **NANYBRUS**, said to have been the founder of the ancient Babylonish empire, and in conjunction with Arbaces the Mede to have put an end to the kingdom of the Assyrians by the defeat and death of Sardanapalus. This first prince is represented as a crafty and mean-spirited knave; and at the same time, as nothing less than an hero. It is said, he was base enough to circumvent Arbaces his colleague and friend in the most shameful manner; by pretending a vow he had, in the midst of the war, made to his god Belus, That if success was the event of it, and the palace of Sardanapalus was consumed, as it was, he would be at the charge and trouble of removing the ashes that were left, to Babylon; where he would heap them up into a mount near the temple of his god; there to stand as a monument to all who should navigate the Euphrates, of the subversion of the Assyrian empire. He, it seems, had been privately informed, by an eunuch, of the immense treasure which had been consumed in the conflagration at Nineveh; and knowing it to be a secret to Arbaces, his avarice suggested to him this artifice. Arbaces not only granted him his request; but appointed him king of Babylon, with an exemption from all tribute. Belësis, by this artifice, carried a prodigious treasure with him to Babylon; but when the secret was discovered, he was called to an account for it, and tried by the other chiefs who had been assistant in the war, and who, upon his confession of the crime, condemned him to lose his head. But Arbaces, a magnificent and generous prince, freely forgave him, left him in possession of the treasure, and also in the independent government of Babylon, saying, The good he had done ought to serve as a veil to his crime; and thus he became at once a prince of great wealth and dominion.

In process of time, and under the successor of Arbaces, he became a man of druse, shew, and effeminaey, unworthy of the kingdom or province he held. Nanybrus, for so we must now call Belësis, understanding a certain robust Mede, called *Parfoudas*, held him in the utmost contempt, and had solicited the emperor of the Medes to divest him of his dominions, and to confer them upon himself, offered a very great reward to the man who should take Parfoudas, and bring him to him. Parfoudas hunting somewhere near Babylon with the king of the Medes, and straggling from the company, happened to fall in with some of the servants of the Babylonian Nanybrus, who had been tempted with the promised reward. They were purveyors to the king; and Parfoudas being very thirsty, asked them for a draught of wine; which they not only granted, but prevailed upon him to take a meal with them. As he drank freely, suspecting no treachery, he was easily persuaded to pass that night in company with some

Belerium,
Belësis.

Belsh.

beautiful women, brought on purpose to detain him. But, while he was in a profound sleep, the servants of Nanybrus rushing upon him, bound him, and carried him to their prince; who bitterly reproached him for endeavouring to estrange his master the king of the Medes from him, and by that means place himself in his room on the throne of Babylon. Parfondas did not deny the charge; but with great intrepidity owned, that he thought himself more worthy of a crown than such an indolent and effeminate prince as he was. Nanybrus, highly provoked at the liberty he took, swore by the gods Belus and Molis, or rather Mylitta, that Parfondas himself should in a short time become so effeminate as to reproach none with effeminaey. Accordingly, he ordered the eunuch who had the charge of his music-women, to shave, paint, and dress him after the manner of those women, to teach him the art, and in short to transform him by all possible means into a woman. His orders were obeyed; and the manly Parfondas soon exceeded the fairest female in singing, playing, and the other arts of allurements.

In the mean time the king of the Medes, having in vain sought after his favourite servant, and in vain offered great rewards to such as should give him any information concerning him, concluded he had been destroyed by some wild beast in the chase. At length, after seven years, the Mede was informed of his state and condition by an eunuch, who, being cruelly scourged by Nanybrus's order, fled, at the instigation of Parfondas, into Media; and there disclosed the whole to the king, who immediately dispatched an officer to demand him. Nanybrus pretended to know nothing of any such person; upon which another officer was sent by the Mede, with a peremptory order to seize on Nanybrus if he persisted in the denial, to bind him with his girdle, and lead him to immediate execution. This order had the desired effect: the Babylonian owned what he had before denied, promising to comply, without further delay, with the king's demand; and in the mean time invited the officer to a banquet, at which 150 women, among whom was Parfondas, made their appearance, singing and playing upon various instruments. But, of all, Parfondas appeared by far the most charming; insomuch, that Nanybrus inquiring of the Mede which he liked best, he immediately pointed at him. At this the Babylonian clapt his hands; and, falling into an immoderate fit of laughter, told him who the person was whom he thus preferred to all the rest; adding, that he could answer what he had done before the king of the Medes. The officer was no less surpris'd at such an astonishing change than his master was afterwards, when Parfondas appeared before him. The only favour Parfondas begged of the king, for all his past services, was, that he would avenge on the Babylonian the base and highly injurious treatment he had met with at his hands. The Mede march'd accordingly at his instigation to Babylon; and, notwithstanding the remonstrances of Nanybrus, urging, that Parfondas had, without the least provocation, endeavoured to deprive him of both his life and kingdom, declared that in ten days time he would pass the sentence on him which he deserved, for presuming to act as judge in his own cause, instead of appealing to him. But Nanybrus having in the mean time gained with a large bribe Mitraphernes the Mede's favourite eunuch,

the king was by him prevailed upon to sentence the Babylonian only to a fine; which made Parfondas curse the man who first found out gold, for the sake of which he was to live the sport and derision of an effeminate Babylonian.

BELESME, a town of Perche in France, in W. Long. o. 16. N. Lat. 48. 23.

BELEZERO, a town of Russia, and capital of a province of the same name. It is situated on the fourth-east shore of the White sea, in E. Long. 36. 10. N. Lat. 61. 50.

BELFAST, a town of Ireland, in the county of Antrim. It is seated at the bottom of Carrickfergus bay, and is the chief town and port in this part of Ireland, as well for beauty and the number of its inhabitants, as for its wealth, trade, and shipping. It has a considerable trade with Glasgow, and the inhabitants are mostly Scots, and of the presbyterian religion. W. Lon. 6. 15. N. Lat. 54. 38.

BELFRY, **BELFREDUS**, is used by military writers of the middle age for a sort of tower erected by besiegers to overlook and command the place besieged. Belfry originally denoted a high tower, whereon centinels were placed to watch the avenues of a place, and prevent surprize from parties of the enemies, or to give notice of fires by ringing a bell. In the cities of Flanders, where there is no belfry on purpose, the tower of the chief church serves the same end. The word *belfry* is compounded of the Teutonic *bell*, and *freid* "peace," because the bells were hung for preserving the peace.

BELFRY is also used for that part of a steeple where-in the bells are hung. This is sometimes called by middle-age writers *campanile*, *clocharia*, and *tristegum*.

BELFRY is more particularly used for the timber-work which sustains the bells in a steeple, or that wooden structure to which the bells in church steeples are fastened.

BELGÆ (anc. geog.), a people of Britain, to the west: Now Hampshire, Wiltshire, and Someisethire, (Camden).

BELGICA, a town of the Ubii in Gallia Belgica, midway between the rivers Rhine and Roer: Now called *Balchusen* (Cluverius); a citadel of Juliers (Bau-drand).

BELGICA Gallia, one of Cæsar's three divisions of Gaul, contained between the ocean to the north, the rivers Seine and Marne to the west, the Rhine to the east, but on the south at different times within different limits. Augustus, instituting every where a new partition of provinces, added the Sequani and Helvetii, who till then made a part of Celtic Gaul, to the Belgic (Pliny, Ptolemy). The gentilitious name is *Belgæ*, called by Cæsar the bravest of the Gauls, because untainted by the importation of luxuries. The epithet is *Belgicus* (Virgil).

BELGARDEN, a town of Germany, in East Pomerania, in the province of Cassubia, and subject to Prussia. E. Long. 16. 5. N. Lat. 54. 10.

BELGINUM, a town of the Treviri, in Gallia Belgica: Now called *Baldenau*, in the electorate of Triers.

BELGIUM, manifestly distinguished from Belgica, as a part from the whole (Cæsar); who makes Belgium the country of the Bellovaci; Hirtius adding the Atre-bates. But as the Ambiani lay between the Bellovaci and Atre-bates, we must also add these; and thus Belgium reached to the sea, because the Ambiani lay upon

Bellesme
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Belgium.

Belgorod
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Belidor.

on it: and these three people constituted the proper and genuine Belgæ (all the rest being adventitious, or foreigners); and these were the people of Beauvais, Amiens, and Artois.

BELGOROD, a town of Russia, and capital of a province of the same name. It is seated on the river Donnets, in E. Long. 18. 5. N. Lat. 51. 20.

BELGOROD, a strong town of Bessarabia in European Turkey, seated at the mouth of the river Neiller, on the Black Sea, 80 miles south-east of Bender. E. Long. 31. 0. N. Lat. 46. 30.

BELGRADE, a city of Turkey in Europe, and capital of Servia, seated at the confluence of the Save and the Danube, in E. Long. 21. 2. N. Lat. 45. 10. The Danube is very rapid near this city, and its waters look whitish. Belgrade is built on a hill, and was once large, strong, and populous. It was surrounded by a double wall, flanked with a great number of towers, and had a castle situated on a rising ground, and built with square stones. The suburbs are very extensive; and resorted to by Turkish, Jewish, Greek, Hungarian, and Slavonian merchants. The streets where the greatest trade is carried on are covered with wood, to shelter the dealers from the sun and rain. The rivers render it very convenient for commerce; and as the Danube falls into the Black Sea, the trade is easily extended to distant countries, which renders it the staple town in these parts; and as the Danube runs up to Vienna, they send goods from thence with a great deal of ease. The Armenians have a church here, and the Jews a synagogue, both these being employed as factors. The shops are but small; and the sellers sit on tables, disposing of their commodities out of a window, for the buyers never go on the inside. The richest merchandize are exposed to sale in two bezesteins or bazars, built crosswise. There are two exchanges, built with stone, and supported with pillars not unlike the Royal Exchange at London. There is likewise a caravanserai or public inn, and a college for young students. It has been taken by the Turks and Imperialists alternately several times; but was ceded to the Turks in 1739, and the fine fortifications demolished.

BELGRADO, a town of Friuli, in the Venetian territories in Italy. It stands near the river Tejamento, in E. Long. 13. 5. N. Lat. 46. 0.

BELIA (anc. geog.), a town of hither Spain: Now *Belchite*, in the kingdom of Arragon. See **BELCHITE**.

BELIAL, בְּלִיָּא, a Hebrew word which signifies a wicked worthless man, one who is resolved to endure no subjection. Thus the inhabitants of Gibeah, who abused the Levite's wife (Judges xix. 22.), have the name of Belial given them. Hophni and Phineas, the high priest Eli's sons, are likewise called sons of Belial (1 Sam. ii. 12.), upon account of the several crimes they had committed, and the unbecoming manner in which they behaved themselves in the temple of the Lord. Sometimes the name Belial is taken to denote the devil. Thus St Paul says (2 Cor. vi. 15.), "What concord hath Christ with Belial?" Whence it appears, that in his time the Jews, under the name of Belial, commonly understood the devil in the places where this term occurs in the Old Testament.

BELIDOR (Bernard Forest de), a Catalonian engineer in the service of France, and member of the academies of sciences at Paris and Berlin, and of the

royal society at London; a celebrated mathematician, and author of a number of military tracts in which the science of mathematics is applied to military uses. Died in 1765, aged 70.

BELIEF, in its general and natural sense, denotes a persuasion, or a strong assent of the mind to the truth of any proposition. In which sense, belief has no relation to any particular kind of means or arguments, but may be produced by any means whatever. Thus we are said to believe our senses, to believe our reason, to believe a witness, &c. And hence, in rhetoric, all sorts of proofs, from whatever topics deduced, are called *probatio*, because apt to get belief or persuasion touching the matter in hand.

BELIEF, in its more restrained and technical sense, invented by the schoolmen, denotes that kind of assent which is grounded only on the authority or testimony of some person or persons, asserting or attesting the truth of any matter proposed.

In this sense, belief stands opposed to knowledge and science. We do not say we believe that snow is white, or that the whole is equal to its parts; but we see and know them to be so. That the three angles of a triangle are equal to two right angles, or that all motion is naturally rectilinear, are not said to be things credible, but scientific; and the comprehension of such truths is not belief but science.

But when a thing propounded to us is neither apparent to our sense, nor evident to our understanding; neither certainly to be collected from any clear and necessary connection with the cause from which it proceeds, nor with the effects which it naturally produces; nor is taken up upon any real arguments, or relation thereof to other acknowledged truths; and yet, notwithstanding, appears as true, not by manifestation, but by an attestation of the truth, and moves us to assent, not of itself, but in virtue of a testimony given to it—this is said to be properly credible; and an assent to this is the proper notion of belief or faith.

BELIEVERS, an appellation given toward the close of the first century to those Christians who had been admitted into the church by baptism, and instructed in all the mysteries of religion. They had also access to all the parts of divine worship, and were authorized to vote in the ecclesiastical assemblies. They were thus called in contradistinction to the catechumens, who had not been baptized, and were debarred from these privileges.

BELIO (anc. geog.), a river of Lusitania, called otherwise *Limeas*, *Limeas*, *Limius*, and *Lethe* or the *River of Oblivion*: the boundary of the expedition of Decimus Brutus. The soldiers refusing out of superstition to cross, he snatched an ensign out of the hands of the bearer, and passed over, by which his army was encouraged to follow (Livy). He was the first Roman who ever proceeded so far, and ventured to cross. The reason of the appellation, according to Strabo, is, that in a military expedition a sedition arising between the Celtici and Turduli after crossing that river, in which the general was slain, they remained dispersed there; and from this circumstance it came to be called the *River of Lethe* or *Oblivion*. Now called *El Lima*, in Portugal, running westward into the Atlantic, to the south of the Minho.

BELISARIUS, general of the emperor Justinian's army.

Belief
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Belisarius.

Belisarius,
Bell.

army, who overthrew the Persians in the East, the Vandals in Africa, and the Goths in Italy. See *ROME*. But after all his great exploits, he was falsely accused of a conspiracy against the emperor. The real conspirators had been detected and seized, with daggers hidden under their garments. One of them died by his own hand, and the other was dragged from the sanctuary. Pressed by remorse, or tempted by the hopes of safety, he accused two officers of the household of Belisarius; and torture forced them to declare that they had acted according to the secret instructions of their patron. Posterity will not hastily believe, that an hero who in the vigour of life had disdained the fairest offers of ambition and revenge, should stoop to the murder of his prince, whom he could not long expect to survive. His followers were impatient to fly; but flight must have been supported by rebellion, and he had lived enough for nature and for glory. Belisarius appeared before the council with less fear than indignation: after 40 years service, the emperor had prejudged his guilt; and injustice was sanctified by the presence and authority of the patriarch. The life of Belisarius was graciously spared: but his fortunes were sequestered; and, from December to July, he was guarded as a prisoner in his own palace. At length his innocence was acknowledged; his freedom and honours were restored; and death, which might be hastened by resentment and grief, removed him from the world about eight months after his deliverance. That he was deprived of his eyes, and reduced by envy to beg his bread, "Give a penny to Belisarius the general!" is a fiction of later times; which has obtained credit, or rather favour, as a strange example of the vicissitudes of fortune.—The source of this idle fable may be derived from a miscellaneous work of the 12th century, the *Chiliads* of John Tzetzes, a monk. He relates the blindness and beggary of Belisarius in ten vulgar or political verses (*Chiliad* iii. N^o 88. 339—348. in *Corp. Poet. Græc.* tom. ii. p. 311).

Εκπαρμα ξυλινον κραταν εβρα τη μηρη
Βελισαριου οβολον δοτε τω στρατηλατη
Ον τυχη μιν εδοξασει, αποσυρλοι δ' εθρονος.

This moral or romantic tale was imported into Italy with the language and manuscripts of Greece; repeated before the end of the 15th century by Crinitus, Pontanus, and Volaterranus; attacked by Alciat for the honour of the law, and defended by Baronius (A. D. 561. N^o 2, &c.) for the honour of the church. Yet Tzetzes himself had read in other chronicles, that Belisarius did not lose his sight, and that he recovered his fame and fortunes.—The statue in the Villa Borgheze at Rome, in a sitting posture, with an open hand, which is vulgarly given to Belisarius, may be ascribed with more dignity to Augustus in the act of propitiating Nemesis (*Winckelman, Hist. de l'Art*, tom. iii. p. 266.). "Ex nocturno visu etiam stipem, quotannis, die certo, emendicabat a populo, cavam manum assēs porrigentibus prebens" (*Sutton. in Aug.* c. 91.)

BELL, a well known machine ranked by musicians among the musical instruments of percussion.

The constituent parts of a bell are, the body or *barrel*, the *clapper* on the inside, and the ear or *cannon* by which it hangs to a large beam of wood. The matter of which it is usually made is a composition called *bell-*

metal. The thickness of a bell's edges is usually $\frac{1}{15}$ of the diameter, and its height 12 times its thickness. The bell-founders have a diapason, or bell-scale, wherewith they measure the size, thickness, weight, and tone, of their bells. For the method of casting bells, see *FOUNDERY*.

The sound of a bell is conjectured to consist in a vibratory motion of its parts, much like that of a musical chord. The stroke of the clapper must necessarily change the figure of the bell, and of a round make it oval: but the metal having a great degree of elasticity, that part will return back again which the stroke drove farthest off from the centre, and that even some small matter nearer the centre than before: so that the two parts which before were extremes of the longest diameter, do then become those of the shortest; and thus the external surface of the bell undergoes alternate changes of figure, and by that means gives that tremulous motion to the air in which the sound consists. M. Perrault maintains, that the sound of the same bell or chord is a compound of the sounds of the several parts thereof, so that where the parts are homogeneous, and the dimensions of the figure uniform, there is such a perfect mixture of all these sounds as constitutes one uniform, smooth, even sound; and the contrary circumstances produce harshness. This he proves from the bells differing in tone according to the part you strike; and yet strike it any where, there is a motion of all the parts. He therefore considers bells as a compound of an infinite number of rings, which according to their different dimensions have different tones, as chords of different lengths have; and when struck, the vibrations of the parts immediately struck determine the tone, being supported by a sufficient number of consonant tones in the other parts.

Bells are observed to be heard farther placed on plains than on hills; and still farther in valleys than on plains: the reason of which will not be difficult to assign, if it be considered that the higher the sonorous body is, the rarer is its medium; consequently, the less impulse it receives, and the less proper vehicle it is to convey it to a distance.

Mr Reamur, in the *Memoirs* of the Paris Academy, has the following observations relating to the shape most proper for bells, to give them the loudest and clearest sound. He observes, "that as pots and other vessels more immediately necessary to the service of life were doubtless made before bells, it probably happened that the observing these vessels to have a sound when struck, gave occasion to making bells, intended only for sound, in that form; but that it does not appear that this is the most eligible figure; for lead, a metal which is in its common state not at all sonorous, yet becomes greatly so on its being cast into a particular form, and that very different from the common shape of bells. In melting lead for the common occasions of casting in small quantities, it is usually done in an iron ladle: and as the whole is seldom poured out, the remainder, which falls to the bottom of the ladle, cools into a mass of the shape of that bottom. This is consequently a segment of a sphere, thickest in the middle, and thinner towards the edges; nor is the ladle any necessary part of the operation, since if a mass of lead be cast in that form in a mould of earth or sand, in any

Bell.

of these cases it is found to be very sonorous. Now if this shape alone can give sound to a metal which in other forms is perfectly mute, how much more must it necessarily give it to other metals naturally sonorous in whatever form? It should seem, that bells would much better perform their office in this than in any other form: and that it must particularly be a thing of great advantage to the small bells of common house-clocks, which are required to have a shrill note, and yet are not allowed any great size." He adds, "that had our forefathers had opportunities of being acquainted with the sound of metals in this shape, we should probably have had all our bells at present of this form."

The use of bells is very ancient, as well as extensive. We find them among Jews, Greeks, Romans, Christians, and Heathens, variously applied; as on the necks of men, beasts, birds, horses, sheep: but chiefly hung in buildings, either religious, as in churches, temples, and monasteries; or civil, as in houses, markets, baths; or military, as in camps and frontier towns.

Among the Jews it was ordained, that the lower part of the blue tunic which the high priest wore when he performed religious ceremonies, should be adorned with pomegranates and gold bells, intermixed equally and at equal distances. As to the number of the bells worn by the high priest, the scripture is silent; and authors are not very well agreed: but the sacred historian has let us into the use and intent of them in these words (Exod. xxviii. 33—35.), "And it shall be upon Aaron to minister, and his sound shall be heard when he goeth into the holy place before the Lord, and when he cometh out, that he die not." The kings of Persia are said to have the hem of their robes adorned like the Jewish high-priests with pomegranates and gold bells. It was, in the opinion of Calmet, with a design of giving notice that the high-priest was passing by, that he wore little bells on the hem of his robe; or rather it was as it were a kind of public notice that he was going to the sanctuary: for as, in the king of Persia's court, no one was suffered to enter the apartments without giving notice thereof by the sound of something; so the high priest, out of respect to the divine presence residing in the holy of holies, did, by the sound of little bells fastened to the bottom of his robe, desire as it were permission to enter, that the sound of the bells might be heard, and he not be punished with death for an unmannerly intrusion. The figure of these bells is not known to us. The prophet Zachariah (xiv. 20.) speaks of bells hung to war horses. "In that day (says the prophet) there shall be upon the bells of horses, Holiness unto the Lord."

Among the Greeks, those who went the nightly rounds in camps or garrisons, carried with them a little bell, which they rung at each sentry-box to see that the soldiers on watch were awake. A coudrophorous or bell-man also walked in funeral processions, at a distance before the corps, not only to keep off the crowd, but to advertise the *flamen dialis* to keep out of the way, for fear of being polluted by the sight, or by the funerary music. The priest of Proserpine at Athens, called *hierophantus*, rung a bell to call the people to sacrifice.

There were also bells in the houses of great men to

call up the servants in a morning. Zonaras assures us, that bells were hung with whips on the triumphal chariots of their victorious generals, to put them in mind that they were still liable to public justice.

Bells were put on the necks of criminals going to execution, that persons might be warned by the noise to get out of the way of so ill an omen as the sight of the hangman or the condemned criminal, who was devoted and just going to be sacrificed to the *diimanes*.

For bells on the necks of brutes, express mention is made of them in Phædras,—*Celsa cervice eminentis, Clarumque colli jactans tintinnabulum*. Taking these bells away was construed by the civil law, theft; and if the beast was lost by this means, the person who took away the bells was to make satisfaction.

As to the origin of church-bells, Mr Whittaker † † *Hist. of Munster* observes, That bells being used, among other purposes, by the Romans to signify the times of bathing, were naturally applied by the Christians of Italy to denote the hours of devotion, and summon the people to church. The first application of them to this purpose is, by Polydore Virgil and others, ascribed to Paulinus bishop of Nola, a city of Campania, about the year 400. Hence, it is said, the names *noie* and *campane* were given them; the one referring to the city, the other to the country. Though others say they took the latter of these names, not from their being invented in Campania, but because it was here the manner of hanging and balancing them, now in use, was first practised; at least that they were hung on the model of a sort of balance invented or used in Campania; for in Latin writers we find *campana statera*, for a steelyard; and in the Greek *καρτανιου*, and *ponderare*, "to weigh." In Britain, bells were applied to church-purposes, before the conclusion of the seventh century, in the monastic societies of Northumbria, and as early as the sixth even in those of Caledonia. And they were therefore used from the first erection of parish-churches among us.—Those of France and England appear to have been furnished with several bells. In the time of Clothair II. king of France, and in the year 610, the army of that king was frightened from the siege of the city of Sens, by ringing the bells of St Stephen's church. The second exception of Egbert, about the year 750, which is adopted in a French Capitulary of 801, commands every priest, at the proper hours, to sound the bells of his church, and then to go through the sacred offices to God. And the council of Eatham, in 1011, requires all the mulets for sins to be expended in the reparation of the church, clothing and feeding the minister of God, and the purchase of church-vestments, church-books, and church-bells. These were sometimes composed of iron in France; and in England, as formerly at Rome, were frequently made of brass. And as early as the ninth century, there were many cast of a large size and deep note.

Ingulphus mentions, that Turketulus abbot of Croyland, who died about the year 870, gave a great bell to the church of that abbey, which he named *Gut-luc*; and afterwards six others, viz. two which he called *Bartholomew* and *Betelin*, two called *Turketul* and *Tatwin*, and two named *Pega* and *Bega*, all which rang together; the same author says, *Non erat tantum tanta consonantia campanarum in tota Anglia*. Not long

Ee.J.

long after, Kinfus archbishop of York gave two great bells to the church of St John at Beverly, and at the same time provided that other churches in his diocese should be furnished with bells. Mention is made by St Aldhem, and William of Malmesbury, of bells given by St Dunstan to the churches in the west. The number of bells in every church gave occasion to the curious and singular piece of architecture in the campanile or bell-tower; an addition, which is more susceptible of the grander beauties of architecture than any other part of the edifice, and is generally therefore the principle or rudiments of it. It was the constant appendage to every parish-church of the Saxons, and is actually mentioned as such in the laws of Athelstan.

The Greek Christians are usually said to have been unacquainted with bells till the ninth century, when their construction was first taught them by a Venetian. Indeed, it is not true that the use of bells was entirely unknown in the ancient eastern churches, and that they called the people to church, as at present, with wooden mallets. Leo Allatius, in his dissertation on the Greek temples, proves the contrary from several ancient writers. It is his opinion, that bells first began to be used among them after the taking of Constantinople by the Turks; who, it seems, prohibited them, lest their sound should disturb the repose of souls, which, according to them, wander in the air. He adds, that they still retain the use of bells in places remote from the intercourse of the Turks; particularly, very ancient ones in Mount Athos. F. Simon thinks the Turks prohibited the Christians the use of bells, rather out of political than religious reasons; inasmuch as the ringing of bells might serve as a signal for the execution of revolts, &c.

In the ancient monasteries we find six kinds of bells enumerated by Durandus, viz. *Squilla*, rung in the refectory; *cymbalum*, in the cloister; *nola*, in the choir; *nolula* or *dupla*, in the clock; *campana*, in the steeple; and *signum* in the tower. Belcthus has much the same; only that for *squilla* he puts *tintinnabulum*, and places the *campana* in the tower, and *campanella* in the cloister. Others place the *tintinnabulum* or *tinnicium* in the refectory or dormitory; and add another bell called *corrigiucula*, rung at the time of giving discipline, to call the monks to be flogged. The *cymbalum* is sometimes also said to have been rung in the cloister, to call the monks to meat.

In the funeral monuments of Weever, are the following particulars relating to bells: "Bells had frequently these inscriptions on them:

" *Funera plango, Fulgura frango, Sabbata pango,*
" *Excito lentos, Dissipo ventos, Paco cruentos.*

" In the Little Sanctuary at Westminster King Edward III. erected a clochier, and placed therein three bells for the use of St Stephen's chapel: about the biggest of them were cut in the metal these words:

" King Edward made mee thirtie thousand weight and three.
" Take me down and wey mee, and more you shall fynd mee.

" But these bells being to be taken down in the reign of King Henry VIII. one writes underneath with a coale:

" But Henry the eight
" Will bait me of my weight." *Ibid.* 492.

N^o 44.

This last distich alludes to a fact mentioned by Stow in his survey of London, ward of Farringdon Within, to wit, that near to St Paul's school stood a clochier, in which were four bells called *Jesus's bells*, the greatest in all England, against which Sir Miles Partridge staked an hundred pounds, and won them of King Henry VIII. at a cast of dice. Nevertheless it appears that abroad there are bells of greater magnitude. In the steeple of the great church at Roan in Normandy is a bell with this inscription:

*Je suis George de Ambois,
Qui trente cinque mille pois.
Mes lui qui me pesera,
Trente six mill me trouvera.*

I am George of Ambois,
Thirtie five thousand in pois:
But he that shall weigh me,
Thirtie six thousand shall find me. *Ibid.*

And it is a common tradition that the bells of King's-college chapel, in the university of Cambridge, were taken by Henry V. from some church in France, after the battle of Agincourt. They were taken down some years ago, and sold to Phelps the bell-founder in White-Chapel, who melted them down.

The uses of bells were summed up in the following distich, as well as that first abovementioned:

*Laudo Deum verum, plebem voco, conjugo clerum,
Defunctos ploro, pestem fugo, festa decoro.*

Matthew Paris observes, that anciently the use of bells was prohibited in time of mourning; though at present they make one of the principal ceremonies of mourning. Mabillon adds, that it was an ancient custom to ring the bells for persons about to expire, to advertise the people to pray for them; whence our passing-bells. The passing-bell, indeed, was anciently rung for two purposes: one, to bespeak the prayers of all good Christians for a soul just departing; the other, to drive away the evil spirits who stood at the bed's foot, and about the house, ready to seize their prey, or at least to molest and terrify the soul in its passage: but by the ringing of that bell (for Durandus informs us, evil spirits are much afraid of bells), they were kept aloof; and the soul, like a hunted hare, gained the start, or had what is by sportsmen called *law*. Hence, perhaps, exclusive of the additional labour, was occasioned the high price demanded for tolling the greatest bell of the church; for, that being louder, the evil spirits must go farther off to be clear of its sound, by which the poor soul got so much more the start of them: besides, being heard farther off, it would likewise procure the dying man a greater number of prayers. The dislike of spirits to bells is mentioned in the Golden Legend, by W. de Worde. "It is said, the evil spirytes that ben in the regyon of thayre, doute moche when they here the belles rongen: and this is the cause why the belles ben rongen whan it thondreth, and whan grete tempeste and outrages of wether happen, to the ende that the feinds and wycked spirytes shold be abashed and flee, and cease of the movyng of tempeste." Lobineau observes, that the custom of ringing bells, at the approach of thunder, is of some antiquity; but that the design was not so much to shake the air, and so dissipate

Bell.

B. 11. dissipate the thunder, as to call the people to church, to pray that the parish might be preserved from that terrible meteor.

In the times of Popery, bells were baptized and anointed *oleo chrismatis*: they were exorcised, and blessed by the bishop; from a belief, that, when these ceremonies were performed, they had power to drive the devil out of the air, to calm tempests, to extinguish fire, and to recreate even the dead. The ritual for these ceremonies is contained in the Roman pontifical; and it was usual in their baptism to give to bells the name of some saint. In Chauncy's history of Hertfordshire, page 383, is a relation of the baptism of a set of bells in Italy with great ceremony, a short time before the writing that book. The bells of the parish-church of Winnington in Bedfordshire had their names cast about the verge of every one in particular, with these rhiming hexameters:

Nomina Campanis hæc indita sunt quoque nostris.

1. *Hoc signum Petri pulsatur nomine Christi.*
2. *Nomen Magdalene campana sonat melode.*
3. *Sit nomen Domini benedictum semper in eum.*
4. *Musa Raphaelis sonat auribus Immanuelis.*
4. *Sum Rosa pulsata nunquam Maria vocata.*

Weev. Fun. 122.

By an old chartulary, once in the possession of Weever the antiquary, it appears that the bells of the priory of Little Dunmow in Essex were, anno 1501, new cast, and baptized by the following names:

Prima in honore Sancti Michaelis Archangeli.

Secunda in honore S. Johannis Evangelisti.

Tertia in honore S. Johannis Baptistæ.

Quarta in honore Assumptionis beatæ Mariæ.

Quinta in honore sancti Trinitatis, et omnium sanctorum.

Ib. 633.

The bells of Osney abbey near Oxford were very famous; their several names were Douce, Clement, Austin, Hautecler [potius Hautcleri], Gabriel, and John.

Nankin in China was anciently famous for the largeness of its bells; but their enormous weight brought down the tower, the whole building fell to ruin, and the bells have ever lain on the ground. One of these bells is near 12 English feet high, the diameter seven and an half, and its circumference 23; its figure almost cylindrical, except for a swelling in the middle; and the thickness of the metal about the edges seven inches. From the dimensions of this bell, its weight is computed at 50,000 pounds, which is more than double the weight of that of Erfort, said by Father Kircher to be the greatest bell in the world. These bells were cast by the first emperor of the preceding dynasty, about 300 years ago. They have each their name; the hanger (*tekoui*), the eater (*che*), the keeper (*cheui*), the will (*fi*). Father le Compte adds, that there are seven other bells in Pekin, cast in the reign of Youlo, each of which weighs 120,000 pounds. But the sounds even of their biggest bells are very poor; being struck with a wooden in lieu of an iron clapper.

The practice of ringing bells in change, or regular peals, is said to be peculiar to England; whence Britain has been termed the *ringing island*. The custom seems to have commenced in the time of the Saxons,

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and was common before the conquest. The ringing of bells, though a recreation chiefly of the lower sort, is in itself not incurious. The tolling a bell is nothing more than the producing a sound by a stroke of the clapper against the side of the bell, the bell itself being in a pendant position and at rest. In ringing, the bell, by means of a wheel and a rope, is elevated to a perpendicular; in its motion to this situation the clapper strikes forcibly on one side, and in its return downwards on the other side of the bell, producing at each stroke a sound. There are in London several societies of ringers, particularly one known by the name of the *College of Youths*: of this it is said Sir Matthew Hale, lord chief justice of the court of King's Bench, was, in his youthful days, a member; and in the life of this learned and upright judge, written by Bishop Burnet, some facts are mentioned which favour this relation. In England the practice of ringing is reduced to a science, and peals have been composed which bear the name of the inventors. Some of the most celebrated peals now known were composed about 50 years ago by one Patrick. This man was a maker of barometers: in his advertisements he styled himself *Toricellian Operator*, from Toricelli, who invented instruments of this kind. In the year 1684, one Abrahams Rudhall, of the city of Gloucester, brought the art of bell-founding to great perfection. His descendants in succession have continued the business of calling bells; and by a list published by them it appears, that at Lady-day 1774 the family, in peals and odd bells, had cast to the amount of 3594. The peals of St Dunstan's in the East, and St Bride's, London, and St Martin's in the Fields Westminster, are in the number.

The music of bells is altogether melody; but the pleasure arising from it consists in the variety of interchanges, and the various succession and general predominance of the consonances in the sounds produced. Musical authors seem to have written but little upon this subject.

Electrical BELLS are used in a variety of entertaining experiments by electricians. The apparatus, which is originally of German invention, consists of three small bells suspended from a narrow plate of metal; the two outermost by chains, and that in the middle, from which a chain passes to the floor, by a silken string. Two small knobs of brass are also hung by silken strings, one on each side of the bell in the middle, which serve for clappers. When this apparatus is connected with an electrified conductor, the outermost bells suspended by the chains will be charged, attract the clappers, and be struck by them. The clappers becoming electrified likewise will be repelled by these bells, and attracted by the middle bell, and discharge themselves upon it by means of the chain extending to the floor. After this, they will be again attracted by the outermost bells; and thus, by striking the bells alternately, occasion a ringing, which may be continued at pleasure. Flashes of light will be seen in the dark between the bells and clappers; and if the electrification be strong, the discharge will be made without actual contact, and the ringing will cease. An apparatus of this kind, connected with one of those conductors that are erected for securing buildings from lightning, will serve to give notice of the approach and passage of an electrical cloud.

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BEL-

Bell.

Hunter's
Hist of
Music.
Vol IV.
P. 15.

Bell
||
Bellai.*BELL-Animal.* See ANIMALCULE, n^o 24—28.*BELL-Metal.* See CHEMISTRY-Index.

BELL, in chemistry, denotes a glass vessel placed over some matter in a state of exhalation, either to collect the vapour or gather the flowers. Chemical bells are a sort of receptacles chiefly used in preparing the oil or spirit of sulphur, for gathering and condensing fumes into a liquor.

Diving-BELL. See DIVING.*BELL-Foundery.* See FOUNDRY.*BELL-Flower.* in botany. See CAMPANULA.*BELL-Weed.* in botany. See JACEA.

BELLA (Stefano de la), a most eminent engraver, was born at Florence A. D. 1610. His father was a goldsmith; and he himself began to work at his father's business. But whilst he was learning to draw, in order to perfect himself in that profession, some of the prints of Callot fell by accident into his hands; with which he was so delighted, that he prevailed upon his father to permit him to apply himself to engraving; and he became the disciple of Santa Gallina, who was also the instructor of Callot. De la Bella at first imitated the manner of Callot. His abilities soon began to manifest themselves; and as by degrees he acquired a facility in the handling of the point, he quitted the style in which he only shone as an imitator, and adopted one entirely his own, which in freedom and spirit is said even to have surpassed that of his fellow disciple. He went to Paris A. D. 1642, where he formed an acquaintance with Israel Silvestre, then newly returned from Rome; and he was much employed by Henriette the uncle of Silvestre. Some time after, Cardinal Richelieu engaged him to go to Arras and make drawings of the siege and taking of that town by the royal army; which drawings he engraved at his return. He also went to Holland, where, it is reported, he saw some of the prints of Rembrandt Gerretsz, and attempted to imitate them; but finding he did not succeed to his expectations, he dropped that design, and continued to pursue his own manner, as most suitable to his genius. After abiding some considerable time at Paris, his family affairs obliged him to return to Florence; where he obtained a pension from the Great Duke, and was appointed to instruct the prince Cosmus his son in the art of design. Being subject to violent pains in the head, his life was rendered very uncomfortable by this cruel disorder, which at last put an end to it A. D. 1664, when he was only 54 years of age. De la Bella drew very correctly, and with great taste. His works manifest much genius and vast fertility of invention. The fire and animation which appears in them compensates for their slightness; and we may reasonably expect to find them slight when we are told that he engraved 1400 plates.

BELLAC, a town of La Marche in France, situated on the little river Union. It contains about 770 houses, and 3000 inhabitants. E. Long. 1. 14. N. Lat. 46. 4.

BELLADONA, in botany, the trivial name of a species of *Atropa*. See *ATROPA*.

BELLAI (William du), lord of Langey, a French general, who signalized himself in the service of Francis I. He was also an able negociator, so that the emperor Charles V. used to say, "that Langey's pen had fought more against him than all the lances in France."

He was sent to Piedmont in quality of viceroy, where he took several towns from the Imperialists. His address in penetrating into the enemy's designs was surprising. In this he spared no expence, and thereby had intelligence of the most secret councils of the emperor and his generals. He was extremely active in influencing some of the universities of France to give their judgment agreeable to the desires of Henry VIII. king of England, when this prince wanted to divorce his queen, in order to marry Anne Bullen. It was then the interest of France to favour the king of England in this particular, it being an affront to the emperor, and a gratification to Henry, which might serve to form a strict alliance between him and Francis I. He was sent several times into Germany to the princes of the Protestant league, and was made a knight of the order of St Michael. He was also a man of learning, having given proofs of his abilities and genius as a writer. He composed several works; the most remarkable of which was, the History of his Own Times, in Latin; divided into octoades, that is, several parts, each consisting of eight books; most of which, however, have been lost. When Langey was in Piedmont in 1542 he had some remarkable intelligence which he was desirous himself to communicate to the king, and being very insinuating, he ordered a litter for his conveyance; but after having passed the mountain of Tarara, betwixt Lyons and Roan, he found himself so extremely bad at St Saphorin that he was obliged to stop there, where he died the 9th of January, in the year 1543. He was buried in the church of Mans, and a noble monument was erected to his memory.

BELLARMIN (Robert), an Italian Jesuit, one of the best controversial writers of his time. In 1576 he read lectures at Rome on controversies; which he did with such applause, that Sixtus V. sending a legate into France in 1590, appointed him as a divine, in case any dispute in religion should happen to be discussed. He returned to Rome, and was raised successively to different offices, till at last, in 1599, he was honoured with a cardinal's hat; to accept of which dignity, it is said, they were obliged to force him by the threats of an anathema. It is certain, that no Jesuit ever did greater honour to his order than he; and that no author ever defended the cause of the Romish church in general, and that of the pope in particular, to more advantage. The Protestants have owned this sufficiently: for, during the space of 50 years, there was scarcely any considerable divine among them who did not fix upon this author for the subject of his hooks of controversy. Notwithstanding the zeal with which this Jesuit maintained the power of the pope over the temporality of kings, he displeased Sixtus V. in his work *De Romano Pontifice*, by not insinuating that the power which Jesus Christ gave to his viceroy was direct, but only indirect; and had the mortification to see it put into the index of the inquisition, though it was afterwards removed. He left, at his death, to the Virgin Mary one half of his soul, and to Jesus Christ the other.—Bellarmine is said to have been a man of great chastity and temperance, and remarkable for his patience. His stature was low, and his mien very indifferent; but the excellence of his genius might be discovered from the traces of his countenance. He

Bellai,
Bellarmine.

Bellatrix || expressed himself with great perspicuity; and the words which he first made use of to explain his thoughts were generally so proper, that there appeared no rature in his writings.

Bellegarde.

BELLAATRIX, in astronomy; a ruddy glittering star of the second magnitude, in the left shoulder of Orion. It takes its name from *bellum*, as being anciently supposed to have a great influence in kindling wars, and forming warriors. Its longitude, according to Hevelius, for the year 1700, was $16^{\circ} 47' 20''$; and its latitude southward $16^{\circ} 52' 11''$.

BELLCLARE, a town of Ireland, in the province of Connaught, and county of Sligo. W. Long. 9. 5. N. Lat. 53. 56.

BELLE, a town of the French Netherlands, seated in E. Long. 2 40. N. Lat. 50. 45.

BELLEAU (Remi), a French poet, born at Nogent le Rotrou, in the territory of Perche, and province of Orleansois. He lived in the family of Renatus of Lorraine, marquis of Elbeuf, general of the French galleys; and attended him in his expedition into Italy, in 1557. This prince highly esteemed Belleau for his courage; and having also a high opinion of his genius and abilities, entrusted him with the education of his son Charles of Lorraine. Belleau was one of the seven poets of his time who were denominated the *French Pleiades*. He wrote several pieces; and translated the odes of Anacreon into the French language, but in this he is thought not to have preserved all the natural beauties of the original. His pastoral pieces are in greatest esteem. His verses in that way (according to his eulogists) are expressed with such beauty and simplicity, that they seem to be a living picture of what they describe. He also wrote an excellent poem on the nature and difference of precious stones, which by some has been reputed his best performance. Belleau died at Paris, in the family of the duke d'Elbeuf, on the 6th of March, 1577. He was interred in the church De Peres Augustines, near the Pont-neuf: several eulogiums were made to his memory.

BELLEFOREST (Francis de), a French author, born in the province of Guienne, in 1530. He was but seven years of age when he lost his father; and his mother was left in poor circumstances, but she contributed all in her power to his education. He was supported some years by the queen of Navarre, sister to Francis I. Some time after he went to study at Bourdeaux; thence he removed to Toulouse; and at last to Paris, where he got acquainted with several men of learning, and was honoured with the friendship of many persons of quality. He wrote, 1. A history of the nine Charles's of France; 2. Annotations on the books of St Augustin; 3. An universal history of the world; 4. The chronicles of Nicholas Gillet, augmented; 5. An universal cosmography; 6. Annals, or a general history of France: and many other works. In short, he supported his family by writing books on whatever subject was proposed to him by the booksellers, according to the taste of the public. He died in 1583.

BELLEGARDE, a strong town of France in Roussillon, on the frontiers of Catalonia. It is an important place on account of its being a passage to the Pyrenean mountains. E. Long. 3. 0. N. Lat. 42. 20.

BELLEGARDE, a town of Burgundy in France, with

the title of a duchy. It is seated on the river Saone, in E. Long. 4. 0. N. Lat. 46. 57.

Belleisle.

BELLEISLE, an island of France, on the coast of Brittany. It is the largest of all the European islands belonging to the French king, being between 12 and 13 leagues in circumference. It is a mixture of craggy rocks and fertile soil; but the inhabitants are very poor, and the only trade carried on in it is the curing of pilchards. There are three harbours in the island, *viz.* Palais, Sauzon, and Goulford; every one of which labours under some capital defect, either in being exposed, shallow or dangerous in the entrance. It contains only one little city called *Le Palais*, three county towns, 103 villages, and about 5000 inhabitants. The island originally belonged to the earl of Cornouaille; but was afterwards yielded to the king, who in 1742 erected it into a duchy, in favours of marshal Belleisle. The town of Palais takes its name from a castle belonging to the duke de Belleisle, which stood in its neighbourhood; but was afterwards converted into a citadel fronting the sea, and strongly fortified. Its fortifications are composed principally of hornworks; and it is provided with two dry ditches, the one next the counterescarp, and the other so contrived as to secure the interior fortifications. This citadel is divided from the largest part of the town by an inlet of the sea, over which there is a bridge of communication. From the other part of the town, and which is most inhabited, it is only divided by its own fortifications and a glacis. In this state was the island in 1761, when an expedition was undertaken against it by a British fleet under the command of commodore Keppel, having on board a considerable land force commanded by general Hodgson. The fleet sailed from Spithead on the 29th of March, and arrived before Belleisle on the 7th of April. The next day it was agreed to attempt a landing on the south-east part of the island, in a sandy bay, near Lochmana point. Here the enemy were in possession of a little fort; they had moreover entrenched themselves on a hill excessively steep, the foot of which was feared away. The attempt was made in three places with great resolution; but the British were at last repulsed with the loss of 500 men. It was not before the 25th of April that the weather allowed a second attempt. This was made on a very strong place, where the enemy were rather less attentive, on account of the excessive steepness and difficulty of climbing up the rocks. Besides the principal attack, two feints were made at the same time to distract the enemy, whilst the men of war directed their fire with great success on the hills. These manœuvres gave brigadier-general Lambert, with an handful of men, an opportunity of climbing up a very steep rock without molestation. This little body formed themselves in good order without delay, and were immediately attacked by 300 French. The British, however, sustained this attack until the whole corps of brigadier Lambert, which had now likewise ascended, came to their assistance, with whose help they repulsed the enemy. The landing of all the forces being soon after made good, the French were driven into the town of Palais. Here the chevalier de St Croix who commanded them, a brave and experienced officer, resolved to hold out to the last extremity; and it was not till the 7th of June that he capitulated, and the garrison

Belleisle, marched out with the honours of war. The island, however was restored to the French by the treaty concluded in 1763.

BELLEISLE, an island of North America, lying at the mouth of the strait between the country of the Esquimaux, or New Britain, and the north end of Newfoundland; whence the straits take also the name of *Belleisle*. W. Long, 58. 5. N. Lat. 51. 50.

BELLENDEN, or BALLANTINE, (William), a Scotch writer who flourished in the beginning of the 17th century, was professor of humanity or belles-lettres at Edinburgh, and master of the requests to James I. of England. But the former is supposed to have been only nominal, or early given up, and the latter also to have consisted in the name only, since he appears to have resided almost constantly at Paris, where by the favour of his sovereign he was enabled to live in easy circumstances. There he published, in 1608, his *Cicero princeps*, a singular work; in which he extracted, from Cicero's writings detached passages, and comprised them into one regular body, containing the rules of monarchical government, with the line of conduct to be pursued, and the virtues proper to be encouraged, by the Prince himself: And the treatise, when finished, he dedicated from a principle of patriotism and gratitude, to the son of his master, Henry, then Prince of Wales. Four years afterwards, namely, in 1612, he proceeded to publish another work of a similar nature, which he called *Cicero Consul. Senator Senatusque Romanus*, in which he treated, with much perspicuity, and a fund of solid information, on the nature of the Consular office, and the constitution of the Roman Senate. Finding these works received, as they deserved, with the unanimous approbation of the learned, he conceived the plan of a third work, *De Statu prisce Orbis*, which was to contain a history of the progress of government and philosophy, from the times before the flood to their various degrees of improvement under the Hebrews, Greeks, and Romans. He proceeded so far as to print a few copies of this work, in the year 1615, when it seems to have been suggested that his treatises, *De Statu Principis*, *De Statu Reipublice*, and *De Statu Orbis*, being on subjects so nearly resembling each other, there might be a propriety in uniting them into one work, by republishing the two former, and intitling the whole *Bellendenus de Statu*. With this view, he recalled the few copies of his last work that were abroad, and after a delay of some months, published the three treatises together, under their new title, in 1616. These pieces have been lately reprinted by an ingenious political editor, who has thought proper to inscribe them to Mr Burke, Lord North, and Mr Fox, whose respective portraits are prefixed to each dedication, and whose talents and virtues he celebrates and defends in a preface of 76 pages, containing a very free and bold discussion of our public men and measures in very classical language, and a strong and satirical representation, under borrowed names of antiquity, of the chiefs of the other party, or the present ministry. Bellenden wrote another work, published after his death, *De tribus Luminibus Romanorum*, whom he conceives to be Cicero, Seneca, and the elder Pliny. The editor gives an account of this work, from whence he took his idea of drawing his characters of the three luminaries of Great Britain. He marks the proficien-

cy in Greek and Roman literature which once distinguished the Scotch, before the civil dissensions drove their brightest geniuses abroad, and celebrates the ardour for philosophy and literature so prevalent in North Britain at present. Dr Middleton has been charged with borrowing not only the matter, but the arrangement, of his "Life of Cicero," from Bellenden, without the least acknowledgment, and the editor confesses himself of this opinion. It is surprising how little is known of Bellenden or his writings: concerning his lineage, birth, private life, and death, no notices have been transmitted even by tradition.

BELLEROPHON, in fabulous history, the son of Glaucus king of Epirus, happening accidentally to kill his brother fled to Prætus king of Argos, who gave him a hospitable reception: but Sthenobea, his queen, falling in love with the beautiful stranger, and finding that nothing could induce him to injure his benefactor, she accused him to her husband of an attempt to violate her honour. Prætus, however, not being willing to act contrary to the laws of hospitality, sent him to Iobates king of Lysia, and the father of Sthenobea, with letters desiring him to put him to death: whence the proverb *Bellerophontis literas afferet*, equivalent to *Littere Uria*. That prince, at the receipt of these letters, was celebrating a festival of nine days, which prevented Bellerophon's destruction. Iobates, however, sent him in the meantime to subdue the Solymi, the Amazons, and Lysians, and thought to get rid of him by exposing him to the greatest dangers; but by his prudence and courage he came off victorious. Iobates next employed him to destroy the Chimæra; when Minerva, or, according to others, Neptune, in consideration of his innocence, furnished him with the horse Pegasus, by whose assistance he killed the Chimæra. Iobates, on his return, being convinced of his truth and integrity, and charmed with his heroic virtues, gave him his daughter Philonoe in marriage, and declared him his successor; which when Sthenobea heard, she killed herself. Bellerophon at length growing vain with his prosperity, resolved, by the assistance of Pegasus, to ascend the skies; when Jupiter checked his presumption, by striking him blind in his flight; on which he fell down to the earth, and wandered till his death in contempt and misery: but Pegasus mounting into heaven, Jupiter placed him among the constellations.

BELLES LETTRES. Whether we consult the voluminous dictionaries of the French language, or those treatises that profess to point out the method of studying and teaching the belles lettres, we find not, in the one or the other, either a clear definition, or a succinct explication of the words *belles lettres*, nor any summary of those sciences which are comprehended under that general and collective denomination. It appears to be a vague term, under which every one may include whatever he thinks proper. Sometimes we are told that by the belles lettres is meant, the knowledge of the arts of poetry and oratory; sometimes that the true belles lettres are natural philosophy, geometry, and other essential parts of learning; and sometimes, that they comprehend the art of war, by land and sea: in short, they are made to include all that we know, and whatever we please; so that, in treating on the belles lettres, they talk of the use of the sacraments, &c. * Some comprehend under the term, all

* Rollin on the Belles Lettres.

Belle-ville
ll
Bellini.
} See Arts
(polite.)

those instructive and pleasing sciences which occupy the memory and the judgment, and do not make part either of the superior sciences, of the *polite arts* †, or of mechanic professions: hence they make history, chronology, geography, genealogy, blazonry, philology, &c. the belles lettres. In a word, it were an endless task to attempt to enumerate all the parts of literature which different learned men have comprehended under this title. Nor would it be of any use to the reader for us to pretend to fix the true import of the term. Whatever arts or sciences it may be supposed to include, they are severally explained in the course of this work.

BELLE-VILLE, a town of the Beaujolois in France, seated near the river Saone, in E. Long. 4. 46. N. Lat. 45. 5.

BELLEVOIS, painter of sea-pieces, is known through all parts of Europe as a good painter, though no particulars have been handed down concerning his life. He died in 1684. His subjects are views of havens, sea-ports, shores, calms, and storms at sea; but in his calms he shows his peculiar excellence. Pictures of this master are often in public sales; and some of them, which seem of his best style, are sold for a tolerable price.

BELLEY, or BELLAY, a town of France, with a bishop's see, and capital of Bugey. It is seated near the river Rhone, in E. Long. 5. 50. N. Lat. 45. 43.

BELLINGHAM, a town of Northumberland in England. W. Long 2. 10. N. Lat. 55. 10.

BELLINI (Gentil), a Venetian painter, born in the year 1421. He was employed by the republic of Venice, and to him and his brother the Venetians are indebted for the noble works which are to be seen in the council-hall. We are told that Mahomet II. emperor of the Turks, having seen some of his performances, was so struck with them, that he wrote to the republic, intreating them to send him. The painter accordingly went to Constantinople, where he did many excellent pieces. Amongst the rest, he painted the decollation of St John the Baptist, whom the Turks revere as a great prophet. Mahomet admired the proportion and shadowing of the work; but he remarked one defect in regard to the skin of the neck, from which the head was separated; and in order to prove the truth of his observation, he sent for a slave and ordered his head to be struck off. This sight so shocked the painter, that he could not be easy till he had obtained his dismissal; which the Grand Signior granted, and made him a present of a gold chain. The republic settled a pension upon him at his return, and made him a knight of St Mark. He died in 1501, in the 80th year of his age.

John Bellini, his brother, painted with more art and sweetness than he; and died in 1512, aged 90.

BELLINI (Laurence), an eminent physician, born at Florence in the year 1643. After having finished his studies in polite literature, he went to Pisa, where he was assist'd by the generosity of the grand duke Ferdinand II. and studied under two of the most learned men of that age, Oliva and Borelli. Oliva instructed him in natural philosophy, and Borelli taught him mathematics. At 20 years of age, he was chosen professor of philosophy at Pisa, but did not continue long in this office; for he had acquired such a reputation for

his skill in anatomy, that the grand duke procured him a professorship in that science. This prince was often present at his lectures, and was highly satisfied with his abilities and performances. Bellini, after having held his professorship almost 30 years, accepted of an invitation to Florence, when he was about 50 years of age. Here he practis'd physic with great success, and was advanced to be first physician to the grand duke Cosmus III. He wrote the following books in Latin: 1. An anatomical discourse on the structure and use of the kidneys. 2. A speech by way of thanks to the serene duke of Tuscany. 3. Some anatomical observations, and a proposition in mechanics. 4. Of the urine and pulse, of blood letting, fevers, and diseases of the head and breasts. 5. Several tracts concerning urine, the motion of the heart, and bile, &c. He died January 8th, 1703, being 60 years of age. His works were read and explained publicly during his life, by the famous Scotch physician Dr Pitcairn, professor of physic in Leyden.

BELLINZONA, a town of Italy, in the Milanese, and one of the bailiwicks which the Swiss possess in that country. It is seated on the river Jesino, five miles above the place where it falls into the Lago Maggiore, and it is fortified with two strong castles formerly joined together by a wall flanked with towers; but the Swiss have demolished a part of the fortifications. E. Long. 9. 6. N. Lat. 46. 8.

BELLIS, the DAISY: A genus of the syngenesia order, belonging to the polygamia superflua class of plants; and in the natural method ranking under the 49th order, *Compositæ discoïdes*. The receptacle is naked and conic; there is no pappus; the calyx is hemispherical, with equal scales; and the seeds are ovated.

Species, &c. 1. The perennis, with a naked stalk, having one flower. This is the common daisy, which grows naturally in pasture-lands in most parts of Europe. It is often a troublesome weed in the grass of gardens, so is never cultivated. Its leaves have a subtile subacid taste; and are recommended as vulneraries, and in asthmas and hectic fevers, as well as in such disorders as are occasioned by drinking cold liquors when the body has been much heated. Ludovici prefers this plant to those commonly used as antiscorbutics and resolvents of coagulated blood in hypochondriacal disorders. 2. The annua, with leaves on the lower part of the stalk, is a low annual plant growing naturally on the Alps and the hilly parts of Italy. It seldom rises more than three inches high; and hath an upright stalk garnished with leaves on the lower part: but the upper part is naked, supporting a single flower like that of the common daisy, but smaller. 3. The hortensis, or garden daisy, with a large double flower. This is generally thought to be only a variety of the common daisy; but Mr Miller assures us, that he was never able to improve the common daisy by culture, or to make the garden daisy degenerate into the common sort for want of it. The varieties of this species cultivated in gardens are, the red and white garden daisy; the double variegated garden daisy; the childing, or hen and chicken garden daisy; and the cock's-comb daisy with red and white flowers. The garden daisies flower in April and May, when they make a pretty variety, being intermixed with plants of the same growth: they should

B. linzonia,
Bellis.

Bellis
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Bell. ri.

be planted in a shady border, and a loamy soil without dung, in which they may be preserved without varying, provided the roots are parted and transplanted every autumn. This is all the culture they require, except keeping them free from weeds. Formerly they were planted as edgings to borders; but for this purpose they are improper, because where fully exposed to the sun, they frequently die in large patches, whereby the edgings become bald in many places.

BELLIS Major. See CHRYSANTHEMUM.

BELLON, a distemper common in countries where they smelt lead-ore. It is attended with languor, intolerable pains and sensations of gripings in the belly, and generally costiveness.—Beasts, poultry, &c. as well as men, are subject to this disorder: hence a certain space round the smelting-houses is called *bellon-ground*, because it is dangerous for an animal to feed upon it.

BELLONA, in Pagan mythology, the goddess of war, is generally reckoned the sister of Mars, and some represent her as both his sister and wife. She is said to have been the inventress of the needle; and from that instrument is supposed to have taken her name *BELONIA*, signifying a *needle*. This goddess was of a cruel and savage disposition, delighting in bloodshed and slaughter; and was not only the attendant of Mars, but took a pleasure in sharing his dangers. She is commonly represented in an attitude expressive of fury and distraction, her hair composed of snakes clotted with gore, and her garments stained with blood: she is generally depicted driving the chariot of Mars, with a bloody whip in her hand; but sometimes she is drawn holding a lighted torch or brand, and at others a trumpet. Bellona had a temple at Rome, near the Circus Flaminius, before which stood the column of war, from whence the consul threw his lance when he declared war. She was also worshipped at Comana, in Cappadocia; and Camden observes, that in the time of the emperor Severus, there was a temple of Bellona in the city of York.

BELLONARII, in antiquity, priests of Bellona, the goddess of wars and battles. The bellonarii cut and mangled their bodies with knives and daggers in a cruel manner, to pacify the deity. In this they are singular, that they offered their own blood, not that of other creatures, in sacrifice. In the fury and enthusiasm wherewith they were seized on these occasions, they ran about raging, uttering prophecies, and foretelling blood and slaughter, devastations of cities, revolutions of states, and the like: whence Martial calls them *turba entheata Bellonæ*. In after-times, they seem to have abated much of their zeal and transport, and to have turned the whole into a kind of farce, contenting themselves with making signs and appearances of cutting and wounds. Lampridius tells us, the emperor Commodus, out of a spirit of cruelty, turned the farce again into a tragedy, obliging them to cut and mangle their bodies really.

BELLONIA (so named from the famous Petrus Bellonius, who left many valuable tracts on natural history, &c.), a genus of the monogynia order, belonging to the pentandria class of plants. Of this genus there is only one species known, *viz.* the *aspera*, with a rough balm leaf. This is very common in the warm islands of America.

BELLORI (John Peter), of Rome; a celebrated

antiquary and connoisseur in the polite arts: Author of the lives of the modern painters, architects, and sculptors, and of other works on antiquities and medals. He died in 1696.

BELLOVACI (anc. geog.), a people of Gallia Belgica, reckoned the bravest of the Belgæ; now the *Beauvaisis*, in the isle of France.

BELLOWS, a machine so contrived as to expire and inspire the air by turns, by enlarging and contracting its capacity. This machine is used in chambers and kitchens, in forges, furnaces, and founderies, to blow up the fire: it serves also for organs and other pneumatic instruments, to give them a proper degree of air. All these are of various constructions, according to their different purposes; but in general they are composed of two flat boards, sometimes of an oval, sometimes of a triangular figure: Two or more hoops, bent according to the figure of the boards, are placed between them; a piece of leather, broad in the middle, and narrow at both ends, is nailed on the edges of the boards, which it thus unites together; as also on the hoops which separate the boards, that the leather may the easier open and fold again: a tube of iron, brass, or copper, is fastened to the undermost board, and there is a valve within, that covers the holes in the underboard to keep in the air.

Anacharsis the Scythian is recorded as the inventor of bellows. The action of bellows bears a near affinity to that of the lungs; and what we call blowing in the latter, affords a good illustration of what is called *respiring* in the former. Animal life itself may on some occasions be subsisted by blowing into the lungs with a pair of bellows. Dr Hooke's experiment to this effect is famous: having laid the thorax of a dog bare, by cutting away the ribs and diaphragm, pericardium, &c. and having cut off the *aspera arteria* below the epiglottis, and bound it on the nose of a bellows, he found, that as he blowed, the dog recovered, and as he ceased, fell convulsive; and thus was the animal kept alternately alive and dead above the space of an hour. There are bellows made wholly of wood, without any leather about them; one of which is preserved in the repository of the Royal Society; and Dr Plot describes another in the copper-works at Ellaston in Staffordshire. Ant. della Fruta contrived a substitute for bellows, to spare the expence thereof in the fusion of metals. This is called by Kircher *camera æolia*, and in England commonly the *water-bellows*; where water falling thro' a funnel into a close vessel, sends from it so much air continually as blows the fire. See the article FURNACE, where different blowing machines of this kind are described.

Smiths and founders bellows, whether single or double, are wrought by means of a rocker, with a string or chain fastened thereto, which the workman pulls. The bellow's pipe is fitted into that of the tewel. One of the boards is fixed, so as not to play at all. By drawing down the handle of the rocker, the moveable board rises, and by means of a weight on the top of the upper board, sinks again. The bellows of forges and furnaces of mines usually receive their motion from the wheels of a water-mill. Others, as the bellows of enamellers, are wrought by means of one or more steps or treddles under the workman's feet. Lastly, the bellows of organs are wrought

Bellovacis
Bellows.

Bellows
||
Belon.

by a man called the *blower*; and in small organs by the foot of the player. Dutchers have also a kind of blast or bellows of a peculiar make, by which they bloat or blow up their meat when killed, in order to piecing or parting it the better.

BONE-BELLOWS, *φυσητήρες οστέων*, occur in Herodotus for those applied by the Scythians to the genitals of mares, in order to distend the uterus, and by this compression make them yield a greater quantity of milk.

Hessian BELLOWS are a contrivance for driving air into a mine for the respiration of the miners. This M. Papin improved, changing its cylindrical form into a spiral one; and with this, working it only with his foot, he could make a wind to raise two pound weight.

Hydrostatic BELLOWS. See *HYDROSTATICS*.

BELLUNESE, a territory of Italy, belonging to the Venetians. It lies between Friuli, Codorino, Feltrino, the bishopric of Trent and Tirol. It has good iron mines, but the only considerable place is Belluno.

BELLUNO, a town of Italy, in the Venetian territories, and capital of the Bellunese. It is a bishop's see; and is situated among the Alps, on the river Piave, between the towns Cadora and Trevisani, in E. Long. 12. 15. N. Lat. 46. 9.

BELLY, in anatomy, the same with what is more usually called *abdomen*. See *ANATOMY*, Part III.

BELMONTE, a town of Italy, in the hither Calabria, and kingdom of Naples. It is situated on the coast of the Tuscan sea, in E. Long. 16. 50. N. Lat. 39. 20.

BELOMANCY; *BELOMANTIA*, a kind of divination by means of arrows, practised in the east, but chiefly among the Arabians. The word is of Greek origin; compounded of *βέλος* *arrow*, and *μαντία* *divination*.

Belomancy has been performed in different manners. One was to mark a parcel of arrows, and put 11 or more of them into a bag: these were afterwards drawn out; and according as they were marked or not, they judged of future events.

Another way was to have three arrows, upon one of which was wrote, "God orders it me;" upon another, "God forbids it me;" and upon the third nothing at all. These were put into a quiver, out of which they drew one of the three at random; if it happened to be that with the first inscription, the thing they consulted about was to be done: if it chanced to be that with the second inscription, it was let alone; but if it proved that without inscription, they drew over again.

Belomancy is an ancient practice, and probably that which Ezekiel mentions, chap. xxi. 21. At least St Jerome understands it so, and observes that the practice was frequent among the Assyrians and Babylonians. Something like it is also mentioned in Hosea, chap. iv. only that slaves are there mentioned instead of arrows, which is rather rhabdomancy than belomancy. Grotius, as well as Jerome, confounds the two together, and shows that it prevailed much among the Magi, Chaldeans, and Scythians; whence it passed to the Sclavonians, and thence to the Germans, whom Tacitus observes to make use of it.

BELON (Peter), of Le Mans, the capital of Le

Maine a province of France, flourished about the middle of the 16th century. He published several books in Latin. He wrote, in French, of birds, beasts, fishes, serpents, and the neglected culture of plants; and a book of Travels, or observations of many singularities and memorable things found in Greece, Asia, Judæa, Egypt, Arabia, and other foreign countries. He was murdered near Paris by one of his enemies, in 1564.

BELONE, in ichthyology, the trivial name of a species of efox. See *ESOX*.

BELSHAZZAR, the last king of Babylon, generally supposed to be the son of Evil-merodach, and grandson to the great Nebuchadnezzar.—During the time that Babylon was besieged by Cyrus, Belshazzar made an entertainment for a thousand of his most eminent courtiers (Dan. v. 1, &c.); and being heated with wine, ordered that the vessels of gold and silver which his grandfather Nebuchadnezzar had taken out of the temple at Jerusalem might be brought to the banqueting-house, that he and his princes, together with his wives and concubines, might drink out of them, which accordingly was done; and to add to their profaneness, in the midst of their cups, they sang songs in praise of their several idols. But it was not long before a damp was put to the king's mirth, by an hand appearing upon the wall, which in three words wrote the sentence of his condemnation. The king saw the hand that wrote; and, being exceedingly affrighted, commanded all his wife men, magicians, and astrologers, to be immediately called, that they might read the writing, and explain its meaning. When they came, the king promised, that whoever should expound this writing should be made the third person of his kingdom in place and power. But the Magi could comprehend nothing of this writing; which increased the disorder and uneasiness that the king was in, together with his whole court: whereupon, at the instance of the queen-mother, Daniel was sent for. The king made him the same offer of honours and presents that he had done to his own magicians if he would explain the writing. Daniel modestly refused those offers: but having undertaken to perform what he required of him, he first reproved the king with great freedom for his ingratitude to God, who had advanced him to the rank of a sovereign, and for the profanation of the vessels which were consecrated to his service; and then proceeded to the interpretation of the words, which were these, *Mene, Tekel, Upharsin*. *Mene*, says he, which signifies *number*, intimates, that the days both of your life and reign are numbered, or that you have but a short time to live; *Tekel*, which signifies *weight*, intimates, that you have been weighed in the balance of God's justice, and found too light; and *Upharsin* (or *Peres*, as Daniel has it, and means the same thing), which signifies a *fragment*, intimates, that your kingdom shall be divided and given to the Medes and Persians. Which accordingly came to pass: for that very night, in the midst of their feasting and revelling, the city was taken by surprise, Belshazzar slain, and the kingdom translated to Cyaxares, whom the Scripture calls *Darius the Mede*. See *BABYLON*.

BELT, the *Great*, a famous strait of Denmark between the island of Zealand and that of Tuncen, at the entrance of the Baltic Sea. It is not however so commodious,

Belone
||
Belt.

Belt
||
Belturbet.

modious, nor so much frequented, as the Sound. In 1658 the whole strait was frozen so hard, that Charles Guiltavus king of Sweden marched over it with a design to take Copenhagen.

BELT, the *Lesser*, lies to the west of the Great Belt, between the island of Funen and the coast of Jutland. It is one of the passages from the German Ocean to the Baltic, though not three miles in breadth, and very crooked.

BELT, *Balthus*, properly denotes a kind of military girdle, usually of leather, wherewith the sword or other weapons are sustained.—Belts are known among the ancient and middle-age writers by divers names, as *ζώνη*, *ζώνη*, *zōna*, *cingulum*, *remniculum*, *rinca* or *rinza*, and *baldrillus*. The belt was an essential piece of the ancient armour; insomuch that we sometimes find it used to denote the whole armour. In later ages, the belt was given to a person when he was raised to knight-hood; whence it has also been used as a badge or mark of the knightly order.

The denomination *belt* is also applied to a sort of bandages in use among surgeons, &c. Thus we meet with quicksilver belts, used for the itch; belts for keeping the belly light, and discharging the water in the operation of tapping, &c.

BELT is also a frequent disease in sheep, cured by cutting their tails off, and laying the fore bare; then casting mould on it, and applying tar and goose grease.

BELTS, in astronomy, two zones or girdles surrounding the body of the planet of Jupiter. See ASTRONOMY.

BELTS, in geography, certain straits between the German Ocean and the Baltic. The belts belong to the king of Denmark, who exacts a toll from all ships which pass through them, excepting those of Sweden, which are exempted.

BEL-TEIN, a superstitious custom observed in the Highlands of Scotland. It is a kind of rural sacrifice, performed by the herdsmen of every village on the first of May. They cut a square trench on the ground, leaving a turf in the middle: on that they make a fire of wood, on which they dress a large caudle of eggs, butter, oatmeal, and milk; and bring, besides the ingredients of the caudle, plenty of beer and whisky; for each of the company must contribute something. The rites begin with spilling some of the caudle on the ground, by way of libation: on that, every one takes a cake of oatmeal, upon which are raised nine square knobs, each dedicated to some particular being, the supposed preserver of their flocks and herds, or to some particular animal, the real destroyer of them: each person then turns his face to the fire, breaks off a knob, and flinging it over his shoulder, says, *This I give to thee, preserve thou my horses; this to thee, preserve thou my sheep*; and so on. After that, they use the same ceremony to the noxious animal: *This I give to thee, O fox! spare thou my lambs; this to thee, O hooded crow! this to thee, O eagle!* When the ceremony is over, they dine on the caudle; and after the feast is finished, what is left is hid by two persons deputed for that purpose; but on the next Sunday they re-assemble and finish the reliques of the first entertainment.

BELTURBET, a town of Ireland in the county

of Cavan, and province of Ulster, situated on the river Earn, in W. Long. 7. 35. N. Lat. 54. 7.

BELTZ, or BELZO, a province of Red Ruffia in Poland, bounded by Leopold on the south, by Chelm on the north, Little Poland on the east, and Volhynia on the west. Its capital town is Beltz.

BELTZ, or *Belzo*, a town of Poland, and capital of the province of the same name, seated on the confines of Upper Volhynia, among marshes, in E. Long. 25. 15. N. Lat. 50. 5.

BELVEDERE, in the Italian architecture, &c. denotes either a pavilion on the top of a building, or an artificial eminence in a garden; the word literally signifying a *fine prospect*.

BELVEDERE, a considerable town of Greece, and capital of a province of the same name in the Morea. The province lies on the western coast: it is the most fertile and rich in all the Morea; and from it the reefs called *Belvederes* take their name. The town is situated in E. Long. 22. 0. N. Lat. 38. 5.

BELVIDERE, in botany. See CHENOPODIUM.

BELUNUM, (anc. geog.), a town of Rhætia, above Feltria, in the territory of the Veneti; now *Belluno*, capital of the Bellunese in the territory of Venice. See BELLUNO.

BELUS, (anc. geog.), a small river of Galilee, at the distance of two stadia from Ptolemais, running from the foot of Mount Carmel out of the lake Cendevia. Near this place, according to Josephus, was a round hollow or valley, where was a kind of sand fit for making glass; which, though exported in great quantities, was found to be inexhaustible. Strabo says, the whole of the coast from Tyre to Ptolemais has a sand fit for making glass; but that the sand of the rivulet Belus and its neighbourhood is a better sort; and here, according to Pliny, the making of glass was first discovered.

BEMA, in antiquity, denotes a step or pace. The bema made a kind of itinerary measure among the Greeks, the length of which was equivalent to one cubit and two thirds, or to ten palms. Whence also the term *bematizein*, *βηματίζειν*, to measure a road.

BEMA, in ecclesiastical writers, denotes the altar or sanctuary in the ancient churches. In which sense *bema* made the third or innermost part of the church, answering to the chancel among us.

BEMA was also used for the bishop's chair, seat, or throne, placed in the sanctuary. It was called *bema* from the steps by which it was to be ascended.

BEMA was also used for the reader's desk. This in the Greek church was denominated *βημα γινώσκων*, in the Latin church *ambo*.

BEMA is more peculiarly used for the Manichees altar, which was in a different place from that of the Catholics.

BEMA was also a denomination given by this sect to the anniversary of the day when Manes was killed, which with them was a solemn feast and day of rejoicing. One of the chief ceremonies of the feast consisted in setting out and adorning their bema or altar with great magnificence.

BEMBEA, a province of the kingdom of Angola in Africa. It is divided into Higher and Lower; and extends on one side along the sea, and on the other di-

Beltz
||
Bemba.

Denmark's
Tour.

Bembo
||
Bench.

Bench.

vides Angola from the foreign states on the south. The country is large, populous, and abounding with cattle; with the fat of which the inhabitants anoint their heads and bodies, and clothe themselves with their hides coarsely dressed. They are addicted to the same idolatrous superstitions with the rest of the natives, but speak a quite different language. The province is watered by a river called *Lutano*, or *San Francisco*, which abounds with crocodiles, sea-horses, and monstrous serpents, that do a great deal of mischief.

BEMBO (Peter), a noble Venetian, secretary to Leo X. and afterwards cardinal, was one of the best writers of the 16th century. He was a good poet both in Italian and Latin; but he is justly censured for the looseness and immodesty of some of his poems. He published, besides these, A History of Venice; Letters; and a book in praise of the Duke and Dukes of Urbino. He died in 1547, in the 72d year of his age.

BEMSTER, or **BEMISTER**, a town of Dorsetshire in England, seated on the river Bert, in W. Long. 3. 15. N. Lat. 50. 45.

BEN. See **BEHN**.

BEN, in pharmacy, the name of an exotic purgative fruit, of the size and figure of a nut; whence it is also called the *ben-nut*, sometimes *balanus myrepsica*, or *glans unguentaria*.

Naturalists distinguish two kinds of bens; viz. the great, *ben magnum*, which resembles the filbert, and is by some called *avellana purgatrix*, brought from America; and the small, *ben parvum*, brought from Ethiopia.

Ben-nuts yield, by expression, much oil, which, from its property of not becoming rancid, at least for years, is used as a menstruum for the extraction of the odoriferous part of flowers of jessamin, violets, roses, hyacinths, lilies of the valley, tuberoses, jonquils, clove julyflowers, and others, which like these yield little or no essential oil by distillation, but impart their fragrance to expressed oils. The method of impregnating oil of ben with the odour of flowers is this: Some fine carded cotton is dipped in the oil, and put in the bottom of a proper vessel. On this is spread a thick layer of fresh flowers, above which more cotton dipt in oil is placed; and thus alternately flowers and cotton are disposed, till the vessel (which may be made of tin, with a cover to be screwed on to it, or of porcelain) is full. By digestion during 24 hours in a water-bath, the oil will receive the odour of the flowers.

BENARES. See **OBSERVATORY**.

BENAVARRI, a town of the kingdom of Arragon in Spain, seated on the frontiers of Catalonia. E. Long. 0. 40. N. Lat. 41. 55.

BENAVENTO, a town of Spain, in the kingdom of Leon, and Terra di Campos, with the title of a duchy. It is seated on the river Ela, in W. Long. 5. 0. N. Lat. 42. 4.

BENAVIDUS, or **BONAVITUS** (Marcus Mantua), a celebrated civilian, taught civil law with reputation, during 60 years, at Padua the place of his birth; and died in 1582, aged 93. His principal works are, 1. *Collectanea super Jus Cæsareum*. 2. *Consiliorum*, tom. ii. 3. *Problematum legalium*. 4. *De illustribus Jurisconsultis*, &c.

BENCH, or **BANC**, in law. See **BANC**.

Free-Bench signifies that estate in copyhold-lands

which the wife, being espoused a virgin, has, after the decease of her husband, for her dower, according to the custom of the manor. As to this free-bench, several manors have several customs; and in the manors of East and West Enbourne, in the county of Berks, and other parts of England, there is a custom, that when a copyhold tenant dies, the widow shall have her free-bench in all the deceased husband's lands, whilst she lives single and chaste; but if she commits incontinency, she shall forfeit her estate: nevertheless, upon her coming into the court of the manor, riding on a black ram, and having his tail in her hand, and at the same time repeating a form of words prescribed, the steward is obliged, by the custom of the manor, to re-admit her to her free-bench.

King's BENCH, a court in which the king was formerly accustomed to sit in person, and on that account was moved with the king's household. This was originally the only court in Westminster-hall, and from this it is thought that the courts of common pleas and exchequer were derived. As the king in person is still presumed in law to sit in this court, though only represented by his judges, it is said to have supreme authority; and the proceedings in it are supposed to be *coram nobis*, that is, before the king. This court consists of a lord chief justice and three other justices or judges, who are invested with a sovereign jurisdiction over all matters whether of a criminal or public nature. The chief justice has a salary of 5,500 l. and the other judges 2,400 l. each.

All crimes against the public good, though they do not injure any particular person, are under the cognizance of this court; and no private subject can suffer any unlawful violence or injury against his person, liberty, or possessions, but a proper remedy is afforded him here; not only for satisfaction of damages sustained, but for the punishment of the offender; and wherever this court meets with an offence contrary to the first principles of justice, it may punish it. It frequently proceeds on indictments found before other courts, and removed by *certiorari* into this. Persons illegally committed to prison, though by the king and council, or either of the houses of parliament, may be bailed in it; and in some cases even upon legal commitments. Writs of mandamus are issued by this court, for the restoring of officers in corporations, &c. unjustly turned out, and freemen wrongfully disfranchised.

The court of King's Bench is now divided into a crown side and plea side; the one determining criminal, and the other civil, causes.

On the crown side, or crown office, it takes cognizance of all criminal causes, from high treason down to the most trivial misdemeanour or breach of the peace. Into this court also indictments from all inferior courts may be removed by writ of *certiorari*; and tried either at bar, or at *nisi prius*, by a jury of the county out of which the indictment is brought. The judges of this court are the supreme coroners of the kingdom. And the court itself is the principal court of criminal jurisdiction known to the laws of England. For which reason, by the coming of the Court of King's Bench into any county (as it was removed to Oxford on account of the sickness in 1665), all former commissions of *oyer and terminer*, and general gaol-delivery, are at once absorbed and determined *ipso facto*: in the same

Benchers
||
Bending.

manner as, by the old Gothic and Saxon constitutions, *Jure vetusto obtinuit, quicquid omnia inferiora judicia, dicente jus rege.* Into this Court of King's Bench hath reverted all that was good and salutary of the *Star-chamber*.

On the plea side, this court determines all personal actions commenced by bill or writ; as actions of debt, upon the case, detinue, trover, ejectment, trespass, waste, &c. against any person in the custody of the marshal of the court, as every person sued here is supposed to be by law.

The officers on the crown side are the clerk and secondary of the crown; and on the side of the pleas there are two chief clerks or prothonotaries, and their secondary and deputy, the custos brevium, two clerks of the papers, the clerk of the declarations, the signer and sealer of bills, the clerk of the rules, clerk of the errors, and clerk of the jails; to which may be added the filazers, the marshal of the court, and the crier.

Amicable Bench. See AMICABLE.

BENCHERS, in the Inns of court, the senior members of the society, who are invested with the government thereof.

BENCOOLEN, a fort and town of Asia, on the south-west coast of the island of Sumatra, belonging to the British. The place is known at sea by a slender mountain called the *Sugar Loaf*, which rises about 20 miles inland. About a quarter of a mile from the sea stands an Indian village, whose houses are small and low, and built on posts. The country about Bencoolen is mountainous and woody, and the air unwholesome, the mountains being continually covered with thick heavy clouds that produce lightning, thunder, and rain. There is no beef to be had, except that of buffaloes, which is not very palatable; and indeed provisions of all kinds, except fruit, are pretty scarce. The chief trade is in pepper, of which great quantities grow on the island. There are frequent bickerings betwixt the natives and the factory, to the no small injury of the East-India Company. The factory was once entirely deserted; and had not the natives found that trade decreased by reason of their absence, it is scarce probable that ever the English would have been invited there again. E. Long. 101. 5. S. Lat. 4. 5.

BEND, in heraldry, one of the nine honourable ordinaries, containing a third part of the field when charged, and a fifth when plain. It is sometimes, like other ordinaries, indented, ingrailed, &c. and is either dexter or sinister. See HERALDRY, n^o 19, 20.

In BEND, is when any things, borne in arms, are placed obliquely from the upper corner to the opposite lower, as the bend lies.

BENDER, a town of Bessarabia in European Turkey, seated on the river Niefler, in E. Long. 29. 5. N. Lat. 46. 40. It is remarkable for being the place of retreat of Charles XII. after he was defeated by the Russians at the battle of Pultowa in 1709.

BENDERMASSEN, a town of the island of Borneo in Asia, and capital of a kingdom of the same name. It has a good harbour; and stands in E. Long. 113. 50. S. Lat. 2. 40.

BENDIDA, in antiquity, a festival, not unlike the Bacchanalia, celebrated by the Athenians in honour of Diana.

BENDING, in a general sense, the reducing a

straight body into a curve, or giving it a crooked Bending
||
Benedict.

form. The bending of timber-boards, &c. is effected by means of heat, whereby their fibres are so relaxed that you may bend them into any figure.

BENDING, in the sea-language, the tying two ropes or cables together: thus they say, *bend the cable*, that is, make it fast to the ring of the anchor; *bend the sail*, make it fast to the yard.

BENDS, in a ship, the same with what is called *wails*, or *wales*; the utmost timbers of a ship's side, on which men set their feet in climbing up. They are reckoned from the water, and are called the *first*, *second*, or *third bend*. They are the chief strength of a ship's sides; and have the beams, knees, and foot-hooks, bolted to them.

BENDY, in heraldry, is the field divided into four, six, or more parts, diagonally, and varying in metal and colour.—The general custom of England is to make an even number; but in other countries they regard it not, whether even or odd.

BENCAPED, among sailors. A ship is said to be *bencaped* when the water does not flow high enough to bring her off the ground, out of the dock, or over the bar.

BENEDETTO (St), a considerable town of the Mantuan, in Italy, in E. Long. 11. 25. N. Lat. 45. 0.

BENEDICITE, among ecclesiastical writers, an appellation given to the song of the three children in the fiery furnace, on account of its beginning with the word *benedicite*.—The use of this song in Christian worship is very ancient, it appearing to have been sung in all the churches as early as St Chrysostom's time.

BENEDICT XIV. Pope, (Prosper Lambertini of Bologna), celebrated for his learning and moderation, which gained him the esteem of all sensible Protestants. He was the patron of learned men and celebrated artists; and an elaborate writer, on theological subjects. His works make 12 vols in folio. He died in 1758.

BENEDICT (St), the founder of the order of the Benedictin monks, was born in Italy, about the year 480. He was sent to Rome when he was very young, and there received the first part of his education. At 14 years of age he was removed from thence to Sublaco, about 40 miles distant. Here he lived a most ascetic life, and shut himself up in a cavern, where nobody knew any thing of him except St Romanus, who, we are told, used to descend to him by a rope, and to supply him with provisions. But being afterwards discovered by the monks of a neighbouring monastery, they chose him for their abbot. Their manners, however, not agreeing with those of Benedict, he returned to his solitude; whither many persons followed him, and put themselves under his direction, so that in a short time he built 12 monasteries. In the year 528, or the following, he retired to mount Cassino, where idolatry was still prevalent, there being a temple of Apollo erected here. He instructed the people in the adjacent country, and having converted them, he broke the image of Apollo, and built two chapels on the mountain. Here he founded also a monastery, and instituted the order of his name, which in time became so famous and extended over all Europe. It was here too that he composed his *Regula Monachorum*, which Gregory the Great speaks of as the most sensible and best written

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written piece of that kind ever published. The time of his death is uncertain, but is placed between 540 and 550. He was looked upon as the Elisha of his time; and is reported to have wrought a great number of miracles, which are recorded in the second book of the dialogues of St Gregory the Great.

BENEDICT, abbot of Peterborough, was educated at Oxford, became a monk in the monastery of Christ's church in Canterbury, and some time after was chosen prior by the members of that society. Though he had been a great admirer of Archbishop Becket, and wrote a life of that prelate, he was so much esteemed by Henry II. that by the influence of that prince he was elected abbot of Peterborough, A. D. 1177. He assisted at the coronation of Richard I. A. D. 1189; and was advanced to be keeper of the great seal, A. D. 1191. But he did not long enjoy this high dignity, as he died on Michaelmas day, A. D. 1193. Besides his Life of Archbishop Becket, he composed a History of Henry II. and Richard I. from A. D. 1170 to A. D. 1192; which hath been much and justly esteemed by many of our greatest antiquaries, as containing one of the best accounts of the transactions of those times. A beautiful edition of this work was published at Oxford, in two volumes, by Mr Hearne, A. D. 1735.

BENEDICTINS, in church-history, an order of monks, who profess to follow the rules of St Benedict.

The Benedictins, being those only that are properly called *monks*, wear a loose black gown, with large wide sleeves, and a capuche, or cowl, on their heads, ending in a point behind. In the canon law, they are styled *black friars*, from the colour of their habit.

The rules of St Benedict, as observed by the English monks before the dissolution of the monasteries, were as follows: They were obliged to perform their devotions seven times in 24 hours, the whole circle of which devotions had a respect to the passion and death of Christ: they were obliged always to go two and two together: every day in lent they were obliged to fast till six in the evening, and abated of their usual time of sleeping and eating; but they were not allowed to practise any voluntary austerity without leave of their superior: they never conversed in their refectory at meals, but were obliged to attend to the reading of the scriptures: they all slept in the same dormitory, but not two in a bed; they lay in their clothes: for small faults they were shut out from meals; for greater, they were debarred religious commerce, and excluded from the chapel; and as to incorrigible offenders, they were excluded from the monasteries. Every monk had two coats, two cowls, a table-book, a knife, a needle, and a handkerchief; and the furniture of their bed was a mat, a blanket, a rug, and a pillow.

The time when this order came into England is well known; for to it the English owe their conversion from idolatry. In the year 596, Pope Gregory sent hither Augustin, prior of the monastery of St Andrew at Rome, with several other Benedictin monks. St Augustin became archbishop of Canterbury; and the Benedictins founded several monasteries in England, as also the metropolitan church of Canterbury, and all the cathedrals that were afterwards erected.

Pope John XXII. who died in 1334, after an exact inquiry, found, that, since the first rise of the order, there had been of it 24 popes, near 200 cardinals,

7000 archbishops, 15,000 bishops, 15,000 abbots of Benedictin monasteries. There have been likewise of this order 20 emperors and 10 empresses, 47 kings and above 50 queens, 20 sons of emperors and 48 sons of kings; about 100 princeesses, daughters of kings and emperors; besides dukes, marquesses, earls, countesses, &c. innumerable. The order has produced a vast number of eminent writers and other learned men. Their Rabanus set up the school of Germany. Their Alcuin founded the university of Paris. Their Dionysius Exiguus perfected the ecclesiastical computation. Their Guido invented the scale of music; and their Sylvester, the organ. They boast to have produced Anselmus, Ildephonsus, Venerable Bede, &c.

There are nuns likewise who follow the rule of St Benedict; among whom those who call themselves *mitigated*, eat flesh three times a-week, on Sundays, Tuesdays, and Thursdays: the others observe the rule of St Benedict in its rigour, and eat no flesh unless they are sick.

BENEDICTION, in a general sense, the act of blessing, or giving praise to God, or returning thanks for his favours. Hence also benediction is still applied to the act of saying grace before or after meals. Neither the ancient Jews nor Christians ever eat without a short prayer. The Jews are obliged to rehearse 100 benedictions *per* day; of which 80 are to be spoken in the morning. The first treatise of the first order in the Talmud, intitled *Seraim*, contains the form and order of the daily benedictions. It was usual to give benediction to travellers on their taking leave; a practice which is still preserved among the monks. Benedictions were likewise given among the ancient Jews, as well as Christians, by imposition of hands. And when at length the primitive simplicity of the Christian worship began to give way to ceremony, they added the sign of the cross, which was made with the same hand, as before, only elevated, or extended. Hence benediction, in the modern Romish church, is used, in a more particular manner, to denote the sign of the cross made by a bishop, or prelate, as conferring some grace on the people. The custom of receiving benediction, by bowing the head before the bishops, is very ancient; and was so universal, that emperors themselves did not decline this mark of submission.—Under the name *benediction*, the Hebrews also frequently understand the presents which friends make to one another, in all probability because they are generally attended with blessings and compliments, both from those who give and those who receive them.

Nuptial BENEDICTION, the external ceremony performed by the priest in the office of matrimony. This is also called *sacerdotal* and *matrimonial benediction*, by the Greeks *αυ βραχια* and *αυ βραχισια*. The nuptial benediction is not essential to, but the confirmation of, a marriage in the civil law.

Beatic BENEDICTION, *benedictio beatica*, is the viaticum given to dying persons. The Pope begins all his bulls with this form: *Salutem et apostolicam benedictionem*.

BENEDICTION is also used for an ecclesiastical ceremony, whereby a thing is rendered sacred or venerable. In this sense benediction differs from consecration, as in the latter unctio is applied, which is not in the

Benefice. former: Thus the chalice is consecrated, and the piblessed; as the former, not the latter, is anointed: though, in the common usage, these two words are applied promiscuously.—The spirit of piety, or rather of superstition, has introduced into the Romish church benedictions for almost every thing. We read of forms of benedictions for wax-candles, for boughs, for ashes, for church-vessels, and ornaments; for flags or ensigns, arms, first-fruits, houses, ships, paschal eggs, cilicium or the hair-cloth of penitents, church-yards, &c. In general, these benedictions are performed by aspersions of holy water, signs of the cross, and prayers suitable to the nature of the ceremony. The forms of these benedictions are found in the Roman pontifical, in the Roman missal, in the book of ecclesiastical ceremonies printed in Pope Leo X.'s time, and in the rituals and ceremonies of the different churches which are found collected in father Martene's work on the rites and discipline of the church.

BENEFICE (*beneficium*), in middle-age writers, is used for a fee, sometimes denominated more peculiarly *beneficium militare*. In this sense, benefice was an estate in land, at first granted for life only; so called, because it was held *ex merito beneficio* of the donor; and the tenants were bound to swear fealty to the lord, and to serve him in the wars. In after-times, as these tenures became perpetual and hereditary, they left their name of *beneficia* to the livings of the clergy; and retained to themselves the name of *feuds*.

BENEFICE, in an ecclesiastical sense, a church endowed with a revenue for the performance of divine service; or the revenue itself assigned to an ecclesiastical person, by way of stipend, for the service he is to do that church.

All church-preferments, except bishoprics, are called *benefices*; and all benefices are, by the canonists, sometimes styled *dignities*: but we now ordinarily distinguish between benefice and dignity; applying dignity to bishoprics, deaneries, archdeaconries, and prebendaries; and benefice to parsonages, vicarages, and donatives.

Benefices are divided by the canonists into military and sacerdotal. In the first there is no obligation but to read prayers, sing, &c. such are canonries, chaplainships, chantries, &c.: the second are charged with the cure of souls, or the direction and guidance of consciences; such as vicarages, rectories, &c.

The Romaniists again distinguish benefices into regular and secular. *Regular* or titular benefices are those held by a religious, or a regular, who has made profession of some religious order; such are abbeys, priories, conventuals, &c.; or rather, a regular benefice is that which cannot be conferred on any but a religious, either by its foundation, by the institution of some superior, or by prescription: for prescription, forty years possession by a religious makes the benefice regular. *Secular* benefices are only such as are to be given to secular priests, *i. e.* to such as live in the world, and are not engaged in any monastic order. All benefices are reputed secular, till the contrary is made to appear. They are called *secular benefices*, because held by seculars; of which kind are almost all cures.

The canonists distinguish three manners of vacating a benefice, *viz.* 1. *De jure*, when the person enjoying it is guilty of certain crimes expressed in those laws, as heresy, simony, &c. 2. *De facto*, as well as *de jure*, by

the natural death or the resignation of the incumbent; Beneficiarii which resignation may be either express, or tacit, as Beneficium, as when he engages in a state, &c. inconsistent with it, as, among the Romaniists, by marrying, entering into a religious order, or the like. 3. By the *sentence of a judge*, by way of punishment for certain crimes, as concubinage, perjury, &c.

Benefices began about 500. The following account of those in England is given as the fact by Dr Burn, *viz.* that there are 1071 livings not exceeding 10 l. *per annum*; 1467 livings above 10 l. and not exceeding 20 l. *per annum*; 1126 livings above 20 l. and not exceeding 30 l. *per annum*; 1049 livings above 30 l. and not exceeding 40 l. *per annum*; 884 livings above 40 l. and not exceeding 50 l. *per annum*; 5597 livings under 50 l. *per annum*. It must be 500 years before every living can be raised to 60 l. a-year by Queen Anne's bounty, and 339 years before any of them can exceed 50 l. a-year. On the whole, there are above 11,000 church-preferments in England, exclusive of bishoprics, deaneries, canonries, prebendaries, priest-vicars, lay-vicars, secondaries, &c. belonging to cathedrals, or choristers, or even curates to well beneficed clergymen.

BENEFICE in commendam is that, the direction and management of which, upon a vacancy, is given or recommended to an ecclesiastic, for a certain time, till he may be conveniently provided for.

BENEFICIARII, in Roman antiquity, denote soldiers who attended the chief officers of the army, being exempted from other duty. Beneficarii were also soldiers discharged from the military service or duty, and provided with *beneficia* to subsist on. These were probably the same with the former, and both might be comprised in the same definition. They were old experienced soldiers, who, having served out their legal time, or received a discharge as a particular mark of honour, were invited again to the service, where they were held in great esteem, exempted from all military drudgery, and appointed to guard the standard, &c. These, when thus recalled to service, were also denominated *evocati*; before their recal, *emeriti*.

BENEFICIARII was also used for those raised to a higher rank by the favour of the tribunes or other magistrates. The word *beneficiarius* frequently occurs in the Roman inscriptions found in Britain, where *consulis* is always joined with it; but besides *beneficiarius consulis*, we find in Grutar *beneficiarius tribunus, praetorii, legati, praefecti, proconsulis*, &c.

BENEFICIARY, in general something that relates to benefices.

BENEFICIARY, *beneficiarius*, is more particularly used for a beneficed person, or him who receives and enjoys one or more benefices. A beneficiary is not the proprietor of the revenues of his church; he has only the administration of them, though unaccountable for the same to any but God.

BENEFICIARY is also used, in middle-age writers, for a feudatory or vassal. The denomination was also given to the clerks or officers who kept the accounts of the *beneficia*, and made the writings necessary thereto.

BENEFICIUM, in military matters among the Romans, denoted a promotion to a higher rank by the favour of some person in authority.

BENEFIELD (Sebastian), an eminent divine of the 17th century, was born in 1559, at Prestonbury in Gloucestershire, and educated at Corpus Christi college in Oxford. In 1608, he took the degree of doctor in divinity; and five years after, was chosen Margaret professor in that university. He had been presented several years before to the rectory of Meysey-Hampton, in Gloucestershire. He published Commentaries upon the first, second, and third chapters of Amos; a considerable number of sermons; and some Latin treatises. He died in 1630.

BENEFIT OF CLERGY. See **CLERGY.**

BENESOEUF, a town of Egypt, seated on the western shore of the Nile, and remarkable for its hemp and flax. E. Long. 31. 0. N. Lat. 29. 10.

BENEVENTE, a town of the province of Leon in Spain, seated on the river Elsa, in W. Long. 5. 5. N. Lat. 42. 4.

BENEVENTO, a city of Italy, in the kingdom of Naples, with an archbishop's see. It is situated near the confluence of the rivers Sabato and Calore, in a fertile valley called the *frail of Benevento*, full of gentlemen's seats and houses of pleasure. This town hath frequently suffered terribly by earthquakes; particularly in 1703, when a great part of it was overturned, and the rest much damaged. E. Long. 14. 57. N. Lat. 41. 6.

The arch of Trajan, now called the *Porta Aurea*, forms one of the entrances to the city. This arch, though it appears to great disadvantage from the walls and houses that hem it in on both sides, is in tolerable preservation, and one of the most magnificent remains of Roman grandeur to be met with out of Rome. The architecture and sculpture are both singularly beautiful. This elegant monument was erected in the year of Christ 114, about the commencement of the Parthian war, and after the submission of Decebalus had intitled Trajan to the surname of *Dacicus*. The order is composite; the materials, white marble; the height, 60 palms; length, 37 and a half; and depth 24. It consists of a single arch, the span of which is 20 palms, the height 35. On each side of it, two fluted columns, upon a joint pedestal, support an entablement and an attic. The intercolumniations and frize are covered with basso-relievos, representing the battles and triumph of the Dacian war. In the attic is the inscription. As the sixth year of Trajan's consulate, marked on this arch, is also to be seen on all the millary columns he erected along his new road to Brundisium, it is probable that the arch was built to commemorate so beneficial an undertaking. Except the old metropolis of the world, no city in Italy can boast of so many remains of ancient sculpture as are to be found in Benevento. Scarce a wall is built of any thing but altars, tombs, columns, and remains of entablatures.

The cathedral is a clumsy edifice, in a style of Gothic, or rather Lombard, architecture. This church, dedicated to the Virgin Mary, was built in the sixth century, enlarged in the 11th, and altered considerably in the 13th, when archbishop Roger adorned it with a new front. To obtain a sufficient quantity of marble for this purpose, he spared neither sarcophagus, altar, nor inscription; but fixed them promiscuously and irregularly in the walls of his barbarous structure.

Three doors (a type of the trinity, according to the rules established by the mythical Vitruvii of those ages) open into this facade. That in the centre is of bronze, embossed with the life of Christ, and the effigies of the Beneventine Metropolitan, with all his suffragan bishops. The inside offers nothing to the curious observer but columns, altars, and other decorations, executed in the most inelegant style that any of the church-building barbarians ever adopted. In the court stands a small Egyptian obelisk, of red granite, crowded with hieroglyphics. In the adjoining square, are a fountain and a very indifferent statue of Benedict the 13th, long archbishop of Benevento.

Of the Beneventine history the following abstract is given by Mr Swinburn, in his *Travels in Sicily*. According to some authors (he informs us), Diomed was the founder of Beneventum; whence its origin must be referred to the "years that immediately succeeded the Trojan war. Other writers assign it to the Samnites, who made it one of their principal towns, where they frequently took refuge when worsted by the Romans. In their time, its name was *Maleventum*, a word of uncertain etymology: however, it sounded so ill in the Latin tongue, that the superstitious Romans, after achieving the conquest of Samnium, changed it into Beneventum, in order to introduce their colony under fortunate auspices. Near this place, in the 479th year of Rome, Pyrrhus was defeated by Curius Dentatus. In the war against Hannibal, Beneventum signalized its attachment to Rome, by liberal tenders of succour and real services. Its reception of Gracchus, after his defeat of Hanno, is extolled by Livy; and, from the gratitude of the senate, many solid advantages accrued to the Beneventines. As they long partook, in a distinguished manner, of the glories and prosperity of the Roman empires, they also severely felt the effects of its decline, and shared in a large proportion the horrors of devastation that attended the irruption of the northern nations.

"The modern history of this city will appear interesting to those readers who do not despise the events of ages which we usually and justly call dark and barbarous. They certainly are of importance to all the present states of Europe; for at that period originated the political existence of most of them. Had no northern savages descended from their snowy mountains, to overturn the Roman colossus, and break asunder the fetters of mankind, few of those powers, which now make so formidable a figure, would ever have been so much as heard of. The avengers of the general wrongs were, no doubt, the destroyers of arts and literature, and brought on the thick clouds of ignorance, which for many centuries no gleam of light could penetrate; but it is to be remembered, also, that the Romans themselves had already made great progress in banishing true taste and knowledge, and would very soon have been a barbarous nation, though neither Goths nor Vandals had ever approached the frontier.

"The Lombards came the last of the Scythian or Scandinavian hordes, to invade Italy. After fixing the seat of their empire at Pavia, they sent a detachment to possess itself of the southern provinces. In 571, Zotto was appointed duke of Benevento, as a feudatory of the king of Lombardy; and seems to

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Beneventum.
Berfield.

have confined his rule to the city alone, from which he sallied forth to seek for booty. The second duke, whose name was Arechis, conquered almost the whole country that now constitutes the kingdom of Naples. His successors appear long to have remained satisfied with the extent of dominion he had transmitted to them. Grimwald, one of them, usurped the crown of Lombardy; but his son Romwald, though a very successful warrior, contented himself with the ducal title. The fall of Desiderius, last king of the Lombards, did not affect the state of Benevento. By an effort of policy or resolution, Arechis the second kept possession; and availing himself of the favourable conjuncture, asserted his independence,—threw off all feudal submission,—assumed the style of Prince,—and coined money with his own image upon it; a prerogative exercised by none of his predecessors as dukes of Benevento. During four reigns, this state maintained itself on a respectable footing; and might long have continued so, had not civil war, added to very powerful assaults from abroad, hastened its ruin. Radelchis and Sicculph aspired to the principality; and each of them invited the Saracens to his aid. The desolation caused by this conflict is scarcely to be described. No better method for terminating these fatal dissensions could be devised, than dividing the dominions into two distinct sovereignties. In 851, Radelchis reigned as Prince at Benevento; and his adversary fixed his court, with the same title, at Salerno. From this treaty of partition, the ruin of the Lombards became inevitable: a want of union undermined their strength,—foreigners gained an ascendant over them,—irresolution and weakness pervaded their whole system of government. The erection of Capua into a third principality, was another destructive operation: and now the inroads of the Saracens,—the attacks of the eastern and western emperors,—anarchy and animosity at home—reduced the Lombard states to such wretchedness, that they were able to make a very feeble resistance to the Norman arms. The city of Benevento alone escaped their sway, by a grant which the emperor Henry II. had made of it to the bishop of Rome, in exchange for the territory of Bamberg in Germany, where the Popes enjoyed a kind of sovereignty. From the year 1054 to this day, the Roman See, with some short interruptions of possession, has exercised temporal dominion over this city. Benevento has given three popes to the chair of St Peter; viz. Felix III. Victor III. and Gregory VIII. and what it is much prouder of, reckons St Januarius in the list of its Bishops.”

BENEVENTUM, (anc. geog.), a town of the Samnites, formerly called *Maleventum* from the unwholesomeness of the wind, and under that appellation it is mentioned by Livy; but after a Roman colony was led thither in the 485th year of the city, it came to have the name of *Beneventum*, as a more auspicious title. It is mentioned by Horace as an ancient city said to have been built by Diomedes before the Trojan war. Now **BENEVENTO**.

BENEVOLENCE, in morals, signifies the love of mankind in general, accompanied with a desire to promote their happiness. See **MORALS**.

BENFIELD, a town of Alsace in France, whose fortifications were demolished in consequence of the treaty of Westphalia. E. Long. 7. 45. N. Lat. 48. 14.

BENGAL, a country of Indostan in Asia, bounded on the east by the kingdoms of Assam, Tipra, and Aracan; on the west, by Malva and Berar; on the north, by Gehud, Rotas, Benares, and Jesuat; and on the south, by Orix and the bay of Bengal. Its greatest length from west to east is about 720 miles, and its breadth from south to north, where greatest, is not less than 300; though in some places not above 150; extending from 21 to 25 degrees of north latitude, and from 80 to 91 of east longitude.

As this country lies almost entirely within the torrid zone, and in the middle of a very extensive continent, it is sometimes subject to such extremes of heat as render it very fatal to European constitutions. Dr Lind is of opinion, that the climate of Bengal is the most dangerous in this respect of any of the English territories excepting Bencoolen on the coast of Sumatra. Part of this unhealthiness arises from the mere circumstance of heat; for in all the southern parts of India, when the wind blows over land, it is so extremely hot and suffocating as scarcely to be borne. The reason of this is evident from the mere inspection of a map of Asia, where it is evident that whatever wind blows over land, especially in the southern parts, must pass over an immense tract of country strongly heated by the sun; and as in every part of this extensive continent there are sandy deserts of very considerable magnitude, the heat is thus prodigiously increased. This becomes very evident on the falling of a shower of rain at the time the land-wind prevails; for if the wind in its way passes through the shower, the air is agreeably cooled though the sky should be ever so clear; while those who reside only at a few miles distance, but out of the direct line of the shower, will be fainting under the excessive heat. Here indeed when the air is clear, the sun-beams are much more powerful than in our climate, insomuch that the light at noon-day is too powerful for the eyes to bear; and the large stars, as Venus and Jupiter, shine with a surprising lustre. Thus the reflexion of the sun-beams from the earth must necessarily occasion an extraordinary degree of heat in the atmosphere; so that from the winds abovementioned very great inconveniences sometimes arise, similar to those which are occasioned by the *Harmattan* in Africa. Mr Ives tells us, that it is affirmed they will snap glass if it be too much exposed to them; he has seen the veneering stripped off from a chest of drawers by their means; and they will certainly crack and chap almost every piece of wood that is not well seasoned. In certain places they are so loaded with sand, that the horizon appears quite hazy where they blow, and it is almost impossible to prevent the eyes from being thus greatly injured. They have likewise a very pernicious effect on such people as are exposed to them while sleeping. This seldom fails to bring on a fit of the *barbiers*, a kind of paralytic distemper attended with a total deprivation of the use of the limbs, and which the patient never gets the better of but by removing to some other climate. These hot winds are made use of with great success for cooling liquors, by wrapping a wet cloth round the bottles and exposing it to the air. The reason of this is explained under the article **EVAPORATION**. Mr Ives remarks, that it will thus cool much sooner than by being exposed to the cool sea-breeze.

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³ Bengal. The great cause of the unhealthiness of Bengal, however, is owing to the inundations of the Ganges and Burrampooter, by which such quantities of putrescible matters are brought down as infect the air with the most malignant vapours when the waters retire. Though the rainy season begins in Bengal only in the month of June, the river begins to swell in the mountains of Thibet early in April, and by the latter end of that month in Bengal also. The reason of this is partly the melting of the snow on the mountains of Thibet, and partly the vast collection of vapours brought by the southerly or southwest monsoon, which are suddenly stopped by the high mountains of Thibet. Hence it is obvious, that the accumulation and condensation of these vapours must first take place in the neighbourhood of the mountains which oppose them; and thus the rainy season commences soonest in those places which lie nearest the mountains.

The rivers in Bengal begin to rise at first very slowly, the increase being only at the rate of one inch per day for the first fortnight. It then gradually augments to two and three inches before any quantity of rain falls in the low countries; and when the rain becomes general, the increase at a medium is five inches per day. By the latter end of July, all the lower parts of Bengal, contiguous to the Ganges and Burrampooter, are overflowed, and present a surface of water more than 100 miles wide. This vast collection of fluid, however, is owing in a great measure to the rains which fall on the low country itself; for the lands in the neighbourhood are overflowed some time before the bed of the river is filled. It must be observed, that the ground on the bank of the river, and even to some miles distance, is higher than that which is more remote; and thus a separation is made for a considerable time betwixt the waters of the land-flood and those of the river.

⁴ As some of the lauds in Bengal would receive damage from such a copious inundation, they must for this reason be guarded by strong dykes to resist the waters, and admit only a certain quantity. These, collectively taken, are said to be more than 1000 miles in length, and are kept up at an enormous expence; yet they do not always answer the purpose, on account of the looseness of the earth of which they are composed, even though some are of the thickness of an ordinary rampart at the base. One particular branch of the Ganges (navigable only in the rainy season, and then equal in size to the Thames at Chelsea) is conducted for 70 miles between dykes: and when full, the passengers look down upon the adjacent country as from an eminence.

⁵ As the tide loses its power of counteracting such an impetuous torrent of fresh water, the height of the inundation gradually diminishes as it approaches the sea, and totally vanishes at the point of confluence; which is owing to the facility with which the waters of the inundation spread over the level of the ocean. But when the force of winds conspires with that of the tide, the waters are retarded in such a manner as sometimes to raise the inundation two feet above the ordinary level; which has been known to occasion the loss of whole crops of rice. In the year 1763, a melancholy accident happened at Luckipour, when a strong gale of wind, conspiring with a high spring-tide, at a

season when the periodical flood was within a foot and an half of its highest pitch, the waters are said to have risen six feet above their ordinary level. Thus the inhabitants of a particular district were swept away with their houses and cattle; and to aggravate the distress, it happened in a part of the country where it was scarce possible to find a tree for a drowning man to escape to.

For some days before the middle of August the inundation is at a stand, and then begins to abate by a cessation of rains in the mountains, though great quantities still continue to fall on the low country. The inundation does not, however, in its decrease, always keep pace with that of the river, by reason of the height of the banks; but after the beginning of October, when the rain has nearly ceased, the remainder goes off quickly by evaporation, leaving the ground exceedingly fertilized.

⁶ From the time that the monsoon changes in October to the middle of March, the rivers are in a state of tranquillity; when the north-west winds begin, and may be expected once in three or four days till the commencement of the rainy season. These are the most formidable enemies of the inland navigation carried on by the large rivers. They are sudden and violent squalls, attended with rain; and though their duration is commonly but short, sometimes produce fatal effects, whole fleets of trading boats having been sunk by them almost instantaneously. They are more frequent in the eastern than the western part of Bengal, and happen oftener towards the close of the day than at any other time; but as they are indicated some time before they approach by the rising and singular appearance of the clouds, the traveller has commonly time enough to seek for a place of shelter. It is in the great rivers alone that they are so formidable, and that about the end of May or beginning of June, when the rivers are much increased in width. After the commencement of the rainy season, which varies in different parts from the middle to the end of June, tempestuous weather occasionally happens. At this season places of shelter are more common than at any other time by the filling up of the creeks and inlets as the river increases: and on the other hand, the bad weather, when it happens, is of longer continuance than during the season of the north-westers. The rivers being now spread to the distance of several miles, large waves are raised on them, particularly when blowing in a direction contrary to the rapid parts of the stream, which for obvious reasons ought to be avoided.

⁷ This navigation is performed in safety during the interval between the end of the rainy season and the beginning of the north-westers; an ordinary degree of attention being then only requisite to pilot the boat clear of shallows and stumps of trees. The season of the north-westers requires the greatest care and attention. Should one of these squalls approach, and no creek or inlet offer for shelter, the steep bank of the rivers should be always sought as a place of shelter, if it is not in a crumbling state †, whether it be to the † See Gan- windward or leeward, rather than the other. If this cannot be done, the flat side must be taken up with; and if it be a lee shore the anchor should be thrown out to prevent driving upon it. In these cases the mast

Bengal.

Dangerous effects of the north-west winds.

Of the inland navigation in Bengal.

See Gan-

^{Bengal.} is always supposed to be struck; and, provided this be done, and the cargo judiciously disposed of, there is little danger of any of the boats commonly made use of being overfet.

8
Budgerows,
a kind of
boats, de-
scribed.

The boats used in the inland navigation of Bengal are called *budgerows*, and are formed somewhat like a pleasure-*barge*. Some have cabins 14 feet broad and proportionally long, drawing from four to five feet water. Their motion is very slow, not exceeding the rate of eight miles a-day when moved by their oars; so that their progress down the river must depend principally on the motion of the current. From the beginning of November to the middle or latter end of May, the usual rate of going down the stream is about 40 miles in twelve hours, and during the rest of the year from 50 to 70 miles. The current is strongest while the waters of the inundation are draining off, which happens in part of August and September. In many of the shallow rivers, however, the current is exceedingly slow during the dry months; inasmuch that the track-rope is frequently used in going downwards. In towing against the stream the steep side of the river is generally preferred on account of the depth of water, though the current runs much stronger there than on the opposite side. On these occasions it is necessary to provide a very long track-rope, as well for avoiding the falling pieces of the steep bank on the one side as the shallow water on the other, when it becomes necessary to change sides through the badness of the tracking ground. The anchor should always be kept ready for dropping in case the track-rope breaks. The usual rate of towing against the stream is from 17 to 20 miles a-day; and to make even this progress the windings of the river require the boats to be dragged against the current at the rate of four miles and an half *per* hour for 12 hours. When the waters are high, a greater progress will be made, notwithstanding the superior strength of the current; because the filling of the river-bed gives many opportunities of cutting off angles and turnings, and sometimes even large windings, by going through creeks.

9
Account of
a dreadful
famine in
1770.

Bengal produces the vegetables and animals common to other countries in the torrid zone. Its great produce of grain is rice, which is commonly exported from thence into other countries. By various accidents, however, the crop of rice sometimes fails, and a famine is produced; and of this there have been many instances in Bengal as well as in other parts of *Indoستان*. One of the most deplorable of this kind happened in the year 1770. The nabob and several great men of the country distributed rice *gratis* to the poor until their stocks began to fail, when those donations were of consequence withdrawn. Vast multitudes then came down to Calcutta, the capital English settlement in the province, in hopes of meeting with relief at that place. The granaries of the Company, however, being quite empty, none could be afforded; so that when the famine had prevailed a fortnight, many thousands fell down in the streets and fields; whose bodies, mangled by the dogs and vultures, corrupting in the air, seemed to threaten a plague as the consequence of the famine. An hundred people were daily employed on the Company's account, with doolys, sledges, and bearers, to throw them into the river. At this time the fish could not be eaten, the river be-

ing so full of carcases; and many of those who ventured to feed upon them died suddenly. Hogs, ducks, and geese, also fed mostly on carnage; so that the only meat that could be procured was mutton; and this, from the dryness of the season, was so small, that a quarter of it would scarcely weigh a pound and an half.

^{Bengal}

In the month of August a most alarming phenomenon appeared, of a large black cloud at a distance in the air, which sometimes obscured the sun, and seemed to extend a great way over and about Calcutta. The hotter the day proved the lower this cloud seemed to descend, and for three days it occasioned great speculation. The bramins pretended, that this phenomenon, which was a cloud of insects, should make its appearance three times; and if ever they descended to the earth, the country would be destroyed by some untimely misfortune. They said, that about 150 years before there had been such another bad time, when the earth was parched for want of water; and this cloud of insects made its appearance, though it came much lower the second time than it had done before. On the third day, the weather being very hot and cloudy, they descended so low that they could be plainly seen. They seemed to be about the size of a horse-flinger, with a long red body, large head and eyes, keeping close together like a swarm of bees, and, to appearance, flying quite on a line. None, however, were caught, as the people were so much frightened by the prognostications of the bramins. Whilst it rained they continued in one position for near a quarter of an hour; then they rose five or six feet at once, and in a little time descended as much, until a strong north-west wind blew for two days successively. During its continuance they ascended and descended, but more precipitately than before; and next morning the air was quite clear. For some days before the cloud made its appearance, the toads, frogs, and insects, which, during the rains, make a continual noise through the night, disappeared, and were neither heard nor seen, except in the river.

10
Surprising
cloud of
insects.

This dreadful famine was occasioned by a preternatural drought. In this country they have two harvests, one in April, called the *little harvest*, which consists of the smaller grain; the second, called the *grand harvest*, is only of rice. But by a drought which happened in 1769 the great harvest of that year failed, as did also the little one of 1770, which produced the dreadful consequences already mentioned.

11
Cause of
the famine

Among the vegetables produced in Bengal Mr Ives mentions the *areca* tree, the woody part of which is as tough as whalebone. Here is also a beautiful tree called *chulta*, the flower of which is at first a hard green ball on footstalks about four inches in length. This opens, and the calyx is composed of five round thick and succulent leaves; the corolla consists of the like number of fine beautiful white petals. After one day the corolla falls off and the ball closes again, and is sold in the markets. There is a succession of these for several months. The mango tree grows here also in plenty. Its fruit is preferred to all others in the country excepting very fine pine-apples; the gentlemen eat little else in the hot months when these fruits are in season. If no wine is drunk with them they are apt to produce boils which are troublesome but healthful.

12
Vegetable
produc-
tions.

Bengal. healthful. In the walks of Bengal they have a tall tree called the *tutoon*, said to have been first brought into England by Captain Birch. The leaves are of a deep shining green, the lower part rather paler where it is ribbed, and undulated round the edges. The fruit is of the size, shape, and colour of an olive, with a moderately thin hulk, and a kernel like that of the date; five or six grow on the same pedicle. Near Calcutta is a large spreading tree called the *ruffa*, which makes a fine appearance when in full bloom. The natives say that this and another near the Dutch settlement are the only two in Bengal. They pretend likewise that they can never find the seed; but Mr Ives informs us that this is to be met with in plenty, though in a bad condition, the ants and other vermin being so fond of them, that not a single pod is ever to be met with that is not touched by one or other of these species of insects. This tree bears flowers of bright crimson, and all the shades from thence down to a bright yellow. They are in such plenty as almost to cover the tree, but have little or no smell. The fruit is a pod of the shape and size of a large garden-bean, containing four or five fleshy seeds, which easily fall into two when dry. They are brown on the outside, white within, and nearly square, but convex on the sides.

Among the animals to be met with in Bengal Mr Ives makes mention of a kind of birds named *argill* or *burgill* (see ARDEA, sp. 6.). They are very large, and in the evenings would majestically stalk along like as many naked Indians, for which our author at first mistook them. On discovering that they were birds he resolved to shoot one of them; which, however, was very difficult to be done. The Indians showed evident marks of dissatisfaction at the attempt; and informed him that it was impossible to succeed, because these birds were possessed by the souls of bramins. At last, however, he succeeded; and informs that the bird he shot extended 14 feet 10 inches between the tips of the wings; from the tip of the bill to the extremity of the claw was seven feet and a half: the legs were naked, as was also one-half of the thighs; the naked parts being three feet in length. The feathers of the wings and back were of an iron colour, and very strong; those of the belly were very long, and on the breast was a great deal of down all of a dirty white. The bill was 16 inches round at the base, nearly of a triangular shape, and of different colours. In the craw was a land-tortoise 10 inches long; and a large black male cat was found entire in its stomach.

Bengal is reckoned the richest and most populous province in the empire of Indostan. Besides its own consumption, which is certainly very considerable, its exports are immense. One part of its merchandise is carried into the inland country. Thibet takes off a quantity of its cottons, besides some iron and cloths of European manufacture. The inhabitants of those mountains fetch them from Patna themselves, and give musk and rhubarb in exchange.

But the trade of Thibet is nothing in comparison of that which Bengal carries on with Agra, Delhi, and the provinces adjacent to those superb capitals, in salt, sugar, opium, silk, silk-stuffs, and an infinite quantity of cottons, and particularly muslins. These articles, taken together, amounted formerly to more than L. 1,750,000 a-year. So considerable a sum was

not conveyed to the banks of the Ganges; but it was the means of retaining one nearly equal, which must have issued from thence to pay the duties, or for other purposes. Since the viceroys of the Mogul have made themselves nearly independent, and send him no revenues but such as they choose to allow him, the luxury of the court is greatly abated, and the trade we have been speaking of is no longer so considerable.

The maritime trade of Bengal, managed by the natives of the country, has not suffered the same diminution, nor was it ever so extensive, as the other. It may be divided into two branches, of which Catek is in possession of the greater part.

Catek is a district of some extent, a little below the most western mouth of the Ganges. Balasore, situated upon a navigable river, serves it for a port. The navigation to the Maldives, which the English and French have been obliged to abandon on account of the climate, is carried on entirely from this road. Here they load their vessels with rice, coarse cottons, and some silk stuffs, for these islands; and receive cowries in exchange, which are used for money in Bengal, and are sold to the Europeans.

The inhabitants of Catek, and some other people of the Lower Ganges, maintain a considerable correspondence with the country of Alham. This kingdom, which is thought to have formerly made a part of Bengal, and is only divided from it by a river that falls into the Ganges, deserves to be better known, if what is asserted here be true, that gun-powder has been discovered there, and that it was communicated from Alham to Pegu, and from Pegu to China. Its gold, silver, iron, and lead mines, would have added to its fame, if they had been properly worked. In the midst of these riches, which were of very little service to this kingdom, salt was an article of which the inhabitants were so much in want, that they were reduced to the expedient of procuring it from a decoction of certain plants.

In the beginning of the present century, some Bramins of Bengal carried their superstitions to Alham, where the people were guided solely by the dictates of natural religion. The priests persuaded them, that it would be more agreeable to Brama if they substituted the pure and wholesome salt of the sea to that which they used. The sovereign consented to this on condition that the exclusive trade should be in his hands; that it should only be brought by the people of Bengal; and that the boats laden with it should stop at the frontiers of his dominions. Thus have all these false religions been introduced by the influence and for the advantage of the priests who teach, and of the kings who admit, them. Since this arrangement has taken place, 40 vessels from 500 to 600 tons burden each are annually sent from the Ganges to Alham laden with salt, which yields 200 per cent. profit. They receive in payment a small quantity of gold and silver, ivory, musk, eagle-wood, gum-lac, and a large quantity of silk.

Excepting these two branches of maritime trade, which, for particular reasons, have been confined to the natives of the country, all the rest of the vessels sent from the Ganges to the different sea-ports of India belong to the Europeans, and are built at Pegu. See PEGU.

Bengal.

A still more considerable branch of commerce, which the Europeans at Bengal carry on with the rest of India, is that of opium. Patna, situated on the Upper Ganges, is the most celebrated place in the world for the cultivation of opium. The fields are covered with it. Besides what is carried into the inland parts, there are annually 3000 or 4000 chests exported, each weighing 300 pounds. It sells upon the spot at the rate of between 24l. and 25l. a chest on an average. This opium is not purified like that of Syria and Persia, which we make use of in Europe; it is only a paste that has undergone no preparation, and has not a tenth part of the virtue of purified opium.

The Dutch send rice and sugar from their settlements to the coast of Coromandel, for which they are paid in specie, unless they have the good fortune to meet with some foreign merchandize at a cheap rate. They send out one or two vessels laden with rice, cottons, and silk: the rice is sold in Ceylon, the cottons at Malabar, and the silk at Surat; from whence they bring back cotton, which is usefully employed in the coarser manufactures of Bengal. Two or three ships laden with rice, gum-lac, and cotton stuffs, are sent to Baffora; and return with dried fruits, rose-water, and a quantity of gold. The rich merchandize carried to Arabia is paid for entirely in gold and silver. The trade of the Ganges with the other sea-ports of India brings 1,225,000l. annually into Bengal.

Though this trade passes through the hands of the Europeans, and is carried on under their protection, it is not entirely on their own account. The Moguls, indeed, who are usually satisfied with the places they hold under the government, have seldom any concern in these expeditions; but the Armenians, who, since the revolutions in Persia, are settled upon the banks of the Ganges, to which they formerly only made voyages, readily throw their capitals into this trade. The Indians employ still larger sums in it. The impossibility of enjoying their fortunes under an oppressive government does not deter the natives of this country from labouring incessantly to increase them. As they would run too great a risk by engaging openly in trade, they are obliged to have recourse to clandestine methods. As soon as an European arrives, the Gentoos, who know mankind better than is commonly supposed, study his character; and, if they find him frugal, active, and well informed, offer to act as his brokers and cashiers, and lend or procure him money upon bottomry, or at interest. This interest, which is usually nine *per cent.* at least, is higher when he is under a necessity of borrowing of the Cheyks.

These Cheyks are a powerful family of Indians, who have, time immemorial, inhabited the banks of the Ganges. Their riches have long ago procured them the management of the bank belonging to the court, the farming of the public revenue, and the direction of the money, which they coin afresh every year in order to receive annually the benefit arising from the mint. By uniting so many advantages, they are enabled to lend the government 1,750,000l. 2,625,000l. or even 4,375,000l. at a time. When the government finds it impossible to refund the money, they are allowed to indemnify themselves by oppressing the people.

The Europeans who frequent the Ganges have not

been sufficiently alarmed at this despotism, which ought to have prevented them from submitting to a dependence upon the Cheyks. They have fallen into the snare, by borrowing considerable sums of these avaricious financiers, apparently at nine, but in reality at thirteen, *per cent.* if we take into the account the difference between the money that is lent them and that in which they are obliged to make their payments. The engagements entered into by the French and Dutch companies have been kept within some bounds; but those of the English company have been unlimited. In 1755, they were indebted to the Cheyks about 1,225,000l.

The Portuguese, who first frequented this rich country, had the wisdom to establish themselves at Chatigan, a port situated upon the frontier of Arracan, not far from the most eastern part of the Ganges. The Dutch, who, without incurring the resentment of an enemy at that time so formidable, were desirous of sharing in their good fortune, were engaged in searching for a port which, without obstructing their plan, would expose them the least to hostilities. In 1603, their attention was directed to Balasore; and all the companies, rather through imitation than in consequence of any well-concerted schemes, followed their example. Experience taught them the propriety of fixing as near as possible to the markets from whence they had their merchandize; and they sailed up that branch of the Ganges which, separating itself from the main river at Moureha above Cassimbuzar, falls into the sea near Balasore under the name of the river *Hughly*. The government of the country permitted them to erect warehouses wherever there was plenty of manufactures, and to fortify themselves upon this river.

The first town that is met with in passing up the river is Calcutta, the principal settlement of the English company. See CALCUTTA. 18
Principal towns.

Six leagues higher is situated Frederic Nagore, founded by the Danes in 1756, in order to supply the place of an ancient settlement where they could not maintain their ground. This new establishment has not yet acquired any importance, and there is all the reason imaginable to believe that it will never become considerable.

Two leagues and an half higher lies Chandernagore, a settlement belonging to the French. See CHANDERNAGORE.

At the distance of a mile from Chandernagore is Chinsura, better known by the name of *Deugli*, being situated near the suburbs of that anciently renowned city. The Dutch have no other possessions there, but merely their fort; the territory round it depending on the government of the country, which hath frequently made it feel its power by its extortions. Another inconvenience attending this settlement is a sand-bank that prevents ships from coming up to it: they proceed no farther than Tulta, which is 20 miles below Calcutta; and this of course occasions an additional expence to the government.

The Portuguese had formerly made Bandel, which is eighty leagues from the mouth of the Ganges, and a quarter of a league above the Hughly, the principal seat of their commerce. Their flag is still displayed, and there are a few unhappy wretches remaining there, who have forgotten their country after having been for-

16
Gentoos
brokers.17.
Cheyks, a
powerful
Indian family.

Bengal forgotten by it. This factory has no other employ-
 ||
 enhinnon. ment than that of supplying the Moors and the Dutch
 19 with mistresses.

Exports. The exports from Bengal to Europe consist of musk,
 gum-lac, nicaragua wood, pepper, cowries, and some
 other articles of less importance brought thither from
 other places. Those that are the immediate produce
 of the country are borax, salt-petre, silk stuffs, muslins,
 and several different sorts of cottons.

It would be a tedious and useless task to enumerate
 all the places where ticken and cottons, fit for table-
 linen or intended to be worn plain, painted, or printed,
 are manufactured. It will be sufficient to refer to DA-
 CA, which may be looked upon as the general mart of
 Bengal, where the greatest variety of finest cottons are
 to be met with, and in the greatest abundance. See
 D A C A.

The sum total of the purchases made in Bengal by
 the European nations, amounted a few years ago to
 no more than 870,000*l*. One third of this sum was
 paid in iron, lead, copper, woollens, and Dutch spices:
 the remainder was discharged in money. Since the
 English have made themselves masters of this rich
 country, its exports have been increased, and its im-
 ports diminished, because the conquerors have carried
 away a greater quantity of merchandise, and pay for
 it out of the revenues they receive from the country.
 There is reason to believe, that this revolution in the
 trade of Bengal has not arrived at its crisis, and that
 sooner or later it will be attended with more import-
 ant consequences and effects.

For the history of Bengal, and its conquest by the
 British, see the article INDOSTAN.

BENGO, a province of the kingdom of Angola in
 Africa, having the sea on the west, and the province
 of Mofesche on the east. It produces plenty of ba-
 nana trees; but the Portuguese have grubbed up vast
 quantities of these, and cultivated the land, which
 now abounds with maize, and the maniac root of which
 they make bread*. The province is divided into a
 great number of districts, of which the chiefs are na-
 tives, but tributary to Portugal, and obliged to till the
 lands belonging to the Portuguese. They are Chris-
 tians, and have eight churches.

BENGUELA, a province of the kingdom of An-
 gola in Africa, bounded on the east by the river Rim-
 ba, on the north by the Coanza, and it extends west-
 ward quite to Cape Negro. Benguela was formerly
 governed by its own kings; but was entirely ruined by
 the incursions of the barbarous Giagas, so that its be-
 ing conquered by the Portuguese proved a great hap-
 piness. It still retains the title of *kingdom*, and is al-
 lowed to enjoy some small privileges; but is far from
 being restored to the state of plenty it enjoyed before
 its destruction by the Giagas already mentioned. It
 produces abundance of salt, but inferior in quality to
 that which is made in the province of Chiffama. The
 zimbis also, whose shells are current as money through
 many countiees of Africa, are caught upon the coast.
 The country, which is mostly mountainous, abounds
 with elephants, rhinoceroses, lions, tigers, crocodiles,
 &c. which are very dangerous, and destroy great num-
 bers of cattle.

BENHINNOM (anc. geog.), a valley in the su-
 burbs, and to the east of Jerusalem, either a part of or

conjoined with the valley of Kidron, (Joshua); infam-
 ous for sacrificing children, or passing them through
 the fire. The place in the valley where the idol stood
 to which the sacrifice was made, was called *Tophet*,
 2 Kings xxiii. 10. Jer. vii. 31, 32; and xix. 2.), from
 beating drums or tabours to drown the cries or shrieks
 of the children: called also *Geennon* or the *Valley of*
Ennon: whence some derive *Gebenna*, the place of fu-
 ture punishment.

BENJAMIN. See BENZON and STYRAX.

BENIARAX, an ancient and considerable town in
 the kingdom of Algiers in Africa, seated in W. Long.
 o. 30. N. Lat. 35. o.

BENIN, a country of Guinea, in Africa, has part
 of the gulph called the *Bite of Benin*, and the Slave
 Coast, on the west; part of Gago and Biafara, on the
 north; Myjac and Makoko on the east; and Congo on
 the south, where it extends about one degree beyond
 the equinoctial line; the length from east to west is
 about 600 miles; but its north and south bounds are
 not so well determined. The land in general is low
 and woody; in some parts it has rivers and lakes, but in
 others there is a scarcity of water. There are here a
 great number of wild beasts, particularly elephants,
 lions, tygers, leopards, baboons, monkeys, wild boars,
 deer, &c. The birds are partridges, of which some are
 blue and some green, turtles, wild ducks, woodcocks,
 &c. Their grain is Indian corn: they have no po-
 tatoes; but plenty of yams, which are of the potato
 kind, but vally larger and more coarse: these are their
 ordinary food; and serve in the room of bread; they
 have two sorts of beans, like horse-beans, but not near
 so good. Their fruits are cocoa-nuts, cormantine apples,
 bananas, wild figs, &c.

The negroes have several colours which might serve
 for painting, and a good sort of soap made with palm-
 oil and wood-ashes; they have a great deal of cotton,
 which not only serves for their own use, but is exported
 to distant places. The river Rio or Benin has a great
 many arms; some of which are so large, that they de-
 serve the name of rivers: it abounds with fish, which
 the inhabitants eat smoke-dried as well as fresh. The
 place of trade in this river is at Arebo, about 120 miles
 distant from its mouth; and to this place the ships may
 sail up. Those who take this voyage see the mouths
 of a great many rivers fall into the principal channel to
 the right and the left; but how far it ascends into the
 country is not known. A little higher up, the country
 is very low and marshy, and seems to be divided into
 islands; and yet there are trees of all sizes growing on
 the banks; this renders the country very unhealthy, as
 many of our British sailors have found to their coil; it
 is also incommoded with vast numbers of flies, called
mosquitoes, which sting terribly, and render the skin
 full of pustules. There are three principal villages, to
 which the negroes come from the inland countries to
 traffic. One is called *Booladou*, and consists of about 50
 houses, or rather huts, for they are made with reeds
 and covered with leaves. The second, called *Archi*, was
 mentioned above: this is much larger than the former,
 and pretty well stocked with inhabitants; and the houses
 have much more room, but they are built after the same
 manner. The third has the name of *Agaton*, and was
 built upon a hill. It was almost ruined by the wars;
 but the negroes lately rebuilt it, on account of its a-
 greecable

Benjamin
 ||
 Benin.

Benin.

agreeable situation. Great Benin is the place of residence of the king.

The inhabitants of Benin are very exact in their trading, and will not recede from any of their old customs: this renders them very slow in their dealings, and backward to pay their debts, which sometimes obliges the traders to sail before they receive satisfaction; but then they are paid as soon as they return. Some of the merchants are appointed by the government, which demands a sort of custom; but it is very trifling. There are three sorts of officers under the king; the first are always near him, and none can address him but by their means: there are several of the second sort; one takes care of the slaves, another of the cattle, another of the streets, another of war, and so on.

Children go almost naked till they are 14, and then they wrap a cotton cloth round their middles: the richer sort put on a sort of callico gowns when they go abroad, with a kind of drawers; but within they are contented with their usual cloth: the better sort of women wear their cotton cloths like petticoats, and have a covering round their shoulders, but take care it shall be open before.

The richer sort of the inhabitants of Benin live upon beef, mutton, and poultry; their drink is water, and brandy when they can get it. The poorer sort live upon dried fish, bananas, and beans; their drink is water and palm-wine. Their chief handicraft men are smiths, carpenters, and curriers; but they perform all their work in a very bungling manner. The men have as many wives as they can keep, which they take without any ceremony except treating their relations. The wives of the lower sort may go wherever they have a mind; but those of the rich are shut up: they allow their wives to be very familiar with the Europeans, and yet pretend to be very jealous of their own countrymen. When a woman is caught in adultery, she is turned away, and the goods of the man are forfeited to the husband; but if the relations of the woman are rich, they prevail with him to overlook the fault by dint of presents.

They use circumcision, which is performed seven days after the children are born, at which time the father makes a feast for the relations; they have also customs, relating to uncleanness, resembling those of the Jews. Thieves are punished by making the party amends if they can, otherwise they are bastinadoed; but murder is always punished with death. When a person is only suspected of a crime, they have several ways of putting him to a trial, like the fire ordeal, or the bitter water of the Jews; but they are of such a nature, that the innocent may be as often condemned as the guilty.

With regard to their religion, they believe in an almighty and invisible God; yet worship images in a human form, and in those of all sorts of animals, making them offerings, every one being his own priest: they look upon these lesser deities as mediators between him and man; some of these idols are in the house and some in cabins by themselves. Every fifth day is holy; on which the rich kill cows, sheep, and goats, and others dogs, cats, and fowls, which they distribute among their poor neighbours.

BENIN, the capital of a kingdom of the same name,

is the residence of their kings, and is seated pretty far in the country: it stands in a plain, and is about four miles in compass. The streets are long and broad; and there are markets twice a-day, where they sell cows, cotton, elephants teeth, European merchandizes, and whatever the country produces. The houses are large with clay walls, and at a distance from each other; they are covered with reeds, straw, and leaves. The women in this place are the greatest slaves; for they go every day to market, manage the household affairs, take care of the children, cook the victuals, and till the ground. The king's palace makes great part of the town; and its great extent excepted, there is nothing worth taking notice of, it being only a confused heap of buildings, made with boards and clay, without regularity or neatness. In the middle, there is a wooden tower, about 70 feet high, made like a chimney; and on the top is a brazen serpent, hanging with his head downwards: this is pretty well made, and is the most curious thing in the town: there is a gallery of statues, but so wretchedly carved, that there is no knowing what they represent without being told: behind a curtain there are 11 brazen heads, with an elephant's tooth on each; these are the king's idols: his throne is made of ivory, on which he sits in a pavilion of India stuff. The king shows himself but once a-year, on the day of a certain festival; and then he is surrounded with his wives and a great number of his officers, who walk out in procession to begin the feast by sacrificing to their gods; this done, he bestows victuals and wine among the multitude, which is imitated by his officers. All the inhabitants of this town and country go under the denomination of the *king's slaves*; and some relations say, that none of them wear any habit till given them by the king: but this seems to be only a salvo to account for the great number of men and women that are daily seen naked in the streets; for if it be true, that the king of Benin can bring 100,000 fighting men into the field, his subjects must be very numerous; and probably his majesty is not rich enough to bestow garments upon them all. The Europeans resort hither to purchase slaves. E. Long. 5. 4. N. Lat. 7. 40.

BENISH-DAYS, among the Egyptians, a term for three days of the week, which are days of less ceremony in religion than the other four, and have their name from the *benish*, a garment of common use, not of ceremony. In Cairo, on Sundays, Tuesdays, and Thursdays, they go to the pashaw's divan; and these are the general days of business. Fridays they stay at home, and go to their mosques at noon; but though this is their day of devotion, they never abstain from business. The three other days of the week are the benish-days, in which they throw off all business and ceremony, and go to their little summer-houses in the country.

BENNAVENTA, or BENNAVENNA, (Antonine), a town of Britain, on the Aulona Major, or the Antonia of Tacitus: supposed to be Northampton on the Nen; but Camden says it is Wedon, a village six miles to the west of Northampton.

BENNET (Henry), earl of Arlington, was born of an ancient family in Middlesex. In the beginning of the civil war, he was appointed under-secretary to George Lord Digby, secretary of state; afterward en-

Benin
||
Bennet.

Bennet.

tered himself as a volunteer for the royal cause, and did his majesty good service, especially at Andover in Hampshire, where he received several wounds. When the wars were ended, he left not the king when success did, but attended his interest in foreign parts. He was made secretary to the duke of York; received the honour of knighthood from Charles II. at Bruges, in 1658: and was sent envoy to the court of Spain. His majesty, upon his return to England, called him home, made him keeper of his privy purse, and principal secretary of state. He had always a peculiar hatred to the lord chancellor Hyde; who on the other hand considered him as a concealed Papist. In 1670 he was one of the council distinguished by the title of the *Cabal*, and one of those who advised shutting up the exchequer. In 1672 he was made Earl of Arlington and Viscount Thetford, and soon after Knight of the Garter. In 1673, he was appointed one of the three plenipotentiaries from the court of Great Britain to Cologne, to mediate a peace between the emperor and the king of France. The House of Commons, in 1673, drew up articles of impeachment against him. In 1674 he was made chamberlain of his majesty's household, with this public reason, that it was in recompense of his long and faithful service, and particularly for his having performed the office of principal secretary of state for the space of 12 years, to his majesty's great satisfaction. But afterward his interest began to decline, while that of the earl of Danby increased; for upon his return from his unsuccessful journey to Holland in 1675, his credit was so much sunk, that several persons at court diverted the king with mimicking his person and behaviour; yet he held his lord chamberlain's place to the day of his death, in 1685. His esteemed letters to Sir William Temple were published after his death.

BENNET (Christopher), an eminent physician in the 16th century, was the son of John Bennet, of Raynton, in Somersetshire. He was educated at Lincoln college, Oxford; and gave the public a treatise on consumption, intitled, *Theatri Tabidorum Vestibulum*, &c. also *Exercitationes Diagnosticae, cum Historiis demonstrativis, quibus Alimentorum et Sanguinis vitia deteguntur in plerisque morbis*, &c.

BENNET (Dr Thomas), an eminent divine, born at Salisbury on the 7th of May 1673, and educated at St John's college, Cambridge. In 1700, he was made rector of St James's, in Colchester; afterwards he was lecturer of St Olave's, Southwark, and morning-preacher at St Lawrence, Jewry; and at last was presented to the vicarage of St Giles's, Cripple-gate, worth 500l. a year. While he was in this station, he was engaged in several expensive law-suits in defence of the rights of the church, to which he recovered 150l. a-year. He wrote, 1. An Answer to the Dissenters Plea for Separation. 2. A Confutation of Popery. 3. A Discourse of Schism. 4. An Answer to a book intitled Thomas against Bennet. 5. A Confutation of Quakerism. 6. A brief History of the joint Use of pre-conceived Forms of Prayer. 7. An Answer to Dr Clarke's Scripture-doctrine of the Trinity. 8. A Paraphrase, with Annotations, on the Book of Common-Prayer. 7. An Hebrew Grammar; and other pieces. He died October 9th, 1728, in the 56th year of his age.

Benoit, Benferade.

BENOIT (Rénatus), a famous doctor of the Sorbonne, and curate of Eustathius at Paris in the 16th century. He was a secret favourer of the Protestant religion; and that his countrymen might be able to read the bible in their own tongue, he published at Paris the French translation, which had been made by the reformed ministers at Geneva. This translation was approved of by several doctors of the Sorbonne before it went to the press, and king Charles IX. had granted a privilege for the printing of it. Yet when it was published, it was immediately condemned. He had been before that time confessor to the unhappy Mary queen of Scotland, during her stay in France, and attended her when she returned into Scotland. Some time before the death of Henry III. Dr Benoit, or some of his friends with his assistance, published a book, intitled, *Apologie Catholique*, i. e. The Catholic Apology; in which it was showed, that the Protestant religion, which Henry king of Navarre professed, was not a sufficient reason to deprive him of his right of succeeding to the crown of France. When Henry IV. was resolved to embrace the Catholic religion, he assisted at that assembly in which king Henry abjured the reformed religion. The king promoted him to the bishoprick of Troyes in Champagne 1597, but he could never obtain the pope's bulls to be installed. However, he enjoyed the temporalities of that bishopric till he resigned it. He died in 1608.

BENSERADE (Isaac de), an ingenious French poet of the 17th century, was born at Lyons. He made himself known at court by his verses and his wit, and had the good fortune to please the cardinals de Richelieu and Mazarin. After the death of Richelieu, he got into favour with the Duke de Breze, whom he accompanied in most of his expeditions; and when this nobleman died, he returned to court, where his poetry became highly esteemed. He wrote, 1. A Paraphrase upon Job. 2. Verses for Interludes. 3. Rondeaux upon Ovid. 4. Several Tragedies. A sonnet which he sent to a young lady with his Paraphrase on Job being put in competition with the Urania of Voiture, caused him to be much spoken of; for what an honour was it to be head of a party against this celebrated author? Those who gave the preference to Benferade's performance were stiled the *Johists*, and their antagonists the *Uranists*; and the dispute long divided the whole court and the wits. Some years before his death, he applied himself to works of piety, and translated almost all the Psalms.

M. L'Abbé Olivet says, that Benferade, towards the latter end of his life, withdrew from court, and made Gentilly the place of his retirement. When he was a youth, he says it was the custom to visit the remains of the ornaments with which Benferade had embellished his house and gardens, where every thing favoured of his poetical genius. The bark of the trees were full of inscriptions: and, amongst others, he remembers the first which presented itself was as follows:

*Adieu fortune, honneurs adieu, vus et les vôtres,
Je viens ici vous oublier;
Adieu toi-même amour, bien plus que les autres
Difficile à congédier.*

Fortune and honours, all adieu,
And whatsoever belongs to you.

Bensheim,
Benfon.

I to this retirement run,
All your vanities to shun.

Thou too adieu, O powerful love;
From thee 'tis hardest to remove.

Mr Voltaire is of opinion that these inscriptions were the best of his productions, and he regrets that they have not been collected.

Benferade suffered at last so much from the stone, that, notwithstanding his great age, he resolved to submit to the operation of cutting. But his contancy was not put to this last proof; for a surgeon letting him blood, by way of precaution, pricked an artery, and, instead of endeavouring to stop the effusion of blood, ran away. There was but just time to call F. Commire, his friend and confessor, who came soon enough to see him die. This happened the 19th of October 1691, in the 82d year of his age.

BENSHEIM, a town of Germany in the Palatine of the Rhine, seated in E. Long. 8. 45. N. Lat. 52. 23.

BENSON (Dr George), a learned dissenting minister, born at Great Salkeld, in Cumberland, in 1699. His love of learning was so successful, that, at 11 years of age, he was able to read the Greek Testament. He afterwards studied at Dr Dixon's academy at Whitehaven, from whence he removed to the university of Glasgow. In 1721, he was chosen pastor of a congregation of Dissenters at Abingdon in Berkshire; in 1729, he received a call from a society of dissenters in Southwark, with whom he continued 11 years; and in 1740, was chosen by the congregation of Crutched Friars, colleague to the learned and judicious Dr Lardner. From the time of his engaging in the ministry he proposed to himself the critical study of the Scriptures, particularly of the New Testament, as a principal part of his business. The first fruits of these studies which he presented to the public was, A Defence of the reasonableness of Prayer, with a Translation of a Discourse of Maximus Tyrius containing some popular Objections against Prayer, and an Answer to these. The light which Mr Locke had thrown on the obscurest parts of St Paul's epistles, by making him his own expositor, encouraged and determined Mr Benson to attempt to illustrate the remaining epistles in the same manner. In 1731, he published A Paraphrase and Notes on the Epistle to Philemon, as a specimen. This was well received, and the author encouraged to proceed in his design. With the epistle to Philemon was published "A short dissertation, to prove from the spirit and sentiments the apostle discovered in his epistles, that he was neither an enthusiast nor impostor; and consequently that the religion which he asserted he received immediately from heaven, and confirmed by a variety of miracles, is indeed divine." This argument hath since been improved and illustrated, with great delicacy and strength, in a review of the apostle's entire conduct and character by Lord Littleton. Mr Benson proceeded with great diligence and reputation to publish Paraphrases and Notes on the two Epistles to the Thessalonians, the first and second to Timothy, and the Epistle to Titus; adding, Dissertations on several important Subjects, particularly on Inspiration. In the year 1735, our author published his History of the first Planting of Christianity, taken from the Acts of the Apostles, and their Epistles, in 2 vols 4to. In this work, besides illustrating throughout the history of the Acts and most

of the epistles, by a view of the history of the times, the occasion of the several epistles, and the state of the churches to whom they were addressed, he established the truth of the Christian religion on a number of facts, the most public, important, and incontestable. He also wrote, The reasonableness of the Christian Religion; The History of the Life of Jesus Christ; A Paraphrase and Notes on the seven Catholic Epistles; and several other works which procured him great reputation. One of the universities in Scotland sent him a diploma with a doctor's degree; and many of high rank in the church of England, as Herring, Hoadley, Butler, Benson, Coneybeare, &c. showed him great marks of favour and regard. He pursued the same studies with great application and success till the time of his death, which happened in the year 1763, in the 64th year of his age.

BENTHAM (Thomas), bishop of Litchfield and Coventry, was born at Shirburn in Yorkshire in the year 1513, and educated in Magdalen college Oxford. He took the degree of bachelor of arts in 1543, and in 1546 was admitted perpetual fellow, and proceeded master of arts the year following, which was that of Edward VI.'s accession to the crown. He now threw off the mask of Popery, which during the equivocal reign of Henry VIII. he had worn with reluctance. When Mary came to the crown, being deprived of his fellowship by her visitors, he prudently retired to Basil in Switzerland, where for some time he expounded the Scriptures to the English exiles in that city; but, being solicited by some Protestants in London, he returned to London before the death of the Queen, and was appointed superintendant of a private congregation in the city. Immediately on the accession of Elizabeth, Bentham was preferred in the church, and in the second year of her reign was consecrated bishop of Litchfield and Coventry. He died at Eccleshal in Staffordshire in 1578, aged 65. He was buried in the chancel of the church there; and a monument was erected, with the effigy of himself, his wife, and four children, with the following inscription:

*Hac jacet in tumba Benthamus, episcopus ille
Doctus, divinus, largus, pius, ahnus.
Ob. 19. Feb. 1578.*

Bishop Bentham had the character of a pious and zealous reformer, and was particularly celebrated for his knowledge of the Hebrew language. His works are, 1. Exposition of the Acts of the Apostles; manuscript. 2. A Sermon on Christ's Temptation; Lond. 8vo. 3. Epistle to M. Parker; manuscript. 4. The Psalms, Ezekiel, and Daniel, translated into English in Queen Elizabeth's Bible.

BENTIVOGLIO (Guy), cardinal, born at Ferrara, in the year 1579. He went to study at Padua, where he made a considerable proficiency in polite literature. Upon his leaving the university, he went to reside at Rome, where he became universally esteemed. He was sent nuncio to Flanders, and then to France; in both which employments his behaviour was such as gave great satisfaction to Paul V. who made him a cardinal, which was the last promotion he made, a little before his death, which happened on the 28th of January 1621. Bentivoglio was at this time in France, where Louis XIII. and all the French court congratulated
him

Bentham,
Bentivoglio.

him on his new dignity; and when he returned to Rome, his Christian majesty entrusted him with the management of the French affairs at that court. Pope Urban VII. had a high regard for him on account of his fidelity, disinterestedness, and consummate knowledge in business. He was beloved by the people, and esteemed by the cardinals; and his qualities were such, that in all probability he would have been raised to the pontificate on the death of Urban, which happened on the 29th of July 1644; but having gone to the conclave during the time of the most intolerable heats at Rome, it affected his body to such a degree, that he could not sleep for 11 nights afterwards; and this want of rest threw him into a fever, of which he died the 7th of September 1644, aged 65. He has left several works; the most remarkable of which are, A History of the Civil Wars of Flanders, An Account of Flanders, with Letters and Memoirs.

BENTIVOGLIO, a small town of Italy in the territory of Bologna, with a castle, situated in E. Long. 11. 34. N. Lat. 44. 47.

BENTLEY (Richard), an eminent critic and divine, was born at Oulton, in the parish of Rothwell, near Wakefield. His ancestors, who were of some consideration, possessed an estate, and had a seat at Henshall, in the parish of Halifax. His grandfather James Bentley was a captain in King Charles I.'s army at the time of the civil wars; and being involved in the fate of his party, had his house plundered, his estate confiscated, and was himself carried prisoner to Pomfret Castle, where he died. Thomas Bentley, the son of James, and father of Dr Bentley, married the daughter of Richard Willis of Oulton, who had been a major in the royal army. This lady, who was a woman of exceeding good understanding, taught her son Richard his accidence. To his grandfather Willis, who was left his guardian, he was in part indebted for his education; and having gone through the grammar school at Wakefield with singular reputation, both for his proficiency and his exact and regular behaviour, he was admitted of St John's college Cambridge, under the tuition of Mr Johnson, on the 24th of May 1676; being then only four months above 14 years of age. On the 22d of March 1681-2, he stood candidate for a fellowship, and would have been unanimously elected, had he not been excluded by the statutes on account of his being too young for priest's orders. He was then a junior bachelor, and but little more than 19 years old. It was soon after this that he became a school-master at Spalding. But that he did not continue long in this situation is certain from a letter of his grandfather Willis's, still preserved in the family, from which it appears, that he was with Dr Stillingfleet at the Deanery of St Paul's on the 25th of April 1683. He had been recommended by his college to the Dean as preceptor to his son; and Dr Stillingfleet gave Mr Bentley his choice whether he would carry his pupil to Cambridge or Oxford. He fixed upon the latter university on account of the Bodleian library, to the consulting of the manuscripts of which he applied with the closest attention. Being now of age, he made over a small estate which he derived from his family to his elder brother, and immediately laid out the money he obtained for it in the purchase of books. In July 1683, he took the degree of Master of Arts at St

John's college Cambridge. In 1692, his patron being advanced to the see of Worcester, collated him to a prebend in that church, and also made him his domestic chaplain. That learned prelate, as well as Dr Will. Lloyd, then bishop of Litchfield, had seen many proofs of our author's extraordinary merit, when they concurred in recommending him as a fit person to open the lectures upon Mr Boyle's foundation in defence of natural and revealed religion. This gave him a fine opportunity of establishing his fame. He saw it well; and resolved to push it to the utmost. Sir Isaac Newton's *Principia* had been published but a few years, and the book was little known and less understood. Mr Bentley therefore determined to spare no pains in displaying to the best advantage the profound demonstrations which that excellent work furnished in proof of a Deity; and that nothing might be wanting to complete the design, he applied to the author, and received from him the solution of some difficulties which had not fallen within the plan of his treatise*. In short, our author's sermons at Boyle's lectures were universally admired, and highly raised his reputation as a preacher; notwithstanding that escape which laid him open to the malignity of Dr Kiel, viz. of proving the moon not to turn round her axis because she always shows the same face to the earth. In 1693, he was made keeper of the royal library at St James's.

In the following year arose the famous dispute between him and the honourable Mr Boyle, in relation to the epistles of Phalaris; of which Mr Boyle had published a very fine edition, with a Latin version of the text. These epistles the Dr asserted to be spurious, the production of some sophist, and altogether contemptible as a literary performance. The principal pieces which appeared in this noted controversy were, 1. Dr Bentley's dissertation upon the epistles of Themistocles, Socrates, Euripedes, Phalaris, and the Fables of Æsop, at the end of the second edition of Mr Wotton's *Reflections on Ancient and Modern Learning*: but afterwards printed by Dr Bentley entire, and added with great additions to his farther defence of it, in answer to Mr Boyle. 2. "Dr Bentley's Dissertation on the Epistles of Phalaris and the Fables of Æsop examined by the Honourable Charles Boyle, Esq;" a book more commonly known by the title of *Boyle against Bentley*. 3. Dr Bentley's Answer to the above, commonly known by the name of *Bentley against Boyle*; a curious piece, interspersed with a great deal of true wit and humour. From the caprice or partiality of the age the victory was adjudged to Mr Boyle, and the ridicule of the wits exercised upon Dr Bentley. Thus Dr Garth, in the Dispensary

*So Diamonds take a lustre from their soil,
And to a BENTLEY 'tis we owe a BOYLE.*

Dr Bentley had also some wags who were his enemies even at Cambridge, who drew his picture in the hands of Phalaris's guards, who were putting him into their master's bull, and out of the Doctor's mouth came a label with these words, *I had rather be ROASTED than BOILED*. And Dean Swift, in his Tale of a Tub, has some strokes at Dr Bentley upon this occasion, but more especially in his *Battle of the Books*, where, on account of Dr Bentley's dissertation of Phalaris, &c. being annexed to Mr Wotton's reflections on learning,

Bentley.

and their being great friends, he makes Mr Wotton and Dr Bentley, standing side by side, in each other's defence, to be both transfixed to the ground by one stroke of the javelin of Mr Boyle, and this he heightens by the simile of a cook's spitting a brace of woodcocks. Nay, so strong is the influence of literary prejudice and fashion, that many even of Dr Bentley's friends considered Boyle's Examination as unanswerable. Nor could they be convinced of the contrary, till the Doctor, first asking them where it was so impregnable, and confuting one article after another upon the spot, as fast as they instanced, assured them it was all of the same kind. This he effectually showed in his answer. It now, however, seems to be the settled opinion of the literary world, that the Doctor has not only the evident advantage in respect of learning and argument, but that he is little, if at all, inferior to his antagonist in point of wit and smartness. It may not, however, be amiss to recite a few testimonies on the subject. Mr Walpole, speaking of Mr Boyle's translation of the Epistles of Phalaris, says, "This work occasioned the famous controversy with Dr Bentley;—who alone, and unworsted, sustained the attacks of the brightest genius's in the learned world, and whose fame has not suffered by the wit to which it gave occasion." Mr Towers, in his British Biography, expresses himself in the following terms: "In the controversy between him and Mr Boyle, the popular clamour, indeed, was in favour of the latter; but Bentley's is unquestionably a much more valuable performance than that of Boyle. The latter, considered as a mere English composition, has the advantage in point of style; and pleased the generality, by the personal satire which it contained against Dr Bentley, who had many enemies. But Bentley had greatly the superiority with respect to just reasoning, critical sagacity, and extent of learning; and his vindication of himself also contained many shrewd and sarcastical strokes against Mr Boyle and his performance. Much has been said in favour of Mr Boyle, as a genteel and polite writer; and it must be confessed, that Dr Bentley's manner was often too assuming, and that he was deficient in point of civility. But notwithstanding this, there was, perhaps, a much greater want of real candour and politeness, whatever affectation of them there might be, in the very contemptuous and unfair manner in which Dr Bentley was treated throughout Mr Boyle's book, than in any thing which Bentley had said against Boyle. Bentley, with all his foibles, was too respectable a character to be a proper subject of such treatment; though Swift, Garth, and Pope, have joined in countenancing the popular prejudices against him." Mr Dodwell, who resided at Oxford during the controversy, who made himself in some sort a party in it, and who had a very particular court paid to him by the Christ-Church men, declared to them that he never learned so much from any book of the size in his life, as he had done from Dr Bentley's Answer to Boyle.

In 1696, at the public commencement, Mr Bentley had been created Doctor of Divinity by the university of Cambridge; and some time thereafter admitted, *ad eundem*, in the university of Oxford.

In 1700 he was presented to the mastership of Trinity college, Cambridge, which is reckoned worth near

N^o 45.

100*l. per annum*. Upon this promotion he resigned his prebend of Worcester; and, in 1701, was collated to the archdeaconry of Ely. Being thus placed in a state of ease and affluence, he entered into matrimony, and indulged his inclination in critical pursuits; and the fruits of his labours, which he occasionally published, all displayed such erudition and sagacity, that, by degrees, he obtained the character of being the greatest critic of the age. In the mean while, however, he carried matters with so high a hand in the government of his college, that, in 1709, a complaint was brought before the bishop of Ely, as visitor, against him, by several of the fellows, who charged him with embezzling the college money, and other misdemeanors. In answer to this, he presented his defence to the bishop, which he published in 1710, under the title of *The present State of Trinity College*, 8vo; and thus began a quarrel, which was carried on with the most virulent animosity on each side, for above 20 years, when it at last ended in the Doctor's favour. In 1716, upon the death of Dr James, he was appointed regius professor of divinity in the former university; annexed to which was a good benefice in the bishopric of Ely. His Majesty King George I. on a visit to the university in 1717, having, as usual, nominated by mandate several persons for a doctor's degree in divinity, our professor, to whose office it belonged to perform the ceremony called *creation*, demanded four guineas from each person, besides a broad piece of gold, and absolutely refused to create any doctor without these fees: hence there arose a long and warm dispute, during which, the doctor was first suspended, and then degraded; but on a petition to his Majesty for relief from that sentence, the affair was referred to the Court of King's Bench, where the proceedings against him being reversed, a mandamus was issued, charging the university to restore him.—With regard to Dr Bentley's long dispute with his college, Mr Whiston represents his having been induced, in a single instance, after four years of unexceptionable conduct, to recede from the excellent rule of *detur digniori*, in the election to a fellowship, as the first false step which led to others, and was very prejudicial to his own happiness. A concise and accurate account of his controversies with his college and the university, and of the publications which appeared on these occasions, may be seen in Mr Gough's anecdotes of topography. There are likewise, in the Harleian collection of manuscripts in the British Museum, N^o 7523, some authentic papers, relative to the proceedings of the university against Dr Bentley.—Dr Bentley was endowed with a natural hardiness of temper, which enabled him to ride out both these storms without any extraordinary disturbance, or interruption to his literary pursuits. In his private character, tho' he is generally allowed to have been too fond of money, he was hearty, sincere, and warm in his friendship, an affectionate husband, and a most indulgent father. He loved hospitality and respect; maintained the dignity and munificence of the ancient abbots in house-keeping at his lodge, which he beautified; and, in conversation, tempered the severity of the critic with such a peculiar strain of vivacity and pleasantry, as was very entertaining. He died at his lodge in Trinity college, on the 14th of July 1742, at 80 years of age. To his latest hour, he could read the smallest Greek Testament

Bentley.

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Bentley.

flament without spectacles; and he died of a young man's disorder, a pleuritic fever. He was of a large and robust frame of body, and of strong features. These gave a dignity, perhaps a severity, to his aspect, which probably heightened the opinion many had conceived of the haughtiness and roughness of his temper. But, in fact, he was of so tender a disposition, that he never read a touching story without tears. It was not, indeed, till after he had been afflicted with a slight paralytic stroke, that this particular effect of the softness of his nature was in every case apparent; so that it may possibly be imputed, in some degree, to his disorder. It is, however, certain, that previous to that event, he was endued with great tenderness and sensibility. In the contest about the visitatorial power, when he met Bishop Moore, he was so struck with seeing his old friend appear in a hostile manner against him, that he fainted away in the court.

When we consider the great abilities and uncommon erudition of which Dr Bentley was possessed, it reflects some disgrace on our country, says Dr Kippis, that even his literary reputation should be so long treated with contempt; that he should be represented as a mere verbal critic, and as a pedant without genius. The unjust light in which he was placed, was not entirely owing to the able men who opposed him in the Boylean controversy; it arose, perhaps, principally from the poets engaging on the same side of the question, and making him the object of their satire and ridicule. The "flashing Bentley" of Pope will be remembered and repeated by thousands who know nothing of the Doctor's real merit. Having mentioned this epithet, we shall add the candid note of the poet's right reverend editor. "This great man, with all his faults, deserved to be put into better company. The following words of Cicero describe him not amiss: "*Habuit a natura genus quoddam acuminis, quod etiam arte limaverat, quod erat in reprehendis verbis versutum et solers; sed sepe stomachosum, nunquam frigidum, interdum etiam facetum.*" In the fourth book of the Dunciad, Mr Pope introduces our critic at greater length, and with still greater severity. Perhaps it may be found, that the asperity of Mr Pope was not entirely owing to the combination of certain wits and poets against Dr Bentley, but to personal resentment. We are told that Bishop Atterbury, having Bentley and Pope both at dinner with him, insisted on knowing what opinion the Doctor entertained of the English Homer. He for some time eluded the question: but at last, being urged to speak out, he said, "The verses are good verses, but the work is not Homer, it is Spontanus." It must, indeed, be acknowledged, that one cause of Dr Bentley's having enemies, was his not always bearing his faculties with sufficient meekness. He appears to have had a considerable degree of literary pride, and to have spoken of himself and others with uncommon freedom. Mr Whiston informs us of the Doctor's having said, "That when he himself should be dead, Wasse would be the most learned man in England." Dr Salter, who was extremely devoted to the memory of Dr Bentley, confessed that he was remarkable for his *fastus*, especially towards his equals, and for speaking highly of himself. But at the same time, he is described by Dr Salter as having been a very amiable and pleasant man in private life, and as

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possessing much good nature, though he hath been otherwise represented. This account agrees with the most authentic information from different quarters. It is related of Dr Bentley, that he used to pull off his hat to the younger students, but would not do it to the fellows of his college. Being asked the reason for making this difference, he answered, "That the young ones might come to something; but for the others, they never could be good for any thing."

The Doctor's principal works, besides those already mentioned, were, 1. His animadversions and remarks on the poet Callimachus. 2. Annotations on the two first Comedies of Aristophanes. 3. Emendations, &c. on the Fragment of Menander and Philemon. 4. Remarks upon Collins's discourse of Free-thinking. 5. Beautiful and correct editions of Horace, Terence, Phædrus, and Milton, with notes.

In 1721 he published Proposals for printing a new edition of the Greek Testament, and St Hierom's Latin version; in which edition he intended to make no use of any manuscript that was not at least 1000 years old. Upon these proposals Dr Middleton published some remarks; and the work never made its appearance. "If Dr Middleton's attack contributed to this event (Dr Kippis observes), he certainly did no little disservice to the cause of sacred literature. The completion of Dr Bentley's noble undertaking was the principal employment of the latter part of his life. He had collected and collated all the manuscripts of Europe to which access could be obtained. For this purpose, his nephew Thomas Bentley, LL. D. well known in the republic of letters, travelled through Europe at his uncle's expence. The work was of such magnitude, that he found it necessary, for the first time, to publish proposals for printing it by subscription. The whole was completed for publication; and he had received 2000 l. in part of the subscription, all of which he returned to the subscribers when he took the resolution of not letting it appear in the world during his own life. The work is now in the possession of his executor Dr Richard Bentley, one of the senior fellows of Trinity College, and rector of Nailston near Ashby in Leicestershire; and it is hoped that at some future period it may yet see the light.—Other valuable remains of Dr Bentley are still in existence; some of which are in the hands of his executor, and some in those of Mr Cumberland his grandson. The latter gentleman is possessed of the Doctor's classic books, with his marginal notes. From these notes Mr Cumberland hath published an edition of Lucan; which, though not perfect throughout, is full and complete with regard to the four first books. The same gentleman has a Homer of our great critic's, with many marginal notes and corrections, preparatory to an edition of it which he intended to have given. Dr Bentley's critical correspondence with his numerous literary acquaintance, which must be very instructive and entertaining, is not only preserved, but designed to be laid before the public."

The Doctor's publication of Milton, it is said, was owing to Queen Caroline. Her Majesty represented to him that he had printed no edition of an English classic, and urged him to undertake Milton. His notes upon this great poet have been the worst received of any of his critical performances. The learned Bishop

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Newton

Bentley.

Benzoin
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Berberis.

Newton speaks of them with considerable severity, intermixed, however, with some applause.

BENZOIN, in materia medica, a concrete resinous juice, obtained from a species of *styrax*. See *STYRAX*.

BERAMS, a coarse cloth, all made with cotton-thread, which comes from the East Indies, and particularly from Surat.

BERAR, a province of Asia, in the dominions of the Great Mogul, near the kingdom of Bengal. It abounds in corn, rice, pulse; and poppies, from which last they extract opium; and sugar-canes grow almost without cultivation. The capital town is called *Shapur*.

BERAUM, a royal city of Bohemia, and capital of a circle of the same name. E. Long. 14. 25. N. Lat. 50. 2.

BERAY, a town of Normandy in France, situated in W. Long. 1. 20. N. Lat. 49. 6.

BERBERIS, the *BARBERRY*, or *pipperidge bush*: A genus of the monogynia order, belonging to the hexandria class of plants; the characters of which are: The calyx consists of six leaves; the petals are six, with two glands at the unguis; it has no stylius; and the berry contains two seeds.

Species. 1. The vulgaris, or common barberry, grows naturally in hedges in many parts of England, as also in some parts of Scotland; but is also cultivated in gardens on account of its fruit, which is pickled and used for garnishing dishes. It rises to the height of eight or ten feet, with many stalks, which have a white bark, yellow on the inside. The stalks and branches are armed with sharp thorns, which commonly grow by threes; the leaves are oval, obtuse, and slightly fawed on their edges. The flowers come out from the wings of the leaves in small ramose bunches, like those of the currant bush, and are of a yellow colour; these are succeeded by oval fruit, which are at first green, but when ripe turn to a fine red colour. The flowers appear in May, and the fruit ripens in September. There are two or three varieties of this shrub, which by some have been taken for distinct species; one is the barberry without stone; another, the barberry with white fruit; and a third is called by Tournefort *taller eastern barberry*, with a black sweet fruit. Of these Mr Miller observes, that the first certainly depends on the age of the plant; because the suckers taken from those bushes commonly produce fruit with stones: the second, he says, seldom bears any fruit; the leaves are of a lighter green colour, and the bark of the stalks are whiter than those of the common kind: the third appears to be the same with the common sort, excepting the colour and flavour of its fruit, which can never indicate a specific difference. 2. The canadensis, is a native of that country from whence it takes its name, and was formerly much more common in British gardens than at present. The leaves are much broader and shorter than those of the common sort, and the fruit is black when ripe. 3. The cretica, with a single flower in each footstalk, is at present very rare in Britain; the plants being tender whilst young, and most of them killed by severe frost. This never rises more than three or four feet high in Britain; but sends out many stalks from the root, which are strongly armed with spines at every joint: the leaves are produced without order, and are shaped like those of the narrow-leaved box-

tree: the flowers come out from between the leaves, each having a slender footstalk; but they are not succeeded by fruit in Britain.

Culture. The first sort is generally propagated by suckers, which are sent out in great plenty from the root; but such plants are very apt to send out suckers in greater plenty than those that are propagated by layers; so the latter method is preferable. The best time for laying down the branches is in the autumn, when the leaves begin to fall: the young shoots of the same year are the best for this purpose; these will be well rooted by the next autumn, when they may be taken off, and planted where they are designed to remain. Where this plant is cultivated for its fruit, it should be planted single, not in hedges as was formerly the practice; the suckers should be every autumn taken away, and the gross shoots pruned out: by this means the fruit will be much fairer and in greater plenty than on those that are suffered to grow wild. The other sorts may be propagated in the same manner; only the third should be planted in pots, and sheltered as soon as the young shoots are taken off, till the plants have acquired strength, when they may be turned out, and planted in a warm situation.

Medicinal and other qualities. The berries, which are so acid that birds will not feed upon them, are moderately astringent; and have been given with success in bilious fluxes, and diseases proceeding from heat, acrimony, and thinness of the juices. Among the Egyptians barberries are used in fluxes and in malignant fevers, for abating heat, quenching thirst, raising the strength, and preventing putrefaction: the fruit is macerated for a day and a night, in about 12 times its quantity of water, with the addition of a little fennel seed, or the like, to prevent offence to the stomach; the liquor strained off, and sweetened with sugar or syrup of citrons, is given the patient liberally to drink. Prosper Alpinus, from whose treatise *De Medicina Aegyptorum* Dr Lewis extracted this account, informs us, that he took this medicine himself with happy success, in a pestilential fever accompanied with an immoderate bilious diarrhoea. The leaves also are gratefully acid. The flowers are offensive to the smell when near, but at a distance their odour is extremely fine. An infusion of the bark in white-wine is purgative. The roots boiled in ley dye wool yellow. In Poland they dye leather of a most beautiful yellow with the bark of the root. The inner bark of the stems dyes linen of a fine yellow with the assistance of alum. This shrub should never be permitted to grow in corn lands; for the ears of wheat that grow near it never fill, and its influence in this respect has been known to extend across a field of 300 or 400 yards. Cows, sheep, and goats, eat it; horses and swine refuse.

BERBICE, a river of Terra Firma in America, which falls into the North Sea, in S. Lat. 6. 30. This is the only river in the country, and waters a great number of plantations of cotton, &c. belonging to the Dutch.

BERCARIA, **BERQUERIA**, or *Berberia*, in middle-age writers, denotes a sheep-fold, sheep-cote, sheep-pen, or other inclosure, for the safe keeping a flock of sheep.—The word is abbreviated from *berbicaria*; of *berbex*, detorted from *vervex*. Hence also a shepherd was denominated *berbicarius* and *berquarius*.

BERCHEROIT,

Berberus
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Bercaria.

Bercheroit
Berengarianism.

BERCHEROIT, or **BERNOITS**, a weight used at Archangel, and in all the Russian dominions, to weigh such merchandizes as are heavy and bulky. It weighs about 364 lib. English avoirdupois weight.

BERCHEM, or **BERGHEM**, (Nicholas), an excellent painter, was a native of Haerlem, and born in 1624. He received instructions from several very eminent masters; and it was no small addition to their fame that Berchem was their scholar. The charming pictures of cattle and figures by this admirable master are justly held in the highest estimation. He has been singularly happy in having many of them finely engraved by John VISSCHER, an artist of the first rank. Berchem had an easy expeditious manner of painting, and an inexpressible variety and beauty in the choice of sites for his landscapes; executing them with a surprising degree of neatness and truth. He possessed a clearness and strength of judgment, and a wonderful power and ease in expressing his ideas; and although his subjects were of the lower kind, yet his choice of nature was judicious, and he gave to every subject as much of beauty and elegance as it would admit. The leasing of his trees is exquisitely and freely touched; his skies are clear; and his clouds float lightly, as if supported by air. The distinguishing characters of the pictures of Berchem are, the breadth and just distribution of the lights; the grandeur of his masses of light and shadow; the natural ease and simplicity in the attitudes of his figures, expressing their several characters; the just degradation of his distances; the brilliancy and harmony, as well as the transparency, of his colouring; the correctness and true perspective of his design; and the elegance of his composition; and where any of those marks are wanting, no authority ought to be sufficient to ascribe any picture to him. He painted every part of his subjects so extremely well, as to render it difficult to determine in which he excelled most; his trees, buildings, waters, rocks, hills, cattle, and figures, being all equally admirable.

BERCHETT, (Peter), an eminent history-painter, was born in France in 1659, and at the age of 18 was employed in the royal palaces. He came to England in 1681, to work under Rambour, a French painter of architecture; but, after staying a year, returned to Paris. He came again, and was sent by King William to the palace he was building at Loo, where he was employed 15 months; and then came a third time to England, where he had sufficient business. We are informed by Mr Walpole, that he then painted the ceiling of the chapel of Trinity college, Oxford, the staircase at the Duke of Schomberg's in Pall-Mall, and the summer-house at Ranelagh. His drawings in the academy were much approved. Towards the close of his life he retired to Marybone, where he painted only small pieces of fabulous history, and died there in January 1720.

BERDASH, in antiquity, was a name formerly used in England for a certain kind of neck-drefs; and hence a person who made or sold such neck-cloths was called a *berdasher*, from which is derived our word *berdasher*.

BERECYNTHIA, the mother of the gods, in the Pagan theology.

BERENGARIANISM, a name given by ecclesiastical writers to the opinion of those who deny the

truth and reality of the body and blood of Christ in the eucharist. The denomination took its rise from Berengarius, archdeacon and scholiasticus of the church of St Mary at Anjou about the year 1035, who maintained, that the bread and wine, even after consecration, do not become the true body and blood of our Lord, but only a figure and sign thereof.

Berengarianism was strenuously opposed by Lanfranc, Guitmond, Adelmannus, Albericus, &c. Divers synods were held, wherein the author was condemned at Rome, Versailles, Florence, Tours, &c. He retracted, and returned again more than once; signed three several Catholic confessions of faith; the first in the second council of Rome, the second in the third, and the third in the fourth council of the same city. But he still relapsed to his former opinion when the storm was over; though Mabillon maintains he soon recovered from his fourth fall, and died an orthodox Catholic in 1088.

BERENICE, daughter of Ptolemy Auletes king of Egypt, succeeded her father before his death. This banished prince implored the assistance of the Romans. Pompey restored him. Berenice, to support herself on the throne, allured a prince, whose name was Seleucus, descended from the kings of Syria, and admitted him to her nuptial bed, and to her sceptre. She was soon weary of him, and put him to death. She next cast her eye on Archelaus, who married her, and put himself at the head of her troops to repulse the Romans. He was killed in a battle. Ptolemy returned to Alexandria and put his rebellious daughter to death.

BERENICE, wife of Ptolemy Evergetes king of Egypt, cut off her hair in pursuance of a vow, and consecrated it in the temple of Venus. This deposit being afterwards lost, Connon the mathematician, in compliment to her, declared that the queen's locks had been conveyed to heaven, and composed those seven stars near the tail of the bull, called to this day *coma Berenices*.

BERENICE, daughter of Costobarnus and of Salome sister to Herod the Great, was married first to Aristobulus, son of the same Herod and Mariamne. He having a brother who married the daughter of Archelaus king of Cappadocia, often upbraided Berenice that he was married below himself in wedding her. Berenice related all these discourses to her mother, and exasperated her so furiously, that Salome, who had much power over Herod's mind, made him suspect Aristobulus, and was the principal cause that urged this cruel father to get rid of him. She married again; and having lost her second husband, went to Rome, and got into the favour of Augustus. But, above all, she insinuated herself into the good graces of Antonia, the wife of Drusus, which in the end proved of great service to Agrippa.

BERENICE, grand-daughter of the preceding, and daughter of Agrippa I. king of Judea, has been much talked of on account of her amours. She was betrothed to one Marcus, but he died before the marriage. Soon after, she married his uncle Herod, who at the desire of Agrippa, both his brother and father-in-law, was created king of Chalcis by the emperor Claudius. She lost her husband in the 8th year of the emperor Claudius; and in her widowhood, it was rumoured she committed incest with her brother Agrippa. To put

Berenice
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Berg.

a stop to this report, she offered herself in marriage to Polemon king of Cilicia, provided he would change his religion. He accepted her offers, was circumcised, and married her. Berenice soon left him to follow her own ways, and he abandoned Judaism to return to his former religion. She was always very well with her brother Agrippa, and seconded him in the design of preventing the desolation of the Jews. She got Titus into her snares; but the murmurs of the Roman people hindering her from becoming his wife, there remained nothing for her but the title of mistress or concubine of the emperor. The French stage, in the 17th century, refounded with the amours of Titus and Berenice.

BERENICE (anc. geog.), the name of several cities, particularly of a celebrated port-town on the Sinus Arabicus: Now *Suez*; which see.

BERENICE'S Hair, *Coma Berenices*. See BERENICE.

BERE-REGIS, a town in Dorsetshire in England, in W. Long. 2. 15. N. Lat. 50. 40.

BERESOW, a division of the province of Tobolsk in Siberia. It is bounded on the north by the straits of Waigatz, on the east by a large bay of the frozen ocean which runs into the land towards the south, and at the 65th degree of latitude separates into two arms; one of which is called the *Obkaia-Guba*, or *Oby-bay*; and the other *Tazovskaia-Guba*, or the bay of *Tazov*. The river Oby empties itself into the former, and the Taz into the latter. This district was under the Russian dominion long before the other parts of Siberia were conquered, being reduced by the Czar Gabriel so early as the year 1530.

BEREWICHA, or BEREWICA, in our old writers, denotes a village or hamlet belonging to some town or manor, situate at some distance therefrom.—The word frequently occurs in Doomsday-book: *Iste sunt berewiche ejusdem manerii*.

BERG, a duchy of Germany, in the circle of Westphalia. It is bounded on the north by the duchy of Cleves, on the west by the county of Mark and the duchy of Westphalia, on the south by Westeravia, and on the east by the diocese of Cologne, from which it is separated by the Rhine. It is about 150 miles in length, and 24 in breadth. It is very fruitful along the Rhine, but mountainous and woody towards the county of Mark. It is subject to the elector Palatine, but his right is disputed by Prussia and Saxony. The principal town is Dusseldorf; and the principal rivers, besides the Rhine, are the Wipper, Agger, and Sieg.

BERG (St Winox), a town of the Low Countries, in the country of Flanders, fortified by Vauban, and subject to France. It is seated on the river Colme, six miles from Dunkirk, and 21 from Ypres. The air is often very unwholesome, especially to strangers. It has an hospital for soldiers, taken care of by friars called *Bons Fieux*, and two seminaries for young students. The river Colme serves instead of a canal to go to Hondshot, St Omer's, and Gravelines. There is likewise another canal to go to Dunkirk. The villages in its territory are very famous for butter and cheese, of which they send a great quantity to Flanders. Fort Lapin and Fort Suisse are within a cannon's shot of this place, and Fort St Francis is seated on the canal, near three miles from the town. E. Long. 2. 35. N. Lat. 50. 57.

BERG-ZABERN, a town of France in Alsace. E. Bergamasco Long. 7. 55. N. Lat. 49. 4.

BERG-Gruin, in natural history, the name of an earth used in painting, and properly called *green okre*, tho' not known among the colour-men under that name. It is found in many parts of Germany, Italy, and England, commonly in the neighbourhood of copper-mines, from particles of which metal it receives its colour. In many parts of Germany, they have a purer kind of this, distinguished by no peculiar name, but separated by art from the waters draining from the copper-mines, and differing no otherwise from this native substance, than as the washed okres of Oxfordshire, &c. do from these sent us in their natural condition. The characters by which the native kind is known from other green earths, are these: it is a dense compact substance, considerably heavy, and of a pale but not disagreeable green; of a rough and uneven, but not dusty surface, and somewhat unctuous to the touch. It adheres firmly to the tongue; does not break easily between the fingers; nor at all stains the hands. It is of a brackish disagreeable taste, and does not ferment with acids.

BERGAMASCO, a province of Italy, in the territory of Venice. It is bounded on the east by the Bressan, on the north by the Valteline, on the west and south by the Milanese. It extends about 36 leagues from north to south, and 30 from east to west. It is watered by several rivers which render it very fertile, and particularly it produces a great number of chestnuts. It has mines of iron, and quarries of marble, and other stones of which they make millstones. There are a great number of villages, but no city except Bergamo the capital. The people are very industrious, and make the best of their natural productions. They are well stocked with cattle, and make fine tapestry. Their language is the most corrupt of any in Italy.

BERGAMO (James Philip de), an Augustin monk, born at Bergamo in 1434, wrote in Latin a Chronicle from the creation of the world to the year 1503, and a Treatise of Illustrious Women. He died in 1518.

BERGAMO, anciently *Bergomum*, a large and strong town of Italy, in the Venetian territory, and capital of the province of Bergamasco. It has a strong citadel, and is the see of a bishop. Its situation near the Alps makes the inhabitants subject to swellings in their throats, owing to the badness of the Alpine waters. E. Long. 9. 38. N. Lat. 45. 42.

BERGAMOT, a species of citron, produced at first casually by an Italian's grafting a citron on the stock of a bergamot pear-tree, whence the fruit produced by this union participated both of the citron-tree and the pear-tree. The fruit hath a fine taste and smell, and its essential oil is in high esteem as a perfume. The essence of Bergamot is also called *essentia de cedra*. It is extracted from the yellow rind of the fruit by first cutting it in small pieces, then immediately squeezing the oil out of them into a glass vessel. This liquor is an etherial oil. A water is distilled from the peel as follows: Take the outer rind of three bergamots, a gallon of pure proof-spirit, and four pints of pure water; draw off a gallon in a balneum marie, then add as much of the best white sugar as will be agreeable. Or take of the essence of bergamot three drams and a half,

E. Bergamasco
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Bergamet.

Bergarac half, of rectified spirit of wine three pints, of volatile
 sal ammoniac a dram; distil off three pints in a balneum
 marie.

BERGAMOT is also the denomination of a coarse tapestry, manufactured with flocks of silk, wool, cotton, hemp, ox, cow, or goat's hair, and supposed to be invented by the people of Bergamo in Italy.

BERGARAC, a very rich, populous, and trading town of France, seated on the river Dordogne, in E. Long. o. 37. N. Lat. 50. 57.

BERGAS, a town of Romania in European Turkey, and the see of a Greek archbishop. It is seated on the river Larissa, in E. Long. 27. 30. N. Lat. 41. 17.

BERGEN, anciently *Bergi*, a city of Norway, and capital of the province of Bergenhus. It is the see of a bishop, and has a strong castle and a good port. It is a large place; but is subject to fires, as being all built of wood. It is surrounded with mountains almost inaccessible; and little or no corn grows in all the country; that which they use is all imported, and distributed from thence throughout the kingdom. The principal trade is in flock-fish, firs, and deal-boards. E. Long. 5. 45. N. Lat. 60. 11.

BERGEN, a town of Pomerania in Germany, and capital of the Isle of Rugen, subject to the Swedes. E. Long. 13. 0. N. Lat. 54. 30.

BERGEN-OP-ZOOM, a town of the Low Countries, in Dutch Brabant, and in the marquise of the same name. It is seated on an eminence, in the middle of a morass, about a mile and a half from the eastern branch of the Scheld, with which it has a communication by a navigable canal. The houses are well built, and the market-places and squares handsome and spacious. The church before the last siege was reckoned a good building, and so was the marquis's palace. It has a good tract of land under its jurisdiction, with several villages, and some islands in the Scheld. It has a very advantageous situation on the confines of Brabant, Holland, Zealand, and Flanders. It is strong by nature as well as by art, being so secured by the morasses about it, which are formed by the river Zoom, that it was reckoned impregnable. It was, however, taken in 1747 by the French, but it is thought not without the help of treachery. The fortifications are allowed to be the master-piece of that great engineer Cohorn. It had been twice besieged before without success. The marquis of Spinola was the last but one who invested it, and he was forced to raise the siege with the loss of 10,000 men. E. Long. 4. 15. N. Lat. 51. 30.

BERGHEM. See **BERCHEM**.

BERGHMONT, an assembly or court held upon a hill in Derbyshire, for deciding controversies among the miners.

BERGMAN (Sir Torbern), a celebrated and natural philosopher, was born in the year 1735 at Catharineberg in Westgothland. His father was receiver-general of the finances, and had destined him to the same employment; but nature had designed him for the sciences. To them he perceived an irresistible inclination from his earliest years, and nature proved more powerful than the will of his friends. His first studies were confined to mathematics and physics: and the efforts that were made to divert him from science having proved ineffectual, he was sent to Upsal with

permission to follow the bent of his inclination. Linnæus at that time filled the whole kingdom with his fame. Infligated by his example, the Swedish youth flocked around him: and accomplished disciples leaving his school, carried the name and the system of their master to the most distant parts of the globe. Bergman was struck with the splendor of this renown; he attached himself to the man whose merit had procured it, and by whom he was very soon distinguished. He applied himself at first to the study of insects, and made several ingenious researches into their history; among others into that of the genus of *tenthræto*, so often and so cruelly preyed on by the larvæ of the ichneumons, that nestle in their bowels and devour them. He discovered that the leech is oviparous; and that the cocæus aquaticus is the egg of this animal, from whence issue ten or twelve young. Linnæus, who had at first denied this fact, was struck with astonishment when he saw it proved. *Vidi et obstupui!* were the words he pronounced, and which he wrote at the foot of the memoir when he gave it his sanction. Mr Bergman soon distinguished himself as an astronomer, naturalist, and geometrician; but these are not the titles by which he acquired his fame. The chair of chemistry and mineralogy, which had been filled by the celebrated Wallerius, becoming vacant by his resignation, Mr Bergman was among the number of the competitors: and without having before this period discovered any particular attention to chemistry, he published a memoir on the preparation of alum that astonished his friends as well as his adversaries. Nobody was able to conceive how in so short a time he could have made a course of experiments so complete, on a subject so new to him. His dissertation was warmly attacked in the periodical publications, and Wallerius himself criticised without reserve. But in the midst of so many enemies, he possessed a firm friend. The prince Gustavus, now king of Sweden, and then chancellor of the university, took cognizance of the affair. After having consulted two persons, the most able to give him advice, and whose testimony went in favour of Bergman, he addressed a memorial, written with his own hand, in answer to all the grievances alleged against the candidate, to the consistory of the university and to the senate, who confirmed the wishes of his Royal Highness.

Mr Bergman had now a hard duty to fulfil: he had to satisfy the hopes that were conceived of him; to justify the opinion of Swab; to fill the place of Wallerius; and to put envy to silence. He did not follow the common tract in the study of chemistry. As he had received the lessons of no master, he was tainted with the prejudices of no school. Accustomed to precision, and having no time to lose, he applied himself to experiments without paying any attention to theories: he repeated those often which he considered as the most important and instructive, and reduced them to method; an improvement till then unknown. He first introduced into chemistry the process by analysis, which ought to be applied to every science; for there should be but one method of teaching and learning, as there is but one of judging well. These views have been laid down by Mr Bergman in an excellent discourse, which contains, if we may say so, his profession of faith in what relates to the sciences. It is here that he displays

Bergman
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Beria.

plays himself without disguise to his reader; and here it is of importance to study him with attention. The productions of volcanoes had never been analysed when Messrs Ferber and Troil brought a rich collection of these into Sweden. At the sight of them Mr Bergman conceived the design of investigating their nature. He examined first of all the matters least altered by the fire, and the forms of which were still to be discerned: he followed them in their changes progressively; he determined, he imitated their more complicated appearances; he knew the effects which would result from the mixture and decomposition of the saline substances which are found abundantly in these productions. He discovered such as were formed in the humid way; and then in his laboratory he observed the process of nature; that combat of flames and explosions; that chaos in which the elements seem to clash and to confound one another, unveiled themselves to his eyes. He saw the fire of volcanoes kindled in the midst of pyritical combinations, and sea-salt decomposed by clays; he saw fixed air disengaged from calcined calcareous stones, spreading upon the surface of the earth, and filling caverns in which flame and animal life are equally extinguished; he saw the sulphureous acid thrown out in waves, convert itself into the vitriolic by mere contact with the air; and distilling thro' the rocks, form the alum veins of the solfatara. He saw the bitumens as they melted; the inflammable and sulphureous airs exhaling; and the waters become mineral and impregnated with the fire and vapours of these stupendous furnaces, preparing for the beings that move and dispute on the crust of the abyss, a remedy for pain and a balsam for disease.

The continual application which Mr Bergman bestowed on his studies having affected his health, he was advised to interrupt them if he wished to prolong his life: but he found happiness only in study, and wished not to forfeit his title to reputation by a few years more of inactivity and languor. He exhausted his strength, and died in the month of June in the year 1784. The university of Upsal paid the most distinguished honours to his memory; and the academy of Stockholm consecrated to him a medal to perpetuate the regret of all the learned in Europe for his loss. His Physical and Chemical Essays have been collected and translated by Dr Edmund Cullen, and published in 2 vols 8vo.

BERGOMUM (anc. geog.), a town of the Transpadana, built by the Gauls on their incursions into Italy. Now called *Bergamo*, in the territory of Venice. E. Long. 10. Lat. 45. 40.

BERIA, BERIE, *Berry*, signifies a large open field; and those cities and towns in England which end with that word are built on plain and open places, and do not derive their names from boroughs as Sir Henry Spelman imagines. Most of our glossographers in the names of places have confounded the word *berie* with that of *bury* and *borough*, as if the appellative of ancient towns: whereas the true sense of the word *berie* is a flat wide campaign, as is proved from sufficient authorities by the learned Du Fresne, who observes that *Beria Sancti Edmundi*, mentioned by Mat. Paris. sub. ann. 1174, is not to be taken for the town, but for the adjoining plain. To this may be added, that many flat and wide meads, and other open grounds, are called by the name of

beries and *berysfields*: the spacious meadow between Oxford and Illey was in the reign of king Athelstan called *Bery*; as is now the largest pasture-ground in Quarendon in the county of Buckingham, known by the name of *Beryfield*. And though these meads have been interpreted demesne or manor meadows, yet they were truly any flat or open meadows that lay adjoining to any villa or farm.

BERING (Sinus), of Copenhagen, a Latin lyric poet, flourished about 1560.

BERINGS STRAITS, the name of that narrow division of the Old and New World, where the breadth between Asia and America is only 13 leagues. They are so named from Captain Vitus Bering, a Dane by birth, and employed on the same plan of discovery in these parts as our great countryman Cook was in the late voyage. He was in the service of Peter the Great; who by the strength of an extensive genius, conceiving an opinion of the vicinity of America to his Asiatic dominions, laid down a plan of discovery worthy of so extraordinary a monarch, but died before the attempt was begun; but his spirit survived in his successor. Bering, after a tedious and fatiguing journey through the wilds of Sibiria, arrived in Kamtschatka, attended with the scanty materials for his voyage, the greatest part of which he was obliged to bring with him through a thousand difficulties. He sailed from the river of Kamtschatka on July 15th 1728; and on the 15th of August saw Serdze Kamen, or the heart-shaped rock, a name bestowed on it by the first discoverer.—From Serdze Kamen, to a promontory named by Captain Cook *East Cape*, the land trends south-east. The last is a circular peninsula of high cliffs, projecting far into the sea due east, and joined to the land by a long and very narrow isthmus, in lat. 66. 6. This is the Tschutski Nofs of our navigators, and forms the beginning of the narrow straits or division of the old and new world. The distance between Asia and America in this place, as already mentioned, is only 13 leagues. The country about the cape, and to the north-west of it, was inhabited. About mid-channel are two small islands, named by the Russians the *isles of St Diomedes*; neither of them above three or four leagues in circuit. It is extremely extraordinary that Bering should have sailed through this confined passage, and yet that the object of his mission should have escaped him. His misfortune could only be attributed to the foggy weather, which he must have met with in a region notorious for mists; for he says that he saw land neither to the north nor to the east. Our generous commander determined to give him every honour his merit could claim, has dignified these with the name of *Bering's Straits*. The depth of these straits is from 12 to 29 or 30 fathoms. The greatest depth is in the middle, which has a slimy bottom; the shallowest parts are near each shore, which consists of sand mixed with bones and shells. The current or tide very inconsiderable, and what there was came from the west. From East Cape the land trends south by west. In Lat. 65. 36. is the bay in which Captain Cook had the interview with the Tschutski. Immediately beyond is the bay of St Laurence, about five leagues broad in the entrance and four deep, bounded at the bottom by high land. A little beyond is a large bay, either bounded by low land at the bottom, or so extensive as to

Bering,
Berings.

Berith, have the end invisible. To the south of this are two other bays; and in Lat. 64. 13. Long. 186. 36 is the extreme southern point of the land of the Tschutski. This formerly was called the *Anadirski Ness*. Near it Bering had conversation with eight men, who came off to him in a *baïdar* or boat covered with the skins of seals; from which Bering and others have named it the *Tschutski Ness*.

BERITH, a simple mentioned in Scripture, used for cleansing or taking out spots (Jer. ii. 22). Some will have it to be the *kali* or salt-wort, from the ashes of which soap is made; and in our version it is rendered *soap*: others, after Rudbeck, made it to be the dye of the purple-fish.

BERKELEY (George), the celebrated bishop of Cloyne, was the son of a clergyman in Ireland, distinguished only by his piety and learning. He was educated at Trinity college in Dublin, of which he attained a fellowship. His first essays as a writer were published in the *Spectator* and *Guardian*, which entertaining works he adorned with many pieces in favour of virtue and religion. His learning and virtues, his wit and agreeable conversation, introduced him to the acquaintance, and procured him the esteem and friendship, of many great and learned men; and among others the Earl of Peterborough, Dr Swift, and Mr Pope. The Earl made him his chaplain, and took him as his companion on a tour through Europe. During his absence, he was elected a senior fellow of his college; and created D. D. *per saltum*, in 1717.

Upon his return, his acquaintance among the great was extended. Lord Burlington, in particular, conceived a great esteem for him on account of his great taste and skill in architecture; an art of which his Lordship was an excellent judge and patron, and which Mr Berkeley had made his particular study while in Italy. By this nobleman he was recommended to the Duke of Grafton lord lieutenant of Ireland, who took him over to Ireland in 1721, after he had been absent from his native country more than six years. In 1722, his fortune received a considerable increase from a very unexpected event. On his first going to London in the year 1713, Dean Swift introduced him to the family of Mrs Esther Vanhomrigh (the celebrated Vanessa), and took him often to dine at her house. Some years before her death, this lady removed to Ireland, and fixed her residence at Cell-bridge, a pleasant village in the neighbourhood of Dublin, most probably with a view of often enjoying the company of a man for whom she seems to have entertained a very singular attachment. But finding herself totally disappointed in this expectation, and discovering the Dean's connection with Stella, she was so enraged at this infidelity, that she altered her intention of making him her heir, and left the whole of her fortune, amounting to near 8000*l.* to be divided equally between two gentlemen whom she named her executors; Mr Marshal a lawyer, afterwards one of the judges of the court of common pleas in Ireland, and Dr Berkeley. The Doctor received the news of this bequest from Mr Marshal with great surprise, as he had never once seen the lady who had honoured him with such a proof of her esteem from the time of his return to Ireland to her death. In 1724, the Doctor resigned his fellowship; being promoted by his patron the Duke of Grafton to the

deanery of Derry, worth 1100*l.* *per annum*. In the interval between this removal and his return from abroad, his mind had been employed in conceiving a most benevolent and charitable plan for the better supplying of the churches in our foreign plantations, and converting the savage Americans to Christianity, by erecting a college in the Summer Islands. The proposal was well received; and he obtained a charter for the foundation, with a parliamentary grant of 20,000*l.* toward carrying it into execution: but he could never get the money; so that, after two years stay in America on this business, the design dropped. He was warmly engaged too, in concert with Swift, Bolingbroke, and others, in a scheme for establishing a society for the improvement of the English language, in imitation of the academy of France. But Harley, the great patron of it, falling from power, this design too proved abortive. In 1728, the Dean entered into a marriage with Anne, the eldest daughter of the Right Honourable John Forster, Esq; speaker of the Irish house of commons.

In the year 1734, he was advanced from the deanery of Derry to the bishoprick of Cloyne, where he distinguished himself by pastoral vigilance and constant residence; and at once endeared himself to his people, by promoting their temporal and spiritual happiness. He endeavoured by all means to raise a spirit of industry, and propagate the arts of cultivation and agriculture in that neglected country.

The earl of Chesham, when he was lord lieutenant of Ireland, offered him a richer see; but he declined it, saying, his neighbours and he loved one another, and he could not think of forming new connections in his old days, and tearing himself from those friends whose kindness to him was his greatest happiness. In 1752, however, finding the infirmities of age come upon him, and that he was unable to discharge the functions of his office, he retired to Oxford, there to spend the remainder of his days in conversation with learned men, and to superintend the education of one of his sons: And that the revenues of the church might not be misapplied, nor the interests of religion suffer by his absence from his diocese, he made great interest for leave to resign his bishoprick, and to obtain in lieu of it a canonry of Christ-church. Failing of success in this, he actually wrote over to the secretary of state, to request that he might have permission to resign his bishopric, worth at that time at least *L.* 1400 *per annum*. So uncommon a petition excited his Majesty's curiosity to enquire who was the extraordinary man that preferred it: being told that it was his old acquaintance Dr Berkeley, he declared that he should die a bishop in spite of himself, but gave him full liberty to reside where he pleased. The bishop's last act before he left Cloyne was to sign a lease of the demesne lands in that neighbourhood, to be renewed yearly at the rent of *L.* 200, which sum he directed to be distributed every year, until his return, among poor house-keepers of Cloyne, Youghal, and Aghadda. At Oxford he lived highly respected by the learned members of that great university, till the hand of Providence unexpectedly deprived them of the pleasure and advantage derived from his residence among them. On Sunday evening, January 14th 1753, as he was sitting in the

Berkeley. middle of his family, listening to a sermon of Dr Sherlock's which his lady was reading to him, he was seized with what the physicians termed a palsy in the heart, and instantly expired. The accident was so sudden, that his body was quite cold, and his joints stiff, before it was discovered; as the bishop lay on a couch, and seemed to be asleep, till his daughter, on presenting him with a dish of tea, first perceived his insensibility. His remains were interred at Christ-church, Oxford, where there is an elegant marble monument erected to his memory by his lady, who had during her marriage brought him three sons and one daughter. As to his person, he was a handsome man, with a countenance full of meaning and benignity, remarkable for great strength of limbs, and till his sedentary life impaired it, of a very robust constitution. He was however often troubled with the hypochondria, and latterly with a nervous cholick. Mr Pope sums up his character in one line: After he has mentioned some particular virtues that characterize other prelates, he ascribes

To Berkeley ev'ry virtue under heav'n.

An admirable description is given of him in the following anecdote. Bishop Atterbury, having heard much of Mr Berkeley, wished to see him. Accordingly he was one day introduced to that prelate by the Earl of Berkeley. After some time, Mr Berkeley quitted the room: on which Lord Berkeley said to the Bishop, 'Does my cousin answer your Lordship's expectations?' The Bishop, lifting up his hands in astonishment, replied, "So much understanding, so much knowledge, so much innocence, and such humility, I did not think had been the portion of any but angels, till I saw this gentleman." His knowledge is said to have even extended to the minutest objects, and included the arts and business of common life. Thus Dr Blackwell, in his Memoirs of the Court of Augustus, having made an observation, "that the ingenious mechanic, the workers in stone and metal, and improvers in trade, agriculture, and navigation, ought to be searched out and conversed with, no less than the professors of speculative science," adds the following eulogium on our prelate: "In this respect I would with pleasure do justice to the memory of a very great though singular sort of a man, Dr Berkeley, better known as a philosopher, and intended founder of an university in the Bermudas, or Summer Islands, than as bishop of Cloyne in Ireland. An inclination to carry me out on that expedition, as one of the young professors, on his new foundation, having brought us often together, I scarce remember to have conversed with him on that art, liberal or mechanic, of which he knew not more than the ordinary practitioners. With the widest views, he descended into a minute detail, and begrudged neither pains nor expence for the means of information. He travelled through a great part of Sicily on foot; clambered over the mountains and crept into the caverns to investigate its natural history, and discover the causes of its volcanoes: and I have known him sit for hours in forgeries and founderies to inspect their successive operations. I enter not into his peculiarities either religious or personal: but admire the extensive genius of the man, and think it a loss to the western world that his noble and exalted plan of an

Berkeley. American university was not carried into execution. Many such spirits in our country would quickly make learning wear another face."

He published many ingenious works, particularly The Principles of Human Knowledge, the singular notions in which gave rise to much controversy: A new theory of vision: Alciphron, or the minute philosopher; one of the most elegant and genteel defences of that religion which he was born to vindicate both by his virtues and his ingenuity: and Siris, or a Treatise on tar-water, which, under his sanction, became for a while a very popular medicine. In the Gentleman's Magazine for January 1777, it is said that the Adventures of Signor Gaudenzio di Lucca, have generally been attributed to bishop Berkeley; and we have observed that this work is ascribed to him by the booksellers in their printed catalogues. It is a beautiful Utopian Romance, which was published between 30 and 40 years ago, and hath gone through several editions. What external evidence there is for its having been written by our ingenious prelate we cannot say; but we think that the book itself affords no internal evidence to the contrary. There are no sentiments in it but what might be supposed to come from Dr Berkeley, allowing for the *coflume* necessary to be preserved in the work, according to the plan upon which it is formed. The beauty and singularity of imagination displayed in it, and the philanthropy and humanity with which it abounds, are perfectly suitable to the bishop's character. The mode of government delineated in the Romance is agreeable to his ideas. It is the patriarchal, and represented as being admirably contrived for promoting the general happiness. The description, in particular, of the European discovered in the southern wilds of Africa, and of his atrocious conduct, as arising from his being a modern free-thinker, is quite in Berkeley's style of thinking.

BERKSHIRE, is an inland county of England, which contained the whole of that British principality inhabited by the Atrebatii, who are supposed to have been originally from Gaul. When Constantine divided the island into Roman provinces in 310, this principality was included in Britannia Prima, the first division, whose boundaries were the English channel on the south, and the Thames and Severn on the north. On the Romans quitting the island, and civil dissensions enabling the Saxons to establish the Heptarchy, this part of the country was included in the kingdom of the West-Saxons, which commenced in 519, and continued till 828, when it became the only remaining sovereignty, having conquered all the others, and they were incorporated by the name of England, under Egbert; whose grandson, Alfred, a native of Wantage in this county, in 889 divided his kingdom into counties, hundreds, and parishes, and at that time this division first received its appellation of Berkshire or Berocshire. At present it is in the Oxford circuit, the province of Canterbury, and diocese of Salisbury. The general shape of it somewhat resembles the form of a slipper or sandal. It contains an area of 654 square miles, or 527,000 square acres, is 39 miles long, 29 broad, and is about 137 in circumference. It supplies 560 men to the national militia, is situated north-west from London, has 140 parishes, 62 vicarages, 12 market towns, but no city: 671 villages,

Berlin. first stage, and is managed with a great deal of art. The whole edifice is surrounded in the upper part with a ballustrade, adorned with trophies and statues, among which is Mars seated on a heap of several sorts of arms. This altogether forms a noble and majestic decoration. It is bounded with iron in the shape of cannon, which are placed at proper distances, and support iron chains that hang like festoons, to prevent passengers from approaching the windows below. The lower rooms are filled with a great number of brass cannon; the walls and pillars which sustain the floor are set off with cuirasses and helmets. The upper story contains several rooms filled with arms, which are disposed in a curious order. Behind the arsenal is the house of the general of the artillery, which includes the foundery, where they are continually at work. Besides this there are other places where they keep the train of artillery.

The opera-house is an elegant modern edifice. The front has a noble portico supported by Corinthian columns, and a pediment adorned with basso relievos and statues. The columns that support the roof throw the whole into a grand saloon. It has three galleries, and is said to be capable of containing 2000 persons.

A rampart and fosse separate Worder from Dorothea Stadt, or the New Town, inhabited chiefly by French. There are seven great alleys or walks, which divide this quarter into two parts. The middle walk is broader than the rest, and is surrounded with ballustrades, having a grass-plot in the middle: this is for persons that take the air on foot. The alleys on each side are paved, and serve for those that come abroad in coaches. These alleys, which are about three miles in length, are terminated with a bar, that leads towards the park. The alleys with trees are bounded by rows of houses. In one of these is a building, formerly called the *lesser stables*, and now made into lodgings for the guards. The apartments above these are occupied by the academy of painting and the academy of arts and sciences. Behind these is the observatory, where there is a great number of astronomical and mathematical instruments.

There are other things worthy of observation, such as the cabinet of medals, and of the antiquities belonging to the king; that of natural curiosities; the chemical laboratory, and its furnaces and medals, of a new invention: the theatre for anatomical demonstrations; the royal library, which is one of the completest in Germany, and has many scarce books and manuscripts.

The city was taken in 1760 by an army of Russians, Austrians, Saxons, &c. who entered on the 9th of October. They totally destroyed the magazines, arsenals, and founderies, seized an immense quantity of military stores, and a number of cannon and arms; called first for the immediate payment of 800,000 guilders, and then laid on a contribution of 1,900,000 German crowns: not satisfied with this, many irregularities were committed by the soldiery; but on the whole, though some shocking actions were committed, a far more exact discipline was observed than from such troops could have been expected upon such an occasion, where there was every incentive which could work upon the licence of a conquering army. Their officers no doubt with great difficulty preserved even that degree of order.

But though their behaviour was tolerable with regard to the private inhabitants, there was something shocking and ungenerous in their treatment of the king's palaces. The apartments of the royal castle of Charlottenburgh were entirely plundered, the precious furniture spoiled, the pictures defaced, without even sparing the antique statues collected by cardinal Polignac, which had been purchased by the house of Brandenburg. The castle of Schonhausen, belonging to the queen, and that of Fredericsfeld, belonging to the Margrave Charles, were also plundered.

The palace of Potsdam, the famous Sans-souci, had a better fate; Prince Esterhasi commanded there, and it was preserved from the smallest violation. The prince, on viewing the palace, only asked which picture of the king resembled him most; and being informed, desired that he might have leave to take it, together with two German flutes which the king used, to keep them, he said, in memory of his majesty. This was a sort of taking very different from pillage.

They staid in the city four days: but hearing that the king, apprehensive of this stroke, was moving to the relief of his capital, they quitted it on the 13th of October; and having wasted the whole country round for a vast extent, and driven away all the cattle and horses they could find, retreated by different routes out of Brandenburg.

BERLIN, a sort of vehicle, of the chariot kind; taking its name from the city of Berlin, in Germany: though some attribute the invention of it to the Italians, and derive the word from *berlina*, a name given by them to a sort of stage, whereon persons are exposed to public shame. The berlin is a very convenient machine to travel in, being lighter, and less apt to be overturned, than a chariot. The body of it is hung high, on shafts, by leathern braces; there being a kind of stirrup, or footstool, for the convenience of getting into it: instead of side-windows, some have screens to let down in bad, and draw up in good, weather.

BERME, in fortification, a space of ground left at the foot of the rampart, on the side next the country, designed to receive the ruins of the rampart, and prevent their filling up the fosse. It is sometimes palisadoed, for the more security; and in Holland it is generally planted with a quick-set hedge. It is also called *liziere*, *relais*, *foreland*, *retrait*, *pais de souris*, &c.

BERMUDAS, or SUMMER-ISLANDS, a cluster of small islands in the Atlantic ocean, lying almost in the form of a shepherd's crook, in W. Long. 65. N. Lat. 32. 30. between 200 and 300 leagues distant from the nearest place of the continent of America, or any of the other West-India islands. The whole number of the Bermudas islands is said to be about 400, but very few of them are habitable. The principal is St George's, which is not above 16 miles long, and three at most in breadth. It is universally agreed, that the nature of this and the other Bermudas islands has undergone a surprising alteration for the worse since they were first discovered; the air being much more inclement, and the soil much more barren, than formerly. This is ascribed to the cutting down those fine spreading cedar-trees for which the islands were famous, and which sheltered them from the blasts of the north-wind, at the same time that it protected the undergrowth of the delicate plants

Bermudas. plants and herbs. In short, the Summer-islands are now far from being desirable spots; and their natural productions are but just sufficient for the support of the inhabitants, who, chiefly for that reason perhaps, are temperate and lively even to a proverb: at first tobacco was raised upon these islands; but being of a worse quality than that growing on the continent, the trade is now almost at an end. Large quantities of ambergris were also originally found upon the coasts, and afforded a valuable commerce; but that trade is also reduced, as likewise their whale trade, though the perquisites upon the latter form part of the governor's revenue, he having L. 10 for every whale that is caught. The Bermudas islands, however, might still produce some valuable commodities, were they properly cultivated. There is here found, about three or four feet below the surface, a white chalk stone which is easily chiseled, and is exported for building gentlemens houses in the West-Indies. Their palmetto leaves, if properly manufactured, might turn to excellent account in making womens hats; and their oranges are still valuable. Their soil is also said to be excellent for the cultivation of vines, and it has been thought that silk and cochineal might be produced; but none of these things have yet been attempted. The chief resource of the inhabitants for subsistence is in the remains of their cedar-wood, of which they fabricate small sloops, with the assistance of the New-England pine, and sell many of them to the American colonies, where they are much admired. Their turtle-catching trade is also of service; and they are still able to rear great variety of tame-fowl, and have wild ones abounding in vast plenty. All the attempts to establish a regular whale-fishery on these islands have hitherto proved unsuccessful; they have no cattle, and even the black hog breed, which was probably left by the Spaniards, is greatly decreased. The water on the islands, except that which falls from the clouds, is brackish; and at present the same diseases reign there as in the Caribbee islands. They have seldom any snow, or even much rain; but when it does fall, it is generally with great violence, and the north or north-east wind renders the air very cold. The storms generally come with the new moon; and if there is a halo or circle about it, it is a sure sign of a tempest, which is generally attended with dreadful thunder and lightning. The inhabited parts of the Bermuda islands are divided into nine districts called *tribes*. 1. St George. 2. Hamilton. 3. Ireland. 4. Devonshire. 5. Pembroke. 6. Pagets. 7. Warwick. 8. Southampton. 9. Sandys. There are but two places on the large island where a ship can safely come near the shore, and these are so well covered with high rocks that few will choose to enter in without a pilot; and they are so well defended by forts, that they have no occasion to dread an enemy. St George's town is at the bottom of the principal haven; and is defended by nine forts, on which are mounted 70 pieces of cannon that command the entrance. The town has a handsome church, a fine library, and a noble town-house, where the governor, council, &c. assemble. Besides these there are about 1000 houses well built. The tribes of Southampton and Devonshire have each a parish-church and library, and the former has a harbour of the same name; there are also scattered houses and hamlets over many of the islands, where particular plantations require them. The

Bermudas. inhabitants are clothed chiefly with British manufactures, and all their implements for tilling the ground and building are made in Britain.

It is uncertain who were the first discoverers of the Bermudas islands. John Bermudas a Spaniard is commonly said to have discovered them in 1527; but this is disputed, and the discovery attributed to Henry May an Englishman. As the islands were without the reach of the Indian navigation, the Bermudas were absolutely uninhabited when first discovered by the Europeans. May abovementioned was shipwrecked upon St George's; and with the wreck of their own ship, he and his companions built another which carried them to Europe, where they published their accounts of the islands. When Lord Delawar was governor of Virginia, Sir Thomas Gates, Sir George Summers, and Captain Newport, were appointed to be his deputy-governors; but their ship being separated by a storm from the rest of the squadron, was in the year 1609 wrecked on the Bermudas, and the governors disagreeing among themselves, built each of them a new ship of the cedar they found there, in which they severally sailed to Virginia. On their arrival there, the colony was in such distress, that the Lord Delawar, upon the report which his deputy-governors made him of the plenty they found at the Bermudas, dispatched Sir George Summers to bring provisions from thence to Virginia in the same ship which brought him from Bermudas, and which had not an ounce of iron about it except one bolt in the keel. Sir George, after a tedious voyage, at last reached the place of his destination, where, soon after his arrival, he died, leaving his name to the islands, and his orders to the crew to return with black hogs to the colony of Virginia. This part of his will, however, the sailors did not choose to execute; but setting sail in their cedar ship for England, landed safely at Whitechurch in Dorsetshire.

Notwithstanding this dereliction of the island, however, it was not without English inhabitants. Two sailors, Carter and Waters, being apprehensive of punishment for their crimes, had secreted themselves from their fellows when Sir George was wrecked upon the island, and had ever since lived upon the natural productions of the soil. Upon the second arrival of Sir George they enticed one Chard to remain with them; but differing about the sovereignty of the island, Chard and Waters were on the point of cutting one another's throats, when they were prevented by the prudence of Carter. Soon after, they had the good fortune to find a great piece of ambergris weighing about 80 pounds, besides other pieces, which in those days were sufficient, if properly disposed of, to have made each of them master of a large estate. Where they were, this ambergris was useless; and therefore they came to the desperate resolution of carrying themselves and it in an open boat to Virginia or to Newfoundland, where they hoped to dispose of their treasure to advantage. In the mean time, however, the Virginia Company claimed the property of the Bermudas islands; and accordingly sold it to 120 persons of their own society, who obtained a charter from King James for their possessing it. This New Bermudas Company, as it was called, fitted out a ship with 60 planters on board to settle on the Bermudas, under the command

Bermudas. of one Mr Richard Moor, by profession a carpenter. The new colony arrived upon the island just at the time the three failors were about to depart with their ambergris; which Moor having discovered, he immediately seized and disposed of it for the benefit of the company. So valuable a booty gave vast spirit to the new company; and the adventurers settled themselves upon St George's island, where they raised cabins. As to Mr Moor, he was indefatigable in his duty, and carried on the fortifying and planting the island with incredible diligence; for we are told, that he not only built eight or nine forts or rather blockhouses, but inured the settlers to martial discipline. Before the first year of his government was expired, Mr Moor received a supply of provisions and planters from England; and he planned out the town of St George as it now stands. The fame of this settlement soon awakened the jealousy of the Spaniards, who appeared off St George's with some vessels; but being fired upon from the forts, they sheered off, though the English at that time were so ill provided for a defence, that they had scarce a single barrel of gunpowder on the island. During Moor's government the Bermudas were plagued with rats which had been imported into them by the English ships. This vermin multiplied so fast in St George's island, that they even covered the ground, and had nests in the trees. They destroyed all the fruits and corn within doors; nay, they increased to such a degree, that St George's island was at last unable to maintain them, and they swam over to the neighbouring islands, where they made as great havock. This calamity lasted five years, though probably not in the same degree, and at last it ceased all of a sudden.

On the expiration of Moor's government, he was succeeded by Captain Daniel Tucker, who improved all his predecessor's schemes for the benefit of the island, and particularly encouraged the culture of tobacco. Being a severe disciplinarian, he held all under him so rigidly to duty, that five of his subjects planned as bold an enterprize for liberty as was perhaps ever put in execution. Their names were Barker, who is said to have been a gentleman; another Barker, a joiner; Goodwin, a ship-carpenter; Paet, a sailer; and Saunders, who planned the enterprize. Their management was as artful as their design was bold. Understanding that the governor was deterred from taking the pleasure of fishing in an open boat, on account of the dangers attending it, they proposed to build him one of a particular construction, which accordingly they did in a secret part of the island; but when the governor came to view his boat, he understood that the builders had put to sea in it. The intelligence was true: for the adventurers, having provided themselves with the few necessaries they wanted, failed for England; and notwithstanding the storms they encountered, their being plundered by a French privateer, and the incredible miseries they underwent, they landed in 42 days time at Corke in Ireland, where they were generously relieved and entertained by the Earl of Thomond.

In 1619 Captain Tucker resigned his government to Captain Butler. By this time the high character which the Summer islands bore in England rendered it fashionable for men of the highest rank to encourage their settlement; and several of the first nobility of England had purchased plantations among them. Cap-

tain Butler brought over with him 500 passengers, who became planters on the islands, and raised a monument to the memory of Sir George Summers. The island was now so populous (for it contained about a thousand whites), that Captain Butler applied himself to give it a new constitution of government by introducing an assembly, the government till this time being administered only in the name of the governor and council. A body of laws was likewise drawn up, as agreeable to the laws of England as the situation of the island would admit of. One Mr Barnard succeeded Captain Butler as governor, but died six weeks after his arrival on the island; upon which the council made choice of Mr Harrison to be governor till a new one should be appointed. No fewer than 3000 English were now settled in the Bermudas, and several persons of distinction had curiosity enough to visit it from England. Among these was Mr Waller the poet, a man of fortune, who being embroiled with the parliament and commonwealth of England, spent some months in the Summer islands, which he has celebrated in one of his poems as the most delightful place in the world. The dangers attending the navigation, and the untowardly situation of these islands, through their distance from the American continent, seem to be the reasons why the Bermudas did not now become the best peopled islands belonging to England; as we are told that some time ago they were inhabited by no fewer than 10,000 whites. The inhabitants, however, never showed any great spirit for commerce, and thus they never could become rich. This, together with the gradual alteration of the soil and climate already taken notice of, soon caused them dwindle in their population; and it is computed that they do not now contain above half the number of inhabitants they once did, and even these seem much more inclined to remove to some other place than to stay where they are; so that unless some beneficial branch of commerce be found out, or some useful manufacture established, the state of the Bermudas must daily grow worse and worse.

BERN, one of the cantons of Switzerland, which holds the second rank among the 13; but as it is by far the largest in extent, containing almost one-third of the whole country, it seems justly intitled to the first. It is bounded to the north by the cantons of Basle and Solothurn, and the Austrian forest-towns; to the south by the lake of Geneva, the Valais, and duchy of Savoy; to the east by Uri, Underwald, Lucern, and the county of Baden; and to the west by Solothurn, Neuchatel, Franche-Compte, the district of Biel, and the land of Gex. It is the most fruitful, the richest, and by much the largest, of all the cantons, extending in length about sixty leagues, and about thirty where broadest. It yields not only plenty of grain, fruit, and pasture; but also good wine, a variety of coloured earths and clays, sand-stone, mundick, gypsum, pit-coal, sulphur, and iron-ore. Here likewise are large herds of cattle, great and small; and, in consequence of that, great quantities of milk, butter, and cheese. The rivers that water this canton are the Aar, the Emment, the Wigger, the Aaa, the Ruz, the Limmat, the Sanen, the Senen, and the Kandel. The principal lake is that of Geneva; the length of which is about 18 leagues, and the greatest breadth between three and four. The depth in some places is near 400 fathom,

Bern. in others not above 40. The Rhone enters it at the east end near Bouveret, and issues out again at the west close by Geneva. In summer its waters are much swelled by the melting of the snow on the mountains. This lake, however, is not entirely surrounded by the territory of Bern, but partly by Savoy and the country of Gex; the former of which belongs to the king of Sardinia, and the latter to France, and the territory of Sion. Its borders are extremely fertile and beautiful, being much embellished with vineyards, which yield excellent wine, and interspersed with towns and villages, betwixt which a considerable commerce is carried on. The other great lakes, that are wholly or partly within this canton, are those of Neufchatel, Biel, Murte, Thun, Brien, and Halwyl, which all abound in fish, particularly that of Geneva, where trouts are sometimes caught weighing 40 or 50 pounds. In that of Biel, called also the *Nydu-lake*, are two small islands, one of which is very beautiful. This lake is about three leagues in length and one in breadth. Along the whole west and north-west sides of the canton runs that chain of mountains called by the general name of *Jura*; but the several mountains of which it is composed have all their particular names. This canton is well cultivated, and very populous, the number of its subjects being computed at 400,000. German is the prevailing language, but almost all the people of fashion speak either French or Italian; even the common people in the Pais de Vaud, and other places that lie towards France or Italy, speak a corrupt French or Italian, or a jargon composed of both. The established religion here and the other Protestant cantons is Calvinism, the same both in doctrine and discipline as in Holland; nor is any other tolerated, except in the common bailiages, and the vale of Frick. The ministers are divided into deaneries and classes, and hold yearly chapters or synods. They are kept in a greater dependence on the civil power here than in the other cantons, and not suffered to interfere with matters of state. The city of Bern first joined the confederacy in the year 1353. Towards the defence thereof the canton now furnishes 2000 men. Every male from 16 to 60 is enrolled in the militia, and about a third of them regimented. There are officers for every district, whose province it is to see that the men be regularly exercised; that their arms, ammunition, and clothing, be in good condition; and that they be kept in a constant readiness to march. Once a-year they are drawn out to a general review. The same attention is paid to those that belong to the train of artillery. Some regiments consist of married, and some of unmarried men; some of foot, others of dragoons. There is also one regiment and a troop of cuirassiers. The latter consists entirely of burghers of Bern. Both the horsemen and footmen find their horses, arms, and accoutrements. Besides the arms and artillery in the arsenal at Bern, all the castles, where the country governors or bailiffs reside, are well furnished with them. At Bern is a constant guard or garrison of 200 men, and a small garrison at Fort Arburg. In the same city is also an office, which grants licences for levies to foreign powers, and where the recruits make their appearance and are registered. The bailiffs have the chief direction of affairs in their several districts, being generals of the militia, and presiding in the courts of justice; but, in

Bern. civil causes above a certain value, an appeal lies from them to Bern; and, in capital cases, their sentence must be confirmed by the great council before it can be executed. When any bailiwick is to be disposed of, as many balls as there are competitors are put into a bag, whereof one is gilt, and he that draws that has the bailiwick.

Mr Keyser observes, that the wealthiest peasants in Switzerland are those of Bern; it being difficult to find a village without one, at least, who is worth between 20,000 or 30,000 guilders, and sometimes even 60,000. He says, the common people of both sexes wear straw hats, and that the womens petticoats are tied up so near their arm pits, that hardly an hand's-breadth is left for their shape; that the inns, not only in this canton but throughout Switzerland, are in general very good; that the manners of the people were, in many respects, greatly changed within 50 years before he visited them, which was about 50 years ago, and consequently must be much more so now; that, instead of the plainness and honest simplicity of their ancestors, the love of superfluities and high living greatly prevailed; that luxury, pomp, and that insatiation for foreign productions which had infected most parts of Europe, had also extended its contagious influence to Switzerland, though not to such a degree as in many other countries. Dr Burnet says, that drinking is so common, and produces so many quarrels and disorders, that the bailiffs not only subsist by the fines payable for them, but often get estates, carrying perhaps 20,000 crowns at the end of five years to Bern; that their law is short and clear, insomuch that the most intricate suit is ended after two or perhaps three hearings, either in the first instance before the bailiff, or in the second at Bern; that the civility expressed in this country to women, at first meeting them, is not by saluting them, but by shaking them by the hand, and that none but strangers take off their hats to them. Mr Addison says, that the peasants are generally clothed in a coarse kind of canvas, the manufacture of the country, and that their holiday-clothes go from father to son; so that it is not uncommon to see a countryman in his great-grandfather's doublet and breeches; that the belief of witchcraft prevailed among them so much, that there were some executions on that account while he was in the country; that the question, or torture, is used not only in this canton but all over Switzerland; that though the subjects of the state are rich, the public is poor; and though they could oppose a sudden invasion, yet that their unkindly soil requires such a number of hands to cultivate it, that they could not spare the reinforcements and recruits that would be necessary in a long war. Upon extraordinary occasions, however, they boast that they could raise 80,000 men in 24 hours. This canton is divided into the German country, that is, that part of the canton in which the German tongue is spoken, and which is also called the *ancient canton*, extending from Morat to the county of Baden; and the Roman, called also the *Waal*, and *Pais de Vaud*. The former of these contains 35 bailiwicks and about 300 parishes.

BERN, a city of Switzerland, and capital of the canton of that name, is situated in E. Long. 7. 40. N. Lat. 40. 0. It is said that the taking of a bear on the day on which the foundation of this city was laid, gave

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occasion to its name; hence it is often in Latin called *Arctopolis*, i. e. the city of the bear, and has a bear for its coat of arms. It is almost surrounded by the river Aar. The houses are mostly built of white free-stone, and, in the principal streets, have piazzas or arches under them, for the conveniency of walking dry in wet weather. Most of the streets are paved with flints, and traversed by a canal lined with free-stone, which is brought from a considerable distance, and is very useful in carrying off the filth of the city, extinguishing fires, and other purposes. The city is large, standing almost in the middle of the canton, and containing several churches, of which one is called the *Great Church*, and the first minister thereof the *dean*, who is the head of the city-clergy. From an inscription near the great door of this church, it appears, that the first stone of it was laid in 1421. Over the same door is a representation of the last judgment, in which the sculptor hath placed the pope among the damned. In this city is also a college with eight professors, a large public library, and a museum; a stately granary, in which a great quantity of corn is always kept; a guildhall; a well stored arsenal; and several hospitals. In the arsenal is a wooden statue of the famous Tell, which represents him as taking aim at the apple placed on the head of his son. There is also the statue of Berch told von Zahringen, the founder of the city; and two large horns of buffaloes or wild bulls, called in Latin *Uri*, such as are used in war by the canton of Uri, instead of trumpets, and taken from it in the year 1712. Hard by also hang the grotesque dresses of those who blew them. The inhabitants of Uri, who boast their descent from the old Tau, bear a buffalo's head on their risci, coat of arms; and the person who blows the great horn in time of war, is called the *bull of Uri*. In the Dominican church, a hole in the wall is always shown to strangers, by means of which, it having a communication with the cell of a monk in an adjoining monastery, the pious fraud of making an image of the Virgin appear to speak was once carried on, which for a while answered the purposes of the monks very well; but they were at last detected and punished. This city, though larger, is not so populous nor so well built as that of Zurich. On the east side of it is a handsome stone bridge; and near the great church is a very fine platform some hundred feet in height, which makes a most delightful walk, being planted with limes, and commanding a charming prospect, particularly of the mountains of the Grisons, covered with snow in the midst of summer. In 1654 a student of divinity, being on horseback, and in liquor, leaped over this terrace without receiving any other hurt than breaking a leg, and lived many years after, but the horse was killed. In the upper part of the city are always kept a number of bears in two inclosures, with fir-trees for them to clamber and play upon. Of the burghers of Bern, only those are qualified for the government and magistracy of the city who are the descendants of such as were made burghers before the year 1635. Other qualifications are also necessary; in particular, they must not be under 30 years of age, and must be enrolled in one of the 12 companies. To obtain a country government, or to hold any considerable employment, the candidate also must be married. The great council, in which the sovereignty of the

canton is vested, consists, when full, of 229; but is generally much short of that number, 80 or more often dying before their places are filled up. The lesser council senate, or, as it is called, the *daily council*, because it meets every day, Sundays and holidays excepted, consists of 27 members, including the two praetors or advoyers, the four tribunes of the people, the two treasurers, and the two heimlichers or secrecymen, so called because to them all secrets relating to the state are discovered. The members of the great and little councils mutually fill up the vacancies that happen in these two colleges. How the bailiffs are chosen we have already taken notice. Our limits will not permit us to enter into any farther detail with respect to the government: only it is to be observed in general, that all the officers of any note are chosen out of the great or little councils; and that all the bailiffs and castellans of the canton continue six years in office. The trade of the city is not very great, but was less before the French refugees settled therein: some, however, doubt whether it has been a gainer by them; as by their introduction of French modes and luxury, they have helped to banish the ancient Helvetic simplicity and frugality. The territory immediately under its jurisdiction is divided into four governments, with which the four vanners, or standard-bearers, are invested. It declared for the reformation in 1528, after a solemn disputation. Here the British envoy to the cantons resides.

BERN-Machine, the name of an engine for rooting up trees, invented by Peter Sommer, a native of Bern in Switzerland.

This machine is represented by a figure on Plate XCV. drawn from a model in the machine-room of the Society for the Encouragement of Arts, &c. It consists of three principal parts; the beam, the ram, and the lever. The beam A B C, (n^o 1.) of which only one side is seen in the figure, is composed of two stout planks of oak three inches thick at least, and separated by two transverse pieces of the same wood at A and C, about three inches thick. These planks are bored through with corresponding holes, as represented in the figure, to receive iron pins, upon which the lever acts between the two sides of the beam, and which is shifted higher and higher as the tree is raised or rather pushed out of its place. The sides are well secured at the top and bottom by strong iron hoops. The iron pins on which the lever rests should be an inch and a quarter, and the holes through which they pass an inch and a half in diameter. The position of these holes is sufficiently indicated by the figure. The foot of the beam, when the machine is in action, is secured by stakes represented at G, driven into the earth. The ram D, which is made of oak, elm, or some other strong wood, is capped with three strong iron spikes, represented at *f*, which take fast hold of the tree. This ram is six or eight inches square; and a slit is cut lengthwise through the middle of it, from its lower end at K to the first ferule *a*, in order to allow room for the chain *g h* to play round the pulley K, which should be four inches thick, and nine inches in diameter. This ram is raised by means of the chain *g h*, which should be about ten feet long, with links four inches and three quarters in length, and an inch thick. One end of this chain is fastened to the

Bern-Machine

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machine.

top of the beam at C, while the other, after passing through the lower part of the ram, and over the pulley K, terminates in a ring or link represented n^o 3. the two ears *m n* of which serve to keep it in a true position between the two planks of the beam. In this ring the hook P is inserted. The hook is represented in profile n^o 2. where F is the part that takes hold of the ring. But it must be observed, that the parts of this machine, represented in n^o 2, 3. are drawn on a scale twice as large as the whole engine. The hook F, n^o 2. should be made of very tough iron, as well as the handle D, and the arch E c. This handle should be two inches thick at z, where it joins to the hook, and the thickness gradually lessen by degrees up to the arch, which need not be more than half an inch thick. On each side of the pin z, is a semicircular notch, x, y, which rests alternately on the pins when the machine is worked. The hole D, and the arch E c, serve to fix a long lever of wood E F, n^o 1. by means of two iron pins; and by this contrivance the lever is either raised or depressed at pleasure, in order to render the working of the machine easy in whatever part of the beam the lever may be placed: for without this contrivance the extremity of the lever E F, would, when the handle is near the top of the beam, be much higher than men standing upon the ground could reach. It must however be remembered, that the lever is often shortened by this contrivance, and consequently its power lessened.

The machine is worked in the following manner: It is placed against a tree, in the manner represented in the figure, so that the iron spikes at *f* may have hold of the tree, and the end of the beam A be supported by stakes represented at G. The iron handle, n^o 2. is placed in the opening between the two planks of the beam, and the wooden lever fixed to it by means of the iron pins already mentioned. The hook F takes hold of the chain, and one of the iron pins is thrust into the outer row of holes, by which means the outer notch x will rest on the pin, which will be now the centre of motion; and the end of the lever E, n^o 1. being pressed downwards, the other notch y, n^o 2. will be raised, and at the same time the chain, and consequently the ram. The other iron pin is now to be thrust into the hole in the inner row, next above that which was before the centre of motion, and the end of the lever E elevated or pushed upwards, the latter pin on which the notch y rests now becoming the centre of motion. By this alternate motion of the lever, and shifting the pins, the chain is drawn upwards over the pulley K, and consequently the whole force of the engine exerted against the tree. There is a small wheel at L, in order to lessen the friction of that part of the machine.

From this account the reader will very easily perceive that the machine is nothing more than a single pulley compounded with a lever of the first and second order. It must however be remembered, that as the push of the engine is given in an oblique direction, it will exert a greater or lesser force against the horizontal roots of the tree in proportion to the angle formed by the machine with the plane of the horizon; and that the angle of 45° is the maximum, or that when the machine will exert its greatest force against the horizontal roots of the tree.

BERNACLE, in ornithology, a species of goose. See ANAS.

Bernacle.
Bernard.

BERNARD (St), the first abbot of Clairvaux, was born in the year 1091, in the village of Fontaine, in Burgundy. He acquired so great a reputation by his zeal and abilities, that all the affairs of the church appeared to rest upon his shoulders, and kings and princes seemed to have chosen him for a general arbitrator of their differences. It was owing to him that Innocent II was acknowledged sovereign pontiff, and after the death of Peter Lewis anti-pope, that Victor, who had been named *successor*, made a voluntary abdication of his dignity. He convicted Abelard at the council of Sens, in the year 1140. He opposed the monk Raoul; he persecuted the followers of Arnaud de Bresse; and, in 1148, he got Gilbert de la Porviced, bishop of Poitiers, and Eonde l'Etoile, to be condemned in the council of Rheims. By such zealous behaviour he verified (says Mr Bayle) the interpretation of his mother's dream. She dreamed, when she was with child of him, that she should bring forth a white dog, whose barking should be very loud. Being astonished at this dream, she consulted a monk, who said to her, "Be of good courage; you shall have a son who shall guard the house of God, and bark loudly against the enemies of the faith." But St Bernard went even beyond the prediction, for he barked sometimes against chimerical enemies: he was more happy in exterminating the heterodox, than in ruining the infidels; and yet he attacked these last, not only with the ordinary arms of his eloquence, but also with the extraordinary arms of prophecy. He preached up the crusade under Louis the Younger, and by this means he enlarged the troops of the crusaders beyond expression: but all the fine hopes with which he flattered the people were disappointed by the event; and when complaint was made that he had brought an infinite number of Christians to slaughter without going out of his own country, he cleared himself by saying that the sins of the Croises had hindered the effect of his prophecies. In short, he is said to have founded 160 monasteries, and to have wrought a great number of miracles. He died on the 20th of August, 1153, at 63 years of age. The best edition of his works is that of 1690, by father Mabillon.

BERNARD (Dr Edward), a learned astronomer, linguist, and critic, was born at Perry St Paul, on the 2d of May, 1638, and educated at Merchant-Taylor's school, and St John's college, Oxford. During his stay at school, he had laid in an uncommon fund of classical learning; so that, on his going to the university, he was a great master of all the elegancies of the Greek and Latin tongues, and not unacquainted with the Hebrew. On his settling in the university, he applied himself with great diligence to history, philology, and philosophy; and made himself master of the Hebrew, Syriac, Arabic, and Coptic languages, and then applied himself to the study of the mathematics under the famous Dr Wallis. Having successively taken the degrees of bachelor and master of arts, and afterwards that of bachelor of divinity in 1668, he went to Leyden to consult several oriental manuscripts left to that university by Joseph Scaliger and Levinus Warnerus. At his return to Oxford, he collated and examined the most valuable manuscripts in the Bodleian library; which

Bernard. which induced those who published any ancient authors, to apply to him for his observations or emendations from the manuscripts at Oxford; which he readily imparted, grudging neither time nor pains to serve the learned; and by this means he became engaged in a very extensive correspondence with the learned of most countries. In the year 1669, the famous Christopher Wren, Savilian professor of astronomy at Oxford, having been appointed surveyor-general of his majesty's works, and being much detained at London by this employment, he obtained leave to name a deputy at Oxford, and pitched upon Mr Bernard, which engaged the latter in a more particular application to the study of astronomy. In 1676, he was sent by the earl of Arlington to France, in order to be tutor to the dukes of Grafton and Northumberland, sons to King Charles II. by the dutchess of Cleveland, who then lived with their mother at Paris: but the simplicity of his manners not suiting the gaiety of the dutchess's family, he returned about a year after to Oxford, and pursued his studies; in which he made great proficiency, as his many learned astronomical and critical works show. He composed tables of the longitudes, latitudes, right ascensions, &c. of the fixed stars; Observations in Latin on the Obliquity of the Ecliptic; and other pieces inserted in the Philosophical Transactions. He also wrote, 1. A Treatise of the ancient Weights and Measures. 2. *Chronologia Samaritanae Synopsis*, in two tables. 3. Testimonies of the Ancients concerning the Greek Version of the Old Testament by the Seventy; and several other learned works. He was a person of great piety, virtue, and humanity; and died on the 12th of January, 1696, in the 59th year of his age, leaving behind him a great number of learned and valuable manuscripts.

BERNARD (James), professor of philosophy and mathematics and minister of the Walloon church at Leyden, was born September 1st, 1658, at Nions in Dauphine. Having studied at Geneva, he returned to France in 1679, and was chosen minister of Venterol, a village in Dauphine. Some time after, he was removed to the church of Vinsobres in the same province. But the persecutions raised against the Protestants in France having obliged him to leave his native country, he retired to Holland, where he was received with great civility, and was appointed one of the pensionary ministers of Gauda. In July 1688, he began a political publication intitled *Histoire abrégée de l'Europe*, &c. which he continued monthly till December 1688, and makes five volumes in 12mo. In 1692, he began his *Lettres Historiques*, containing an account of the most important transactions in Europe, with necessary reflections. He carried on this work, which was also published monthly, till the end of the year 1698. It was afterwards continued by other hands, and consists of a great many volumes. Mr Le Clerc having left off his *Bibliothèque Univerfelle*, in 1691, Mr Bernard wrote the greatest part of the 20th volume, and by himself carried on the five following to the year 1693. In 1698, he collected and published *Actes et negociations de la paix de Ryswic*, in four volumes 12mo. In 1699 he began the *Nouvelles de la republique des lettres*, which continued till December 1710. Mr Bernard having acquired great reputation by his works, as well as by his sermons at Gauda, and

the Hague, the congregation of the Walloon church at Leyden became extremely desirous to have him for one of their ministers; and a vacancy happening in 1705, he was unanimously chosen. About the same time, Mr de Volder professor of philosophy and mathematics at Leyden having resigned, Mr Bernard was appointed his successor; and the university presented him with the degrees of doctor of philosophy and master of arts. His public and private lectures took up a great part of his time; yet he did not neglect his pastoral function, but composed his sermons with great care: he wrote also two excellent treatises, one on a late repentance, the other on the excellency of religion. In 1716, he published a supplement to Moeri's dictionary in two volumes folio. The same year he resumed his *Nouvelles de la republique des lettres*; which he continued till his death, which happened the 27th of April, 1718, in the 60th year of his age.

BERNARD the Great (St); a mountain in Savoy and Switzerland, between Valais and the valley of Aouft, at the source of the rivers Drance and Doria. The top is always covered with snow; and there is a great monastery seated thereon, where the monks always entertain travellers without distinction of religion for three days.

BERNARDINE (St), was born at Massa in Tuscany, in 1380. In 1404 he entered into a Franciscan monastery near Sienna, where he became an eminent preacher; and was afterwards sent to Jerusalem, as commissary of the Holy Land. On his return to Italy, he visited several cities, where he preached with such applause, that the cities of Ferrara, Sienna, and Urbino, desired Pope Eugenius IV. to appoint him their bishop: but Bernardine refused the honour, accepting only the office of vicar-general of the friars of the observance for all Italy. He repaired and founded above 300 monasteries in that country; died in 1444; was canonized in 1450 by Pope Nicholas; and his works were published at Venice in 1591, in 4 vols 4to.

BERNARDINES, an order of monks, founded by Robert abbot of Moleme, and reformed by St Bernard. They wear a white robe with a black scapulary; and when they officiate they are clothed with a large gown, which is all white, and hath great sleeves, with a hood of the same colour.—The Bernardines differ very little from the Cistercians. They had their origin toward the beginning of the 12th century.

BERNAY, a town of Upper Normandy in France, seated on the river Carantone, in E. Long. o. 50. N. Lat. 49. 6.

BERNBURG, a town of Germany, in the circle of Upper Saxony, and principality of Anhalt, where a branch of the house of Anhalt resides. It is seated on the river Sara, in E. Long. 12. 30. N. Lat. 51. 55.

BERNERA, one of the Western Isles of Scotland, lying about two leagues to the southward of Harries. It is about five miles in circumference; the soil is sandy, but when manured with the alga marina, extremely fertile, producing an increase of thirty-fold of barley; nay one grain has been known to produce 14 ears when the season was remarkably favourable. The face of the island is extremely agreeable in summer, exhibiting a pleasing variety of corn fields and clover pastures. Here is a fresh water lake called *Lochbruic*, diversified with small islands, and abounding with eels, which the natives

Bernera
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Bernier.

tives by the help of lights, catch in the night-time, as they fall down a rivulet towards the sea in heaps twisted together. There are two chapels in this island dedicated to St Asaph and St Columbes; and near the former is a stone standing about eight feet above the ground. At the east end of this island there is a strange reciprocation of the flux and reflux of the sea, and another no less remarkable upon the west side of the long island. The tides from the south-west run along northward; so that during the ordinary course of the tides the flood runs east in the frith, where Bernera lies, and the ebb runs west: thus the sea ebbs and flows regularly for four days before, and as long after, the full and change of the moon; the spring tides generally rising 14 feet perpendicular, and the others proportionably: but for four days before, and as many after, the quarter moons, there is a singular variation; at that time a southerly moon making high water, the course of the tide being eastward, it begins to flow at half an hour after nine in the morning, and continues to flow till half an hour after three in the afternoon, when it is high water; but when it begins to ebb, the current still runs eastward, until it is low water; so that the tide runs eastward 12 hours together, that is, from half past nine in the morning till half past nine at night; yet when the night-tide begins to flow, the current turns and runs westward all night for 12 hours, during both flood and ebb: thus the reciprocations continue, one flood and ebb running eastward and another westward, till within four days of the full and change of the moon; then they resume their ordinary course, running east during the six hours of flood, and west during the six hours of ebb. There is another phenomenon in these tides no less remarkable than that just now mentioned. Between the vernal and autumnal equinox, that is, during one half of the year, the tides about the quarter moons run all day eastward and all night westward; and during the other six months their course is reversed, being westward in the day and eastward in the night.

BERNICLA, in ornithology, the trivial name of a species of goose. See ANAS.

BERNICLE, in zoology, a species of lepas. See LEPAS.

BERNIER (Nicholas), an eminent musician and composer, was born at Mante on the Seine, in the year 1664. By his merit in his profession he attained to be conductor of the music in the chapel of St Stephen, and afterwards in that of the king. The regent duke of Orleans admired his works, and patronized their author. This prince having given him a motet of his own composition to examine, and being impatient for his observations thereon, went to the house of Bernier, and entering his study, found the abbe de la Croix there criticising his piece, while the musician himself was in another room carousing and singing with a company of his friends. The duke broke in upon and interrupted their mirth, with a reprimand of Bernier for his inattention to the task assigned him. This musician died at Paris in 1734. His five books of Cantatas and Songs for one and two voices, the words of which were written by Rousseau and Fufelier, have procured him great reputation. There are besides of his composition Les Nuits de Sceaux, and many motets, which are still in great esteem.

BERNIER (Francis), surnamed the *Mogul*. on ac-

count of his travels and residence in that country, was born at Angers in France; and after he had taken his degree of doctor of physic at Montpellier, left his country in 1654, went to Egypt, to the Holy Land, and to the kingdom of the Mogul, where he was physician to that monarch, attended him in his journeys, and stayed there 12 years. Upon his return to France, he published the History of the countries he had visited; and spent the remainder of his life in composing various other works, particularly an Abridgment of the philosophy of Gassendus in 8 vols 12mo. His first work is esteemed to be the best account we have of the countries which are the subject of it.

BERNINI (John Laurence), commonly called *Cavaliere Bernin*, a Neapolitan, famous for his skill in painting, sculpture, architecture, and mechanics. He first began to be known under the pontificate of Paul V. Rome is indebted to this artist for some of its greatest ornaments; and there are in the church of St Peter no less than 15 different works of his hand. He died at Rome in 1680.

BERNO, abbot of Richenou, in the diocese of Constance, who flourished about the year 1008, is celebrated as a poet, rhetor, musician, philosopher, and divine. He was the author of several treatises on music, particularly of one *De Instrumentis Musicalibus*, beginning with the words *Musican non esse contem!* which he dedicated to Arrabon, Archbishop of Mentz. He also wrote *De Mensura Monochordi*. But the most celebrated of his works is a treatise *De Musica seu Tonis*, which he wrote and dedicated to Pelegrines archbishop of Cologne, beginning *Vero mundi isti advenit et peregrino*. This latter tract is part of the Babilol manuscript, and follows the Enchiridion of Odo: it contains a summary of the doctrines delivered by Boetius, an explanation of the ecclesiastical tones, intermixed with frequent exhortations to piety, and the application of music to religious purposes. He was highly favoured by the emperor Henry II. for his great learning and piety; and succeeded so well in his endeavours to promote learning, that his abbey of Richenou was as famous in his time as those of St Gaul and Cluni, then the most celebrated in France. He died in 1048; and was interred in the church of his monastery, which but a short time before he had dedicated to St Mark.

BERNOULLI (James), a celebrated mathematician, born at Basil the 27th of December 1654. Having taken his degrees in the university of Basil, he applied himself to divinity, not so much from inclination as complaisance to his father. He gave very early proofs of his genius for mathematics, and soon became a geometrician, without any assistance from masters, and at first almost without books: for he was not allowed to have any books of this kind; and if one fell by chance into his hands, he was obliged to conceal it, that he might not incur the reprimands of his father, who designed him for other studies. This severity made him choose for his device, Phaeton driving the chariot of the sun, with these words, *Invito patri sidera verso*, "I traverse the stars against my father's inclination." This had a particular reference to astronomy, the part of mathematics to which he at first applied himself. But the precautions of his father did not avail, for he pursued his favourite study with great application. In 1656 he began his travels. When he was at Geneva,

Bernini
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Bernouilli.

Bernoulli. he fell upon a method to teach a young girl to write, though she had lost her sight when she was but two months old. At Bourdeaux he composed universal gnomonic tables, but they were never published. He returned from France to his own country in 1680. About this time there appeared a comet, the return of which he foretold; and wrote a small treatise upon it, which he afterwards translated into Latin. He went soon after to Holland, where he applied himself to the study of the new philosophy. After having visited Flanders and Brabant, he went to Calais, and passed over from thence to England. At London he contracted an acquaintance with all the most eminent men in the several sciences; and had the honour of being frequently present at the philosophical societies held at the house of the famous Mr Boyle. He returned to his native country in 1682; and he exhibited at Basil a course of experiments in natural philosophy and mechanics, which consisted of a variety of new discoveries. In 1682, he published his essay of a new system of comets; and the year following, his dissertation on the weight of air. Mr Leibnitz, about this time, having published in the *Acta Eruditorum* at Leipzig some essay of his new *Calculus differentialis*, or *infinitesimæ partis*, but concealed the art and method of it; Mr Bernoulli, and one of his brothers, discovered, by the little which they saw, the beauty and extent of it: they endeavoured to unravel the secret; which they did with such success, that Mr Leibnitz declared, that the invention belonged to them as much as to himself. In 1687, the professorship of mathematics at Basil being vacant, Mr Bernoulli was appointed his successor. He discharged this trust with universal applause; and his reputation drew a great number of foreigners from all parts to hear his lectures. He had an admirable talent in teaching, and adapting himself to the different genius and capacity of his scholars. In 1699, he was admitted into the academy of sciences at Paris as a foreign member, and in 1701 the same honour was conferred upon him by the academy of Berlin. He wrote several pieces in the *Acta Eruditorum* of Leipzig, the *Journal des Sçavans*, and the *Histoire de l'Académie des Sciences*. His assiduous application to his studies brought upon him the gout, and by degrees a slow fever, of which he died the 16th of August 1705, in the 58th year of his age.—Archimedes having found out the proportion of a sphere to a cylinder circumscribed about it, ordered it to be engraven upon his monument. In imitation of him, Mr Bernoulli appointed, that a spiral logarithmical curve should be inscribed upon his tomb, with these words, *Eadem mutata refugio*; in allusion to the hopes of the resurrection, which are represented in some measure by the properties of the curve which he had the honour of discovering.

BERNOULLI (Daniel), a celebrated physician and philosopher, was born at Groningen, February 9th 1700. He was intended by his parents for trade, but his genius led him to different pursuits. He passed some time in Italy, and at 24 refused to be president of an academy meant to have been established at Genoa. He spent several years at St Peterburg with great credit; and in 1733 returned to Basil, where he successively filled the chair of physic, natural and speculative philosophy. In his first work, *Exercitationes Mathematicæ*, he took the only title he then had, viz. "Son

of John Bernoulli," and never would suffer any other to be added to it. This work appeared in Italy with the great inquisitor's privilege added to it, and it classed Bernoulli in the rank of inventors. He gained or divided nine prizes, which were contended for by the most illustrious mathematicians in Europe, from the academy of sciences. The only man who has had success of the same kind is Euler, his countryman, disciple, rival, and friend. His first prize he gained at 24 years of age. In 1734 he divided one with his father; but this hurt the family union; for the father construed the contest itself into a want of respect; and the son did not sufficiently conceal that he thought (what was really the case) his own piece better than his father's. Besides this, he declared for Newton, against whom his father had contended all his life. In 1740, Mr Bernoulli divided the prize "On the Tides of the Sea" with Euler and Maclaurin. The academy at the same time crowned a fourth piece, whose only merit was that of being Cartesian; but this was the last public act of adoration paid by it to the authority of the author of the Vortices, which it had obeyed perhaps too long. In 1748, Mr Daniel Bernoulli succeeded his father in the academy of sciences, and was himself succeeded by his brother John; this place, since its first erection, *i. e.* 84 years, never having been without a Bernoulli to fill it. He was extremely respected at Basil; and to bow to Daniel Bernoulli, when they met him in the streets, was one of the first lessons which every father gave every child. He used to tell two little adventures, which he said had given him more pleasure than all the other honours he had received. He was travelling with a learned stranger, who, being pleased with his conversation, asked his name: "I am Daniel Bernoulli," answered he, with great modesty; "And I," said the stranger (who thought he meant to laugh at him), "am Isaac Newton." Another time he was giving a dinner to the famous Koenig the mathematician, who boasted, with a sufficient degree of self-complacency, of a difficult problem he had resolved with much trouble. Bernoulli went on doing the honours of his table; and, when they went to drink coffee, presented him with a solution of the problem more elegant than his own. He died in March 1782.

BEROEA (anc. geog.), a noble city of Macedonia, to the south of Edessa, or *Ægæ*, and south-east of Cytus. The people are commended in Scripture for their reception of the Gospel on a fair and impartial examination.—Another *Beroea* of Syria (Stephanus); called also *Beroe*, and by the inhabitants *Beroïa*. It is the standing tradition for some ages, that it is the modern Aleppo; called *Chalep* in Nicetas, Nicephorus, and Zonaras; from which it is supposed the present appellation *Aleppo* is derived; distant 90 miles from the Levant Sea and the port of Scanderoon, and about 100 miles west of the Euphrates. E. Long. 36. 0. Lat. 36. 30.

BEROOT, or **BAIROUT**, a town of Phœnicia, a province of Syria in Turkey in Asia. It is the ancient Berytus; but there are now no remains of its former beauty, except its situation. It stands in a plain, which from the foot of Lebanon runs out into the sea, narrowing to a point, about two leagues from the ordinary line of the shore, and on the north side forms a pretty long road, which receives the river of Nahr-el-Salib,

Beroot
||
Berre.

Salib, called also *Nabr-Bairout*. This river has such frequent floods in winter, as to have occasioned the building of a considerable bridge; but it is in so ruinous a state as to be impassable. The bottom of the road is rock, which chafes the cables, and renders it very insecure. From hence, as we proceed westward towards the point, we reach, after an hour's journey, the town of Bairout. This belonged to the Druzes, till lately that it was taken from them, and a Turkish garrison placed in it. Still, however, it continues to be the emporium of the Maronites and the Druzes, where they export their cottons and silks, almost all of which are destined for Cairo. In return, they receive rice, tobacco, coffee, and specie, which they exchange again for the corn of the Bekaa and the Hauran. This commerce maintains near 6000 persons. The dialect of the inhabitants is justly censured as the most corrupt of any in the country: it unites in itself the 12 faults enumerated by the Arabian grammarians.—The port of Beroot, formed like all the others on the coast by a pier, is like them choaked up with sand and ruins. The town is surrounded by a wall, the soft and sandy stone of which may be pierced by a cannon ball without breaking or crumbling; which was unfavourable to the Russians in their attack: but in other respects this wall, and its old towers, are defenceless. Two inconveniences will prevent Beroot from ever becoming a place of strength; for it is commanded by a chain of hills to the south-east, and is entirely destitute of water, which the women are obliged to fetch from a well at the distance of half a quarter of a league, though what they find there is but indifferent. By digging in order to form reservoirs, subterraneous ruins have been discovered; from which it appears, that the modern town is built on the ancient one. The same may be observed of Latakia, Antioch, Tripoli, Saide, and the greater part of the towns on the coast, which have been occasioned by earthquakes that have destroyed them at different periods. We find likewise, without the walls to the west, heaps of rubbish, and some shafts of columns, which indicate that Beroot has been formerly much larger than at present. The plain around it is entirely planted with white mulberry trees, which are young and flourishing; by which means the silk produced here is of the very finest quality. In descending from the mountains (says M. Volney), no prospect can be more delightful than to behold, from their summits or declivities, the rich carpet of verdure formed by the tops of these useful trees in the distant bottom of the valley. In summer, it is inconvenient to reside at Beroot on account of the heat and the warmth of the water: the town, however, is not unhealthy, though it is said to have been so formerly. It has ceased to be unhealthy since the Emir Fakr-eldin planted a wood of fir trees, which is still standing a league to the southward of the town. E. Long. 35. 38. N. Lat. 34. 18.

BEROSUS, priest of the temple of Belus at Babylon, in the time of Ptolemy Philadelphus, wrote the History of Chaldea, which is often cited by the ancients, and of which Josephus gives some curious fragments. The Athenians, according to Pliny, caused his statue, with a golden tongue, to be placed in their Gymnasium.

BERRE, a town of Provence in France, seated on

a lake of the same name. It is remarkable for the quantity and goodness of the salt that is made there, but the air is very unwholesome. E. Long. 4. 32. N. Lat. 43. 32.

Berretini
||
Berriman.

BERRETINI NA CORTONA (Pietro), painter of history and landscape, was born at Crotona in 1596; and, according to some writers, was a disciple of Andrea Comodi; though others affirm that he was the disciple of Baccio Ciardi, and the author of the Abrege says he was successively the author of both: but he is allowed to have been as great and as enlarged a genius as any of his profession, and to have painted more agreeably than most of the artists who were his contemporaries. He went young to Rome, and applied himself diligently to study the antiques, the works of Raphael, Buonaroti, and Polidoro; by which he so improved his taste and his hand, that he distinguished himself in a degree superior to any of the artists of his time. He worked with remarkable ease and freedom; his figures are admirably grouped; his distribution is truly elegant; the chiaro-scuro is judiciously observed; and through his whole compositions there appears uncommon grace: but De Piles observes, that it was not such a grace as was the portion of Raphael and Correggio; but a general grace, consisting rather in a habit of making the airs of his heads always agreeable, than in a choice of expressions suitable to each subject. In his large compositions, the colouring had a good effect; but his colouring in fresco is far superior to what he performed in oil: nor do his easel pictures appear as finished as might be expected from so great a master, when compared with what he painted in a larger size. By the best judges it seems to be agreed, that although this master was frequently incorrect; though not always judicious in his expressions; though irregular in his draperies, and apt to design his figures too short and too heavy; yet, by the magnificence of his composition, the delicate airs of his figures, the grandeur of his decorations, and the astonishing beauty and gracefulness of the whole together, he must be allowed to have been the most agreeable mannerist that any age hath produced.—He died in 1669. Some of his most capital works are in the Barberini palace at Rome, and the Palazzo Pitti at Florence.

BERRETONI (Nicolo), history-painter, was born at Macerata in 1617, and was a disciple of Carlo Maratti, with whom he studied design and colouring for some years; and attained such excellence, that he excited even the jealousy and envy of his master, who seemed to be apprehensive of finding a powerful competitor and rival in his pupil.—His early works, after he quitted the school of Maratti, were in the style and taste of Guido; and they could not possibly have a more high encomium or recommendation. He died in 1682.

BERRIMAN (Dr William), was the son of Mr John Berriman apothecary in Bishopsgate-street, London, where he was born in 1688. He studied at Oriel-college, Oxford, where he took his several degrees, and became curate and lecturer of All-hallows in Thames-street, and lecturer of St Michael's, Queen-lithe. In 1720, he was appointed domestic chaplain to Dr Robinson bishop of London, who soon after collated him to the living of St Andrew's Under-shaft; and in 1727, he was elected fellow of Eton-college. He died

Berry,
Berfabe

Bersarū
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Berwick.

in 1750, in the 62d year of his age. He wrote, 1. A seasonable Review of Mr Whillon's Account of Primitive Doxologies. 2. An Historical Account of the Trinitarian Controversy, in eight sermons, at Lady Moyer's lecture. 3. Brief Remarks on Mr Chandler's Introduction to the History of the Inquisition. 4. Sermons at Boyle's lectures, 2 vols 8vo. 5. Christian Doctrines and Duties explained and recommended, in 2 vols 8vo; and other works.

BERRY. See BACCA.

BERRY, a province of France, with the title of a duchy. It is bounded on the north, by Solome; on the south, by Marche; on the east, by Nivernois and Bourbonnoise; and on the west, by Touraine. It is 90 miles in length from north to south, and 73 in breadth from east to west. The air is very temperate; and the soil produces wheat, rye, and wine little inferior to Burgundy; that of Sancerre, St Satur, and Lavernulle, is the best. The fruits are in plenty, and pretty good. The pastures are proper to fatten sheep. This country produces also a good deal of hemp and flax. There are mines of iron and silver, but they are neglected. The stone quarries, within half a league of Bourges, are very serviceable. In the parish of St Hilaire there is a mine of oker, made use of in melting metals and for painting. Near Bourges there is a cold mineral spring, which has a clammy fat pellicle over it every morning, of different colours. It lets fall a fine black smooth sediment, which has the same smell, and almost the same taste, as gunpowder, which makes some conclude it partakes of sulphur, vitriol, and oker. The pellicle is as thick as a crown-piece; and when put on a red-hot fire-shovel, will bounce and sparkle, as will also the sediment. It is certain there is saltpetre in these waters, though vitriol seems to be the most predominant. These waters, drunk on the spot, temperate the heat of the blood and humours, open obstructions, and strengthen the fibres. Berry is watered by several rivers; the principal of which are the Loire, the Crense, the Cher, the Indre, the Orron, the Evre, the Aurette, the Maulon, the Great and Little Saudre, the Nerre, &c. Near Limiers, there is a lake 20 miles round. Berry is divided into the Upper and the Lower, and Bourges is the capital city. The inhabitants of Bourges carry on a small trade with corn down the Loire; but that of the wine above mentioned is much more considerable, it being transported to Paris by means of that river and the canal of Briare. But the principal commerce consists in the fat cattle which they send to Paris, and the great number of sheep; these last bear fine wool, which is used in the manufactures of this province and other parts of the kingdom. There are two sorts of manufactures in Berry; the one for cloths and serges, and the other for knit and wove stockings. There is likewise a great quantity of hemp, which is transported elsewhere; for they have not yet got the art of manufacturing it themselves. At Aubigny there are 2000 persons generally employed in the making of cloth.

BERSABE (anc. geog.), a town in the tribe of Simeon (Joshua); the south boundary not only of its own tribe but of the whole land of Israel, as appears from the common expression "from Dan to Bersabe:" in our translation it is Beer-Sheba. It was the residence of the patriarchs; as first of Abraham, from whom it took its name, and of Isaac. It signifies the

well or fountain of the oath; dug by Abraham, and claimed as his property by covenant and the religion of an oath, against the insults of the Philistines. Eusebius and Jerome say, that there was a citadel and large village of that name in their time. It was called *Beer-sheba of Judah* in 1 Kings xix. 3. not to distinguish it from the Beer-sheba of Galilee, which probably did not then exist, but to ascertain the limits of the king of Judah. In the lower age called *Castrum Versabini*.

BERSARII, in writers of the middle age, a kind of hunters or sportsmen, who pursued wild beasts in forests and chaces. The word seems derived from the barbarous Latin *bersare*, "to shoot with a bow;" on which principle it should properly denote archers only, or bowmen. Or it might be derived from *berfa*, "the fence or pales of a park;" in which view, it should primarily import those who hunt or poach in parks or forests.

Hincmar speaks of a kind of inferior officers in the court of Charlemagne, under the denomination of *bersarii*, *voltrarii*, and *beverarii*. Spelman takes the first to denote those who hunted the wolf; the second, those who had the superintendency of the hounds for that use; and the third, those who hunted the beaver.

BERSELLO, a fortified town of Italy in the Modenese. It was taken by Prince Eugene in 1702; and by the French in 1703, who were obliged to abandon it in 1707. It is seated near the confluence of the rivers Linza and Po, in E. Long. 10. 30. N. Lat. 44. 55.

BERSUIRE, a town of France in Lower Poitou. W. Long. 0. 27. N. Lat. 46. 52.

BERTINERO, a town of Romagna in Italy, with a strong citadel. It is the see of a bishop; and is seated on an hill, in E. Long. 11. 47. N. Lat. 44. 8.

BERTRAND (St), an episcopal town of France in Gascony, and capital of the country of Comminges. E. Long. 0. 38. N. Lat. 43. 2.

BERVY, a sea-port and parliament town in the county of Mearns in Scotland. W. Long. 2. 0. N. Lat. 56. 40.

BERWICK (the Duke of), was natural son of James II. by Mrs Arabella Churchill, sister to the great Duke of Marlborough. He followed the fate of his father, and came into France after the revolution with James II. Here the Duke of Berwick was recommended to the court by his superior merit. He was created marshal of France, knight of the Holy Ghost, duke and peer of France, grandee of Spain, commander in chief of the French armies; in all which stations his behaviour was such, that few equalled, perhaps none surpassed, him. He lived in an age when the renowned Prince of Orange and many other of the greatest men commanded against him. His courage was of the cool steady kind; always possessing himself; taking all advantages; not foolishly, rashly, or wantonly throwing away the lives of his soldiers. He kept up on all occasions the most strict discipline; and did not spare punishment among his soldiers for marauding and other crimes, when properly deserved; for which some inconsiderate people have blamed him. He has been reflected upon by the very zealous and violent adherents of the Stuart family for not being sufficiently attached to that party, which was his own family. But by a cool examination of his actions, it will appear, that his behaviour in this particular

wick particular was, as in most parts of his life, sensible and just. When he accepted of employments, received honours, dignities, and became a naturalized Frenchman, he thought it his duty, as an honest man, to become a Frenchman, and a real subject to the monarch who gave him bread; and to be, or not to be, in the interest of the Stuart family, according to the will and commands of the sovereign whom he served, and in the interest of France according to time and circumstances; for there is no serving two masters well. But when ordered by his king to be in that family's interest, he acted with the greatest sincerity; and took the most effectual and sensible methods to serve that unhappy house, as the following anecdote, if true, and it has great appearance and probability on its side, proves. The Duke of Marlborough, after the signing of the treaty of Utrecht, was censured by the British parliament for some of the army contracts in relation to bread and forage; upon which he retired into France; and it was then credibly asserted, the Duke of Marlborough was brought over to the interest of the Stuart family; for it is now past a doubt, that Queen Anne had a very serious intention of having her brother upon the throne of England after her death: and several circumstances, as well as the time of that Duke's landing in England, make many people believe he was gained over to the Stuart party. If the Duke of Berwick was, directly or indirectly, the means of gaining his uncle over to that interest, he more effectually served it than that rash mock army of unhappy gentlemen who were taken prisoners at Preston in 1715 had it in their power to do. In a word, the Duke of Berwick was, without being a bigot, a moral and religious man; and showed by his life and actions, that morality and religion are very compatible and consistent with the life of a statesman and a great general; and if they were oftener united in those two professions, it would be much happier for the rest of mankind. He was killed by a cannon-ball at the siege of Philipsburgh in 1738.

BERWICK, one of the best cultivated counties in Scotland; bounded by the river Tweed, on the south; by Lothian, on the north; by the German Ocean, on the east; and by Tiviotdale, on the west. It abounds with corn and grass, and has in it several seats of persons of quality. The principal rivers are the Tweed, the Whiteater, Blackadder, Eye, and Ednel. The chief place is the town and castle of Dunfermline. Eymouth is the sea-port, where a great deal of grain is shipped. Lauder is the only royal borough, though Greenlaw is the county-town. It sends one member to parliament.

BERWICK (North), a royal borough and sea-port in the county of East Lothian in Scotland. W. Long. 2. 29. N. Lat. 5. 56.

BERWICK-upon-Tweed, is a town on the borders of England and Scotland, and a county of itself. It stands on the north or Scottish side of the river Tweed; and is pleasantly situated on an easy declivity, almost close to the sea. It has a ditch on the north and east; but on the south and west it has high walls, regularly fortified, and planted with cannon, and to which the river serves as a moat. The houses are generally well built; and the town-house is a handsome structure, with a lofty turret, in which are eight bells, and a fine clock which tells the quarters, with four dials, one on each side the

square. The church is a neat building, but has no bells. The bridge is 947 feet long, and is supported by fifteen arches. The barracks form a large regular square, and will hold two regiments of foot very conveniently. The town is governed by a mayor, recorder, town-clerk, and four bailiffs; and has a coroner, a treasurer, four serjeants at mace, and a water bailiff. It had a strong castle, which now lies quite in ruins. It has a market on Saturdays, extremely well supplied; and a fair on Friday on Trinity-week for black cattle and horses. Corn and eggs are shipped from hence for London and other ports; but the principal trade is the salmon which are caught in the Tweed, and reckoned to be as good as any in the kingdom. Some are sent alive, and some pickled in kits by persons who subsist on that employment, and are called *salmon coopers*. The living is a rectory, rated at 20l. a-year in the king's books. Though this town is not admitted to be either in England or Scotland, the English judges hold assizes here; and it is subject to the bishop of Durham. It sends two members to parliament. W. Long. 1. 35. N. Lat. 55. 58.

BERY, or BURY, the vill or seat of habitation of a nobleman, a dwelling or mansion house, being the chief of a manor: from the Saxon *berig*, which signifies a hill or castle; for heretofore noblemens seats were castles situated on hills, of which we have still some remains; as in Herefordshire there are the *beries* of Stockton, Hope, &c. It was anciently taken for a sanctuary.

BERY. See BERIA.

BERYL, in natural history, called by our lapidaries *aqua marina*, is a pellucid gem of a bluish green colour, found in the East Indies and about the gold mines of Peru: we have also some from Silesia, but what are brought from thence are oftener coloured crystals than real beryls; and when they are genuine, they are greatly inferior both in hardness and lustre to the oriental and Peruvian kinds.

The beryl, like most other gems, is met with both in the pebble and columnar form, but in the latter most frequently. In the pebble form it usually appears of a roundish but flattened figure, and commonly full of small flat faces, irregularly disposed. In the columnar or crystalline form it always consists of hexangular columns, terminated by hexangular pyramids. It never receives any admixture of colour into it, nor loses the blue and green, but has its genuine tinge in the degrees from a very deep and dusky to the palest imaginable of the hue of sea-water.

The beryl, in its perfect state, approaches to the hardness of the garnet, but is often softer; and its size is from that of a small tare to that of a pea, a horse-bean, or even a walnut. It may be imitated by adding to 20 pounds of crystal-glass made without magnesia, six ounces of calcined brass or copper, and a quarter of an ounce of prepared zaffre.—The properties of the beryl were very wonderful in the opinion of the ancient naturalists; it kept people from falling into ambuscades of enemies, excited courage in the fearful, and cured diseases of the eyes and stomach. It does none of these things now; because people are not simple enough to believe it has the virtue to do them.

BERYL-crystal, in natural history, a species of what Dr Hill calls *ellipticocrystallus*, or imperfect crystals. *of*

Bery,
Beryl.

Berytus of an extreme pure, clear, and equal texture, and scarce ever subject to the slightest films or blemishes. It is ever constant to the peculiarity of its figure, which is that of a long and slender column, remarkably tapering towards the top, and very irregularly hexangular. It is of a very fine transparency, and naturally of a pale brown; and carries such evident marks of distinction from all brown crystals, that our lapidaries call it, by way of eminence, the *beryl-crystal*, or simply the *beryl*.

BERYTUS (anc. geog.), a sea-port town of Phœnicia on the Mediterranean, so ancient as to be thought to have been built by Saturn. It was destroyed by Tryphon, but rebuilt by the Romans. Agrippa placed here two legions, whence it became a colony. It enjoyed the *jur Italicum*, and had an excellent school for the study of the law in Justinian's time. Now **BEROÛT**; which see.

BES, or **BESSIS**, in Roman antiquity, two-thirds of the as. See **As**.

BES also denotes two thirds of the jugerum. See **JUGERUM**.

BESAILE, signifies the father of a grandfather.

BESAILE, in law, a writ that lies where the great-grandfather was seized in fee of any lands, &c. at the time of his death: and after his decease a stranger enters thereon, the same day, and keeps out the heir.

BESANCON, a city of France, capital of the Franche Compté, and one of the most ancient cities of Europe. It is the see of an archbishop, and has a parliament as well as a university. It is seated on the river Dreux, which divides it into two parts, the greatest of which is a peninsula. The entrance is shut up by a mountain, on which they have built a large citadel, which commands all the city. There are many names of places in and about the city, that are plainly corruptions of the Latin, and are marks of its antiquity, as Chamars, Campus Martis, Chamuse, Campus Musarum, Chandane, Campus Dianæ, &c. The metropolitan church is built at the bottom of St Stephen's hill; and is a very handsome structure with a high tower steeple. The great altar is placed in the middle choir, where on high days they expose reliques in silver shrines, enriched with gold and jewels. There are several tombs and other things remarkable in the churches; and after you have past the church of Notre Dame, and the square that it looks into, you come to a triumphal arch, erected in honour of the emperor Aurelian, on which are several figures of men and animals, pretty entire. It serves as a gate to the cloister of St John the Great. The great hospital of the order of the Holy Ghost is a structure worth seeing. The streets are wide and handsome; and the houses are well built with free-stone, and covered with slate, chiefly about the square called *Battan*, which is adorned with a fountain, the water of which proceeds from the statue of Bacchus. The river Dreux is passed over on a stone bridge, to enter from one part of Besancon into the other. The market-place is at the entrance; and on the left is another square, adorned with a fountain, where the great street begins, which traverses all this part, from the bridge to St John the Great. The new square is not far from this street, from whence you go to the town-house, which is a large structure with four wings,

before the front of which is the statue of Charles V. in bronze, with a globe in one hand and a sword in the other. The imperial eagle is raised over a large basin, and spouts out water by both his beaks. The governor's palace is the most magnificent in the province, and there is a fountain a little farther, adorned with the figure of a naked woman, with water springing out at her nipples. E. Long. 6. 10. N. Lat. 47. 26.

BESANT, or **BEZANT**, a coin of pure gold, of an uncertain value, struck at Byzantium, in the time of the Christian emperors; from hence the gold offered by the king at the altar is called *besant* or *bisant*.

BESANTED, or **BEZANTED**. This word means *full of besants*; and is used to denote a field, ordinary, or charge, covered with above eight besants: for if there be but eight or fewer, their number must be particularly mentioned.

BESELEEL and **OOLIAH**, architects, sculptors, and painters, supposed to have made all the ornaments in brass, silver, &c. of the first tabernacle in the wilderness, 1490 B. C.

BESIERS, or **BEZIERS**, an ancient and handsome town of France, in Lower Languedoc, with a bishop's see, and the title of a viscounty. It has a delightful situation; and the country in which it stands is fertile in corn, oil, and produces excellent wine. It is seated on a hill near the river Orbe, in E. Long. 3. 23. N. Lat. 43. 21.

BESISTAN, or **BERSTEIN**: Thus at Constantinople, Adrianople, and in some other towns within the Grand Signior's dominions, they call those places where the merchants have their shops, and expose their merchandizes to sale. Each sort of merchants have their particular besistan, which must also be understood of the workmen, all those of the same trade working in the same place. These besistans are commonly large galleries, vaulted over, whose gates are shut every night. Sometimes the warden and keepers of the besistans will answer for the merchandizes, on paying them a very moderate perquisite for every shop.

BESLERIA (from Basilus Bessler an apothecary at Nuremberg, author of a book, intitled, *Hortis Eystetenfis*), a genus of the angiospermia order, belonging to the didynamia class of plants. Of this genus there are three species; the *melittifolia*, with branching footstalks and oval leaves; the *lutea*, with simple footstalks growing in clusters, and spear-shaped leaves; and the *cristata*, with stalks growing single, and a five-leaved involucre. All these are natives of the warm parts of America, and cannot be preserved in this country without artificial heat. But as they are remarkable neither for beauty nor any other property, we forbear any particular description.

BESORCH, a coin of tin, or some alloyed metal, current at Ormus, at the rate of $\frac{7}{17}$ parts of a farthing sterling.

BESOZZI, or **BEZUTIUS** (Ambrogio), a painter of considerable eminence, was born at Milan in 1648. He worked some time under Gioseffo Danedi, called *Montalti*: he afterwards went to Rome, where he studied from the antiques and the pictures of the greatest masters; and at last perfected himself in the school of Ciro Ferri. His great excellency consisted in painting architecture, friezes, imitations of bas-relieves, and other

abia other decorations. He died at Milan in 1706, aged 58 years.

BESSARABIA, a territory of Turkey in Europe, lying between Moldavia, the Danube, the Black Sea, and Little Tartary. It is inhabited by independent Tartars, who maintain themselves by their cattle, husbandry, and by robbery. Their religion, manners, and customs, are the same of those with the Crimean Tartars. When there are any forces sent against them, they retire among the mountains near the Black Sea, where it is impossible to come at them on account of the morasses and defiles.

BESSARION, titular patriarch of Constantinople and archbishop of Nice, and one of those illustrious persons who contributed to the resurrection of letters in the 15th century, was born at Trebisond. He was very zealous to reunite the Greek with the Latin church, and engaged the emperor John Palæologus to interest himself in bringing this great work about. He passed into Italy, appeared at the council of Florence, harangued the fathers, and made himself admired as well by his modesty as by his uncommon abilities. The Greek Schismatics conceived so mortal an aversion to him, that he was obliged to remain in Italy; where pope Eugenius IV. honoured him with the purple in 1439. He fixed his abode at Rome, and would have been raised to the Papal chair, if cardinal Alain had not opposed it, as injurious to the Latin church, to choose a Greek however illustrious. He was employed in several embassies, but that to Fraunce proved fatal to him. When legate at this court, he happened to visit the duke of Burgundy, before he saw Louis XI. which so disconcerted the capricious haughty monarch, as to occasion him a very ungracious reception. Nay, the king even took the cardinal legate by his most magnificent beard, saying in his fine Latin, *Barbara Græca genus retinent quod habere solebant*: and this affront so chagrined the cardinal, as to occasion his death at Ravenna upon his return in 1472. This at least is what Matthieu relates in his History of Louis XI. Bessarion loved the literati, and protected them. Argyropilus, Theodore of Gaza, Poggius, Laurentius Valla, &c. formed in his house a kind of academy. His library was large and curious; and the senate of Venice, to whom he gave it, preserve it to this day with attention and regard. He left some works, which rank among those that helped to revive letters; as, *Defensio Doctrinæ Platonice*, &c. Translations of some Pieces of Aristotle. Orations, Epistles, &c.

BESSICA (anc. geog.), a district of Thrace towards mount Hæmus to the south of the Hebrus. It was inhabited by a fierce and barbarous people noted for their robberies. Their chief city Uscudama is now known by the name of *Adrianople*. They lived under their own kings till the consulate of M. Licinius Lucullus and C. Cassius Varus; when the consul Lucullus invaded their country, and having gained a great victory over them, took their metropolis, and subjected the whole nation to the Roman laws. The Romans, notwithstanding they had subdued them by force of arms, still suffered them to live under their own kings; for Piso, while he governed Macedon in quality of proconsul, having treacherously seized Raboentus, whom Suctonius calls *prince of the Bessi*, caused him to be publicly beheaded. This affront so exasperated the

whole nation that they revolted; but were overthrown in a great battle by Octavius the father of Augustus. During the civil wars of Rome they attempted anew to recover their liberty, but were again defeated by the famous M. Brutus. In the reign of Augustus one Vologesus, a native of the country, and priest of Bacchus, having, under pretence of religion, drawn together great crowds of people, made himself master of the whole country; and entering the Chersonesus, committed there the most dreadful ravages. He was at last, however, overcome by L. Piso; who obliged the savage inhabitants to lay down their arms, and submit to such conditions as he was pleased to impose upon them. From this time the Bessi continued subject to the Romans without attempting any more to regain their liberty.

BESSIS See **BES**.

BESTAIL, or **BESTIAL**, in ancient statutes, all kinds of beasts or cattle, especially those purveyed for the king's provision.

BESTIARI, in Roman antiquity, such as fought against beasts, or those who were exposed to them by sentence of the law. There were four kinds of bestiarii: the first were those who made a trade of it, and fought for money; the second were such young men as, to show their strength and dexterity in managing their arms, fought against beasts; the third kind was, where several bestiarii were let loose at once, well armed, against a number of beasts; and the fourth kind were those condemned to the beasts, consisting either of enemies taken prisoners in war, or as being slaves, and guilty of some enormous crime; those were all exposed naked, and without defence.

BESTRICIA, a town of Transylvania, remarkable for the gold mines in its neighbourhood. E. Long. 22. 5. N. Lat. 48. 0.

BETA, the **BEEF**; a genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 12th order, *Holoraceæ*. The calyx has four leaves; there is no corolla; the seeds are kidney-shaped, and situated within the base of the calyx.

Species. 1. The *maritima*, or sea-beet, grows naturally by the sea-side, and in salt marshes, in many parts of England, as also on the Bass island at the mouth of the Forth in Scotland. It has been supposed by many to be only a variety of the common white beet; but Mr Mäler assures us he has been unable to make any variation in them by culture. 2. The *hortensis*, or common white beet, is cultivated in gardens for the sake of its leaves which are frequently used in soups. The root of this sort seldom grows larger than a man's thumb; the spikes of flowers come out from the wings of the leaves, which are long, and have narrow leaves placed between the flowers. The lower leaves of the plant are thick and succulent, and their footstalks broad. The varieties of this are, the white beet, the green beet, and the Swiss or chard beet. These will vary from the one to the other, but have never been found to change to the first or third sort. 3. The *vulgaris*, or red beet, with a pyramidal root, hath large, thick, succulent leaves, which are for the most part of a dark-green or purple colour. The roots of this are large, and of a deep red colour. The larger these roots grow, the tenderer they are; and the

Bessis
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Beta.

Beta
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Betel-fagui

deeper their colour, the more they are esteemed. The varieties of this species are, the common red beet, the turnip-rooted beet, and the green-leaved red beet. 4. The ciela, or root of scarcity; for which see AGRICULTURE, n^o 52.

Culture. The common white beet is commonly sown by itself in the beginning of March, upon an open spot of ground, not too moist. When the plants have put out four leaves, the ground should be hoed as is practised for carrots, carefully cutting up all the weeds, and also the plants where they are too near each other, leaving them at least six inches asunder. In three weeks or a month's time the ground should be hoed a second time to cut up the weeds and thin the plants to a greater distance, for by this time they will be out of danger; so should not be left nearer than eight or nine inches, if regard is had to the goodness of the leaves; and if it is of the Swiss kind, with broad leaves, the plants must not be nearer than a foot. In six weeks after, the ground should be hoed over a third time, which if properly done will destroy all the weeds. After this the plants will spread and prevent the weeds from growing, therefore will want but little cleaning for a considerable time, and the leaves will soon be fit for use. The outer larger leaves should be first gathered, leaving the smaller inner ones to grow large; by which method a small spot of ground will supply a moderate family for a whole year, provided the plants are not allowed to run to seed, for in that case they will not be good.

The red beet is frequently sown with onions, carrots, or parsnips; but if these are not to be soon removed, the beets ought to be sown by themselves. This sort requires a deep light soil; the seeds should be sown in March, and must be treated in the same manner as the former sort: but the plants should not be left nearer than a foot distance, or in a good land a foot and a half; for the leaves will cover the ground at that distance. The roots will be fit for use in autumn, and continue good all winter; but in the spring, when they begin to shoot, they will be hard and stringy.

Medicinal and other uses. Decoctions of beets gently loosen the belly; hence they have been ranked among the emollient herbs: the plants remaining after the boiling are supposed to have rather a contrary effect. They afford little nourishment, and are said by some to be prejudicial to the stomach. The juice expressed from the roots is a powerful errhine. The root of the red beet is sometimes used to improve the colour of claret; and Mr Margraff found that good sugar might be produced from the roots of the white kind by the methods practised abroad for procuring it from the sugar cane. By some it is recommended to cultivate the white beet in large quantities as food for cattle. See AGRICULTURE, n^o 51.

BETANZOS, a town of Galicia in Spain, seated on the Mandeo, and a bay of the sea, in W. Long. 7. 50. N. Lat. 43. 21.

BETEL, or BETLE, in botany, an Indian plant (a species of PIPER), of great use and esteem in the east, where it makes a considerable article of commerce. See PIPER.

BETELFAGUI, a town of Asia, in Arabia Felix, famous for the vast quantity of coffee bought and sold there; being the mart where the country people bring
N^o 45.

their coffee to sell; and where the Europeans come, or send their factors or brokers, to purchase it. E. Long. 57. 20. N. Lat. 15. 40.

BETHABARA (anc. geog.), a term denoting a passage; and therefore by many referred to the passage at Jericho, where the Israelites passed over dryshod; by Lightfoot, to the passage at Scythopolis; but Cellarius refers it to the mid-way between both; because there were doubtless several passages or fords on the Jordan. Here John is said to have baptized on the other side Jordan, (Evangelists).

BETHAGLO, or BETH-HAGLA (anc. geog.), a town of the tribe of Benjamin (Joshua xviii. 21.). In Jerome's time there was a village called *Ajla*, ten miles from Eleutheropolis, towards Gaza, and supposed to be Bethagla.

BETHANY (anc. geog.), a village at the foot of mount Olivet, on the east side, about two miles to the east of Jerusalem, (John, Jerome); where Lazarus dwelt and was raised from the dead; and where happened the ascension of our Saviour.

BETHARAMPHTHA (anc. geog.), a town of Galilee, (Ptolemy); of the Peraea, (Josephus); which being walled round by Herod Antipas, was called *Julias*, after Julia, the daughter of Augustus, and consort of Tiberius; it stood to the north of the lake of Genesareth, at the influx of the Jordan into that lake; and here Dr Well's places Bethsaida.

BETHARAN (anc. geog.), a town of the Peraea, or on the other side Jordan. Said to be called *Livias*, or *Libias*, in the Greek manner, by Herod in honour of Livia, (Eusebius, Jerome); and of the same latitude almost with Jerusalem, (Ptolemy; called *Julias* by Josephus, who always calls the Livia of Augustus *lia*).

BETHAVEN (anc. geog.), a town in the tribe of Ephraim, and a name given Bethel by Hosi, after the establishment of the idolatry of Jeroboam there; meaning it to have become the house of iniquity, from being the house of God: but Bethaven was a distinct town (Joshua vii. 2.) to the south-east of Bethel.

BETHEL (anc. geog.), a city of Samaria, on the borders of the tribe of Benjamin, anciently called *Luz*, (Moses); but they seem to be distinguished, (Joshua xvi. 2.). They were, however, contiguous places. Bethel was properly the place of Jacob's vision; and Luz, or Lus, an adjoining town, afterwards called *Bethel*, the former name being lost in that of *Bethel*. It was twelve miles to the north-east of Jerusalem, (Jerome); and called *Bethaven*, (Hosea).

BETHESDA, (called in the Greek, *κολυμβήθρα πρὸς βηθαθα*, and thence in the Vulgate, *Piscina Probatica*, because, according to some, the sheep were washed in it, which were appointed for sacrifices), was the Hebrew name for a pool or public bath, which had five porticos, piazzas, or covered walks around it. This bath, for its singular usefulness, was called Bethesda, בית השדה, *Beth Chesda*, or the *house of Mercy*, because, as Pool, in his Annotations, observes the erecting of baths was an act of great kindness to the common people, whose indispositions in hot countries required frequent bathing. However, some will have the word Bethesda to be בית השדה, or the *sink-house*, or *drain*, because the waters which came from the temple, and the place where the victims were washed, flowed thither. From the Greek word *κολυμβήθρα* being used
by

Beth bar
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Bethed.

Bethesda. by Josephus (*Antiq.* xv. 3.) to denote the baths at Jericho, Dr Macknight, in his *Harmony of the Gospels*, concludes that their opinion seems to be without a proper foundation who affirm, that this pool served for walking the sheep designed for sacrifice before they were driven into the temple, and for washing the entrails of the beasts sacrificed there; besides, he thinks it inconsistent with the situation of Bethesda, *near the sheep-gate* (or *market*, as our English translators have rendered the Greek $\epsilon\tau\iota\ \tau\eta\ \pi\epsilon\lambda\alpha\gamma\epsilon\iota\ \kappa\alpha\lambda\omega\mu\epsilon\tau\epsilon\iota\sigma\tau\alpha$, though some copies have it, *E. v.*, &c.) in the south-east wall of the city; or, according to the compilers of the *Universal History*, in that which was on the north-east, a great way from the temple. However this may be, we are told (*John* v. 2, 3, &c.) that in the porticos of this bath, at the time of a certain feast (which is generally supposed to have been the passover), there lay a multitude of impotent folk, such as the blind, halt, and withered, waiting for the moving of the water: for an angel went down at a certain season into the pool, and troubled the water; that is, moved it in a sensible manner. Whosoever then first, after the troubling of the water, leaped into it, was made whole of whatever disease he had. Some writers confine the miracle of the pool of Bethesda to the season of this particular feast mentioned in verse 1. of this chapter, because they understand $\kappa\alpha\tau\alpha\ \kappa\alpha\tau\iota\sigma\tau\eta\varsigma$ by *times* (verse 4.), which our translators render, *a certain season*, meant *at that season*; that is, the season mentioned verse 1.; and since the evangelist does not say that the water of Bethesda had their sanative quality at any other feast, we are at liberty to make what supposition seems most convenient. Perhaps the silence of Paul and Josephus upon this miracle may induce some to think, that it happened only at one passover; for though many infirm people lay in Bethesda, if the angel, as is probable, descended frequently during that solemnity, the miracle would be no sooner known, than multitudes would come and wait at the pool to be cured by the moving of the waters: however, if the number of the sick who gathered on this occasion, and the phrase $\kappa\alpha\tau\alpha\ \kappa\alpha\tau\iota\sigma\tau\eta\varsigma$, shall incline any person to believe that the waters of Bethesda had an healing quality at other passovers also, Dr Macknight observes, that the silence of the writers before mentioned needs not be much regarded; it being well known that they have omitted greater transactions which they had an opportunity to know, *viz.* that multitude and variety of miracles which our Lord performed in the course of His ministry. That the waters of Bethesda should at this time have obtained a miraculous healing quality was, without doubt, as that writer remarks, in Honour of the personal appearance of the son of God on earth. Perhaps it was intended to show that Ezekiel's (xlvi.) vision of waters flowing out of the sanctuary was about to be fulfilled, of which waters it is said, (*ib.* verse 9.) "They shall be healed, and every thing shall live whither the river cometh." But it must be observed, that the fourth verse of this chapter of St John is not in the Cambridge MSS. which formerly was Beza's, nor in one or two more of great authority. See Dr Mill's judgment of it in that part of his *Prolegomena* to which he refers the reader in his *note* on the text. But though it should be rejected, the difficulty for which some would have it cancelled, Dr Macknight observes, remains still; be-

cause the seventh verse implies that cures were performed in this pool, and that only one at a time was cured, and consequently that these cures were miraculous. If so, it is as easy to conceive that an angel moved the water, and gave it its healing quality, as to fancy those cures were performed miraculously any other way. Grotius thinks, that the angel is said to have descended, not because he was ever seen to do so, but because the Jews were persuaded that God brought such things to pass by the ministrations of angels; so that from that violent motion of the water, and the cure following it, the presence of an angel was with reason supposed. Dr Hammond supposes, that the waters became medicinal by being impregnated with a healing warmth from the blood and entrails of the sacrificed beasts that were washed there; and that the $\alpha\gamma\epsilon\lambda\omicron\varsigma$, *angel*, or *messenger*, in the text is not to be understood of those celestial beings that are usually distinguished by that name, but only of a common messenger, *viz.* an officer or servant of the priest, who at a proper season was sent by him to stir the pool.

BETHLEHEM, a town of Palestine, famous for the birth of Jesus Christ. It was once a flourishing town, but is now only a poor village. It is situated two leagues south-east of Jerusalem, on an eminence, in a country full of hills and valleys, and might be rendered very agreeable. The soil is the best in all these districts: fruits, vines, olives, and sesamum succeed here extremely well; but cultivation is wanting. They reckon about 600 men in this village capable of bearing arms upon occasion; and this often occurs, sometimes to resist the Pacha, sometimes to make war with the adjoining villages, and sometimes in consequence of intestine dissensions. Of these 600 men, about 100 are Latin Christians, who have a vicar dependent on the great convent of Jerusalem. Formerly their whole trade consisted in the manufacture of beads; but the reverend fathers not being able to find a sale for all they could furnish, they have resumed the cultivation of their hands. They make a white wine, which justifies the former celebrity of the wines of Judea, but it has the bad property of being very heady. The necessity of uniting for their common defence prevails over their religious differences, and makes the Christians live here in tolerable harmony with the Mahometans, their fellow-citizens. Both are of the party *Ummah*, which, in opposition to that called *Kuff*, divides all Palestine into two sects, perpetually at variance. The courage of these people, which has been frequently tried, has rendered them formidable through all that country. Here is a church built by St Helena, in the form of a cross, which is very large; and from its top may be seen all the country round about. The roof is flat, flat, and composed of cedar on the inside, and leaded without. Both sides of the nave are supported by two rows of marble pillars, each made of one piece, and eleven in a row, so much that they make as it were five naves, separated from each other by these rows of pillars, in each of which is the picture of some saint. On the wall over the pillars there is a very beautiful mosaic work, on a gold ground. The walls were formerly overlaid with fine marble, but the Turks have taken it to adorn their mosques. The three upper ends of the cross terminate in three semicircles, having in each a letter. Over the chan-

Bethlehem.

Beth'hem
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Beth-peor.

cel there is a stately cupola, covered with lead on the outside, and within adorned with Mosaic work. Close to the church is the monastery of the Franciscans; which is large, but indifferently built. The gardens are defended with strong walls, and at the north-west of them stands a tower now almost in ruins. Their chapel is better taken care of. Through this there is a passage to a square cave, where they say the Innocents were buried. Beyond this there are passages to the tombs of St Jerom, St Paula, Eustochium, and Eusebius of Cremona. Beyond these there is a grot or cell, which they say was the lodging-place of St Jerom when he translated the Bible. Another entrance leads to a vault or chapel, 12 feet wide and 40 long, whose floor is paved, and sides lined with white marble, and the roof is adorned with Mosaic work, now much decayed. At the end of this there is an arched concavity, with an altar, over which is a picture of the nativity, and under it a vault, the middle of which is a star made with stones of various colours, to mark the place where they say our Saviour was born; and near this is the manger where they pretend he was laid; it is hewn out of a rock, and is now flagged with white marble.

BETHLEHEM, a town of the Netherlands, in the province of Brabant, subject to the house of Austria. E. Long. 4. 40. N. Lat. 51. 2.

BETHLEHEMITES, or BETHLEMITES, in Church History, a sort of monks introduced into England in the year 1257, habited like the Dominicans, except that, on their breast, they wore a star with five rays, in memory of the star or comet which appeared over Bethlehem at the nativity of our Saviour. They were celled at Cambridge, and had only one house in England.

There is also an order of Bethlehemites still subsisting in Peru, who have convents at Lima; one called of the incurables, the other of our Lady of mount Carmel. These Bethlehemites came originally from the city of Guatimala in Mexico, where they were instituted by the venerable Peter Joseph of Betaneur, for the service of the poor. Innocent XI. in 1687, approved the institute. They have already nine convents in Peru.

The Bethlehemites, though outwardly of great simplicity, pass for the most refined politicians; insomuch as to be called the quintessence of the Carmelites and Jesuits. They are all fryars. For their almoner they choose a secular priest, whom they hire, and who has no vote in the chapter.

BETHORON, (anc. geog.), a town of Samaria; Upper and Nether, and both in the tribe of Ephraim, built by SHERA grand daughter of Ephraim, 1 Chron. viii. 24. both which were restored by Solomon, after falling to decay, 1 Kings ix. 17. and 2 Chron viii. 5. Their distance was almost the whole breadth of the tribe of Ephraim, the Upper being in the north, the Nether in the south, of that tribe, Joshua xvi. We know more of the Nether than of the Upper: it was situate on a mountain, and therefore Josephus and Jerome mention going up or ascending; and it stood on the public road to Lydda and Cæsarea, distant an hundred stadia, or twelve miles from Jerusalem: and on account of this vicinity, some allot it to the tribe of Benjamin.

BETH-PEOR, (anc. geog.) a town of the Reu-

benites, on the other side Jordan, at mount Fogor, 6. Bethphage
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Beth-peor. ver against Jericho, six miles above Livias. It had a temple sacred to the idol Baal Peor, Numbers xxv. 3. called Beel-Phegor by the Vulgate, interpreted Priapus by Jerome.

BETHPHAGE, (anc. geog.) a place at the west descent or declivity of mount Olivet, Matthew xxi. 1. From which it may be gathered, that the whole of that declivity, with a part of the valley, and the extreme skirts of the city, went under the common name of Bethphage.

BETHSAIDA, See BETHARAMPHTHA.

BETHSAN, or BETHSEAN, (anc. geog.) a town of Samaria, in the half tribe of Manasseh, on the borders of Galilee, about half a league from Jordan, on this side, having half of its territory in the Peraea: it was afterwards called Scythopolis: it was distant from Tiberias, situate on the lake Genesareth, 120 stadia, or 15 miles, to the south; and from Jerusalem to the north, 600 stadia, or 75 miles. As to the origin of the appellation Scythopolis, there scarce appears any thing in history that has a relation to it, but the irruption of the Scythians, in the time of the Medes, when they over-ran all Asia. It was the greatest city of all the Decapolis, (Josephus.) It is called Bælon by Stephanus.

BETHUNE (Maximilian de), Duke of Sully, grand master of the artillery, and marshal of France, sovereign prince of Enrichemont and Bois-Bell, Marquis of Rosny, and one of the ablest and most upright ministers France ever had, was descended from an illustrious house, and was born in 1560. He entered very young into the service of Henry of Bourbon then king of Navarre, afterwards Henry IV. of France, who was just seven years his elder. He was bred in the reformed religion, and continued in the profession of it to the end of his life, though from political motives he advised his master to abjure it, as the only method of putting an end to the miseries of France. After Henry had gained possession of the kingdom, Sully performed all the duties of a great and good minister, while his master exercised all the offices of a great and good king. He had been at the battles of Contras, Arques, and Ivry; at the sieges of Paris, Noyon, Rouen, and Laon; and signalized himself on every important occasion. In 1597 he was made chief overseer of the highways of France; and the following year was raised to the post of superintendent of the finances. Though he was then but 40 years of age, and had hitherto signalized himself only in the army, he put the king's finances in such order, that he paid his debts, which amounted to two hundred millions of livres, and laid up great sums in the king's treasury. In 1601 he was made grand-master of the artillery, the next year governor of the Bastille, and afterwards superintendent of the fortifications. He was then sent into England as ambassador extraordinary; and had, at his return, the government of Poictou. At last Henry IV. in 1606, erected in his favour the territory of Sully on the Loire into a duchy and peerage, and made him grand-master of the ports and havens. After the murder of that great prince in 1610, the Duke of Sully, who had served him with the greatest zeal and fidelity, was obliged to retire to one of his houses, where he enjoyed a private life; but in 1634 he was made marshal

Bethune
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Betonica.

of France, upon which he resigned the post of grand-master of the artillery. He died in his castle of Villebon on the 21st of December 1641, at 82 years of age. His Memoirs are ranked among the best books of French history: they contain a most particular account of whatever passed from the peace of 1570 to the death of Henry IV. in 1610: and acquire additional value from the many curious personal anecdotes preserved in them. They were translated into English by Mrs Lennox in 1757.

BETHUNE, a town of France, in Artois, containing upwards of 5000 inhabitants. There is an entrance into this city through four gates, and it is surrounded with walls and fortified. The city and the castle taken together are of a triangular figure, but the castle itself is a very irregular building. The houses are very indifferent, and the streets ill paved; however, there is a large handsome square, and several churches. In the marshy lands near the city there are several canals cut for the conveniency of whitening linen. It is seated on a rock by the river Belfe. E. Long. 2. 48. N. Lat. 50. 32.

BETIS, governor of Gaza under Darius, famous for his valour and loyalty; he defended a place of consequence with a few men against Alexander, who was there shot through the shoulder. Betis thinking him slain, returned triumphantly to the city; but in a second assault he was wounded and brought to Alexander, who cruelly ordered him to be put to death.

BETLEY, a town of Staffordshire in England. It is seated on the confines of the county, next to Cheshire, in a barren sandy soil. W. Long. 2. 15. N. Lat. 53. 0.

BETLIS, a strong town of Armenia or Turcomania belonging to a bey or prince of the country, who is very powerful, and is subject to neither the grand signior nor king of Persia. It lies on the road from Tauris to Aleppo, and the prince can stop caravans whenever he pleases; for the passage between the mountains is so narrow, that ten men can defend it against 1000. The town is seated between two mountains about a cannon-shot from each other, and the castle is on an eminence exactly in the middle. This eminence is in the shape of a sugar-loaf; and is so steep on all sides, that it is impossible to get up but by winding round about it. The people in and about the town are shepherds, but are ready to take up arms at the command of their prince. E. Long. 42. 40. N. Lat. 37. 20.

BETON, a name given by the French engineers to a kind of mortar, which they use in raising the foundations of masonry under water. It consists of twelve parts of pozzolans or Dutch tarrafs, six of good sand, nine of unstaked lime, thirteen of stone splinters about the size of an egg, and three of tile-dust or cinders, or scales of iron out of a forge; this being well worked together, is left to stand for about 24 hours, or till it becomes so hard as not to be separated without a pick-axe.

BETONICA, BETONY: A genus of the gymnospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 42d order, *verticillatæ*. The calyx is awned; the upper lip of the corolla is ascending and flattish; and the tube is cylindric.

Species, &c. Of this genus botanical writers enu-

merate the following species. 1. The officinalis, purple or wood betony. 2. The danica, or greater Danish betony. 3. The alpina, or least Alpine betony. 4. The orientalis, or eastern betony, with very long narrow leaves, and a thicker spike of flowers. 5. The incana, or hoary Italian betony, with a flesh-coloured flower. Of these the first species only deserves notice. It is a low plant growing in woods and shady places in several parts both of England and Scotland; the flowers come forth in June and July, of a purplish colour, and stand in spikes on the top of the stalks. The leaves and flowers have an herbaceous, roughish, somewhat bitterish taste, accompanied with a very weak aromatic flavour. This herb has been long a favourite among writers on the materia medica, who have not failed to attribute to it abundance of good qualities. Experience, however, does not discover any other virtue in betony than that of a mild corroborant: as such, an infusion or light decoction of it may be drank as tea; or a saturated tincture in rectified spirits given in suitable doses, in laxity or debility of the viscera, and diseases proceeding from thence. The powder of the leaves snuffed up the nose provokes sneezing; and hence betony is sometimes made an ingredient in sternutatory powders: this effect does not seem to be owing, as is generally supposed, to any peculiar stimulating virtues in the herb, but to the rough hairs with which the leaves are covered. The roots of this plant differ greatly in their quality from the other parts: their taste is very bitter and nauseous; taken in a small dose, they vomit and purge violently, and are supposed to have somewhat in common with the roots of hellebore. According to Simon Paulli and Bartholinus, this plant affects those who gather any considerable quantity of it with a disorder resembling drunkenness. Its leaves are sometimes smoked like tobacco.

BETONICA Aquatica. See SCROPHULARIA.

BETONICA Pauli. See VERONICA.

BETONY. See BETONICA.

BETROTHMENT, a mutual promise or compact between two parties for a future marriage. The word imports as much as giving one's troth; that is, true faith, or promise. Betrothment amounts to the same with what is called by civilians and canonists *sponsalia*, or "espousals;" sometimes *desponsation*, and by the French *fiancailles*.

BETTERTON (Thomas), the celebrated actor, was the son of Mr Betterton under-cook to King Charles I. and was born in Tothil-street Westminster in the year 1635. Having received the first rudiments of a genteel education, his fondness for reading induced him to request of his parents that they would bind him an apprentice to a bookeller, which was readily complied with, fixing on one Mr Rhodes near Charing-cross for his master. This gentleman, who had been wardrobe-keeper to the theatre in Blackfriars before the troubles, obtained a licence in 1659, from the powers then in being, to set up a company of players in the Cock-pit in Drury-Lane, in which company Mr Betterton entered himself, and, though not much above 20 years of age, immediately gave proof of the most capital genius and merit.

Presently after the restoration, two distinct theatres were established by royal authority; the one in Drury-Lane in consequence of a patent granted to Henry

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Betterton.

Betterton. Killigrew, Esq; which was called the *King's Company*: the other in Lincoln's-Inn-Fields, who styled themselves the *Duke of York's Servants*, the patentee of which was the ingenious Sir William Davenant: which last mentioned gentleman having long had a close intimacy with and warm friendship for Mr Rhodes, engaged Mr Betterton, and all who had acted under Mr Rhodes, into his company; which opened in 1662 with a new play of Sir William's, in two parts, called the *Siege of Rhodes*. In this piece, as well as in the subsequent characters which Mr Betterton performed, he increased his reputation and esteem with the public, and indeed became so much in favour with King Charles II. that by his majesty's special command he went over to Paris to take a view of the French stage, that he might the better judge what would contribute to the improvement of our own; and it was upon this occasion, as is generally supposed, that moving scenes were first introduced upon the English theatre, which before had been only hung with tapettry.

In the year 1676 he married one Mrs Sanderfon, a female performer on the same stage; who, both as an actress and a woman, was every thing that human perfection was capable of arriving at, and with whom he through the whole course of his remaining life possessed every degree of happiness that a perfect union of hearts can bestow.

When the duke's company removed to Dorset-Gardens, he still continued with them; and on the coalition of the two companies in 1684, he acceded to the treaty, and remained among them; Mrs Betterton maintaining the same foremost figure among the women that her husband supported among the male performers. And so great was the estimation that they were both held in, that in the year 1675, when a pastoral called *Calisto* or the *Chaste Nymp*, written by Mr Crown at the desire of Queen Catherine consort to Charles II. was to be performed at court by persons of the greatest distinction, our English Roscius was employed to instruct the gentlemen, and Mrs Betterton honoured with the tutorage of the ladies, among whom were the two princesses Mary and Anne, daughters of the Duke of York, both of whom succeeded to the crown of these realms. In grateful remembrance of which, the latter of them, when queen, settled a pension of L. 100 *per annum* on her old instructress.

In 1693, Mr Betterton having founded the inclinations of a select number of the actors whom he found ready to join with him, obtained, through the influence of the Earl of Dorset, the royal licence for acting in a separate theatre; and was very soon enabled, by the voluntary subscriptions of many persons of quality, to erect a new playhouse within the walls of the Tennis-Court in Lincoln's-Inn-Fields. To this step Mr Betterton is said to have been induced, partly by ill treatment from the managers, and partly with a view to repair, by the more enlarged profits of a manager, the loss of his whole fortune (upwards of L. 2000) which he had undergone in the year 1692, by adventuring it in a commercial scheme to the East-Indies. Be this, however, as it will, the new theatre opened in 1695 with Mr Congreve's *Love for Love*, the success of which was amazingly great. Yet in a few years it appeared that the profits arising from this theatre, opposed as it was by all the strength of Cibber's and Van-

brugh's writings at the other house, were very insignificant; and Mr Betterton growing now into the infirmities of age, and labouring under violent attacks of the gout, he gladly quitted at once the fatigues of management and the hurry of the stage.

The public, however, who retained a grateful sense of the pleasure they had frequently received from this theatrical veteran, and sensible of the narrowness of his circumstances, resolved to continue the marks of their esteem to him by giving him a benefit. On the 7th of April 1709 the comedy of *Love for Love* was performed for this purpose, in which this gentleman himself, though then upwards of 70 years of age, acted the youthful part of Valentine; as in the September following he did that of Hamlet, his performance of which the author of the *Tatler* has taken a particular notice of. On the former occasion, those very eminent performers, Mrs Barry, Mrs Bracegirdle, and Mr Dogget, who had all quitted the stage some years before, in gratitude to one whom they had had so many obligations to, acted the parts of Angelica, Mrs Frail, and Ben; and Mr Rowe wrote an epilogue for that night, which was spoken by the two ladies, supporting between them this once powerful supporter of the English stage. The profits of this night are said to have amounted to upwards of L. 500, the prices having been raised to the same that the operas and oratorios are at present; and when the curtain drew up, almost as large an audience appearing behind as before it.

The next winter Mr Betterton was prevailed on by Mr Owen M-Sweeney, then manager of the opera-house in the Hay-market (at which plays were acted four times a-week), to continue performing, though but seldom. In consequence of which, in the ensuing spring, viz. on the 25th of April 1710, another play was given out for this gentleman's benefit, viz. *The Maid's Tragedy* of Beaumont and Fletcher, in which he himself performed his celebrated part of Melanthus. This, however, was the last time of his appearing upon the stage. For having been suddenly seized with the gout, and being impatient at the thoughts of disappointing his friends, he made use of outward applications to reduce the swellings of his feet, which enabled him to walk on the stage, though obliged to have his foot in a slipper. But although he acted that day with unusual spirit and briskness, and met with universal applause, yet he paid very dear for this tribute he had paid to the public; for the fomentations he had made use of occasioning a revulsion of the gouty humour to the nobler parts, threw the distemper up into his head, and terminated his life on the 28th of that month. On the 2d of May his body was interred with much ceremony in the cloyster of Westminster, and great honour paid to his memory by his friend the *Tatler*, who has related in a very pathetic, and at the same time the most dignified manner, the process of the ceremonial. As an *author*, Mr Betterton had a considerable degree of merit. His dramatic works are, 1. *Amorous Widow*, a comedy. 2. *Dioclesian*, a dramatic opera. 3. *Masque* in the Opera of the *Prophets*. 4. *Revenge*, a comedy. 5. *Unjust Judge*, a tragedy. 6. *Woman made a Justice*, a comedy. As an *actor*, he was certainly one of the greatest of either his own or any other age; but those who are desirous of having him painted out in the most lively colours

Betue,
Betula.

to their imagination, we must refer to the description given of him by his cotemporary and friend Colley Cibber, in the Apology for his own life.

BETUE, or BERAW, a territory of the Low Countries in the duchy of Guelderland, between the rivers Rhine and Leek. The ground is very moist, and the rains often render the roads impassable. It is divided into the Upper and Lower.

BETULA, the BIRCH-TREE: A genus of the tetrandria order, belonging to the montecia class of plants; and in the natural method ranking under the 50th order, *Amentaceæ*. The calyx of the male is monophyllous, trifid, and trislorous; and the corolla is parted into four segments: The female calyx is monophyllous, trifid, and bislorous: The seeds have a membranaceous wing on both sides.

Species. 1. The alba, or common birch-tree, is fo well known as to need no description. It is in general of a humble growth; however, in a soil and situation it affects, it will rise to a great height, and swell to a considerable size. There is a spruce in its general appearance in summer; and in winter its bark sometimes exhibits, in its variegations of red and white, no indelicate object. Were it not for its being so commonly seen upon poor soils, and in bleak inhospitable situations, as well as for the mean and degrading purposes to which it is universally put, the birch would have some claim to being admitted to a place among the ornamentals. 2. The nana, or dwarf-birch, with roundish leaves, grows naturally in the northern parts of Europe and on the Alps. It seldom rises above two or three feet high, having slender branches garnished with round leaves, but seldom produces flowers here. It is preserved in some curious gardens for the sake of variety, but is a plant of no use. 3. The lenta, or Canada birch, grows to a timber-tree of 60 or more feet in height. The leaves are heart-shaped, oblong, smooth, of a thin consistence, pointed, and very sharply serrated. They differ in colour; and the varieties of this species go by the names of, 1. Dusky Canada birch; 2. White-paper birch; 3. Poplar-leaved Canada birch; 4. Low-growing Canada birch, &c.—4. The nigra, or black Virginia birch-tree, will grow to upwards of 60 feet in height. The branches are spotted, and more sparingly set in the trees than the common sorts. The leaves are broader, grow on long footstalks, and add a dignity to the appearance of the tree; and as it is naturally of upright and swift growth, and arrives at so great a magnitude, Hanbury thinks it ought to have a share among our forest-trees, and to be planted for standards in open places, as well as to be joined with other trees of its own growth in plantations more immediately designed for relaxation and pleasure. There are several varieties of this species, differing in the colour, size of the leaves, and shoots; all of which have names given them by nurserymen, who propagate the different sorts for sale; such as 1. The broad-leaved Virginia birch; 2. The poplar-leaved birch; 3. The paper birch; 4. The brown birch, &c.—5. The alnus, or alder-tree, will grow to a large timber-tree. Like the birch, it suffers, as an ornamental, from an association of ideas; we not only find it very common, but we see it in low, dreary, dirty situations: nevertheless, if the alder be suffered to form its own bed in an open advantageous situation, it is by no means an un-

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ightly tree: in Stow Gardens, in what is called the old part, there are some very fine ones: and in coming round from the house by the road leading to Buckingham, there is one which is truly ornamental. Hacked and disfigured in the manner in which alders in general are, they have but little effect in doing away the unsightliness of a swamp; but if they were suffered to rise in groups and singlets, open enough to have room to form their full tops, and close enough to hide sufficiently the unseemliness of the surface, even a moor or a morass seen from a distance might be rendered an agreeable object. Wherever the soil is or can be made pasturable, the alder should by no means be permitted to gain a footing. Its suckers and seedlings poison the herbage; and it is a fact well known to the observant husbandman, that the roots of the alder have a peculiar property of rendering the soil they grow in more moist and rotten than it would be if not occupied by this aqueous plant. Plantations of alders should therefore be confined to swampy, low, unpasturable places; except when they are made for the purposes of ornament; and in this case the native species ought to give place to its more ornamental varieties, of which Hanbury makes five; namely, 1. The long-leaved alder; 2. The white alder; 3. The black alder; 4. The hoary-leaved alder; 5. The dwarf alder.

Culture. The first sort is easily propagated: it may be raised either from seeds or layering; and it will flourish in almost any soil and situation. The method of propagating the foreign sorts of birch is, 1. From seeds. We receive the seeds from America, where they are natives; and if we sow them in beds of new mould, covering them over about a quarter of an inch deep, they will readily grow. During the time they are in the nursery, they must be constantly weeded, watered in dry weather, and when they are one or two years old, according to their strength, they should be planted in the nursery in rows in the usual manner. Weeding must always be observed in summer, and digging between the rows in winter; and when the plants are about a yard or four feet high, they will be of a good size to be planted out for the shrubbery-quarters. A part, therefore, may be then taken up for such purposes; whilst the remainder may be left to grow for standards, to answer such other purposes as may be wanted. 2. These trees may also be propagated by layers; and this is the way to continue the peculiarities in the varieties of the different sorts. A sufficient number of plants should be produced for this purpose, and set on a spot of double-dug ground, three yards distance from each other. The year following, if they have made no young shoots, they should be headed to within half a foot of the ground, to form the stool, which will then shoot vigorously the summer following; and in the autumn the young shoots should be planted near the stools, and the tender twig layered near their ends. They will then strike root, and become good plants by the autumn following; whilst fresh twigs will have sprung up from the stool, to be ready for the same operation. The layers, therefore, should be taken up, and the operation performed as above. If the plants designed for stools have made good roots the first year, they need not be headed down, but planted near the ground, and all the young twigs layered. Thus may an immediate crop be raised the way, whilst

Betula. young shoots will spring out in great plenty below the plashed part, in order for layering the succeeding year. This work, therefore, may be repeated every autumn or winter; when some of the strongest layers may be planted out, if they are immediately wanted; whilst the others may be removed into the nursery, to grow to be stronger plants, before they are removed to their destined habitations. 3. Cuttings also, if set in a moist shady border the beginning of October, will frequently grow: But as this is not a sure method, and as these trees are so easily propagated by layers, it hardly deserves to be put in practice.

The propagation of the alder, like that of the other aquatic natives, is very easy: it may be raised either from suckers, from cuttings, or by layering; and no doubt from seed, though this mode of propagation is seldom practised in this country. Evelyn mentions a peculiar method of raising this tree from cuttings or truncheons, which he calls the *Jersey-manner*: he says, "I received it from a most ingenious gentleman of that country: it is, to take truncheons of two or three feet long at the beginning of the winter, and to bind them in faggots, and place the ends of them in water till towards the spring, by which season they will have contracted a swelling spire or knur about that part, which being set does (like the gennet-moil apple-tree) never fail of growing and striking root." Millar recommends truncheons of three feet long, two feet of which to be thrust into the ground. Hanbury says that truncheons are uncertain, and strongly recommends layering; which for preserving the varieties, as well as for ornamental plantations of alders in general, is the best method.

Uses. In some of the northern parts of Europe the wood of the white birch is much used for making carriages and wheels, being hard and of long duration. In France it is generally used for making wooden shoes, and in Britain for making womens shoe-heels, packing-boxes, brooms, hoops, &c. It also makes very good fuel, and is planted along with hazel to make charcoal for forges. The bark of the birch tree seems in a manner incorruptible. In Sweden the houses are covered with it, and it lasts many years. It frequently lapsens that the wood is entirely rotten, when the bark is perfectly sound and good. In Kamptschatka it is used for making drinking cups. It abounds with a resinous matter, to which its durability is certainly owing. In consequence of this matter, it is highly inflammable: and in the northern countries torches are made of this bark sliced and twitted together. The bark itself consists of two different substances; a thick brittle brownish red one; and several very thin, smooth, white, transparent membranes. In these last the inflammable property resides. The thick brittle part is less resinous, and has a roughish taste. It has been thought to possess some medical virtues, but concerning these experience has as yet determined nothing certain. Upon deeply wounding or boring the trunk of the tree in the beginning of spring, a sweetish juice issues forth, sometimes, as is said, in so large quantity as to equal the weight of the whole tree and root; one branch will bleed a gallon or more in a day. This juice is recommended in scorbutic disorders, and other foulnesses of the blood; its most sensible effect is to promote the urinary discharge. By proper fermentation with the addition of

fugar, this juice makes a pleasant wine. The bark of the Canada birch is very light, tough, and durable; and the inhabitants of America use it for canoes. Notwithstanding these uses to which the birch is applicable when already in possession, the planting of it is not recommended, except in bleak and barren situations where no other tree will thrive, and except as a screen and guardian to nurse up and defend from chilling blasts plants of greater value.

The alder tree flourishes best in low marshy situations, in which it is frequently planted to make hedges, and is also of great use for securing the banks of rivers. Grass grows well beneath its shade: the wood is soft and brittle; but lasts a long time under water, and consequently is of use for pipes, and to lay under the foundations of buildings situated upon bogs. Womens shoe heels, ploughman's clogs, and various articles of the turner kind, are made of it. The bark gives a red colour, and with the addition of copperas a black: it is chiefly used by fishermen to stain their nets. In the Highlands of Scotland near Dundonnell, Mr Penant says, the boughs cut in the summer, spread over the fields, and left to rot in the winter, are found to answer as a manure. In March, the ground is cleared of the undecayed parts, and then ploughed. The fresh gathered leaves are covered with a glutinous liquor; and some people strew them on their floors to kill fleas. These insects are said to be entangled in the glutinous liquor of the leaves, as birds are by birdlime. The whole plant is astringent, and its bark has been recommended in intermittent fevers. The bark of the black berry-bearing alder is said to be the most certain purge for horned cattle in obstinate constipations of the bowels. Horses, cows, goats, and sheep, eat the leaves of all the species of *betula*; but swine refuse them. When eaten by cows, they are said greatly to increase the quantity of the milk.

BETULEIUS (Sixtus), an able grammarian, a good Latin poet, and philosopher, born at Memmingen in the year 1500; his true name was *Birck*. He taught the belles lettres and philosophy with reputation; and became principal of the college of Augsburg, where he died on the 16th of June 1554. He published several works in prose; and his dramatic pieces of Joseph, Susannah, and Judith, are esteemed.

BEVECUM, a town of the Austrian Netherlands, in the province of Brabant. E. Long. 4. 50. N. Lat. 50. 45.

BEVEL, among masons, carpenters, &c: a kind of square, one leg whereof is frequently crooked, according to the sweep of an arch or vault. It is moveable on a centre, and so may be set to any angle.

BEVEL-Angle, any other angle besides those of 90 or 45 degrees.

BEVELAND (North and South), two islands in the province of Zealand, between the eastern and western branches of the river Scheld, making part of the United Provinces.

BEVELLING, in ship-building, the art of hewing a timber with a proper and regular curve, according to a mould which is laid on one side of its surface. "In order to hew any piece of timber to its proper bevel, it will be necessary, first, to make one side *fair* and *out of winding*; a term used to signify that the side of a timber should be a plane. If this side be uppermost,

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permost, and placed horizontally, or upon a level, it is plain, if the timber is to be hewed square, it may be done by a plummet and line; but if the timber is not hewed square, the line will not touch both the upper and lower edge of the piece; or if a square be applied to it, there will be wood wanting either at the upper or lower side. This is called *within* or *without* a square. When the wood is deficient at the under side, it is called *under bevelling*; and when it is deficient on the upper side, it is called *standing-bevelling*; and this deficiency will be more or less according to the depth of the piece; so that, before the proper bevellings of the timbers are found, it will be sometimes very convenient to assign the breadth of the timbers; nay, in most cases it will be absolutely necessary, especially afore and abaft: though the breadth of two timbers, or the timber and rion, which includes the two timbers and the space between them, may be taken without any sensible error, as far as the square body goes. For as one line represents the moulding side of two timbers, the fore-side of the one being supposed to unite with the aft-side of the other; the two may be considered as one entire piece of timber." *Murray's Ship-building.*

BEVERAGE, in a general sense, signifies a *drink*: hence nectar is said to be the beverage of the gods. In writers of the middle age, beverage, *beveragium*, or *biberagium*, denotes money given to an artificer, or other person, to drink, over and above his hire or wages.

BEVERIDGE (William), a learned English bishop, in the beginning of the 18th century, was born in the year 1638, and educated in St John's college Cambridge, where he distinguished himself very early by his extensive learning, and particularly by his knowledge of the oriental languages. Upon the deprivation of Dr Thomas Ken, bishop of Bath and Wells, for not taking the oaths to the government in 1691, he refused the offer of that see, tho' he was then chaplain to King William and Queen Mary. In 1704 he was consecrated to the bishopric of St Asaph; in which high function he so behaved himself all along, and discharged it in so exemplary a manner, that he approved himself a truly primitive prelate. He died at his lodgings in the Cloisters in Westminster-abbey in 1707, aged 71. As his whole life was spent in acts of piety and charity, so he gave remarkable instances of both at his death, leaving the bulk of his estate for the propagation of the gospel, and promoting of Christian knowledge, at home as well as abroad. His *Private Thoughts upon a Christian Life* is a very popular, though in many points a very exceptionable, book. He wrote several other works on various subjects, particularly on the oriental tongues.

BEVERLAND (Hadrian), a man of excellent genius in the end of the 16th century, but who prostituted it in the study and composition of books of a very obnoxious kind. He was a perfect master of Ovid, Catullus, Petronius, and authors of that stamp. He is famous for his book on Original Sin, in which he maintained, that Adam's sin consisted in his commerce with his wife, and that original sin is nothing else but the inclination of the sexes to each other: it was condemned to be burnt. He led a scandalous life, but seems to have repented of his wicked manners and lewd writings; for he published a treatise in the end of his

life, *De Fornicatione cavenda*, in 1698. It is said he died mad.

BEVERLEY, a town of Yorkshire, governed by a mayor, a recorder, 12 aldermen, &c. and sends two members to parliament. The minster here is a very fair and neat structure, and the roof is an arch of stone. In it are several monuments of the Percies, Earls of Northumberland, who had added a little chapel to the choir, in the windows whereof there are several pictures of that family painted on glass. At the upper end of the choir, at the right of the altar-place, stands the freed-stool, made of one entire stone, to which every one that fled had a right of protection. At the upper end of the body of the church, next the choir, hangs an ancient table, with the picture of King Athelstane, who founded the church. Between them is this inscription:

Als free make I thee,
As heart can wish, or egh can see.

Hence the inhabitants pay no toll in any town or port in England. In the body of the church stands an ancient monument, called the *Virgins Tomb*, because two virgin-sisters lie buried there, who gave the town a piece of land, into which any free man may put three milk cows from Lady-day to Michaelmas. At the lower end of the body of the church is a large font of agate stone.

Near the minster, on the south side of it, is a place called *Hall-Garth*, wherein they keep a court of record, called *Provoost's Court*. In this cause arising within the liberties may be tried for any sum. The liberties contain above 100 towns and parts of towns, in Holderness and other parts of the east-riding belonging to it. The town is a mile in length, having pleasant springs running quite through it. It is beautified with two stately churches; and has a free-school, with two fellowships, six scholarships, and three exhibitions in St John's college, Cambridge, belonging to it; besides six alms-houses, where none are admitted but those that give bond to leave their effects to the poor when they die. The principal trade of this town is making malt, oat-meal, and tanned leather; and the poor people chiefly support themselves by making bone-lace. About a mile east from the town, there is a mineral water, which cures eruptions of the skin, and is beneficial in the king's evil. E. Long. o. 9. N. Lat. 53. 50.

BEVERLY (John of), in Latin *James Beverlicus*, archbishop of York in the eighth century, was born of a noble family at Harpham in Northumberland, and was justly esteemed one of the best scholars of his time. He was first a monk, and afterwards abbot of the monastery of St Hilda, when his merit recommended him to the favour of Alfred king of Northumberland, who in the year 685 advanced him to the see of Hildesdale or Hexham, and in 687 translated him to the archbishopric of York. This prelate was tutor to the famous Bede; and lived in the strictest friendship with Aeca and other Anglo-Saxon doctors, several of whom he engaged to write comments on the Holy Scriptures. In 744, he founded a college at Beverly for secular priests; and after he had governed the see of York 34 years, being tired of the tumults

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tumults and confusions that prevailed in the church, divested himself of his episcopal character, and retired to Beverly; where he died four years after, on the 7th of May 721.—Bede and other monkish writers ascribe several miracles to him. Between 300 and 400 years after his death, his body was taken up by Alfric archbishop of York, and placed in a shrine richly adorned with silver, gold, and precious stones: and in 1416, the day of his death was, by a synod held at London, appointed a festival. We are told that William the Conqueror, when he ravaged Northumberland with a numerous army, spared Beverly alone, out of a religious veneration for St John of that place. This prelate wrote some pieces which are mentioned by Bale and Pits, viz. 1. *Pro Luca expendenda*. 2. *Homilie in Evangelia*. 3. *Epistole ad Hildam Abbatissam*. 4. *Epistole ad Herebaldum, Andenun, et Bertinum*.

BEVERUNGEN, a town of Germany, in the diocese of Paderborn, seated at the confluence of the rivers Beve and Weier, in E. Long. 9. 30. N. Lat. 51. 40.

BEVILE, in heraldry, a thing broken or opening like a carpenter's rule: Thus we say, he beareth argent, a chief bevile, vert, by the name of *beverlis*.

DEVIN (Elway), a musician eminently skilled in the knowledge of practical composition, flourished towards the end of Queen Elizabeth's reign. He was of Welch extraction, and had been educated under Tallis, upon whose recommendation it was that in 1589 he was sworn in gentleman extraordinary of the chapel; from whence he was expelled in 1637, it being discovered that he adhered to the Romish communion. He was also organist of Bristol cathedral, but forfeited that employment at the same time with his place in the chapel. Child, afterwards Doctor, was his scholar. He has composed fundry services, and a few anthems. Before Bevin's time the precepts for the composition of canon were known to few. Tallis, Bird, Waterhouse, and Farmer, were eminently skilled in this most abstruse part of musical practice. Every canon, as given to the public, was a kind of enigma. Compositions of this kind were sometimes exhibited in the form of a cross, sometimes in that of a circle; there is now extant one resembling a horizontal sundial: and the *resolition* (as it was called) of a canon, which was the resolving it into its elements and reducing it into score, was deemed a work of almost as great difficulty as the original composition. But Bevin, with a view to the improvement of students, generously communicated the result of many years study and experience in a treatise which is highly commended by all who have taken occasion to speak of it. This book was published in 4to 1631, and dedicated to Goodman bishop of Gloucester, with the following title: 'A briefe and short instruction of the art of musicke, to teach how to make discant of all proportions that are in use: very necessary for all such as are desirous to attain to knowledge in the art; and may by practice, if they can sing, soone be able to compose three, four, and five parts, and also to compose all sorts of canons that are usuall, by these directions of two or three parts in one upon the plain song.' The rules contained in this book for composition in general are very brief; but for the composition of canon there are in it a great variety of examples of almost all the possible forms in which it is

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capable of being constructed, even to the extent of 60 parts.

BEWDLY, a town of Worcestershire in England, seated on the bank of the river Severn, in W. Long. 2. 20. N. Lat. 52. 25. It has its name *Bewdley*, *Beawley*, or *Beaulieu*, from its pleasant situation on the declivity of a hill overlooking the river, and commanding a fine prospect of the country, and formerly of the forest of Wyre, remarkable for its tall stately oaks and other trees, which have since been either blown or cut down. It was formerly accounted so delightful a place, that Henry VII. built a house here for prince Arthur, which he called *Tiken-hall*. Bewdley sent burgesses to parliament very early, and had charters and great privileges from Edward IV. and Henry VII. which were confirmed, with the addition of others, by Henry VIII. in whose time it was annexed to the county of Worcester. King James I. granted it a charter; of which a surrender was procured in Charles II.'s time, and the corporation was new-modelled. King James II. compelled it to accept of a new charter; but the former surrender, upon a trial, was held void, and a new charter was obtained of Queen Anne. In consequence of this it is governed by a bailiff and burgesses, recorder, steward, town-clerk, &c. The town is neat and well built; and carries on a considerable trade, by means of the Severn, in salt, glass, iron-ware, and Manchester goods; but its chief manufacture is in caps, commonly called *Menmouth caps*. It has a good market for corn, malt, leather, and hops.

BEWITS, in falconry, pieces of leather, to which a hawk's bells are fastened, and buttoned to his legs.

BEY, among the Turks, signifies a governor of a country or town. The Turks write it *begh*, or *bek*, but pronounce it *bey*.

This word is particularly applied to a lord of a banner, whom, in the same language, they call *sangiac big* or *bey*. Every province in Turkey is divided into seven sangiacs, or banners, each of which qualifies a bey; and these are all commanded by the governor of the province, whom they also call *begler-beg*, that is, lord of all the beys or beys of the province: these beys are much the same as bannerets were formerly in England.

Bey of Tunis, denotes a prince or king thereof; answering to what at Algiers is called the *dey*. In the kingdom of Algiers, each province is governed by a bey, or vice-roy, who is appointed and removed at pleasure by the dey; but has a despotic power within his jurisdiction; and at the season for collecting the tribute from the Arabs, is assisted by a body of troops from Algiers.

BEYS (Giles), a celebrated printer at Paris, in the 16th century, and the first introducer of the consonants j and v.

BEZA (Theodore), one of the principal pillars of the reformed church, was born at Vezelai, in Burgundy, June 24th, 1519. He was brought up by his uncle Nicholas de Beza, counsellor of the parliament of Paris, till the month of December 1528, when he sent him to study at Orleans, and afterwards at Bourges, where he was under the care of Melethior Wolmar, under whom he made an extraordinary progress in polite learning, and from him imbibed the principles of Calvinism. His uncle intended him for the

Bewdly
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Beza.' the bar; but the law not suiting his disposition, he spent most of his time in reading the Greek and Latin authors, and in composing verses. In 1539, he took up his licentiate's degree, and went to Paris. He fell into snares in his youth, and wrote some licentious things. Sickness awakened him; and he pursued a vow he had formerly made, of entering into the reformed religion. According to this resolution he went to Geneva, and made public profession of the reformed religion. In 1549, he accepted of the Greek professorship at Lausanne, where he also read lectures in French on the New Testament to the refugees of both sexes who dwelt in that city. Having settled at Geneva, he adhered to Calvin in the strictest manner, and became in a little time his colleague in the church and in the university. He was sent to Nerae, at the solicitation of some great men of the kingdom, to convert the king of Navarre, and to confer with him upon affairs of importance. This was when the Guises had got the authority under the reign of Francis II. to the prejudice of the princes of the blood. The king of Navarre having testified, both by letters and deputies, that he desired that Beza might assist at the conference of Poissy, the senate of Geneva consented. The assembly hearkened attentively to his harangue, till speaking of the real presence, he said, that the body of Jesus Christ was as distant from the bread and wine, as the highest heaven is from the earth. This made a murmur: some cried out, *Blasphemavit!* others got up to go away. Cardinal de Tournon, who sat in the first place, desired the king and queen either to silence Beza, or to permit him and his company to withdraw. The king did not stir, nor any of the princes, and leave was given to go on. Throughout the whole conference he behaved himself with great ability. He often preached before the queen of Navarre, the prince of Condé, and in the suburbs of Paris. After the massacre of Vassy, he was deputed to the king to complain of this violence. The civil war followed soon after, during which the Prince of Condé kept him with him; and while the prince was imprisoned, he lived with Admiral de Coligni, and did not return to Geneva till after the peace 1563. In 1571, he was chosen moderator at the national synod of Rochelle; and the year after, assisted at that of Nismes; after this, he assisted at the conferences of Monthelard, and at those of Bern. The infirmities of old age beginning to fall heavy upon him in 1597, he could seldom speak in public: and at last he left it off entirely in the beginning of the year 1600. However, in 1597, he wrote some animated verses against the Jesuits, on occasion of the report that was made of his death, and of his having before he died made profession of the Roman faith. He lived till the 13th of October 1605. He was a man of extraordinary merit, and one who did great services to the Protestant cause. This, however, exposed him to innumerable slanders and calumnies; but he showed both to the Catholics and Lutherans, that he understood how to defend himself. He wrote, 1. A Translation of the New Testament; 2. Turned the Psalms into Latin verse; 3. Published a Treatise on the Sacraments; 4. Some Sermons on the Passion of Jesus Christ and on Solomon's Song; 5. A Version of the Canticles, in lyric verse; 6. A

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French tragi-comedy, intitled, The Sacrifice of Abraham; and many other pieces.

BEZANS, cotton cloths, which come from Bengal; some are white, and others striped with several colours.

BEZANTLER, the branch of a deer's horns next below the brow-antler.

BEZOAR, in natural history and medicine, a general name for certain animal-substances supposed to be effectual in preventing the fatal consequences of poison. The word comes from the Persian *batzcher*, *bazcher*, or *pabazar*, which signifies an antidote.

The first mention made of bezoar is in Avenzoar, an Arabian physician, who gives a very romantic account of its origin. He describes it as generated of the tears or gum of the eyes of stags; who, after eating serpents, used to run into the water up to the nose, where they stood till their eyes began to ooze a humour, which, collecting under the eye-lids, gradually thickened and coagulated, till, being grown hard, it was thrown off by the animal in rubbing frequently. Other opinions no less fabulous obtained till the time of Garcias al Houto, physician to the Portuguese viceroy of the Indies, who gave the first genuine account of it. Kempfer afterwards gave a description of it, with some new particulars.

The bezoar is a calculous concretion found in the stomach of certain animals of the goat kind. See CAPRA. It is composed of concentric coats surrounding one another, with a little cavity in the middle, containing a bit of wood, straw, hair, or the like substances.

There are two sorts of bezoar; one brought from Persia and the East-Indies, the other from the Spanish West-Indies. The first or best sort, called *oriental bezoar*, is of a shining dark-green or olive colour, and an even smooth surface; on removing the outward coat, that which lies underneath it appears likewise smooth and shining. The *occidental* has a rough surface, and less of a green colour than the foregoing; it is likewise much heavier, more brittle, and of a looser texture; the coats are thicker, and on breaking exhibit a number of stix curiously interwoven. The oriental is generally less than a walnut; the occidental for the most part larger, and sometimes as big as a goose egg. The first is universally most esteemed, and is the only sort now retained by the London college; the Edinburgh, in the edition of their pharmacopœia preceding the present, directed both; but they now seem to allow them to be used promiscuously, retaining in their catalogue only the name *bezoar lapis*.

This stone is in high esteem among the Persians, and even of greater value than in Europe; which, with sundry other circumstances needless to relate here, has given occasion to many to suspect, that the true bezoar is never brought to us. Some authors relate with great confidence, that all the stones commonly sold under this name are artificial compositions. That some of them are so, is evident; hence the great differences in the accidents which different persons have given of their qualities: the stones examined by Slare as oriental bezoar did not dissolve in acids; those which Grew and Boyle made trial of, did; those employed by Geoffroy (in some experiments related in the French memoirs

Bezoar.

1710) did not seem to be acted on by rectified spirit; whilst some of those examined by Neumann at Berlin almost totally dissolved therein. The common mark of the goodness of this stone, is its striking a deep green colour on white paper that has been rubbed with chalk.

Bezoar was not known to the ancient Greeks, and is first taken notice of by the Arabians (as above mentioned), who extol it in a great variety of disorders, particularly against poisons. Later writers also bestow extraordinary commendations on it as a sudorific and alexipharmac; virtues to which it certainly has no pretence. It has no smell or taste, is not digestible in the stomach of the animal in which it is found, and is scarce capable of being acted on, by any of the juices of the human body. It cannot be considered in any other light than as an absorbent; and is much the weakest of all the common substances of that class. It has been given to half a dram, and sometimes a whole dram, without any sensible effect; though the general dose (on account of its great price) is only a few grains.

BEZOAR, in a more extensive sense, includes all substances formed *stratum super stratum* in the stomachs or intestines of animals; in which sense pearls, the concretions called *crabs-eyes*, &c. belong to the class of bezoars. To this also belong the hippolithus, or *bezoar equinum*, a stone sometimes found in the stomach or intestines of a horse; the monkey-bezoar, a stone said to be found in the stomachs of certain monkeys in Brazil and the East-Indies, harder than the oriental bezoar, of a dark-green colour, and very costly on account of its scarcity.—*Bezoar bovinum*, is a yellowish stone found in the ox's gall-bladder.—*Human bezoars* are stony substances found in the intestines of several persons, formed from the stones of plums, or other fruits, retained in the cœcum or other guts, and growing coated over, of which we have an instance given by Dr Cole, Phil. Trans. n^o 235.—*Bezoar microscopium* is the same with the human calculus; and is various in its degrees of hardness, as well as in its size and figure. It has been used in the place of the more costly sorts.—As to the *bezoar hystricis*, a concretion found in the gall-bladder of an Indian porcupine; and the German bezoar, or that found in mountain-deer, especially on the Alps; these, not being stones, are more properly called by late writers *agagropilæ*; the former consisting of woolly fibres, and a bitter friable matter, having neither laminæ nor membranes; the latter being a ball of hair or herbs, or perhaps roots, compacted in the stomach of the animal.—They are all, as medicines, unworthy of regard.—The bezoar bovinum, or ox-bezoar, is used by miniature-painters in several casts of yellow.

BEZOAR-mineral. See PHARMACY-Index.

Fossil BEZOAR, is a kind of figured stone, formed, like the animal bezoar, of several coats or strata ranged round some extraneous body which forms a nucleus, and supposed to have the same virtues. It is found chiefly in Sicily, in sand and clay pits. It is of a purple colour, with a rough surface, the size of a walnut, and light. When broken, it is found to be an irony crust, containing in its hollow a fine greenish white earth, resembling pale bezoar. The earth is used, and

not the shells. It seems to be of the nature of bole armeniac. It is also called *Sicilian earth*.

BEZOARDIC, an appellation given to whatever partakes of the nature of bezoar; also to compound medicines whereof bezoar makes an ingredient.

BIA, in commerce, a name given by the Siamese to those small shells which are called *covories* throughout almost all the other parts of the East Indies. See COWRIES.

BIÆUM, βιζιον, in rhetoric, denotes a kind of counter-argument, whereby something alleged for the adversary is retorted against him, and made to conclude a different way: for instance, *Occidisti, quia adstitisti interf. &c.*—*Quævis. Immo quia adstiti interfecto, non occidi; nam si id esset, in fugam me coniecissem.* "You killed the person, because you were found standing by his body. *Biæum*, Rather I did not kill him because I was found standing by his body; since, in the other case, I should have fled away."

BIÆUM, in the Grecian laws, was an action brought against those who ravished women, or used violence to any man's person.

BIAFAR, or BIATRA, a kingdom of Africa, situated to the east of Benin, to the west of Medra, from which it is divided by a chain of mountains, and extending southward to the fourth degree of north latitude. The natives are the most of all negroes addicted to, and infatuated with, magic; imagining themselves capable of causing rain, thunder, and lightning: therefore they worship the devil with great zeal, and even sacrifice their children to him.

BIAFORA, in the customs of the middle age, a form of cry or alarm to arms; on the hearing whereof, the inhabitants of towns or villages were to issue forth, and attend their prince. The word seems originally from Gascony; and the Italians even now on a sudden insurrection of the people, commonly cry, *Via-fora*. by a usual change of the letter B into V.

BIARCHUS, an officer in the court of the emperors of Constantinople, intrusted with the care and inspection of the provisions of the soldiery.

BIALOGOROD, or AKERMAN, a strong town of Bessarabia, in European Turkey. It is seated on a lake called *Vidono*, near the sea-side, in E. Long. 22. 50. N. Lat. 46. 24.

BIANA, a town of Asia in the dominions of the Great Mogul, remarkable for its excellent indigo. E. Long. 77. 0. N. Lat. 26. 20.

BIANCHI (Francesco), called *Il Frari*, an eminent painter, was born at Modena; and had the honour of being master to one of the most esteemed painters that ever appeared, Antonio Correggio. His colouring was delicately fine; his attitudes full of grace; and his invention extremely grand. His works had an astonishing beauty, and are prized as highly as even those of Correggio. He died in 1520.

BIANCHINI (Francis), one of the most learned men of his time, was born at Verona in 1662, of a noble and ancient family. His taste for natural philosophy and mathematics induced him to establish the academy of Aletosili, at Verona. He went to Rome in 1684; and was made librarian to cardinal Ottoboni, who was afterwards Pope under the name of Alexander VIII. He also became canon of St Mary de la Rotonda, and

Bezoardic
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Bianchini.

at length of St Lawrence in Damasco. He was esteemed by the learned; and was a member of many academies. He published several ingenious dissertations, &c. and died in 1729, aged 67.

BIAS, one of the seven sages of Greece, flourished about 608 before Christ. He was accustomed to say, "It is a sickness of the mind to wish for impossible things." During the siege of Priena, his native city, being asked why he was the only one who retired from the place without carrying any thing with him, he replied, That he carried his all with him; meaning, that his knowledge and virtue were the only blessings that were peculiarly his own, since they could not be taken from him. He expired while pleading for one of his friends.

BIAS, or *Biafs*, in a general sense, the inclination or bent of a person's mind to one thing more than another.—It also signifies the lead or weight put into a bowel, that draws or turns the course of it any way to which the bias looks.

BIBERACH, a free and imperial city of Suabia in Germany. It has a large manufacture in fustians, and is seated in a pleasant fertile valley on the river Rufs. E. Long. 10. 2. N. Lat. 48. 4.

BIBERSBERG, a town of Upper Hungary, situated in E. Long. 17. 25. N. Lat. 48. 35.

BIBIENA (Ferdinand Galli), an excellent painter and architect, was born at Bologna in 1657; and was furnished *Bibiena* from a territory of that name in Tuscany, in which his father was born. He acquired such reputation by his skill in architecture, the decorations of the theatre, and perspective, that the duke of Parma invited him to his court, and made him his first painter and architect. Bibiena at length went to the emperor's court, where he had the same honours and advantages. He wrote two books of architecture; and died at Bologna, at above 80 years of age. His sons followed with success the same professions.

BIBLE (in Greek *βιβλος*, *the book*), a name applied by Christians by way of eminence or distinction to the collection of sacred writings, or the holy scriptures of the Old and New Testaments; known also by various other appellations, as, the Sacred Books, Holy Writ, Inspired Writings, Scriptures, &c. The Jews styled the Bible (that is, the Old Testament) *mikra*; which signifies *Lesson* or *Lecture*.

This collection of the sacred writings containing those of the Old and New Testament, is justly looked upon as the foundation of the Jewish as well as the Christian religion. The Jews, it is true, acknowledged only the scriptures of the Old Testament, the correcting and publishing of which is unanimously ascribed, both by the Jews and Christians, to Ezra. Some of the ancient fathers, on no other foundation than that fabulous and apocryphal book, the second book of Esdras, pretend, that the scriptures were entirely lost and destroyed at the Babylonish captivity, and that Ezra restored them all again by divine revelation. What is certain is, that in the reign of Josiah there was no other book of the law extant besides that found in the temple by Hilkiah; from which original, by order of that pious king, copies were immediately written out, and search made for all the other parts of the scriptures, (2 Kings xxii.); by which means copies of the whole became multiplied among the people, who carried them with them into their captivity. Af-

ter the return of the Jews from the Babylonish captivity, Ezra got together as many copies as he could of the Sacred writings, and out of them all prepared a correct edition, disposing the several books in their proper order, and settling the canon of scripture for his time. These books he divided into three parts. 1. The Law. 2. The Prophets. 3. The Cetubim or Hagiographia, i. e. *The Holy Writings*.

I. The Law contains. 1. Genesis. 2. Exodus. 3. Leviticus. 4. Numbers. 5. Deuteronomy.

II. The writings of the prophets are, 1. Joshua. 2. Judges, with Ruth. 3. Samuel. 4. Kings. 5. Isaiah. 6. Jeremiah, with his Lamentations. 7. Ezekiel. 8. Daniel. 9. The twelve minor Prophets. 10. Job. 11. Ezra. 12. Nehemiah. 13. Esther.

III. And the Hagiographia consists of, 1. The Psalms. 2. The Proverbs. 3. Ecclesiastes. 4. The Song of Solomon. This division was made for the sake of reducing the number of the sacred books to the number of the letters in their alphabet, which amount to 22. At present, the Jews reckon 24 books in their canon of scripture, in disposing of which the law stands as it did in the former division, and the prophets are distributed into the former and latter prophets.

The former prophets are, Joshua, Judges, Samuel, Kings.

The latter prophets are, Isaiah, Jeremiah, Ezekiel, and the 12 minor prophets.

And the hagiographia consists of The Psalms, the Proverbs, Job, the Song of Solomon, Ruth, the Lamentations, Ecclesiastes, Esther, Daniel, Ezra, the Chronicles.

Under the name of Ezra, they comprehend Nehemiah. It is true this order hath not always been observed, but the variations from it are of little or no moment.

The five books of the law are divided into 54 sections. This division many of the Jews hold to have been appointed by Moses himself; but others, with more probability, ascribe it to Ezra. The design of this division was, that one of these sections might be read in their synagogues every sabbath-day. The number was 54, because in their intercalated years a month being then added, there were 54 sabbaths. In other years, they reduced them to 52, by twice joining together two short sections. Till the persecution of Antiochus Epiphanes, they read only the law; but the reading of it being then prohibited, they substituted in the room of it 54 sections out of the prophets; and when the reading of the law was restored by the Maccabees, the section which was read every sabbath out of the law served for their full lesson, and the section out of the prophets for their second. These sections were divided into verses, of which division, if Ezra was not the author, it was introduced not long after him, and seems to have been designed for the use of the Targumists or Chaldee interpreters: for after the return of the Jews from the Babylonish captivity, when the Hebrew language ceased to be their mother tongue, and the Chaldee grew into use instead of it, the custom was that the law should be first read in the original Hebrew, and then interpreted to the people in the Chaldee language, for which purpose these shorter sections or periods were very convenient.

The division of the scriptures into chapters, as we at present have them, is of much later date. Some attribute

Bible. bute it to Stephen Langton, archbishop of Canterbury, in the reigns of John and Henry III. But the true author of the invention was Hugo de Sancto Caro, commonly called *Hugo Cardinalis*, because he was the first Dominican that ever was raised to the degree of cardinal. This Hugo flourished about the year 1240. He wrote a comment on the scriptures, and projected the first concordance, which is that of the vulgar Latin Bible. The aim of this work being for the more easy finding out any word or passage in the scriptures, he found it necessary to divide the book into sections, and the sections into subdivisions; for till that time the vulgar Latin Bibles were without any division at all. These sections are the chapters into which the Bible hath ever since been divided. But the subdivision of the chapters was not then into verses, as it is now. Hugo's method of subdividing them was by the letters A, B, C, D, E, F, G, placed in the margin at an equal distance from each other, according to the length of the chapters. The subdivision of the chapters into verses, as they now stand in our Bibles, had its original from a famous Jewish rabbi, named Mordecai Nathan, about the year 1445. This rabbi, in imitation of Hugo Cardinalis, drew up a concordance to the Hebrew Bible, for the use of the Jews. But though he followed Hugo in his division of the books into chapters, he refined upon his invention as to the subdivision, and contrived that by verses: this being found to be a much more convenient method, it has been ever since followed. And thus, as the Jews borrowed the division of the books of the holy scriptures into chapters from the Christians, in like manner the Christians borrowed that of the chapters into verses from the Jews.

The order and division of the books of the Bible, as well of the Old as the New Testament, according to the disposition made by the council of Trent, by decree I. session iv. are as follow: where we are to observe, that those books to which the asterisks are prefixed, are rejected by the Protestants as apocryphal.

- Genesis,
- Exodus,
- Leviticus,
- Numbers,
- Deuteronomy,
- Joshua,
- Judges and Ruth,
- 1 Samuel, or 1 Kings,
- 2 Samuel, or 2 Kings,
- 1 Kings, otherwise called 3 Kings,
- 2 Kings, otherwise called 4 Kings,
- 1 Chronicles,
- 2 Chronicles,
- 1 Esdras (as the LXX and Vulgate call it), or the book of Ezra,
- 2 Esdras or (as we have it) the book of Nehemiah,
- * Tobit,
- * Judith,
- Either,
- Job,
- Psalms,
- Proverbs,
- Ecclesiastes,
- Song of Solomon,
- * The book of Wisdom,

- * Ecclesiasticus,
- Isaiah,
- Jeremiah and * Baruch,
- Ezekiel,
- Daniel,
- Hosea,
- Joel,
- Amos,
- Obadiah,
- Nahum, which we place immediately after Micah, before Habakkuk.
- Jonah, which we place immediately after Obadiah.
- Micah,
- Hebakkuk,
- Zephaniah,
- Haggai,
- Zechariah,
- Malachi,
- * 1 Maccabees,
- * 2 Maccabees.

The books of the New Testament are,

- The Gospel of {
 - St Matthew,
 - St Mark,
 - St Luke,
 - St John.
- The Acts of the Apostles.
 - the Romans,
 - the Corinthians, I.
 - the Corinthians, II.
 - the Galatians,
 - the Ephesians,
 - the Philippians,
 - the Colossians,
 - the Thessalonians, I.
 - the Thessalonians, II.
 - Timothy, I.
 - Timothy, II.
 - Titus,
 - Philemon,
- The Epistle of St Paul to {
 - the Hebrews,
 - St James,
 - St Peter, I.
 - St Peter, II.
 - St John, I.
 - St John, II.
 - St John, III.
 - St Jude,
- The general Epistle of {
 - St James,
 - St Peter, I.
 - St Peter, II.
 - St John, I.
 - St John, II.
 - St John, III.
 - St Jude,

The Revelation of St John.

The apocryphal books of the Old Testament, according to the Romanists, are, the book of Enoch (see Jude 14), the third and fourth books of Esdras, the third and fourth books of Maccabees, the prayer of Manasseh, the Testament of the twelve Patriarchs, the Psalter of Solomon, and some other pieces of this nature.

The apocryphal books of the New Testament are, the epistle of St Barnabas, the pretended epistle of St Paul to the Laodiceans, several spurious gospels, Acts of the Apostles, and Revelations; the book of Hermas, intitled, the Shepherd, Jesus Christ's Letter to Abgarus, the epistles of St Paul to Seneca, and several other pieces of the like nature, as may be seen in the collection of the apocryphal writings of the New Testament made by Fabricius.

The books which are now lost and cited in the Old Testament

Bible. Testament are these, the book of the *Righteous*, or of Jasher, as our version of the Bible has it (Josh. x. 13. and 2 Sam. i. 18.); the book of the wars of the Lord, (Numb. xxi. 14.); the annals of the kings of Israel, so often cited in the books of the Kings and Chronicles. The authors of these annals were the prophets, who lived in the kingdoms of Judah and Israel. We have likewise but a part of Solomon's 3000 proverbs and his 1005 songs, (1 Kings iv. 32.); and we have entirely lost what he wrote upon plants, animals, birds, fishes, and reptiles.

Ezra, in the opinion of most learned men, published the scriptures in the Chaldee character: for that language being grown wholly into use among the Jews, he thought proper to change the old Hebrew character for it, which hath since that time been retained only by the Samaritans, among whom it is preserved to this day.

Prideaux is of opinion that Ezra made additions in several parts of the Bible, where any thing appeared necessary for illustrating, connecting, or completing the work; in which he appears to have been assisted by the same spirit in which they were first written. Among such additions are to be reckoned the last chapter of Deuteronomy, wherein Moses seems to give an account of his own death and burial, and the succession of Joshua after him. To the same cause our learned author thinks are to be attributed many other interpolations in the Bible, which created difficulties and objections to the authenticity of the sacred text, no ways to be solved without allowing them. Ezra changed the names of several places which were grown obsolete, and instead of them put their new names, by which they were then called in the text. Thus it is that Abraham is said to have pursued the kings who carried Lot away captive, as far as Dan; whereas that place in Moses's time was called *Lais*; the name *Dan* being unknown till the Danites, long after the death of Moses, possessed themselves of it.

The Jewish canon of Scripture was then settled by Ezra, yet not so but that several variations have been made in it. Malachi, for instance, could not be put in the Bible by him, since that prophet is allowed to have lived after Ezra; nor could Nehemiah be there, since mention is made, in that book, of Jaddus, as high-priest, and of Darius Codomannus, as king of Persia, who were at least 100 years later than Ezra. It may be added, that in the first book of Chronicles, the genealogy of the sons of Zerubbabel is carried down for so many generations as must necessarily bring it to the time of Alexander, and consequently this book could not be in the canon in Ezra's days. It is probable, the two books of Chronicles, Ezra, Nehemiah, Esther, and Malachi, were adopted into the Bible in the time of Simon the Just, the last of the men of the great synagogue.

The Jews, at first, were very reserved in communicating their scripture to strangers: despising and shunning the Gentiles, they would not disclose to them any of the treasures concealed in the Bible. We may add, that the people bordering on the Jews, as the Egyptians, Phœnicians, Arabs, &c. were not very curious to know the laws or history of a people, whom in their turn they hated and despised. Their first acquaintance with these books was not till after the se-

veral captivities of the Jews, when the singularity of the Hebrew laws and ceremonies induced several to desire a more particular knowledge of them. Josephus seems surprised to find such slight foot-steps of the scripture-history interspersed in the Egyptian, Chaldean, Phœnician, and Grecian history; and accounts it hence, that the sacred books were not as yet translated into Greek or other languages, and consequently not known to the writers of those nations.

The first version of the Bible was that of the *Septuagint* into Greek, in the time of Ptolemy Philadelphus; though some maintain that the whole was not then translated, but only the Pentateuch; between which and the other books in the version called of the Seventy, the critics find a great diversity in point of style and expression, as well as of accuracy.

Hebrew Bibles, are either manuscript or printed. The best manuscript Bibles are those copied by the Jews of Spain. Those copied by the Jews of Germany are less exact, but more common. The two kinds are easily distinguished from each other; the former being in beautiful characters, like the Hebrew Bibles of Bomberg, Stephens, and Plantin; the latter in characters like those of Manster and Gryphius. P. Simon observes, that the oldest manuscript Hebrew Bibles are not above six or seven hundred years old; nor does rabbi Menahem, who quotes a vast number of them, pretend that any of them exceed six hundred years.

Dr Kennicot, in his *Dissertatio Generalis* prefixed to his Hebrew Bible, p. 21, observes, that the most ancient manuscripts were written between the years 900 and 1100: but though those that are the most ancient are not more than 800 or 900 years old, they were transcribed from others of a much more ancient date. The manuscript preserved in the Bodleian library is not less than 800 years old. Another manuscript, not less ancient, is preserved in the Caserean library at Vienna.

The most ancient printed Hebrew Bibles are those published by the Jews of Italy, especially of Pesaro and Bresse. Those of Portugal also printed some parts of the Bible at Lisbon, before their expulsion.— This may be observed in the general, that the best Hebrew Bibles are those printed under the inspection of the Jews; there being so many *minutiae* to be observed, that it is scarce possible for any other to succeed in it.

In the beginning of the 16th century Dan. Bomberg printed several Hebrew Bibles in folio and quarto at Venice, most of which are esteemed both by the Jews and Christians: the first in 1517, which is the least exact, and generally goes by the name of Felix Pratensis, the person who revised it. This edition contains the Hebrew text, the targum, and the commentaries of several rabbins. In 1528, the same Bomberg printed the folio Bible of rabbi Benchajim, with his preface, the masoretical divisions, a preface of Aben Ezra, a double *masora*, and several various readings. The third edition was printed in 1618; it is the same with the second, but much more correct. From the former editions it was, that Buxtorf, the father, printed his rabbinical Hebrew Bible at Basil in 1618; which though there are many faults in it, is

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more correct than any of the former. In 1623 appeared at Venice a new edition of the rabbinical Bible by Leo of Modena, a rabbin of that city, who pretended to have corrected a great number of faults in the former edition; but, besides that it is much inferior to the other Hebrew Bibles of Venice, with regard to paper and print, it has passed through the hands of the inquisitors, who have altered many passages in the commentaries of the rabbins.

As to Hebrew Bibles in 4to, that of R. Stephens is esteemed for the beauty of the characters; but it is very incorrect. Plantin also printed several beautiful Hebrew Bibles at Antwerp: one, in eight columns, with a preface by Arias Montanus in 1571, which far exceeds the Complutentian in paper and print, and contents; this is called the Royal Bible, because it was printed at the expense of Philip II. of Spain: another at Geneva in 1619; besides many more of different sizes, with and without points. Manassch Ben Israel, a learned Portuguese Jew, published two editions of the Hebrew Bible at Amsterdam; the one in 4to in 1635; the other in 8vo in 1639: the first has two columns, and for that reason is commodious for the reader. In 1639, R. Jac. Lombroso published a new edition in 4to at Venice, with small literal notes at the bottom of each page, where he explains the Hebrew words by Spanish words. This Bible is much esteemed by the Jews at Constantinople: in the text they have distinguished between words where the point *camets* is to be read with a *camets-katuph*, that is, by *o*, and not an *a*.

Of all the editions of the Hebrew Bible in 8vo, the most beautiful and correct are the two of Jo. Athias, a Jew of Amsterdam. The first, of 1661, is the best paper; but that of 1667 is the most exact: that, however, published since at Amsterdam by Vander Hooght, in 1705, is preferable to any of them.

After Athias, three Hebraizing Protestants engaged in revising and publishing the Hebrew Bible; viz. Clodius, Jablonski, and Opatius.—Clodius's edition was published at Franckfort in 1677, in 4to. At the bottom of the page it has the various readings of the former editions; but the author does not appear sufficiently versed in the accenting, especially in the poetical books; besides, as it was not published under his eye, many faults have crept in. That of Jablonski in 1699, in 4to, at Berlin, is very beautiful as to letter and print: but, though the editor pretends he made use of the editions of Athias and Clodius, some critics find it scarce in any thing different from the 4to edition of Bomberg. That of Opatius is also in 4to at Keil, in 1709; the character is large and good, but the paper bad: it is done with a great deal of care; but the editor made use of no manuscripts but those of the German libraries; neglecting the French ones, which is an omission common to all three. They have this advantage, however, that besides the divisions used by the Jews, both general and particular, into *parafkes* and *pesukim*, they have also those of the Christians, or of the Latin Bibles, into chapters and verses; the *keri ketib*, or various readings, Latin summaries, &c. which made them of considerable use, with respect to the Latin editions and the concordances.

The little Bible of R. Stephens, in 16to, is very much prized for the beauty of the character. Care, how-

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ever, must be taken; there being another edition of Geneva exceedingly like it, excepting that the print is worse, and the text less correct. To these may be added some other Hebrew Bibles without points, in 8vo and 24to, which are much coveted by the Jews; not that they are more exact, but more portable than the rest, and are used in their synagogues and schools: of these there are two beautiful editions, the one of Plantin, in 8vo, with two columns, and the other in 24to, reprinted by Raphalengius at Leyden in 1610. There is also an edition of them by Laurens at Amsterdam in 1631, in a larger character; and another in 12mo, at Franckfort, in 1694, full of faults, with a preface of M. Lenfden at the head of it.

Houbigant published an elegant edition of the Hebrew Bible at Paris in 1753, contained in four vols. folio. The text is that of Van der Hooght, without points, to which he has added marginal notes, supplying the variations of the Samaritan copy. Dr Kennicott, after almost 20 years laborious collation of near 700 copies, manuscript and printed, either of the whole or of particular parts of the Bible, did, in 1776, publish the first volume of his Hebrew Bible in folio. The text is that of Everard Van der Hooght, already mentioned, differing from it only in the disposition of the poetical parts, which Dr Kennicott has printed in hemistichs, into which they naturally divide themselves; however the words follow one another in the same order as they do in the edition of Van der Hooght. This edition is printed on an excellent type; the Samaritan text, according to the copy in the London Polyglott, is exhibited in a column parallel with the Hebrew text; those parts of it only being introduced in which it differs from the Hebrew. The numerous variations both of the Samaritan manuscripts from the printed copy of the Samaritan texts, and of the Hebrew manuscripts from the printed text of Van der Hooght, are placed separately at the bottom of the page, and marked with numbers referring to the copies from which they are taken. The editor regrets, that the dissertation generalis, which would help much to enrich this article, is not to be published till the second volume is ready.

Greek Bibles.—There is a great number of editions of the Bible in Greek; but they may be all reduced to three or four principal ones, viz. that of Complutum, or Alcalá de Henares, that of Venice, that of Rome, and that of Oxford. The first was published in 1515, by Cardinal Ximenes, and inserted in the Polyglott Bible, usually called the *Compluterian Bible*: this edition is not just, the Greek of the Seventy being altered in many places according to the Hebrew text. It has, however, been reprinted in the Polyglott Bible of Antwerp, in that of Paris, and in the 4to Bible, commonly called *Vatablus's Bible*.

The second Greek Bible is that of Venice, printed by Aldus in 1518. Here the Greek text of the Septuagint is reprinted just as it stood in the manuscript, full of faults of the copyists, but easily amended. This edition was reprinted at Strasburg in 1526, at Basil in 1545, at Franckfort in 1597, and other places, with some alterations to bring it nearer the Hebrew. The most commodious is that of Franckfort; there being added to this little *scholia*, which show the different interpretations of the old Greek translators: the author of this collection has not added his name, but it is commonly ascribed to Junius.

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The third Greek Bible is that of Rome, or the Vatican, in 1587, with Greek *scholia* collected from the manuscripts in the Roman libraries by Pet. Morin. It was first set on foot by Cardinal Montalbo, afterwards Pope Sixtus Quintus. This fine edition has been reprinted at Paris in 1628 by J. Morin, priest of the oratory, who has added the Latin translation, which in the Roman was printed separately, with *scholia*. The Greek edition of Rome has been printed in the Polyglot Bible of London; to which are added, at bottom, the various readings of the Alexandrian manuscript. This has been also reprinted in England in 4to and 12mo, with some alterations. It has been again published at Franeker in 1709 by Bos, who has added all the various readings he could find.

The fourth Greek Bible is that done from the Alexandrian manuscript, begun at Oxford by Dr Grabe in 1707. In this the Alexandrian manuscript is not printed such as it is, but such as it was thought it should be; *i. e.* it is altered wherever there appeared any fault of the copyists, or any word inserted from any particular dialect: this some think an excellence, but others a fault; urging, that the manuscript should have been given absolutely and entirely of itself, and all conjectures as to the readings should have been thrown into the notes.

Latin BIBLES, how numerous soever, may be all reduced to three classes; the ancient vulgate, called also *Italica*, translated from the Greek Septuagint; the modern vulgate, the greatest part of which is done from the Hebrew text; and the new Latin translations, done also from the Hebrew text, in the 16th century. We have nothing remaining of the ancient vulgate, used in the primitive times in the western churches, but the Psalms, Wisdom, and Ecclesiastes. Nobilius has endeavoured to retrieve it from the works of the ancient Latin fathers; but it was impossible to do it exactly, because most of the fathers did not keep close to it in their citations.

As to the modern vulgate, there are a vast number of editions very different from each other. Cardinal Ximenes has inserted one in the Bible of Complutum, corrected and altered in many places. R. Stephens, and the doctors of Louvain, have taken great pains in correcting the modern vulgate.

The best edition of Stephens's Latin Bible is that of 1540, reprinted in 1545, in which are added on the margin the various readings of several Latin manuscripts which he had consulted. The doctors of Louvain revised the modern vulgate after R. Stephens; and added the various readings of several Latin manuscripts. The best of the Louvain editions are those at the end of which are added the critical notes of Francis Lucas of Bruges.

All these reformations of the Latin Bible were made before the time of Pope Sixtus V. and Clement VIII. since which people have not dared to make any alterations, excepting in comments and separate notes. The correction of Clement VIII. in 1592, is now the standard throughout all the Romish churches: that pontiff made two reformations; but it is the first of them that is followed. From this the Bibles of Plantin were done, and from those of Plantin all the rest; so that the common Bibles have none of the after corrections of the same Clement VIII. It is a heavy

charge that lies on the editions of Pope Clement, viz. that they have some new texts added, and many old ones altered, to countenance and confirm what they call the Catholic doctrine; witness that celebrated passage of St John, *tres sunt*, &c. There are a great number of Latin Bibles of the third class, comprehending the versions from the originals of the sacred books made within these 200 years. The first is that of Santes Pagninus, a Dominican, under the patronage of Pope Leo X. printed at Lyons, in 4to, in 1527, much esteemed by the Jews. This the author improved in a second edition. In 1542, there was a beautiful edition of the same at Lyons, in folio, with *scholia*, published under the name of Michael Villanovanus, *i. e.* Michael Servetus, author of the *scholia*. Those of Zurich have likewise published an edition of Pagninus's Bible in 4to; and R. Stephens reprinted it in folio, with the vulgate, in 1557, pretending to give it more correct than in the former editions. There is also another edition of 1586, in four columns, under the name of *Vatablus*: and we find it again in the Hamburgh edition of the Bible in four languages.

In the number of Latin Bibles is also usually ranked the version of the same Pagninus corrected, or rather rendered literal, by Arias Montanus; which correction being approved of by the doctors of Louvain, &c. was inserted in the Polyglot Bible of Philip II. and since in that of London. There have been various editions of this in folio, 4to, and 8vo; to which have been added the Hebrew text of the Old Testament, and the Greek of the New. The best of them all is the first, which is in folio, 1571.

Since the Reformation there have been several Latin versions of the Bible from the originals, by Protestants. The most esteemed are those of Munster, Leo Juda, Castalio, and Tremellius; the three last whereof have been reprinted various times. Munster published his version at Basil in 1534, which he afterwards revised; he published a correct edition in 1546. Castalio's fine Latin pleases most people; but there are some who think it too much affected; the best edition thereof is that in 1573. Leo Juda's version, altered a little by the divines of Salamanca, was added to the ancient Latin edition, as published by R. Stephens, with notes, under the name of *Vatablus's Bible*, in 1545. It was condemned by the Parisian divines, but printed with some alterations by the Spanish divines of Salamanca. That of Junius and Tremellius is preferred, especially by the Calvinists, and has undergone a great number of editions.

One may add a fourth class of Latin Bibles, comprehending the vulgate edition corrected from the originals. The Bible of Hidorus Clarus is of this number: that author, not being contented with restoring the ancient Latin copy, has corrected the translator in a great number of places, which he thought ill rendered. Some Protestants have followed the same method; and among others, Andrew and Luke Oslander, who have each published a new edition of the vulgate, corrected from the originals.

Oriental BIBLES.—At the head of the Oriental versions of the Bible must be placed the Samaritan, as being the most ancient of all, though neither its age nor author have been yet ascertained, and admitting no more for holy scripture but the Pentateuch, or five

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books of Moses. This translation is made from the Samaritan Hebrew text, which is a little different from the Hebrew text of the Jews. This version has never been printed alone; nor any where but in the Polyglots of London and Paris.

Chaldee BIBLES, are only the glosses or expositions made by the Jews in the time when they spake the Chaldee tongue. These they call by the name of *Targumim*, or *paraphrases*, as not being any strict versions of the Scripture. They have been inserted entire in the large Hebrew Bibles of Venice and Basil; but are read more commodiously in the Polyglots, being there attended with a Latin translation.

Syriac BIBLES—There are extant two versions of the Old Testament in the Syriac language: one from the Septuagint, which is ancient, and made probably about the time of Constantine; the other called *antiqua et simplex*, made from the Hebrew, as some suppose, about the time of the apostles. This version is printed in the Polyglots of London and Paris.

In the year 1562, Widmanstadius printed the whole New Testament in Syriac, at Vienna, in a beautiful character: after him there were several other editions; and it was inserted in the Bible of Philip II. with a Latin translation. Gabriel Sionita also published a beautiful Syriac edition of the Psalms, at Paris, in 1525, with a Latin interpretation.

Arabic BIBLES.—In the year 1516, Aug. Justinian, bishop of Nebio, printed at Genoa an Arabic version of the Psalter, with the Hebrew text and Chaldee paraphrase, adding Latin interpretations. There are also Arabic versions of the whole scriptures in the Polyglots of London and Paris; and we have an edition of the Old Testament entire, printed at Rome in 1671, by order of the congregation *de propaganda fide*; but it is of little esteem, as having been altered agreeably to the vulgate edition. The Arabic Bibles among us are not the same with those used with the Christians in the East. Some learned men take the Arabic version of the Old Testament, printed in the Polyglots, to be that of Saadiah, who lived about the year 900; at least in the main. Their reason is, that Aben Ezra, a great antagonist of Saadiah, quotes some passages of his version, which are the same with those in the Arabic version of the Polyglots; yet others are of opinion, that Saadiah's version is not extant. In 1622, Erpenius printed an Arabic Pentateuch, called also the Pentateuch of Mauritania, as being made by the Jews of Barbary, and for their use. This version is very literal, and esteemed very exact. The four Evangelists have also been published in Arabic, with a Latin version, at Rome, in 1591, folio. These have been since reprinted in the Polyglots of London and Paris, with some little alterations of Gabriel Sionita. Erpenius published an Arabic New Testament entire, as he found it in his manuscript copy, at Leyden, in 1616.

There are some other Arabic versions of late date mentioned by Walton in his Prolegomena; particularly a version of the Psalms preserved in Sion College, London, and another of the Prophets at Oxford; neither of which have been published.

Coptic BIBLES.—There are several manuscript copies of the Coptic Bible in some of the great libraries, especially in that of the French king. Dr Wilkins published the Coptic New Testament in 4to in the

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year 1716, and the Pentateuch also in 4to in 1731, with Latin translations. He reckons these versions to have been made in the end of the second, or the beginning of the third century.

Ethiopic BIBLES.—The Ethiopians have also translated the Bible into their language.—There have been printed separately, the Psalms, Canticles, some chapters of Genesis, Ruth, Joel, Jonah, Zephaniah, Malachi, and the New Testament; all which have been since reprinted in the Polyglot of London. As to the Ethiopic New Testament, which was first printed at Rome in 1548, it is a very inaccurate work, and is reprinted in the English Polyglot with all its faults.

Armenian BIBLES.—There is a very ancient Armenian version of the whole Bible, done from the Greek of the Seventy, by some of their doctors about the time of Chrysofom. This was first printed entire in 1664, by one of their bishops at Amsterdam, in 4to; with the New Testament in 8vo.

Persian BIBLES.—Some of the fathers seem to say, that all the scripture was formerly translated into the language of the Persians; but we have nothing now remaining of the ancient version, which was certainly done from the Septuagint. The Persian Pentateuch printed in the London Polyglot is, without doubt, the work of Rabbi Jacob, a Persian Jew. It was published by the Jews at Constantinople, in the year 1551. In the same Polyglot we have likewise the four Evangelists in Persian, with a Latin translation; but this appears very modern, incorrect, and of little use. Walton says this version was written above 400 years ago. Another version of the Gospels was published at Cambridge by Wheloc in the last century: there are also two Persian versions of the Psalms made in the last century from the vulgar Latin.

Gothic BIBLES.—It is generally said, that Ulphilas, a Gothic bishop, who lived in the fourth century, made a version of the whole Bible, excepting the book of Kings, for the use of his countrymen. That book he omitted, because of the frequent mention of the wars therein; as fearing to inspire too much of the military genius into that people. We have nothing remaining of this version but the four Evangelists, printed in 4to, at Dort, in 1665, from a very ancient MS.

WHILST the Roman empire subsisted in Europe, the reading of the Scriptures in the Latin tongue, which was the universal language of that empire, prevailed every where. But since the face of affairs in Europe has been changed, and so many different monarchies erected upon the ruins of the Roman empire, the Latin tongue has by degrees grown into disuse: whence has arisen a necessity of translating the Bible into the respective languages of each people; and this has produced as many different versions of the Scriptures in the modern languages, as there are different nations professing the Christian religion. Hence we meet with French, Italian, Spanish, German, Flemish, Danish, Sclavonian, Polish, Bohemian, and Russian or Muscovite Bibles; besides the Anglo-Saxon, and modern English and Irish Bibles.

French BIBLES. The oldest French Bible we hear of is the version of Peter de Vaux, chief of the Waldenses, who lived about the year 1160. Raoul de Presle translated the Bible into French in the reign of Charles V.

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Bibles. king of France, about the year 1380. Besides these, there are several old French translations of particular parts of the Scripture. The doctors of Louvain published the Bible in French at Louvain, by order of the emperor Charles V. in 1550. There is a version by Isaac le Maître de Sacy, published in 1672, with explanations of the literal and spiritual meaning of the text, which was received with wonderful applause, and has been often reprinted. As to the New Testaments in French, which have been printed separately, one of the most remarkable is that of F. Amelotte of the oratory, composed by the direction of some French prelates, and printed with annotations in the year 1666, 1667, and 1670. The author pretends he had been at the pains to search all the libraries in Europe, and collate the oldest manuscripts. But, in examining his work, it appears that he has produced no considerable various readings, which had not before been taken notice of either in the London Polyglott or elsewhere. The New Testament of Mons printed in 1665, with the archbishop of Cambray's permission, and the king of Spain's licence, made a great noise in the world. It was condemned by Pope Clement IX. in 1668, and by Pope Innocent XI. in 1679, and in several bishoprics of France at several times. The New Testament published at Trevoux in 1702, by M. Simon, with literal and critical annotations upon difficult passages, was condemned by the bishops of Paris and Meaux in 1702. F. Bohours, a Jesuit, with the assistance of F. F. Michael Tellier, and Peter Bernier, Jesuits likewise, published a translation of the New Testament in 1697: but this translation is, for the most part, harsh and obscure, which was owing to the author's keeping too strictly to the Latin text from which he translated.

There are likewise French translations published by Protestant authors; one by Robert Peter Olivetan, printed at Geneva in 1535, and since often reprinted with the corrections of John Calvin and others; another by Sebastian Castellio, remarkable for particular ways of expression never used by good judges of the language. John Diodati likewise published a French Bible at Geneva in 1644; but some find fault with his method, in that he rather paraphrases the text than translates it. Faber Stapalenus translated the New Testament into French, which was revised and accommodated to the use of the reformed churches in Piedmont, and printed in 1534. Lastly, M. John Le Clerc published a New Testament in French at Amsterdam in 1703, with annotations taken chiefly from Grotius and Hammond; but the use of this version was prohibited in Holland by order of the States General, as tending to revive the errors of Sabellius and Socinus.

Italian Bibles. The first Italian Bible published by the Romanists is that of Nicholas Maleum, a Benedictine monk, printed at Venice in 1471. It was translated from the Vulgate. The version of Anthony Brucioli, published at Venice in 1532, was prohibited by the Council of Trent. The Calvinists likewise have their Italian Bibles. There is one of John Diodati in 1607 and 1641, and another of Maximus Theophilus in 1551, dedicated to Francis de Medicis Duke of Tuscany. The Jews of Italy have no entire version of the Bible in Italian; the inquisition constantly refusing to allow them the liberty of printing one.

Spanish Bibles. The first Spanish Bible that we hear

of is that mentioned by Cyprian de Valera, which he says was published about the year 1500. The Epistles and Gospels were published in that language by Ambrose de Montefin in 1512; the whole Bible by Cassiodore de Reyna, a Calvinist, in 1569; and the New Testament, dedicated to the emperor Charles V. by Francis Enzinas, otherwise called *Driander*, in 1543. The first Bible which was printed in Spanish for the use of the Jews was that printed at Ferrara in 1553, in Gothic characters, and dedicated to Hercules d'Est Duke of Ferrara. This version is very ancient, and was probably in use among the Jews of Spain before Ferdinand and Isabella expelled them out of their dominions in 1492.

German Bibles. The first and most ancient translation of the Bible in the German language is that of Ulphilas bishop of the Goths, about the year 360. This bishop left out the book of Kings, which treat chiefly of war, lest it should too much encourage the martial humour of the Goths. An imperfect manuscript of this version was found in the abbey of Verden near Cologne, written in letters of silver, for which reason it is called *Codex Argenteus*; and it was published by Francis Junius in 1665. The oldest German printed Bible extant is that of Nuremberg, printed in 1447; but who the author of it was is uncertain. John Emzer, chaplain to George Duke of Saxony, published a version of the New Testament in opposition to Luther. There is a German Bible of John Eckius in 1537, with Emzer's New Testament added to it; and one by Ulembergius of Westphalia, procured by Ferdinand Duke of Bavaria, and printed in 1630. Martin Luther having employed eleven years in translating the Old and New Testament, published the Pentateuch in 1522, the historical books and the Psalms in 1524, the books of Solomon in 1527, Isaiah in 1529, the Prophets in 1531, and the other books in 1530: he published the New Testament in 1522. The learned agree, that his language is pure, and the version clear and free from intricacies: it was revised by several persons of quality, who were masters of all the delicacies of the German language. The German Bibles which have been printed in Saxony, Switzerland, and elsewhere, are for the most part the same as that of Luther, with very little variation. In 1604 John Piscator published a version of the Bible in German, taken from that of Junius and Tremellius: but his turn of expression is purely Latin, and not at all agreeable to the genius of the German language: the Anabaptists have a German Bible printed at Worms in 1529. John Crullius published his version of the New Testament at Racovia in 1630; and Felbinger his at Amsterdam in 1660.

Flemish Bibles. The Flemish Bibles of the Romanists are very numerous, and for the most part have no author's name prefixed to them, till that of Nicolas Vinek, printed at Lovain in 1543. The Flemish versions made use of by the Calvinists till the year 1637, were copied principally from that of Luther. But the synod of Dort having in 1618 appointed a new translation of the Bible into Flemish, deputies were named for the work, which was not finished till the year 1637.

Danish Bibles. The first Danish Bible was published by Peter Palladius, Olaus Chrysolom, John Synagogius, and John Maccabæus, in 1550, in which they fol-

Bibles. lowed Luther's first German version. There are two other versions, the one by John Paul Resenius bishop of Zealand, in 1605; the other, being the New Testament only, by John Michel, in 1524.

Swedish BIBLE. In 1534 Olaus and Laurence published a Swedish Bible from the German version of Martin Luther. It was revised in 1617, by order of king Gustavus Adolphus, and was afterwards almost universally received.

Bohemian, Polish, Russian or Muscovite, and Slavonian BIBLES. The Bohemians have a Bible translated by eight of their doctors, whom they had sent to the schools of Wirtemberg and Basil, on purpose to study the original languages. It was printed in Moravia in the year 1539. The first Polish version of the Bible, it is said, was that composed by Hadewich wife of Jagellon Duke of Lithuania, who embraced Christianity in the year 1390. In 1599 there was a Polish translation of the Bible published at Cracow, which was the work of several divines of that nation, and in which James Wieck, a Jesuit, had a principal share. The Protestants, in 1596, published a Polish Bible from Luther's German version, and dedicated it to Uladislaus IV. king of Poland. The Russians or Muscovites published the Bible in their language in 1581. It was translated from the Greek by St Cyril, the apostle of the Slavonians; but this old version being too obscure, Ernest Gliik, who had been carried prisoner to Moscow after the taking of Narva, undertook a new translation of the Bible in Slavonian; who dying in 1705, the Czar Peter appointed some particular divines to finish the translation: but whether it was ever printed, we cannot say.

English-Saxon BIBLES. If we inquire into the versions of the Bible of our own country, we shall find that Adelm bishop of Sherburn, who lived in 709, made an English-Saxon version of the Psalms; and that Eadfrid, or Ecbert, bishop of Lindisferne, who lived about the year 730, translated several of the books of Scripture into the same language. It is said likewise, that venerable Bede, who died in 785, translated the whole Bible into Saxon. But Cuthbert, Bede's disciple, in the enumeration of his master's works, speaks only of his translation of the Gospel; and says nothing of the rest of the Bible. Some pretend, that King Alfred, who lived in 890, translated a great part of the Scriptures. We find an old version in the Anglo-Saxon of several books of the Bible, made by Elfric abbot of Malmesbury: it was published at Oxford in 1699. There is an old Anglo-Saxon version of the four Gospels, published by Matthew Parker archbishop of Canterbury in 1571, the author whereof is unknown. Dr Mill observes, that this version was made from a Latin copy of the old Vulgate.

Saxon BIBLES.—The whole Scripture is said by some to have been translated into the Anglo-Saxon by Bede about the year 701, though others contend he only translated the Gospels.

We have certain books or parts of the Bible by several other translators; as, 1. The Psalms, by Adelm bishop of Shireborn, contemporary with Bede; though by others this version is attributed to King Alfred, who lived 200 years after. Another version of the Psalms in Anglo-Saxon was published by Spelman in 1640. 2. The Evangelists, still extant, done from the ancient

Bibles. vulgate, before it was revised by St Jerom, by an author unknown, and published by Matth. Parker in 1571. An old Saxon version of several books of the Bible, made by Elfric abbot of Malmesbury, several fragments of which were published by Will. Lilly in 1638, the genuine copy by Edm. Thwaites in 1699, at Oxford.

Indian BIBLE.—A translation of the Bible into the North American Indian language by Elliot was published in 4to at Cambridge in 1685.

English BIBLES.—The first English Bible we read of was that translated by J. Wickliffe about the year 1360; but never printed, though there are MS. copies of it in several of the public libraries. J. de Trevisa, who died about the year 1398, is also said to have translated the whole Bible; but whether any copies of it are remaining, does not appear.

Tindal's.—The first printed Bible in our language was that translated by Will. Tindal, assisted by Miles Coverdale, printed abroad in 1526; but most of the copies were bought up and burnt by Bishop Tunstal and Sir Thomas More. It only contained the New Testament, and was revised and republished by the same person in 1530. The prologues and prefaces added to it reflect on the bishops and clergy; but this edition was also suppressed, and the copies burnt. In 1532, Tindal and his associates finished the whole Bible except the Apocrypha, and printed it abroad: but while he was afterwards preparing for a second edition, he was taken up and burnt for heresy in Flanders.

Matthew's's.—On Tindal's death, his work was carried on by Coverdale, and John Rogers superintendent of an English church in Germany, and the first martyr in the reign of Queen Mary, who translated the Apocrypha, and revised Tindal's translation, comparing it with the Hebrew, Greek, Latin, and German, and adding prefaces and notes from Luther's Bible. He dedicated the whole to Henry VIII. in 1537, under the borrowed name of Thomas Matthews; whence this has been usually called *Matthew's's Bible*. It was printed at Hamburgh, and licence obtained for publishing it in England by the favour of Archbishop Cranmer and the Bishops Latimer and Shaxton.

Cranmer's's.—The first Bible printed by authority in England, and publicly set up in churches, was the same Tindal's version, revised, compared with the Hebrew, and in many places amended, by Miles Coverdale afterwards bishop of Exeter; and examined after him by Archbishop Cranmer, who added a preface to it: whence this was called *Cranmer's's Bible*. It was printed by Grafton, of the largest volume, and published in 1540; and, by a royal proclamation, every parish was obliged to set one of the copies in their church, under the penalty of 40 shillings a-month; yet, two years after, the Polish bishops obtained its suppression of the King. It was restored under Edward VI. suppressed again under Queen Mary, and restored again in the first year of Queen Elizabeth, and a new edition of it given in 1562.

Geneva.—Some English exiles at Geneva in Queen Mary's reign, Coverdale, Goodman, Gilbie, Sampson, Cole, Whittingham, and Knox, made a new translation, printed there in 1560, the New Testament having been printed in 1557; hence called the *Geneva Bible*; containing the variations of readings, marginal annotations, &c. on account of which it was much valued

luced by the puritan party in that and the following reigns.

Bishop's.—Archbishop Parker resolved on a new translation for the public use of the church, and engaged the bishops and other learned men to take each a share or portion. These being afterwards joined together, and printed with short annotations in 1568, in a large folio, made what was afterwards called the *Great English Bible*, and commonly the *Bishop's Bible*. The following year it was also published in 8vo, in a small but fine black letter: and here the chapters were divided into verses; but without any breaks for them, in which the method of the Geneva Bible was followed, which was the first English Bible where any distinction of verses was made. It was afterwards printed in large folio, with corrections, and several prolegomena, in 1572: this is called *Matthew Parker's Bible*. The initial letters of each translator's name were put at the end of his part: *e. gr.* at the end of the Pentateuch, W. E. for William Exon; that is, William Bishop of Exeter, whose allotment ended there: at the end of Samuel, R. M. for Richard Menevensis, or bishop of St David's, to whom the second allotment fell: and the like of the rest. The Archbishop oversaw, directed, examined, and finished the whole. This translation was used in the churches for 40 years, though the Geneva Bible was more read in private houses, being printed above 30 times in as many years. King James bore it an inveterate hatred on account of the notes; which at the Hampton-court conference he charged as partial, untrue, seditious, &c. The Bishop's Bible too had its faults. The King frankly owned he had yet seen no good translation of the Bible in English; but he thought that of Geneva the worst of all.

Rhemish.—After the translation of the Bible by the bishops, two other private versions had been made of the New Testament: the first by Laur. Thomson, made from Beza's Latin edition, together with the notes of Beza, published in 1582 in 4to, and afterwards in 1589, varying very little from the Geneva Bible; the second by the Papists at Rheims in 1584, called the *Rhemish Bible*, or *Rhemish Translation*. These finding it impossible to keep the people from having the Scriptures in the vulgar tongue, resolved to give a version of their own as favourable to their cause as might be. It was printed on a large paper, with a fair letter and margin. One complaint against it was its retaining a multitude of Hebrew and Greek words untranslated, for want, as the editors express it, of proper and adequate terms in the English to render them by; as the words *azymes*, *tunike*, *rational*, *holocaust*, *prepuce*, *pasche*, &c. However, many of the copies were seized by the Queen's searchers and confiscated; and Th. Cartwright was solicited by secretary Walsingham to refute it: but, after a good progress made therein, Archbishop Whitgift prohibited his further proceeding therein, as judging it improper the doctrine of the church of England should be committed to the defence of a puritan, and appointed Dr Fulke in his place, who refuted the Rheimsists with great spirit and learning. Cartwright's refutation was also afterwards published in 1618, under Archbishop Abbot. About 30 years after their New Testament, the Roman Catholics published a translation of the Old at Doway, 1609 and 1610, from the vulgate, with annotations; so that the

English Roman Catholics have now the whole Bible in their mother-tongue; though it is to be observed, they are forbidden to read it without a licence from their superiors.

King James's.—The last English Bible was that which proceeded from the Hampton-court conference in 1603, where many exceptions being made to the Bishop's Bible, King James gave order for a new one; not, as the preface expresses it, for a translation altogether new, nor yet to make of a bad one a good one, but to make a good one better, or of many good ones one best. Fifty-four learned persons were appointed for this office by the King, as appears by his letter to the archbishop, dated in 1604; which being three years before the translation was entered upon, it is probable seven of them were either dead or had declined the task, since Fuller's list of the translators makes but 47; who being ranged under six divisions, entered on their province in 1607. It was published in 1613, with a dedication to James, and a learned preface, and is commonly called *King James's Bible*. After this, all the other versions dropped and fell into disuse, except the Epistles and Gospels in the Common Prayer Book, which were still continued according to the Bishop's translation till the alteration of the liturgy in 1661, and the Psalms and Hymns, which are to this day continued as in the old version.

The judicious Selden, in his *Table Talk*, speaking of the Bible, says, "The English translation of the Bible is the best translation in the world, and renders the sense of the original best, taking in for the English translation the Bishop's Bible, as well as King James's. The translators in King James's time took an excellent way. That part of the Bible was given to him who was most excellent in such a tongue (as the Apocrypha to Andrew Downs), and then they met together, and one read the translation, the rest holding in their hands some Bible either of the learned tongues, or French, Spanish, Italian, &c. If they found any fault, they spoke; if not, he read on."

King James's Bible is that now read by authority in all the churches in Britain.

Welsh Bibles.—There was a Welch translation of the Bible made from the original in the time of Queen Elizabeth, in consequence of a bill brought in to the house of commons for this purpose in 1563. It was printed in folio in 1588. Another version, which is the standard translation for that language, was printed in 1620. It is called *Parry's Bible*. An impression of this was printed in 1690, called *Bishop Lloyd's Bible*. These were in folio. The first 8vo impression of the Welch Bible was made in 1630.

Irish Bible.—Towards the middle of the 16th century, Bedell, bishop of Kilmore, set on foot a translation of the Old Testament into the Irish language; the New Testament and the Liturgy having been before translated into that language. The bishop appointed one King to execute this work, who, not understanding the oriental languages, was obliged to translate it from the English. This work was received by Bedell, who, after having compared the Irish translation with the English, compared the latter with the Hebrew, the LXX. and the Italian version of Diodati. When this work was finished, the bishop would have been himself at the charge of the impression, but his

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design was stopped upon advice given to the lord lieutenant and the archbishop of Canterbury, that it would prove a shameful thing for a nation to publish a Bible translated by such a despicable hand as King. However, the manuscript was not lost, for it went to press in the year 1685.

Erse Bible.—There is also (lately finished at Edinburgh) a version of the Bible in the Gaelic or Erse language.

BIBLIANDER (Theodore), professor of divinity at Zurich in the 16th century. As he understood the oriental languages, he set about a new edition of the Koran; the text of which he corrected, by collating the Arabic and Latin copies. To this edition he subjoined the life of Mahomet and his successors; and prefixed an apology by way of preface, which has been loudly exclaimed against.

BIBLIOGRAPHIA, a branch of archæographia, employed in the judging and perusing of ancient manuscripts, whether written in books, paper, or parchment.

The sense of it is now extended; and it signifies a work intended to give information concerning the first or best editions of books, and the ways of selecting and distinguishing them properly. In short, it is used for a *notitia* or description of printed books, either in the order of the alphabet, of the times when printed, or of the subject matters. In which sense, bibliographia amounts to much the same with what is otherwise called *bibliotheca*.

Literary journals afford also a kind of bibliographia.

BIBLIOMANCY, a kind of divination performed by means of the Bible. This amounts to much the same with what is otherwise called *sortes biblicæ* or *sortes sanctorum*. It consisted in taking passages of Scripture at hazard, and drawing indications thence concerning things future; as in Augustin's *tolle & lege*. It was much used at the consecration of bishops.—F. J. Davidus, a Jesuit, has published a bibliomancy under the borrowed name of *Veridicus Christianus*.

BIBLIOTHECA, in its original and proper sense, denotes a library, or place for depositing books.

BIBLIOTHECA, in matters of literature, denotes a treatise giving an account of all the writers on a certain subject: thus, we have bibliothecæ of theology, law, philosophy, &c.

There are likewise universal bibliothecæ, which treat indifferently of all kinds of books; also select bibliothecæ, which give account of none but authors of reputation.

Many of the bibliothecæ agree, in most respects, with what are otherwise called memoirs or journals of literature, except that these last are confined to new books; but there are other bibliothecæ, that differ in nothing from catalogues of the writers on certain subjects.

BIBLISTS, so the Roman-catholics call those Christians who make Scripture the sole rule of faith; in which sense, all Protestants either are or ought to be biblists.

BIBLUS, *βίβλος*, in botany, an aquatic plant in Egypt, called also *papyrus*; of the skin whereof the ancient Egyptians made their paper. See **PAPYRUS**.

BIBRACTE (anc. geog.), a citadel of the Ædui, according to Strabo; but Cæsar describes it as a town well fortified, very large and populous, and of the

greatest authority among that nation: Now *Beurell*, or *Bevray*; a desolate place four miles to the north-west of Autun.

BIBROCI (anc. geog.), an ancient people of Britain: Now the *Hundred of Bray* in Berks.

BICANER, a city of Asia, on the river Ganges, belonging to the great Mogul. E. Long. 87. 20. N. Lat. 28. 40.

BICE, or **BISE**, among painters, a blue colour prepared from the lapis armenus.

Bice bears the best body of all bright blues used in common work, as house-painting, &c. but it is the palest in colour. It works indifferently well, but inclines a little to sandy, and therefore requires good grinding. Next to ultramarine, which is too dear to be used in common work, it lies best near the eye of all other blues.

BICEPS, the name of several muscles: as the biceps humeri, or cubiti; biceps tibiæ; &c. See **ANATOMY**, *Table of the Muscles*.

BICESTER, a straggling town of Oxfordshire in England, seated on the road between Oxford and Buckingham.

BICHET, a quantity or measure of corn, which differs according to the places where it is used. The bichet is not a wooden measure, as the minot at Paris, or the bushel at London; but is compounded of several certain measures. It is used in many parts of France, &c.

BICLINIUM, in Roman antiquity, a chamber with two beds in it; or when two beds only were round a table.

BICORNES, an order of plants in the *fragmenta methodi naturalis* of Linnæus, so termed from the anthers having in appearance two horns. See **BOTANY**.

BIDACHE, a town of Lower Navarre in France, seated on the river Bidoufe. W. Long. 10. 0. N. Lat. 41. 31.

BIDAL, or **BIDALE**, in our ancient customs, denotes the invitation of friends to drink ale at some poor man's house, who in consideration hereof expects some contribution for his relief. This custom still obtains in the west of England, and is mentioned in some of our ancient statutes.

BIDDLE (John), one of the most eminent English writers among the Socinians, was born at Wotton-under-Edge in Gloucestershire, and educated in the free school of that place. Being a hopeful youth, he was taken notice of; particularly by Lord George Berkeley, who allowed him an exhibition of ten pounds a-year. This caused him vigorously to apply himself to his studies; and he was, while at school, author of a translation of Virgil's *Bucolics*, and of the two first satires of Juvenal. He continued at school till he was 13 years of age. However, having manifested in that early period a singular piety and contempt of secular affairs, he was sent to the university of Oxford, and entered a student in Magdalen hall. In 1641, the magistrates of Gloucester chose him master of the free school of that city; and he was much esteemed: but falling into some opinions concerning the Trinity different from those commonly received, and expressing his thoughts with too much freedom, he suffered various persecutions and imprisonments in the time of the commonwealth. During one of these confinements, which lasted for several years, being reduced

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reduced to great indigence, he was employed by Roger Daniel of London to correct the impression of the Greek Septuagint Bible, which that printer was about to publish with great accuracy. In 1651, the parliament published a general act of oblivion, which restored him to his full liberty. He was afterwards imprisoned on account of his tenets; and at last the Protector banished him for life to St Mary's castle in the isle of Scilly, and sent him thither in October 1655. Soon after, he was allowed 100 crowns a-year for subsistence. In 1658, he was set at full liberty. After the restoration of King Charles II. he was fined in 100 l. and each of his hearers in 20 l. to lie in prison till paid; which being put in execution, the want of the fresh air and exercise made him contract a disease, of which he died on the 22d of September 1662, in the 47th year of his age. His life was published in Latin in 1682, by Mr Farrington of the Inner Temple, who represents him as possessed of extraordinary piety, charity, and humility. He would not discourse of those points in which he differed from others with those that did not appear religious according to their knowledge; and was a strict observer himself, and a severe exacter in others, of reverence in speaking of God and Christ. He had so happy a memory, that he retained word for word the whole New Testament, not only in English, but in Greek, as far as the fourth chapter of the Revelations of St John.

BIDDIFORD, a town of Devonshire, seated on the river Torridge, over which there is a fine stone-bridge with 24 arches. It is a large and populous place, and carries on a considerable trade. W. Long. 4. 10. N. Lat. 51. 10.

BIDDING, or **OFFERING**, denotes the raising the price of a thing at a sale or auction. The French calls this *encherir*. It answers to what the Romans called *licitari*: they used to bid by holding up the hand or finger.

BIDDING is also used for proclaiming or notifying. In which sense we meet with *bidding of the BANNIS*, the same with what is otherwise called *asking*.

BIDDING-Prayer. It was one part of the office of the deacons in the primitive Christian church, to be a sort of monitors and directors of the people in the exercise of their public devotions in the church. To which end they made use of certain known forms of words, to give notice when each part of the service began. This was called by the Greeks *κρυπτειν*, and by the Latins *predicare*: which therefore do not ordinarily signify to *preach*, as some mistake it; but to perform the office of a crier (*κρυξ*, or *præco*) in the assembly: whence Synesius and others call the deacons *εργονηγοις*, the *holy criers* of the church, appointed to bid or exhort the congregation to pray and join in the several parts of the service of the church. Agreeable to this ancient practice is the form *Let us pray*, repeated before several of the prayers in the English liturgy.

BIDDING of the Beads, a charge or warning which the parish-priest gave to his parishioners at certain special times, to say so many pater-nollers, &c. on their beads.

BIDENS, **WATER-HEMP** **AGRIMONY**: A genus of the polygamia æqualis order, belonging to the Syngenesia class of plants; and in the natural method ranking under the 45th order, *Compositæ-oppositifoliæ*. The

receptacle is paleaceous; the pappus has erect scabrous awns; and the calyx is imbricated. Of this genus Linnæus enumerates 13 species; but none of them appear to merit notice except the tripartita, frequently found by the sides of rivulets, ditches, and lakes, both in Scotland and England. This grows to the height of two feet; and hath its leaves divided into three, or often five, lanceolate serrated lobes, with yellow flowers, which are succeeded by flattish angular seeds, having two beards arising from the angles, which are hooked or barbed downwards; and generally they have another shorter beard arising from the middle of the back of the seed. "As this plant (says Mr Lightfoot †) † *Flora Scotica* is found by a chemical analysis to possess much the same qualities as the celebrated verbesina semela, a plant belonging to a genus very nearly related to this, it is probable it would have the same good effects in expelling the stone and gravel. A decoction of this plant with alum dyes yarn of a yellow colour. The yarn must be first steeped in alum water, then dried and steeped in a decoction of the plant, and afterwards boiled in the decoction. The seeds have been known sometimes to destroy the *cyprinus auratus*, or gold fish, by adhering to their gills and jaws."

BIDENTAL, in Roman antiquity, a place blasted with lightning; which was immediately consecrated by an haruspex, with the sacrifice of a bidens. This place was afterwards accounted sacred, and it was unlawful to enter it or to tread upon it; for which reason it was commonly surrounded with a ditch, wall, hedge, ropes, &c. See next article.

BIDENTALES, in Roman antiquity, priests instituted to perform certain ceremonies and expiations when thunder fell on any place. Their principal office was the sacrificing a sheep of two years old, which in Latin is called *bidens*; from whence the place struck with thunder got the name of *bidental*.

BIDENTES, in middle-age writers, denotes two yearlings, or sheep of the second year. The wool of these bidentes, or two years old sheep, being the first sheering, was sometimes claimed as a heriot to the king, on the death of an abbot. Among the ancient Romans, the word was extended further to any sorts of beasts used for victims, especially those of that age: whence we meet with *veses bidenter*.

BIDET, a nag or little horse, formerly allowed each trooper and dragoon, for his baggage and other occasions. Bidets are grown into disuse, on account of the expences thereof, and the disorders frequently arising from those who attended on them, &c.

BIDIS, (anc. geog.), a small city of Sicily, not far from Syracuse, whose ruins are still to be seen in the territory of Syracuse, about 15 miles to the south-west, with a church called *S. Giovanni di Bidisi*.

BIDLIO (Godfrey), author of several treatises in anatomy, was born at Amsterdam, March 12th, 1649. In 1688, he was professor of anatomy at the Hague; and, in 1694, at Leyden; when king William III. of England appointed him his physician; which he would not accept but on condition of holding his professorship, which was readily granted him. He published, in Latin, 1. The Anatomy of the human Body, demonstrated in 105 cuts, explained by the discoveries of the ancient and modern writers. 2. An Oration upon the Antiquity of Anatomy. 3. A Letter to Anthony Leewenheek

Bidon
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Biennial.

Leewenhoeck on the animals sometimes found in the liver of sheep and other animals. 4. Two Decades of Dissertations in Anatomy and Chirurgery; and other pieces. He died at Leyden, in April 1713.

BIDON, a liquid measure, containing about five pints of Paris, that is, about five quarts English wine-measure. It is seldom used but among ships crews.

BIE, (de Adrian,) an eminent painter, was born at Liere in 1594. After learning the rudiments of the art from different masters, he travelled to Rome, where he spent six years in studying the works of the best masters. His industry was then rewarded with proportionable success; for he found encouragement among the most honourable persons at Rome, and in every part of Italy through which he travelled, from persons of the first distinction. His penciling was so exceedingly neat, and his touch and colouring so very delicate, that he was frequently employed to paint on jasper, agate, porphyry, and other precious materials.

BIEEZ, a town of Poland, in the palatinate of Cracovia, remarkable for its mines of vitriol. It is seated on the river Weseloke, in E. Long. 2. 21. N. Lat. 49. 50.

BIEL. See BIENNA.

BIELA, a town of Russia, and capital of a province of the same name, seated on the river Opschaw, in E. Long. 34. 55. N. Lat. 55. 0.

BIELA OSERO, or BELOZERO, a town of the Russian empire, capital of a duchy, and situated on a lake of the same name, at the mouth of the river Consa, in E. Long. 39. 10. N. Lat. 58. 55.

BIELA, a town of Piedmont in Italy, and capital of the Bellese near the river Cerva, in E. Long. 8. 3. N. Lat. 45. 22.

BIELSKI, a town of Poland, in the palatinate of Polachia, near one of the sources of the river Narew. E. Long. 22. 55. N. Lat. 53. 50.

BIELSKOI, a town of Russia, in the province of Smolensko. E. Long. 35. 5. N. Lat. 56. 40.

BIENNA, a town of Switzerland, seated on a lake of the same name. The inhabitants are Protestants, and in alliance with those of Bern, Soleure, and Friburg. E. Long. 7. 14. N. Lat. 47. 11.

BIENNIAL PLANTS; plants, as the title *biennial* imports, that are only of two years duration. Numerous plants are of this tribe, which being raised one year from seed, generally attain perfection either the same, or in about the period of a twelvemonth, or a little less or more, and the following spring or summer shoot up stalks, flower, and perfect seeds; soon after which they commonly perish; or if any particular sort survive another year, they assume a dwindling and straggling growth, and gradually die off; so that biennials are always in their prime the first or second summer. Biennials consist both of esculents and flower plants. Of the esculent kinds, the cabbage, favy, carrot, parsnip, beet, onion, leek, &c. are biennials. Of the flowery tribe, the Canterbury-bell, French honey-suckle, wall-flower, stock-july-flower, sweet-William, China-pink, common-pink, matted-pink, carnation, scabious, holly-hock, tree-mallow, vervain-mallow, tree-primrose, honesty, or moonwort, &c. are all of the biennial tribe; all of which being sown in March, April, or May, rise the same year, and in spring following shoot up into stalks, flower, and perfect seeds in

autumn; after which most of them dwindle: though sometimes the wall-flowers, hollyhocks, carnations, pinks, will survive and flower the following year; but the plants become straggling, the flowers small and badly coloured: it is therefore eligible to raise a supply annually from seed; although wall-flowers, carnations, and pinks, may be continued by slips and layers.

BIER, a wooden machine for carrying the bodies of the dead to be buried. The word comes from the French *biere*, which signifies the same. It is called in Latin *feretrum*, a *ferendo*.—Among the Romans the common bier, whereon the poorer sort were carried, was called *sandypila*; that used for the richer sort, *lectica*, *lectica funebris*, sometimes *lectus*. The former was only a sort of wooden chest, *villus arca*, which was burnt with the body; the latter was enriched and gilded for pomp. It was carried bare, or uncovered, when the person died a natural and easy death; when he was much disfigured or distorted, it was veiled or covered over.

BIER is more particularly used for that whereon the bodies of saints are placed in the church to rest, and exposed to the veneration of the devout. This is also called, in middle-age writers, *lectus*, *feretrum*, *lectica*, and *loculus*; and was usually enriched with gold, silver, and precious stones, which was the cause that the bier of St. Benedict was pillaged, and all its ornaments carried off.

BIEROLIET, a town of the Netherlands in Dutch Flanders, where William Bruckfield, or *Beukelings*, who invented the method of pickling herrings, died in 1397. E. Long. 3. 42. N. Lat. 51. 25.

BIFERÆ, plants that flower twice a-year, in spring and autumn, as is common between the tropics.

BIFRONS, a person double-fronted, or two-faced.

BIFRONS is more peculiarly an appellation of Janus, who was represented by the ancients with two faces, as being supposed to look both backwards and forwards: though other reasons for it are recited by Plutarch. Sometimes he was painted with four faces, *quadrisons*, as respecting the four seasons.

BIGA, in antiquity, a chariot drawn by two horses abreast. Chariot-races, with two horses, were introduced into the Olympic games in the 93d Olympiad: but the invention was much more ancient, as we find that the heroes in the Iliad fight from chariots of that kind. The moon, night, and the morning, are by mythologists supposed to be carried in *bigæ*, the sun in *quadrigæ*. Statues in *bigæ* were at first only allowed to the gods, then to conquerors in the Grecian games; under the Roman emperors, the like statues, with *bigæ*, were decreed and granted to great and well-deserving men, as a kind of half triumph, being erected in most public places of the city. Figures of *bigæ* were also struck on their coins. The drivers of *bigæ* were called *bigarii*; a marble bust of one Florus a *bigarius* is still seen at Rome.

BIGAMY, properly signifies being *twice married*; but with us is used as synonymous to polygamy, or having a plurality of wives at once. Such second marriage, living the former husband or wife, is simply void, and a mere nullity, by the ecclesiastical law of England: and yet the legislature has thought it just to make

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Bigamy.

Bigati
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Bignon.

make it felony, by reason of its being so great a violation of the public œconomy and decency of a well ordered state. For polygamy can never be endured under any rational civil establishment, whatever specious reasons may be urged for it by the eastern nations, the fallaciousness of which has been fully proved by many sensible writers: but in northern countries the very nature of the climate seems to reclaim against it; it never having obtained in this part of the world, even from the time of our German ancestors, who, as Tacitus informs us, "*prope soli barbarorum singulis uxoribus contenti sunt.*" It is therefore punished by the laws both of ancient and modern Sweden with death. And in Britain it is enacted by statute 1 Jac. I. c. 11. that if any person being married, do afterwards marry again, the former husband or wife being alive, it is felony; but within the benefit of clergy. The first wife in this case shall not be admitted as an evidence against her husband, because she is the true wife; but the second may, for she indeed is no wife at all: and so, *vice versa*, of a second husband. This act makes an exception to five cases, in which such second marriage, though in the three first it is void, is yet no felony. 1. Where either party hath been continually abroad for seven years, whether the party in England hath notice of the other's being alive or no. 2. Where either of the parties hath been absent from the other seven years within this kingdom, and the remaining party hath had no knowledge of the other's being alive within that time. 3. Where there is a divorce (or separation *a mensa et thoro*) by sentence in the ecclesiastical court. 4. Where the first marriage is declared absolutely void by any such sentence, and the parties loosed *a vinculo*. Or, 5. Where either of the parties was under the age of consent at the time of the first marriage; for in such case the first marriage was voidable by the disagreement of either party, which the second marriage very clearly amounts to. But, if at the age of consent the parties had agreed to the marriage, which completes the contract, and is indeed the real marriage; and afterwards one of them should marry again; Judge Blackstone apprehends that such second marriage would be within the reason and penalties of the act.

BIGATI, in antiquity, a kind of ancient Roman silver coins, on one side whereof was represented a *biga*, or chariot drawn by two horses. The *bigatus* was properly the Roman denarius, whose impression, during the times of the commonwealth, was a chariot driven by Victory, and drawn either by two horses or four; according to which it was either denominated *bigatus* or *quadrigatus*.

BIGGLESWADE, a town of Bedfordshire in England, seated on the river Ivel, over which there is a handsome bridge. The town is much more considerable now than formerly, on account of its commodious inns for passengers, it lying on the principal road from London to York. W. Long. o. 15. N. Lat. 52. 5.

BIGHT, among seamen, denotes one roll or round of a cable or rope, when coiled up.

BIGNON (Jerome), a French writer, was born at Paris in 1590. He gained an uncommon knowledge, under the care of his father, in philosophy, mathematics, history, civil law, and divinity, in a very short time; and was almost at the end of his studies at an age when

it is usual to send children to school. At ten years of age he gave the public a specimen of his learning, in a Description of the Holy Land; and two years after, he published a Discourse concerning the principal antiquities and curiosities of Rome; and A summary treatise concerning the election of Popes. Henry IV. desired to see him, and appointed him page to the dauphin, who was afterwards Louis XIII. He appeared at court with all the politeness of manners imaginable. He wrote at that time a Treatise of the precedency of the kings of France, which he dedicated to Henry IV. who gave him an express order to continue his researches on that subject: but the death of that prince interrupted his design. He published, in 1613, the Formulæ of Marculphus. He was in 1620 made advocate-general in the grand council; and discharged that post with such reputation, that the king nominated him some time after counsellor of state, and at last advocate-general in the parliament. He resigned his offices in 1641; and the year following was appointed chief library keeper of the king's library. He was obliged to resume his office of advocate-general, and held it till his death. He was employed in the most important affairs of state. At last this great man, who had always made religion the basis of his other virtues, died with the most exemplary devotion in 1656.

BIGNONIA, TRUMPET-FLOWER, or SCARLET JASMINE: A genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranking in the 40th order *Perfonate*. The calyx is quinquefid and cup-form: The corolla is bell-shaped at the throat, quinquefid, and bellied underneath: The siliqua is bilocular; and the seeds have membranous wings.

Species. Of this genus Linnæus enumerates 17 species; of which the following are the most remarkable: 1. The radicans, or climbing ash-leaved bignonia, is a native of Virginia and Canada. It rises 30 or 40 feet high, having pinnated opposite leaves of four pair of serrated lobes, and an odd one: all the shoots and branches being terminated by beautiful clusters of large trumpet-shaped scarlet flowers. The humming birds delight to feed on these flowers, and by thrusting themselves too far into them are sometimes caught. Of this species there is a variety with smaller flowers. 2. The sempervivens, or evergreen climbing Virginia bignonia, is a native of Virginia, Carolina, and the Bahama islands. The stalks are more slender than those of the former species; yet they rise, upon proper supports, to the height of 20 or 30 feet; the flowers are trumpet-shaped, erect, and of a yellow colour, proceeding from the sides and ends of the stalks and branches. 3. The catalpa is a native of the same countries. It hath a strong woody stem and branches, rising 20 feet high, ornamented with large heart-shaped leaves, five or six inches long, and almost as broad, placed by threes, with whitish yellow-striped flowers coming out in panicles towards the end of the branches. This deserves a place in all curious shrubberies, as during the summer season no tree makes a more beautiful appearance: for which reason it should be placed conspicuously; or some might be planted singly upon spacious lawns or other large opens of grass-ground, and permitted to take their natural growth. 4. The unguis, or claw-bignonia, a deciduous climber, is a native of Barbadoes and the other

Bignonia. other West India islands. It rises by the help of claw-like tendrils, the branches being very slender and weak; and by these it will over-top bushes, trees, &c. twenty or thirty feet high. The branches, however, show their natural tendency to aspire, for they wind about every thing that is near them: so that, together with the assistance nature has given them of tendrils, it is no wonder they arrive at so great an height. These branches, or rather stalks, have a smooth surface, are often of a reddish colour, particularly next the sun, and are very tough. The tendrils grow from the joints; they are bowed, and are divided into three parts. The leaves grow in pairs at the joints, and are four in number at each. These are of an oblong figure, have their edges entire, and are very ornamental to the plant; for they are of an elegant green colour: their under surface is much paler than their upper; and their footstalks, midrib, and veins, alter to a fine purple. The flowers are monopetalous and bell-shaped. The tube is very large, and the rim is divided and spreads open. They grow from the wings of the leaves in August, two usually at each joint; and they are succeeded in the countries where they grow naturally by long pods. 5. The caprolata, or tendril bignonia, a native of North America, is another fine climber, which rises by the assistance of tendrils or claspers. The leaves grow at the joints opposite by pairs, though those which appear at the bottom frequently come out singly. They are of an oblong figure, and continue on the plant all winter. The flowers are produced in August from the wings of the leaves; they are of the same nature, and of the shape nearly of the former; are large, of a yellow colour, and succeeded by short pods.

Culture and Propagation. Of the climbers: 1. If the shoots are laid upon the ground, and covered with a little mould, they will immediately strike root, and become good plants for setting out where they are wanted. 2. They will all grow by cuttings. The bottom part of the strongest young shoots is the best; and by this method plenty may be soon raised. 3. They are to be raised by seeds; but this is a tedious method, especially of the pinnated-leaved sorts; for it will be many years before the plants raised from seeds will blow. As to the catalpa, whoever has the convenience of a bark-bed may propagate it in plenty, 1. By cuttings; which being planted in pots, and plunged into the beds in the spring, will soon strike root, and may afterwards be so hardened to the open air, that they may be set abroad in the shade before the end of summer: in the beginning of October, they should be removed into a green-house, or under some shelter to be protected from the winter's frost. In the spring, after the bad weather is past, they may be turned out of the pots, and planted in the nursery-way, in a well sheltered place; and if the soil be rich, and rather inclined to be moist, it will be the better. Here they may stand for four or five years, the rows being dug in winter and weeded in summer, when they will be of a proper size to be planted out to stand. These cuttings will often grow in a rich, shady, moist, border; so that whoever can have plenty of them, should plant them pretty thick in such a place, and he may be tolerably sure, by this way, of raising many plants. 2. From seed; which must be procured from America, and should be

sown in a fine warm border of light rich mould, or else in pots or boxes; the seedling plants requiring more than a common care.

BIGORRE, a territory or county of France, in the province of Gascony. It is bounded on the east by the valley of Aure, the viscounty of Neboussa, Riviere Verdun, and Pardiac; by Bearn on the west; on the south, by the valleys of Brotou and Penticoufe in Arragon; and on the north, by the county of Riviere-Bas incorporated with Armagnac. It is 40 miles long from north to south, and 30 in breadth from east to west. It is divided into three parts, the mountains, the plains, and the Rustan. The mountains are inclosed between those of the valley of Aure on the east, those of Arragon on the south, and of Bearn on the west. This part contains two principal valleys, Lavedan and Barege. The valley of Bigorre is of an oval form, and has the hills of Rustan on the east. The remarkable towns are Tarbes the capital, Bagneres, Lour, &c. The mountains are a barrier between France and Spain, and there are four different passages which the inhabitants are obliged to guard. Bigorre yields marble, jasper, stone, and slate: there are also mines of several sorts, but they are not worked. The rivers are the Adour, the Elches, the Arrosset, and the Gave of Lavedan; there are also three lakes.

BIGOT, a person obstinately and perversely wedded to some opinion or practice, particularly of a religious nature. Camden, perhaps, has hit upon the true original of the word. He relates, that when Rollo, Duke of Normandy, received Gilla, the daughter of Charles *the Foolish*, in marriage, together with the investiture of that dukedom, he would not submit to kiss Charles's foot: and when his friends urged him by all means to comply with that ceremony, he made answer in the English tongue, *NE SE BY GOD, I E. NET S BY GOD.* Upon which, the king and his courtiers deriding him, and corruptly repeating his answer, called him *bigot*; from whence the Normans were called, *bigodi*, or *bigots*.

BIGOT, in Italian *bigontia*, is used to denote a Venetian liquid measure, containing the fourth part of the amphora, or half the boot.

BILAEZ, a strong town of Croatia in Hungary, seated in an isle formed by the river Anna, in E. Long. 16. 2. N. Lat. 44. 35.

BILANDER, in navigation, a small merchant-ship with two masts, distinguished from other vessels of the same kind by the form of the main-sail. Few vessels are now rigged in the manner of bilanders; the name has been variously applied in different countries.

BILBILIS, (anc. geog.), a town of Hispania Citerior, the birth-place of Martial; now supposed to be Calatajud in Arragon on the Xalon.

BILBOA, a large, handsome, and rich town of Spain, capital of Biscay, with a well frequented harbour. It is remarkable for the wholesomeness of its air and the fertility of the soil about it. The inhabitants have always preserved themselves from a mixture with the Jews and Moors; and therefore will admit no family to settle among them but who can prove themselves to be of Christian extraction, nor will they admit any slaves among them as in the other parts of Spain. The exports are wool, and sword-blades, with some other manufactures of iron and steel. The town is seated at the

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implying that they find the same founded on probable evidence, and therefore worthy of further consideration.

In Scots law, every summary application in writing, by way of petition to the court of session, is called a *bill*.

Bill of Attainder. See **ATTAINDER**.

Bill of Appeal. See **APPEAL**.

BILL signifies also a paper, either written or printed, in very large characters, which is posted up in some open and public place, to give notice of the sale of any merchandize or ship, or of the sailing of any vessel into foreign parts.

BILL, in trade, both wholesale and retail, as also among workmen, signifies an account of merchandizes or goods delivered to a person, or of work done for one.

BILL, in commerce, denotes a security for money under the hand and sometimes seal of the debtor, without any condition or forfeiture in case of non-performance; in which it is distinguished from a bond or obligation. It has been usually defined, a writing wherein one man is bound to another to pay a sum of money, on a day that is future, or presently on demand, according to the agreement of the parties at the time when it is drawn; on which, in case of failure, diligence or execution may be immediately done to force payment. These bills must be on stamped paper: if under L. 50, the stamp to be 6 d.; if for L. 50 or upwards, 1 s.

Bank-BILL is a note or obligation signed on behalf of the company of the bank, by one of their cashiers, for value received. Or it is an obligation to pay on demand either to the bearer or to order; in Scotland, it is understood to be to order.

BILL of Entry, an account of the goods entered at the custom-house, both inwards and outwards. In this bill must be expressed, the merchant exporting or importing; the quantity of merchandize, and the divers species thereof; and whither transported, or from whence.

BILL of Exchange, is a security, originally invented among merchants in different countries, for the more easy remittance of money from the one to the other, which has since spread itself into almost all pecuniary transactions. It is an open letter of request from one man to another, desiring him to pay a sum named therein to a third person on his account; by which means a man at the most distant part of the world may have money remitted to him from any trading country. If A lives in Jamaica, and owes B who lives in England L. 1000; now if C be going from England to Jamaica, he may pay B this L. 1000 and take a bill of exchange drawn by B in England upon A in Jamaica, and receive it when he comes thither. Thus does B receive his debt, at any distance of place, by transferring it to C; who carries over his money in paper-credit, without danger of robbery or loss. This method is said to have been brought into general use by the Jews and Lombards, when banished for their usury and other vices: in order the more easily to draw their effects out of France and England into those countries in which they had chosen to reside. But the invention of it was a little earlier; for the Jews were banished

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out of Guienne in 1287, and out of England in 1290, and in 1236 the use of paper-credit was introduced into the Mogul empire in China.—In common speech, such a bill is frequently called a *draught*; but a bill of exchange is the more legal as well as mercantile expression. The person, however, who writes this letter is called, in law, the *drawer*; and he to whom it is written, the *drawee*; and the third person or negociator to whom it is payable (whether specially named or the bearer generally) is called the *payee*.

These bills are either foreign or inland; foreign, when drawn by a merchant residing abroad upon his correspondent in England, or *vice versa*; and inland, when both the drawer and the drawee reside within the kingdom. Formerly foreign bills of exchange were much more regarded in the eye of the law than inland ones, as being thought of more public concern in the advancement of trade and commerce. But now by two statutes, the one 9 and 10 W. III. c. 17. the other 3 and 4 Ann. c. 9. inland bills of exchange are put upon the same footing as foreign ones; what was the law and custom of merchants with regard to the one, and taken notice of merely as such, being by those statutes expressly enacted with regard to the other. So that there is now in law no manner of difference between them. In drawing foreign bills of exchange, it is customary to give two or three of the same date and tenor to be sent by different conveyances, that in case of accidents the person to whom they are sent may not be disappointed; in which case it is mentioned in the body of the bill, that it is the 1st, 2d, or 3d bill of exchange; so that when one is paid it discharges all the rest. Foreign bills for any sum must be on 6d. stamped paper.

BILL of Lading, an acknowledgment signed by the master of a ship, and given to a merchant, &c. containing an account of the goods which the master has received on board from that merchant, &c. with a promise to deliver them at an intended place for a certain salary. Each bill of lading must be treble, one for the merchant who loads the goods, another to be sent to the person to whom they are consigned, and the third to remain in the hands of the master of the ship. It must be observed, however, that a bill of lading is used only when the goods sent on board a ship are but part of the cargo: for when a merchant loads a whole vessel for his own personal account, the deed passed between him and the master of the ship is called *charter-party*. See **CHARTER-party**.

BILLS of Mortality, are accounts of the numbers of births and burials within a certain district, every week, month, quarter, or year. In this sense we say *weekly bills*, *monthly bills*, *quarterly bills*, *yearly bills*. The London *bills of mortality*, which were the first, are composed by the company of parish-clerks, and express the number of christenings of each sex, and the number of deaths from each disease.

BILL of Parcels, an account given by the seller to the buyer, containing the particulars of all the sorts and prices of the goods bought.

BILL of Sale, is when a person wanting a sum of money delivers goods as a security to the lender, to whom he gives this bill, empowering him to sell the goods, in case the sum borrowed is not repaid, with interest, at the appointed time.

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Bill of Store, a licence granted at the custom-house to merchants, by which they have liberty to carry, custom-free, all such stores and provisions as they may have occasion for during their voyage.

Bill of Sufferance, a licence granted to a merchant, at the custom-house, suffering him to trade from one English port to another without paying custom.

Lombard Bills, are instruments of an uncommon kind and figure, used in Italy and Flanders, and of late also in France; consisting of a piece of parchment, cut to an acute angle about an inch broad at top, and terminating in a point at bottom; chiefly given where private persons are concerned in the fitting out a ship on any long voyage. The manner is thus: The party, who is desirous to be concerned in the cargo or venture, carries his money to the merchant, who fits out the ship, where it is entered down in a register: at the same time the merchant writes down on a piece of parchment, upwards of an inch broad, and seven or eight inches long, the name of the lender and the sum lent; which being cut diagonal-wise, or from corner to corner, each party retains his half. On the return of the vessel, the lender brings his moiety to the merchant; which being compared with the other, he receives his dividend accordingly. Much the same is practised in Holland by those who lend money on pledges: the name of the borrower and the sum are written on a like slip of parchment, which is cut in two, and half given to the borrower, and the other half stitched to the pledge; that, upon comparing them together again, the borrower may receive his goods on paying the money stipulated.

Bill in Parliament, a paper containing propositions, offered to the houses to be passed by them, and then presented to the king to pass into a law.

To bring a bill into the house, if the relief sought by it is of a private nature, it is first necessary to prefer a petition; which must be presented by a member, and usually sets forth the grievance desired to be remedied. This petition (when founded on facts that may be in their nature disputed) is referred to a committee of members, who examine the matter alleged, and accordingly report it to the house; and then (or, otherwise, upon the mere petition) leave is given to bring in the bill. In public matters, the bill is brought in upon motion made to the house, without any petition at all. Formerly all bills were drawn in the form of petitions, which were entered upon the parliament-rolls, with the king's answer thereunto subjoined; not in any settled form of words, but as the circumstances of the case required: and at the end of each parliament the judges drew them into the form of a statute, which was entered on the statute-rolls. In the reign of Henry V. to prevent mistakes and abuses, the statutes were drawn up by the judges before the end of the parliament; and in the reign of Henry VI. bills in the form of acts, according to the modern custom, were first introduced.

The persons directed to bring in the bill, present it in a competent time to the house, drawn out on paper, with a multitude of blanks, or void spaces, where any thing occurs that is dubious, or necessary to be settled by the parliament itself (such especially as the precise date of times, the nature and quantity of penalties, or of any sums of money to be raised); being indeed

only the skeleton of the bill. In the house of lords, if the bill begins there, it is (when of a private nature) referred to two of the judges, who examine and report the state of the facts alleged, to see that all necessary parties consent, and to settle all points of technical propriety. This is read a first time, and at a convenient distance a second time; and after each reading, the speaker opens to the house the substance of the bill, and puts the question, Whether it shall proceed any farther? The introduction of the bill may be originally opposed, as the bill itself may at either of the readings; and, if the opposition succeeds, the bill must be dropped for that session; as it must also, if opposed with success in any of the subsequent stages.

After the second reading, it is committed; that is, referred to a committee: which is either selected by the house in matters of small importance; or else, upon a bill of consequence, the house resolves itself into a committee of the whole house. A committee of the whole house is composed of every member; and, to form it, the speaker quits the chair (another member being appointed chairman), and may sit and debate as a private member. In these committees the bill is debated clause by clause, amendments made, the blanks filled up, and sometimes the bill entirely new modelled. After it has gone through the committee, the chairman reports it to the house with such amendments as the committee have made; and then the house reconsiders the whole bill again, and the question is repeatedly put upon every clause and amendment. When the house hath agreed or disagreed to the amendments of the committee, and sometimes added new amendments of its own, the bill is then ordered to be engrossed, or written in a strong gross hand, on one or more long rolls (or presses) of parchment sewed together. When this is finished, it is read a third time, and amendments are sometimes then made to it; and if a new clause be added, it is done by tacking a separate piece of parchment on the bill, which is called a *ryder*. The speaker then again opens the contents; and, holding it up in his hands, puts the question, Whether the bill shall pass? If this is agreed to, the title to it is then settled; which used to be a general one for all the acts passed in the session, till in the fifth year of Hen. VIII. distinct titles were introduced for each chapter. After this, one of the members is directed to carry it to the lords, and desire their concurrence; who, attended by several more, carries it to the bar of the house of peers, and there delivers it to their speaker, who comes down from his woofack to receive it.

It there passes through the same forms as in the other house (except engrossing, which is already done); and, if rejected, no more notice is taken, but it passes *sub silentio*, to prevent unbecoming alterations. But if it is agreed to, the lords send a message by two masters in chancery (or sometimes two of the judges) that they have agreed to the same: and the bill remains with the lords, if they have made no amendment to it. But if any amendments are made, such amendments are sent down with the bill to receive the concurrence of the commons. If the commons disagree to the amendments, a conference usually follows between members deputed from each house; who for the most part settle and adjust the difference: but if both houses remain

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inflexible, the bill is dropped. If the commons agree to the amendments, the bill is sent back to the lords by one of the members, with a message to acquaint them therewith. The same forms are observed, *mutatis mutandis*, when the bill begins in the house of lords. But when an act of grace or pardon is passed, it is first signed by his majesty, and then read once only in each of the houses, without any new engrossing or amendment. And when both houses have done with any bill, it always is deposited in the house of peers, to wait the royal assent; except in the case of a bill of supply, which after receiving the concurrence of the lords is sent back to the house of commons.

The royal assent may be given two ways: 1. In person; when the king comes to the house of peers, in his crown and royal robes, and sending for the commons to the bar, the titles of all the bills that have passed both houses are read; and the king's answer is declared by the clerk of the parliament in Norman-French: a badge, it must be owned (now the only one remaining), of conquest; and which one could wish to see fall into total oblivion; unless it be reserved as a solemn memento to remind us that our liberties are mortal, having been once destroyed by a foreign force. If the king consents to a public bill, the clerk usually declares, *Le roy le veut*, "The king wills it so to be;" if to a private bill, *Soit fait come il est desire*, "Be it as it is desired." If the king refuses his assent, it is in the gentle language of *Le roy s'avisera*, "The king will advise upon it." When a bill of supply is passed, it is carried up and presented to the king by the speaker of the house of commons; and the royal assent is thus expressed, *Le roy remercie ses loyal subjects, accepte leur benevolence, et aussi le veut*; "The king thanks his loyal subjects, accepts their benevolence, and wills it so to be." In case of an act of grace, which originally proceeds from the crown and has the royal assent in the first stage of it, the clerk of the parliament thus pronounces the gratitude of the subject: *Les prelates, seigneurs, et commons, en ce present parliament assemblees, au nom de tous vous autres subjects, remercient tres humblement votre majeste, et prient a Dieu vous donner en sante bone vie et longue*; "The prelates, lords, and commons, in this present parliament assembled, in the name of all your other subjects, most humbly thank your majesty, and pray to God to grant you in health and wealth long to live." 2. By the statute 33 Hen. VIII. c. 21. the king may give his assent by letters patent under his great seal, signed with his hand, and notified in his absence to both houses assembled together in the high house. And when the bill has received the royal assent in either of these ways, it is then, and not before, a statute or act of parliament.

This statute or act is placed among the records of the kingdom; there needing no formal promulgation to give it the force of a law, as was necessary by the civil law with regard to the emperor's edicts: because every man in Britain is, in judgment of law, party to the making of an edict of parliament, being present thereat by his representatives. However, a copy thereof is usually printed at the king's press for the information of the whole land. And formerly, before the invention of printing, it was used to be published by the sheriff of every county; the king's writ being sent to him at the end of every session, together with a tran-

script of all the acts made at that session, commanding him, *ut statuta illa, et omnes articulos in eisdem contentos, in singulis locis ubi expedire viderit, publice proclamari, et firmiter teneri et observari faciat*. And the usage was to proclaim them at his county court, and there to keep them, that whoever would might read or take copies thereof; which custom continued till the reign of Henry VII.

An act of parliament thus made is the exercise of the highest authority that this kingdom acknowledges upon earth. It hath power to bind every subject in the land, and the dominions thereunto belonging; nay, even the king himself, if particularly named therein. And it cannot be altered, amended, dispensed with, suspended, or repealed, but in the same forms and by the same authority of parliament: for it is a maxim in law, that it requires the same strength to dissolve as to create an obligation. It is true, it was formerly held, that the king might in many cases dispense with penal statutes; but now by statute 1 Wil. and M. II. c. 2. it is declared, that the suspending or dispensing with laws by regal authority, without consent of parliament, is illegal.

Bill of Rights. See the article LIBERTY.

BILLERICAY, a town of Essex in England, seated on a hill, in E. Long. 0. 25. N. Lat. 51. 35.

BILLET, in heraldry, a bearing in form of a long square. They are supposed to represent pieces of cloth of gold or silver; but Guillem thinks they represent a letter sealed up, and other authors take them for bricks. *Billeté* signifies that the escutcheon is all over strewed with billets, the number not ascertained.

Billet-Wood, small wood for fuel, cut three feet and four inches long, and seven inches and a half in compass; the assize of which is to be inquired of by justices.

BILLETING, in military affairs, is the quartering of soldiers in the houses of a town or village.—And, among fox-hunters, it signifies the ordure and dung of a fox.

BILLIARDS, an ingenious kind of game, played on a rectangular table, with little ivory balls, which are driven into hazards or holes, according to certain rules of the game.

This game was invented by the French, when it was played in a different manner from what it is at present, by having a pafs or iron fixed on the table, through which the balls at particular periods of the game used to be played; but now this method is quite laid aside.

Soon after the French, the Germans, the Dutch, and Italians, brought this game into vogue throughout most parts of Europe, at which they became great proficients; and in a few years afterwards it became a favourite diversion in many parts of England, particularly with persons of the first rank. Since that time, indeed, it has been in a great measure prostituted by the designing and vulgar sort of people: notwithstanding, it will never be out of fashion, being of itself very entertaining, and attended with that kind of moderate exercise which renders it the more agreeable.

The table on which the game is played is generally about twelve feet long and six feet wide, or rather in the exact form of an oblong; it is covered with fine green cloth, and surrounded with cushions to prevent the balls rolling off, and to make them rebound.

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Billiards.

Billiards. There are six holes, nets, or pockets: these are fixed at the four corners, and in the middle, opposite to each other, to receive the balls, which when put into these holes or pockets are called hazards. The making of a hazard, that is, putting the adversary's ball in, at the usual game reckons for two in favour of the player.

The game is played with sticks, called *maces*, or with cues; the first consist of a long straight stick, with a head at the end, and are the most powerful instruments of the two: the cue is a thick stick diminishing gradually to a point of about half an inch diameter; this instrument is played over the left hand, and supported by the fore-finger and thumb. It is the only instrument in vogue abroad, and is played with amazing address by the Italians and some of the Dutch; but in England the mace is the prevailing instrument, which the foreigners hold in contempt, as it requires not near so much address to play the game with, as when the cue is made use of; but the mace is preferred for its peculiar advantage, which some professed players have artfully introduced, under the name of *trailing*, that is, following the ball with the mace to such a convenient distance from the other ball as to make it an easy hazard. The degrees of trailing are various, and undergo different denominations amongst the connoisseurs at this game; namely, the shove, the sweep, the long stroke, the trail, and the dead trail or turn up, all which secure an advantage to a good player according to their various gradations: even the butt end of the cue becomes very powerful, when it is made use of by a good trailer.

Rules generally observed at the common or usual game.

—1. For the lead, the balls must be put at one end, and the player must strike them against the farthest cushion, in order to see which will be nearest the cushion that is next to them. 2. The nearest to the cushion is to lead and choose the ball if he pleases. 3. The leader is to place his ball at the nail, and not to pass the middle pocket; and if he holes himself in leading, he loses the lead. 4. He who follows the leader must stand within the corner of the table, and not place his ball beyond the nail. 5. He who plays upon the running ball loses one. 6. He who touches the ball twice, and moves it, loses one. But these two rules are seldom or ever enforced, especially in England. 7. He who does not hit his adversary's ball, loses one. 8. He who touches both balls at the same time, makes a foul stroke, in which case if he should hole his adversary, nothing is gained by the stroke; but if he should put himself in, he loses two. 9. He who holes both balls loses two. 10. He who strikes upon his adversary's ball, and holes himself, loses two. 11. He who plays at the ball without striking it, and holes himself, loses three. 12. He who strikes both balls over the table, loses two. 13. He who strikes his ball over the table, and does not hit his adversary's ball, loses three. 14. He who retains the end of his adversary's stick when playing, or endeavours to baulk his stroke, loses one. 15. He who plays another's ball or stroke without leave, loses one. 16. He who takes up his ball, or his adversary's without leave, loses one. 17. He who stops either ball when running loses one, and being near the hole loses two. 18. He who blows upon the ball when running loses one, and if near the hole loses two. 19. He who shakes the table when the

ball is running, loses one. 20. He who strikes the table with the stick, or plays before his turn, loses one. 21. He who throws the stick upon the table, and hits the ball, loses one. 22. If the ball stands upon the edge of the hole, and after being challenged it falls in, it is nothing, but must be put up where it was before. 23. If any person not being one of the players, stops a ball, the ball must stand in the place where it was stopped. 24. He who plays without a foot upon the floor and holes his adversary's ball, gets nothing for it, but loses the lead. 25. He who leaves the game before it is ended, loses it. 26. Any person may change his stick in play. 27. If any difference arise between players, he who marks the game or the majority of the company must decide it. 28. Those who do not play must stand from the table, and make room for the players. 29. If any person lays any wager, and does not play, he shall not give advice to the players upon the game.

Different kinds of games played at billiards.—Besides the common winning game, which is twelve up, there are several other kinds of games, viz. the losing-game, the winning and losing, choice of balls, brioche, carambole, Russian carambole, the bar-hole, the one-hole, the four-game, and hazards.

The *losing-game*, is the common game nearly reversed; that is to say, except hitting the balls, which is absolutely necessary, the player gains by losing. By putting himself in, he wins two; by putting his adversary in, he loses two; but if he pockets both balls, he gets four. This game depends greatly upon particular strengths, and is therefore very necessary to be known to play the winning game well.

The *winning and losing game* is a combination of both games; that is to say, all balls that are put in by striking first the adversary's ball, reckon towards game; and holing both balls reckons four. At this game and the losing, knocking over or forcing the balls over the cushion, goes for nothing, the striker only loses the lead.

Choice of balls, is choosing each time which ball the player pleases, which is doubtless a great advantage, and is generally played against losing and winning.

Brioche, is being obliged to hit a cushion, and make the ball rebound or return to hit the adversary's ball, otherwise the player loses a point. This is a great disadvantage, and is reckoned between even players to be equal to receiving about eight or nine points.

Carambole, is a game newly introduced from France. It is played with three balls, one being red, which is neutral, and is placed upon a spot on a line with the stringing nail (*i. e.* that part of the table from whence the player strikes his ball at first setting off, and which is generally marked with two brass nails). Each antagonist at the first stroke of a hazard, play from a mark which is upon a line with it at the other end of the table. The chief object at this game is, for the player to hit with his own ball the two other balls, which is called a *carambole*, and by which the player wins two. If he puts in the red ball he gets three, and when he holes his adversary's ball he gets two; so that seven may be made at one stroke, by caramboling and putting in both balls. This game resembles the losing, depending chiefly upon particular strengths, and is generally

Billiards.

nerally played with the cue. The game is sixteen up; nevertheless it is reckoned to be sooner over than the common game. The next object of this game, after making what we have distinguished by the *carambole*, is the *baulk*; that is, making the white ball, and bringing the player's own ball and the red one below the stringing nail, from whence the adversaries begin. By this means the opponent is obliged to play *bricole* from the opposite cushion, and it often happens that the game is determined by this situation.

The *Russian carambole*, is a game that has still more lately been introduced from abroad, and is played in the following manner: The red ball is placed as usual on the spot made for that purpose; but the player when he begins, or after having been holed, never places his ball on any particular place or spot; he being at liberty to put it where he pleases. When he begins to play, instead of striking at the red ball, he leads his own gently behind it, and his antagonist is to play at which he thinks proper; if he plays at the red ball and holes it, he scores three as usual towards the game, which is twenty-four instead of sixteen points; and the red ball is put upon the spot again, at which he may strike again or take his choice which of the two balls to push at, always following his stroke till both balls are off the table. He is intitled to two points each time that he *caramboles*, the same as at the other game; but if he *caramboles* and puts his own ball into any hole, he loses as many as he might have got had he not holed himself: for example, if he strikes at the red ball, which he holes, at the same time *caramboles* and holes himself, he loses five points; and if he holes both balls when he *caramboles*, and likewise his own, he loses seven, which he would have got if he had not holed his own ball. In other respects it is played like the common *carambole* game.

The *bar-hole*, is so called from the hole being barred which the ball should be played for, and the player striking for another hole; when this game is played against the common game, the advantage for the latter, between equal players, is reckoned to be about six.

The player at the *one-hole*, though it seems to those who are not judges of the game to be a great disadvantage, has in fact the best of it; for as all balls that go into the one hole reckon, the player endeavours to lay his ball constantly before that hole, and his antagonist frequently finds it very difficult to keep one or other ball out, particularly on the leads, when the one hole player lays his ball (which he does as often as he can) on the brink of the hole; leading for that purpose from the opposite end, which in reality he has no right to do; for the lead should be given from the end of the table at which the hazard is made: but when a person happens to be a novice, this advantage is often taken.

The *four-game*, consists of two partners on each side, at the common winning game; who play by succession after each hazard, or two points lost. The game is fifteen up; so that the point or hazard is an odd number, which makes a misf at this game of more consequence than it is at another; being as much at four, six, or eight, as it is at five, seven, or nine, at the single game.

Hazards, are so called because they depend entirely upon the making of hazards, there being no account kept of any game. Any number of persons may play,

by having balls that are numbered; but the number seldom exceeds six, to avoid confusion. The person whose ball is put in, pays so much to the player according to what is agreed to be played for each hazard; and the person who misses, pays half the price of a hazard to him whose ball he played at. The only general rule is not to lay any ball a hazard for the next player, which may be in a great measure avoided, by always playing upon the next player, and either bringing him close to the cushion or putting him at a distance from the rest of the balls. The table, when hazards are played, is always paid for by the hour.

BILLINGHAM, a town of Northumberland in England, seated in W. Long. 1. 35. N. Lat. 55. 20.

BILLON, in the history of coins, a composition of precious and base metals, where the latter predominate. Wherefore gold under twelve carats fine, is called *billon of gold*; and silver under six penny-weight, *billon of silver*. So little attention was paid formerly to the purity of gold and silver, that the term *billon of gold* was applied only to that which was under twenty-one carats, and *billon of silver* to that which was lower than ten penny-weight.

BILLON, a town of Auvergne in France, situated in E. Long. 3. 30. N. Lat. 45. 36.

BILSDON, a small town of Leicestershire in England, situated in W. Long. 0. 15. N. Lat. 52. 40.

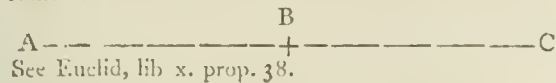
BILSEN, a town of Germany, in the circle of Westphalia and bishopric of Liege, seated on the river Demer, in E. Long. 5. 42. N. Lat. 50. 48.

BILSON (Thomas), bishop of Winchester, in which city he was born and educated. In 1565, he was admitted perpetual fellow of New college, and in 1570 completed his degrees in arts. He was made bachelor of divinity in 1579, and doctor the year following. His first preferment was that of master of Winchester school; he was next made prebendary, and afterwards warden, of Winchester college. In 1596 he was consecrated bishop of Worcester; and about a year after, translated to the see of Winchester, and sworn of queen Elizabeth's privy council. He was one of the principal managers of the Hampton-court conference in 1604; and the English translation of the Bible in the reign of king James I. was finally corrected by this prelate, and Dr Miles Smith bishop of Gloucester. He died in the year 1616; and was buried in Westminster abbey, near the entrance of St Edmund's chapel, on the south side of the monument of king Richard II. The several authors who have mentioned bishop Bilson, agree in giving him the character of a learned divine, an able civilian, and an upright man. His style is in general much more easy and harmonious than that of cotemporary ecclesiastics. His works are, 1. *Several Latin poems and orations*. Manuscript, in Ant. Wood's library. 2. *The true difference between Christian subjection and unchristian rebellion*. Oxf. 1585, 4to. Lond. 1586, 8vo. 3. *The perpetual government of Christ's church*. Lond. 1593, 4to, Black Letter. 4. *The effect of certain sermons touching the full redemption of mankind by the death and blood of Christ*, &c. Lond. 1599, 4to. 5. *The survey of Christ's suffering for man's redemption, and of his descent to Hades or Hell*. Lond. 1604, fol. 6. *A sermon preached before king James I. and his queen at their coronation*. Lond. 1603, 8vo.

Billingham
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Billon.

Bimedial
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Binary.

BIMEDIAL, in mathematics. If two medial lines, as AB and BC, commensurable only in power, containing a rational rectangle, are compounded, the whole line AC will be irrational, and is called a *first bimedral line*.



See Euclid, lib. x. prop. 38.

BIMINI, one of the Lucaya islands in North America, near the channel of Bahama. It is about eight miles in length, and as much in breadth, covered with trees, and inhabited by the native Americans. It is very difficult of access on account of the shoals, but is a very pleasant place. W. Long. 79. 30. N. Lat. 25. 0.

BIMLIPATAN, a sea-port town of Golconda in the East Indies, seated on the west side of the bay of Bengal. Here the Dutch have a very small factory, designed for buying up the cloth manufactured by the inhabitants. E. Long. 83. 5. N. Lat. 18. 0.

BINACLE, a wooden case or box, which contains the compasses, log-glasses, watch glasses, and lights to show the compass at night. As this is called *bitacle* in all the old sea-books, even by mariners, it appears evidently to be derived from the French term *habitation* (a small habitation), which is now used for the same purpose by the seamen of that nation. The binacle (Plate XCV. fig. 4.) is furnished with three apartments, with sliding shutters: the two side ones, *a* *b*, have always a compass in each *d*, to direct the ship's way; while the middle division, *c*, has a lamp or candle with a pane of glass on either side to throw a light upon the compass in the night, whereby the man who steers may observe it in the darkest weather, as it stands immediately before the helm on the quarter deck. There are always two binacles on the deck of a ship of war, one being designed for the man who steers, and the other for the person who superintends the steerage, whose office is called *coxing*.

BINAROS, a small town of Spain, in the kingdom of Valentia, remarkable for good wine. It is seated near the sea, in E. Long. 0. 15. N. Lat. 40. 24.

BINARY ARITHMETIC, that wherein unity or 1 and 0 are only used. This was the invention of M. Leibnitz, who shows it to be very expeditious in discovering the properties of numbers, and in constructing tables: and Mr Dangeourt, in the history of the royal academy of sciences, gives a specimen of it concerning arithmetical progressionals; where he shows, that because in binary arithmetic only two characters are used, therefore the laws of progression may be more easily discovered by it than by common arithmetic. All the characters used in binary arithmetic are 0 and 1; and the cypher multiplies every thing by 2, as in the common arithmetic by 10. Thus 1 is one; 10, two; 11, three; 100, four; 101, five; 110, six; 111, seven; 1000, eight; 1001, nine; 1010, ten; which is built on the same principles with common arithmetic. Hence immediately appears the reason of the celebrated property of the duplicate geometrical proportion in whole numbers; *viz.* that one number of each degree being had, we may thence compose all the other whole numbers above the double of the highest degree. It being here, *v. gr.* as if one should say,

111 is the sum of 4, 2, and 1, which property may serve essayers to weigh all kinds of masses with a little weight; and may be used in coins, to give several values with small pieces. This method of expressing numbers once established, all the operations will be easy: in multiplication particularly, there will be no need for a table, or getting any thing by heart.

100	4
10	2
1	1
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111	7

Binary
||
Bingen.

The author, however, does not recommend this method for common use, because of the great number of figures required to express a number; adding, that if the common progression were from 12 to 12, or from 16 to 16, it would be still more expeditious; but its use is in discovering the properties of numbers, in constructing tables, &c. What makes the binary arithmetic the more remarkable is, that it appears to have been the same with that used 4000 years ago among the Chinese, and left in *enigma* by Fohi, the founder of their empire, as well as of their sciences.

BINARY MEASURE, in music, is a measure which is beaten equally, or where the time of rising is equal to that of falling. This is usually called *common time*.

BINARY NUMBER, that composed of two units.

BINCH, a small fortified town of the Low Countries, in the county of Hainault, subject to the house of Austria. E. Long. 3. 21. N. Lat. 50. 23.

BIND, a country word for a stalk of hops.

BIND OF EELS, a quantity, consisting of 250, or 10 strikes, each containing 25 eels.

BIND-WEED, in botany. See CONVULVULIS.

BINDBROKE, a town of Lincolnshire in England, seated in E. Long: 0. 10. N. Lat. 53. 32.

BINDING-JOISTS, in architecture, are those joists in a floor, into which the trimmers of stair-cases, or well-holes of the stairs, and chimney-ways, are framed: they ought to be stronger than common joists.

BINDING, in the art of defence, a method of securing or crossing the adversary's sword with a pressure, accompanied with a spring from the wrist. See BEATING.

Unless a man, by some kind of cross, secure, as it were, or render his adversary's sword incapable to offend him during the time of his performing a lesson upon him, it is impossible for him to be certain but that he may receive from his adversary, either a fortuitous *contretemps*, or an exchanged thrust, before the recovery of his body, or going off after a thrust—The great objection made by some people, particularly those time-catchers, against the frequent use of binding, is, that when a man, in performing it, cleaves too much to his adversary's sword, he is liable to his adversary's slipping of him, and consequently of receiving either a plain thrust, or one from a feint.

BINDING is a term in falconry, which implies tiring, or when a hawk seizes.

BINDING OF BOOKS. See BOOK-BINDING.

BING, in the alum-works, denotes a heap of alum thrown together in order to drain.

BINGAZI, a sea-port town of Africa, in the kingdom of Tripoli. E. Long. 19. 10. N. Lat. 32. 20.

BINGEN, an ancient and handsome town of Germany, in the archbishopric of Mentz, seated at the place where the river nave falls into the Rhine. E. Long. 7. 48. N. Lat. 50. 3.

Bingham
||
Bion.

BINGHAM (Joseph), a learned divine, born at Wakefield in Yorkshire, in September 1668, educated at University college in Oxford, and afterwards presented by John Radcliffe, M. D. to the rectory of Headbournworthy, near Winchester. In this country retirement he began his learned and laborious work, *Origines Ecclesiasticae*; or, The Antiquities of the Christian church. The first volume of which was published in 1708, and it was completed afterwards in nine volumes more. He published also several other books. But notwithstanding his great learning and merit, he had no other preferment than that of Headbournworthy till the year 1712, when he was collated to the rectory of Havant, near Portsmouth, by Sir Jonathan Trelawney bishop of Winchester, to whom he dedicated several of his books. He died August 17th, 1723, in the 55th year of his age.

BINGHAM, a town of Nottinghamshire in England, seated in the vale of Belvoir, in W. Long. 1. 10. N. Lat. 50. 3.

BINGIUM, (anc. geog.), a village or town of the Vangiones in Gallia Belgica, seated at the confluence of the Nave and Rhine. Now BINGEN, which see.

BINGLEY, a town in the west riding of Yorkshire, seated on the river Aire, in W. Long. 1. 35. N. Lat. 53. 20.

BINN, *binna*, a sort of chest or cupboard, wherein to lock up bread, meat, or other provisions. The word is also used for a place boarded up to put corn in.

BINN, or **BIN**. The pease and oatmeal, used at sea, are apt to spoil in casks. Dr Hales proposes to prevent this, by putting them into large bins, with false bottoms of hair cloths laid on bars, whereby fresh air may be blown upwards through them, at proper times, with small ventilators.

BINOCULAR TELESCOPE, a kind of dioptric telescope fitted with two tubes, joined in such a manner that one may see a distant object with both eyes at the same time. See **OPTICS**.

BINOMIAL, in algebra, a root consisting of two members connected by the sign + or -. Thus $a+b$, and $8-3$, are binomials, consisting of the sums and differences of these quantities. See **ALGEBRA**.

BINTAN, an island of Asia, in the East Indies, to the south of the peninsula of Malacca, situated in E. Long. 103. 50. N. Lat. 1. 0.

BIOGRAPHER, one who writes the lives of particular persons, as Plutarch, Suetonius, &c. See the next article.

BIOGRAPHY, a species of history which records the lives and characters of remarkable persons. This is at once the most entertaining and instructive kind of history. It admits of all the painting and passion of romance; but with this capital difference, that our passions are more keenly interested, because the characters and incidents are not only agreeable to nature, but strictly true. No books are so proper to be put into the hands of young people. See the *Preface* to this **WORK**; and **HISTORY**, n^o 85.

BION, a bucolic poet, native of Smyrna, lived at the same time with Ptolemy Philadelphus, whose reign reached from the fourth year of the 123d Olympiad to the second year of the 133d. He was an incomparable poet, if we may believe the lamentations
N^o 46.

of his disciple Moschus. His few pieces which are left do not contradict this testimony. See **MOSCHUS**.

BION, surnamed *Boryphœnites*, because he was of Boryllhene, was a philosopher of a great deal of wit, but of very little religion: he flourished about the 120th Olympiad; but falling sick, he, like other profane persons, became superstitious.

BIORNBURG, a town of north Finland in Sweden, seated on the river Kune near its mouth in the Gulf of Bothnia. E. Long. 22. 35. N. Lat. 62. 6.

BIO THANATI (from *βία*, violence, and *θάνατος*, death), in some medical writers, denotes those who die a violent death. The word is also written, and with more propriety, *biathanati*; sometimes *biesthanti*.

In a more particular sense, it denotes those who kill themselves, more properly called *autothanati*. In this sense it is that the word is used both by Greek and Latin writers. By the ancient discipline of the church, they were punished by denying them burial, and refusing all commemoration of them in the prayers and offices of the church.

BIO THANATI (supposed by some to be derived from *βίος*, life, and *θάνατος*, death, and alluding to the belief of a future life after death), was also a name of reproach given by the Heathens to the primitive Christians, for their constancy and forwardness to lay down their lives in martyrdom.

BIO THANATOS is also used in some writers of the barbarous age for wicked, damnable, or accursed.

BIQUAC, *βιουακ*, or *βιοακ*, in the military art, a nightly guard performed by the whole army, when there is an apprehension of danger from the enemy. The word is formed by corruption from the German *weywacht*, a double watch or guard.

BIPENNIS, a two-edged axe, used anciently by the Amazons in fight; as also by the seamen, to cut asunder the ropes and cordage of the enemy's vessels. The bipennis was a weapon chiefly of the oriental nations, made like a double axe, or two axes joined back to back, with a short handle. Modern writers usually compare it to our halbard or partizan; from which it differed in that it had no point, or that its shaft or handle was much shorter.

BIQUADRATE, or **BIQUADRATIC**, is the next power above the cube, or the square multiplied by itself.

BIQUADRATIC EQUATION, in algebra, an equation raised to the fourth power, or where the unknown quantity of one of the terms has four dimensions: Thus $x^4 + ax^3 + bx^2 + cx + d = 0$ is a biquadratic equation. See **ALGEBRA**.

BIQUADRATIC Parabola, in geometry, a curve line of the third order, having two infinite legs tending the same way. See **PARABOLA**.

BIQUADRATIC Power of any number, is the fourth power or squared square of that number: Thus 16 is the biquadratic power of 2; for $2 \times 2 = 4$, and $4 \times 4 = 16$.

BIQUADRATIC Root of any number, is the square root of the square root of that number: Thus the biquadratic root of 81 is 3; for the square root of 81 is 9, and the square root of 9 is 3.

BIQUALAR, in the customs of the Algerines, a cook of the divan.—The janizaries, whom the Algerines call *el-lachis*, after serving a certain term as com-

Bion
||
Biqualar.

Biquintile mon soldiers, are preferred to be biqualars, or cooks of the divan, which is the first step towards arriving at higher preferment. Biqualars have the care of furnishing the officers and commanders of the Algerine soldiery with meat and drink in the camp, in garrison, &c. From biqualars they are made odobachis; that is, corporals of companies, or commanders of squadrons.

BIQUINTILE, an aspect of the planets, when they are 144 degrees distant from each other. It is thus called, because they are distant from one another by twice the fifth part of 360 degrees.

BIR, or **BERR**, a town of the province of Diarbeck in Turkey in Asia, with a castle where the governor resides, seated on the eastern bank of the river Euphrates, near a high mountain in a very pleasant and fertile country. E. Long. 38.6. N. Lat. 36. 10.

BIRAGUE (Clement), a Milanese engraver, and the inventor of the art of cutting diamonds, flourished about the year 1580.

BIRCH-TREE, in botany. See **BETULA**.

BIRCH-Bark being bituminous, and consequently warm and emollient, is used in fumigations to correct a distempered air. The inner silken bark was anciently used for writing-tables before the invention of paper; though Ray rather assigns the office of paper to the cuticle, or outer skin, which peels off yearly. And with the outward, thicker, and coarser part, are houses in Russia, Poland, and other northern tracts, covered, instead of slates and tyle. The Indians make pinnaces with white cedar, which they cover with large flakes of birch-bark; sewing them with thread of spruce-roots, and pitching them, as the ancient Britons did, with the willow. Pliny speaks of a bitumen actually procured from the birch-tree.

Fungus of BIRCH, an excrescence growing on its trunk. It is astringent, and good against hemorrhagics. When boiled, beaten, and dried in an oven, it makes excellent spunk or touchwood.

BIRCH-Leaves are of use in the dropsy, itch, &c. either internally or externally applied.

BIRCH-Twigs serve to make rods and brooms: smeared with bird-lime, they are used by fowlers; to say nothing of the ancient fasces carried by licitors.

BIRCH-Wine is made by fermenting the vernal juice. Formerly it was in great repute against all nephritic disorders, but is left out in the modern London practice. The preparation of birch-wine is well and amply described in a book intitled *Vineta Britannicum*.

BIRCH (Dr Thomas), an eminent historical and biographical writer, was born in London in 1705. His parents were both of them Quakers; and his father, Joseph Birch, was a coffee-mill maker by trade. Thomas being put to school, was indefatigable in his application, and stole many hours from sleep to increase his stock of knowledge. By this unremitting diligence, though he had not the happiness of an university education, he soon became qualified to take holy orders in the church of England, to the surprise of his acquaintance. In 1728 he married the daughter of the Rev. Mr Cox, to whom he was curate: but his felicity was of short duration, Mrs Birch dying of a puerperal fever in less than 12 months after their marriage; an event which he deploras in a very elegant and pathetic poem, preserved in Nichols's Vol. III. Part I.

Collection. In 1732 he was recommended to the friendship and favour of the late lord high chancellor Hardwicke, then attorney-general; to which noble peer, and to the present Earl of Hardwicke, he was indebted for all his preferments. The first proof he experienced of his patron's regard was the living of Ulting in the county of Essex, in the gift of the crown, to which he was presented 1732. In 1734 he was appointed one of the domestic chaplains to the unfortunate Earl of Kilmarnock, who was beheaded 1746. Mr Birch was chosen a member of the Royal Society, Feb. 20. 1734-5; and of the Society of Antiquaries, Dec. 11. 1735, of which he afterwards became director till his death. Before this, the Marischal college of Aberdeen had conferred on him, by diploma, the degree of Master of Arts. In 1743, by the interest of Lord Hardwicke, he was presented by the crown to the sinecure rectory of Landewy Welfrey in the county of Pembroke; and in 1743-4 was preferred, in the same manner, to the rectory of Sidington St Peter's, in the county and diocese of Gloucester. We find no traces of his having taken possession of this living; and indeed it is probable that he quitted it immediately for one more suitable to his inclinations and to his literary engagements, which required his almost constant residence in town; for on the 24th of February 1743-4, he was instituted to the united rectories of St Michael Woodstreet and St Mary Staining; and in 1745-6, to the united rectories of St Margaret Pattens and St Gabriel, Fenchurchstreet (by lord chancellor Hardwicke, in whose turn the presentation then was). In January 1752, he was elected one of the secretaries of the Royal Society, in the room of Dr Cromwell Mortimer, deceased. In January 1753, the Marischal college of Aberdeen created him Doctor of Divinity; and in that year the same degree was conferred on him by Archbishop Herring. He was one of the trustees of the British Museum; for which honour he was probably indebted to the present Earl of Hardwicke, as he was for his last preferment, the rectory of Depden in Essex, to which he was inducted Feb. 26. 1761. In the latter part of his life he was chaplain to the Princess Amelia. In 1765 he resigned his office of secretary to the Royal Society, and was succeeded by Dr Morton. His health declining about this time, he was ordered to ride for the recovery of it; but being a bad horseman, and going out Jan. 9. 1766, he was unfortunately thrown from his horse, on the road betwixt London and Hampstead, and died on the spot, in the 61st year of his age, to the great regret of the Doctor's numerous literary friends; and was buried in St Margaret Pattens. Dr Birch had in his lifetime been very generous to his relations; and none that were nearly allied to him being living at his decease, he bequeathed his library of books and manuscripts, with his picture painted in 1735, and all his other pictures and prints not otherwise disposed of by his will, to the British Museum. He likewise left the remainder of his fortune, which amounted to not much more than 500l. to be laid out in government-securities, for the purpose of applying the interest to increase the stipend of the three assistant librarians: thus manifesting at his death, as he hath done during his whole life, his respect for literature, and his desire to promote useful knowledge.

Birch,
Bird.

ledge. To the Royal Society he bequeathed his picture painted by Wills in 1737, being the original of the mezzotinto print done by Fauber in 1741. His principal publications were, 1. "The General Dictionary, Historical and Critical;" including a new translation of Mr Bayle, and interspersed with several thousand new lives. Dr Birch's associates in this undertaking were, the Rev. John Peter Bernard, Mr John Lockman, and Mr George Sale. The whole design was completed in 10 volumes folio. 2. Dr Cudworth's "Intellectual System (improved from the Latin edition of Mosheim), his Discourse on the true Notion of the Lord's Supper, and two Sermons, with an Account of his Life and Writings," 2 vols 4to, 1743. 3. "The Life of the Hon. Robert Boyle," 1744; prefixed to an edition of that excellent philosopher's works, revised by Dr Birch. 4. "The Lives of Illustrious Persons of Great Britain," annexed to the engravings of Houbraken and Vertue, 1747—1752. 5. "An Inquiry into the Share which King Charles I. had in the Transactions of the Earl of Glamorgan," 1747, 8vo. 6. An edition of "Spenser's Fairy Queen, 1751," 3 vols quarto, with prints from designs by Kent. 7. "The Miscellaneous Works of Sir Walter Raleigh;" to which was prefixed the Life of that great, unfortunate, and injured man, 1751, 2 vols 8vo. 8. "The Theological, Moral, Dramatic, and Poetical Works of Mrs Catharine Cockburn; with an Account of the Life of that very ingenious Lady," 1751, 2 vols 8vo. 9. "The Life of the Most Reverend Dr John Tillotson, Lord Archbishop of Canterbury. Compiled chiefly from his original Papers and Letters," 1752, 8vo. 10. "Milton's Prose Works," 1753, 2 vols 4to; with a new Life of that great poet and writer. 11. "Memoirs of the Reign of Queen Elizabeth, from the year 1581 till her death. In which the secret intrigues of her court, and the conduct of her favourite Robert Earl of Essex, both at home and abroad, are particularly illustrated. From the original papers of his intimate friend Anthony Bacon, Etq; and other manuscripts never before published," 1754, 2 vols 4to. 12. "The History of the Royal Society of London for improving natural knowledge, from its first rise. In which the most considerable of those papers communicated to the Society, which have hitherto not been published, are inserted in their proper order, as a supplement to the Philosophical Transactions." 1756 and 1757, 4 vols 4to. 13. "The Life of Henry Prince of Wales, eldest Son of King James I. Compiled chiefly from his own papers and other manuscripts never before published." 1760, 8vo. His numerous communications to the Royal Society may be seen in the Philosophical Transactions; and his poetical talents are evident from the verses already referred to.

BIRD (William), an eminent musician and composer, was one of the children of the chapel in the reign of Edward VI. and, as it is asserted by Wood in the Ashmolean MS. was bred up under Tallis. It appears, that in 1575 Tallis and Bird were both gentlemen and also organists of the royal chapel; but the time of their appointment to this latter office cannot now be ascertained.

The compositions of Bird are many and various; those of his younger years were mostly for the service

of the church. He composed a work entitled *Sacrarum Cantionum, quinque vocum*, printed in 1589; among which is that noble composition *Civitas sancti tui*, which for many years past has been sung in the church as an anthem to the words "Bow thine ear, O Lord." He was also the author of a work entitled *Gravalia, ac Cantiones sacrae, quinis, quaternis, trinisque vocibus concinnatae. lib. primus*. Of this there are two editions, the later published in 1610. Although it appears by these his works that Bird was in the strictest sense a church musician, he occasionally gave to the world compositions of a secular kind: and he seems to be the first among English musicians that ever made an essay in the composition of that elegant species of vocal harmony, the madrigal; the *La Verginella* of Ariosto, which he set in that form for five voices, being the most ancient musical composition of the kind to be met with in the works of English authors. Of his compositions for private entertainment, there are extant, 'Songs of fundry natures, some of gravitie, and others of myrth, fit for all companies and voyces, printed in 1589;' and two other collections of the same kind, the last of them printed in 1611. But the most permanent memorials of Bird's excellencies are his motets and anthems; to which may be added, a fine service in the key of D with the minor third, the first composition in Dr Boyce's Cathedral Music, vol. III. and that well-known canon of his, *Non nobis Domine*.

Besides his salaries and other emoluments of his profession, it is to be supposed that Bird derived some advantages from the patent granted by queen Elizabeth to Tallis and him, for the sole printing of music and music-paper: Dr Ward speaks of a book which he had seen with the letters T. E. for Thomas East, Est, or Este, who printed music under that patent. Tallis dying in 1585, the patent, by the terms of it, survived to Bird, who, no doubt for a valuable consideration, permitted East to exercise the right of printing under the protection of it; and he in the title-page of most of his publications styles himself the *assignee of William Byrd*. Bird died in 1623.

BIRD, in zoology. See ZOOLOGY, n° 8.; COMPARATIVE-ANATOMY, chap. ii.; and ORNITHOLOGY.

Beam-BIRD, or Petty-chaps. See MOTACILLA.

Black-BIRD.

Blue-BIRD.

Call-BIRD.

Canary-BIRD.

Dung-BIRD.

Humming-BIRD.

Mocking-BIRD.

BIRD of Paradise.

BIRD-Call, a little stick cleft at one end, in which is put a leaf of some plant, wherewith to counterfeit the cryer's call of several birds, and bring them to the net, or snare, or lime-twig, to be taken. A laurel-leaf fitted on the bird-call, counterfeits the voice of lapwings; a leek that of nightingales, &c.

BIRD-Catching, the art of taking birds or wild-fowl, whether for food, for the pleasure of their song, or for their destruction as pernicious to the husbandman, &c. The methods are by bird-lime, nets, decoys, &c. See BIRD-LIME, infra; and DECOY.

In the suburbs of London (and particularly about Shoreditch) are several weavers and other tradesmen,

Bird.

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who, during the months of October and March, get their livelihood by an ingenious, and, we may say, a scientific, method of *bird catching*, which is totally unknown in other parts of Great Britain. The reason of this trade being confined to so small a compass, arises from their being no considerable sale for singing-birds except in the metropolis: as the apparatus for this purpose is also heavy, and at the same time must be carried on a man's back, it prevents the bird-catchers going to above three or four miles distance.

This method of bird-catching must have been long practised, as it is brought to a most systematical perfection, and is attended with a very considerable expense.

The nets are a most ingenious piece of mechanism; are generally twelve yards and a half long, and two yards and a half wide; and no one, on bare inspection, would imagine that a bird (who is so very quick in all its motions) could be caught by the nets flapping over each other, till he becomes eye-witness of the pullers seldom failing.

The wild birds fly (as the bird-catchers term it) chiefly during the month of October, and part of September and November; as the flight in March is much less considerable than that of Michaelmas. It is to be noted also, that the several species of birds of *flight* do not make their appearance precisely at the same time, during the months of September, October, and November. The pipet (A), for example, begins to fly about Michaelmas; and then the woodlark, linnnet, goldfinch, chaffinch, greenfinch, and other birds of flight succeed; all of which are not easily to be caught, or in any numbers, at any other time, and more particularly the pipet and the woodlark.

These birds, during the Michaelmas and March flights, are chiefly on the wing from day-break to noon, though there is afterwards a small flight from two till night; but this however is so inconsiderable, that the bird-catchers always take up their nets at noon.

It may well deserve the attention of the naturalist whence these periodical flights of certain birds can arise. As the ground, however, is ploughed during the months of October and March for sowing the winter and lent corn, it should seem that they are thus supplied with a great profusion both of seeds and insects, which they cannot so easily procure at any other season.

It may not be improper to mention another circumstance, to be observed during their sitting, *viz.* that they fly always against the wind: hence there is great contention amongst the bird-catchers who shall gain that point; if (for example) it is westerly, the bird-catcher who lays his nets most to the east, is sure almost of catching every thing, provided his call-birds

are good: a gentle wind to the south-west generally produces the best sport.

The bird-catcher, who is a substantial man, and hath a proper apparatus for this purpose, generally carries with him five or six linnets, (of which more are caught than any singing bird), two gold-finches, two green-finches, one wood lark, one red-poll, a yellow-hammer, tit-lark, and aberdavine, and perhaps a bull-finch; these are placed at small distances from the nets in little cages. He hath, besides, what are called *flur-birds*, which are placed within the nets, are raised upon the flur (u) and gently let down at the time the wild bird approaches them. These generally consist of the linnet, the gold-finch, and the green-finch, which are secured to the flur by what is called a *brace* (c); a contrivance that secures the birds without doing any injury to their plumage.

It having been found that there is a superiority between bird and bird, from the one being more in song than the other; the bird-catchers contrive that their call-birds should moult before the usual time. They therefore, in June or July, put them into a close box under two or three folds of blankets, and leave their dung in the cage to raise a greater heat; in which state they continue, being perhaps examined but once a-week to have fresh water. As for food, the air is so putrid, that they eat little during the whole state of confinement, which lasts about a month. The birds frequently die under the operation; and hence the value of a stopped bird rises greatly. When the bird hath thus prematurely moulted, he is in song whilst the wild birds are out of song, and his note is louder and more piercing than that of a wild one; but it is not only in his note he receives an alteration, the plumage is equally improved. The black and yellow in the wings of the gold-finch, for example, become deeper and more vivid, together with a most beautiful gloss, which is not to be seen in the wild bird. The bill, which in the latter is likewise black at the end, in the stopped-bird becomes white and more taper, as do its legs: in short, there is as much difference between a wild and a stopped-bird, as there is between a horse which is kept in body-clothes and one at grass.

When the bird-catcher hath laid his nets, he disposes of his call-birds at proper intervals. It must be owned, that there is a most malicious joy in these call-birds to bring the wild ones into the same state of captivity; which may likewise be observed with regard to the decoy-ducks. See *Decoy*.

Their sight and hearing infinitely exceeds that of the bird-catcher. The instant that the (n) wild birds are perceived, notice is given by one to the rest of the call-birds, (as it is by the first hound that hits on the scent to the rest of the pack); after which, follows the same sort of tumultuous eclay and joy. The call-birds,

G g 2

while

(A) A small species of lark, but which is inferior to other birds of that genus in point of song.

(B) A moveable perch to which the bird is tied, and which the bird-catcher can raise at pleasure by means of a long string fastened to it.

(C) A sort of bandage, formed of a slender silken string that is fastened round the bird's body, and under the wings, in so artful a manner as to hinder the bird from being hurt, let it flutter ever so much in the raising.

(D) It may be also observed, that the moment they see a hawk, they communicate the alarm to each other by a plaintive note; nor will they then jerk or call though the wild birds are near.

Bird.

Bird.

while the bird is at a distance, do not sing as a bird does in a chamber; they invite the wild ones by what the bird-catchers call *short jerks*, which, when the birds are good, may be heard at a great distance. The ascendancy by this call or invitation is so great, that the wild bird is stopped in its course of flight; and, if not already acquainted with the nets (ε), lights boldly within 20 yards of perhaps three or four bird-catchers, on a spot which otherwise it would not have taken the least notice of. Nay, it frequently happens, that if half a flock only are caught, the remaining half will immediately afterwards light in the nets, and share the same fate; and should only one bird escape, that bird will suffer itself to be pulled at till it is caught; such a fascinating power have the call-birds.

While we are on this subject of the jerking of birds we cannot omit mentioning, that the bird-catchers frequently lay considerable wagers whose call-bird can jerk the longest, as that determines the superiority. They place them opposite to each other, by an inch of candle; and the bird who jerks the ofteneft, before the candle is burnt out, wins the wager. We have been informed, that there have been instances of a bird's giving 170 jerks in a quarter of an hour; and we have known a linnet, in such a trial, persevere in its emulation till it swooned from the perch: thus, as Pliny says of the nightingale, *victa morte finit sepe vitam, spiritu prius deficiente quam cantu*. It may be here observed, that birds when near each other, and in sight, seldom jerk or sing. They either fight, or use short and wheedling calls; the jerking of these call-birds, therefore, face to face, is a most extraordinary instance of contention for superiority in song.

To these we may add a few particulars that fell within our notice during our inquiries among the bird-catchers; such as, that they immediately kill the hens of every species of birds they take, being incapable of singing, as also being inferior in plumage; the pippets likewise are indiscriminately destroyed, as the cock does not sing well: they sell the dead birds for three-pence or fourpence a dozen. These small birds are so good, that we are surpris'd the luxury of the age neglects so delicate an acquisition to the table. The modern Italians are fond of small birds, which they eat under the common name of *beccaficos*: and the dear rate a Roman tragedian paid for one dish of singing birds is well known; (see the article *Æsor*).

Another particular we learned, in conversation with a London bird-catcher, was the vast price that is sometimes given for a single song-bird, which had not learned to whistle tunes. The greatest sum we heard of, was five guineas for a chaffinch, that had a particular and uncommon note, under which it was intended to train others. and we also heard of five pounds ten shillings being given for a call-bird linnet.

A third singular circumstance, which confirms an observation of Linnæus, is, that the male chaffinches fly by themselves, and in the flight precede the females; but this is not peculiar to the chaffinches. When the tit-larks are caught in the beginning of the season, it frequently happens, that forty are taken and not one

Bird.

female among them: and probably the same would be observed with regard to other birds (as has been done with relation to the wheat-ear), if they were attended to. An experienced and intelligent bird-catcher informed us, that such birds as breed twice a year, generally have in their first brood a majority of males, and in their second, of females, which may in part account for the above observation.

We must not omit mention of the bullfinch, though it does not properly come under the title of a singing-bird, or a bird of flight, as it does not often move farther than from hedge to hedge: yet, as the bird sells well on account of its learning to whistle tunes, and sometimes flies over the fields where the nets are laid, the bird-catchers have often a call-bird to ensnare it, though most of them can imitate the call with their mouths. It is remarkable with regard to this bird, that the female answers the purpose of a call-bird as well as the male, which is not experienced in any other bird taken by the London bird-catchers.

The nightingale is not a bird of flight, in the sense the bird-catchers use this term. Like the robin, wren, and many other singing birds, it only moves from hedge to hedge, and does not take the periodical flights in October and March. The persons who catch these birds, make use of small trap-nets, without call-birds; and are considered as inferior in dignity to other bird-catchers who will not rank with them. The arrival of the nightingale is expected by the trappers in the neighbourhood of London, the first week in April: at the beginning, none but cocks are taken; but in a few days the hens make their appearance, generally by themselves, though sometimes a few males come along with them. The latter are distinguished from the females not only by their superior size, but by a great swelling of their vent, which commences on the first arrival of the hens. They are caught in a net-trap, the bottom of which is surrounded with an iron ring; the net itself is rather larger than a cabbage net. When the trappers hear or see them, they strew some fresh mould under the place, and beat the trap with a meal-worm from the baker's shop. Ten or a dozen nightingales have been thus caught in a day.

The common way of taking larks, of which so many are used at our tables (see *ALAUDA*), is in the night, with those nets which are called *trammels*. These are usually made of 36 yards in length, and about six yards over, with six ribs of pack-thread, which at the ends are put upon two poles of about 16 feet long, and made lesser at each end. These are to be drawn over the ground by two men, and every five or six steps the net is made to touch the ground, otherwise it will pass over the birds without touching them, and they will escape. When they are felt to fly up against the net, it is clapped down, and then all are safe that are under it. The darkest nights are properest for this sport; and the net will not only take larks, but all other birds that roost on the ground; among which are woodcocks, snipes, partridge, quails, field-sares, and several others. In the depth of winter people sometimes take great numbers of larks by nooses of horse-hair. The method

is

(ε) A bird, acquainted with the nets, is by the bird-catchers termed a *slarper*; which they endeavour to drive away, as they can have no sport whilst it continues near them.

Brd. is this: Take 100 or 200 yards of packthread; fasten at every six inches a noose made of double horse-hair; at every 20 yards the line is to be pegged down to the ground, and so left ready to take them. The time to use this is when the ground is covered with snow, and the larks are to be allured to it by some white oats scattered all the way among the nooses. They must be taken away as soon as three or four are hung, otherwise the rest will be frightened; but though the others are scared away just where the sportsman comes, they will be feeding at the other end of the line, and the sport may be thus continued for a long time.—Those caught in the day are taken in clap-nets of fifteen yards length, and two and a half in breadth; and are enticed within their reach by means of bits of looking-glass, fixed in a piece of wood, and placed in the middle of the nets, which are put in a quick whirling motion by a string the larker commands; he also makes use of a decoy-lark. These nets are used only till the 14th November: for the larks will not *dare*, or frolic in the air, except in fine sunny weather; and of course cannot be inveigled into the snare. When the weather grows gloomy, the larker changes his engine, and makes use of a trammel net, twenty-seven or twenty-eight feet long, and five broad; which is put on two poles, eighteen feet long, and carried by men under each arm, who pass over the fields and quarter the ground as a setting dog: when they hear or feel a lark hit the net, they drop it down, and so the birds are taken.

Multitudes of the inhabitants of each cluster of the Orkney Isles feed during the season on the eggs of the birds of the cliffs. The method of taking them is so very hazardous, as to satisfy one of the extremity to which the poor people are driven for want of food. Copinsha, Hunda, Hoy, Foula, and Nofs-head, are the most celebrated rocks; and the neighbouring natives the most expert climbers and adventurers after the game of the precipice. The height of some is above fifty fathoms; their faces roughened with shelves or ledges sufficient only for the birds to rest and lay their eggs. To these the dauntless fowlers will ascend, pass intrepidly from the one to the other, collect the eggs and birds, and descend with the same indifference. In most places the attempt is made from above: they are lowered from the slope contiguous to the brink, by a rope, sometimes made of straw, sometimes of the bristles of the hog: they prefer the last even to ropes of hemp, as it is not liable to be cut by the sharpness of the rocks; the former is apt to untwist. They trust themselves to a single assistant, who lets his companion down, and holds the rope, depending on his strength alone; which often fails, and the adventurer is sure to be dashed to pieces, or drowned in the subjacent sea. The rope is often shifted from place to place, with the impending weight of the fowler and his booty. The person above receives signals for the purpose, his associate being far out of sight; who, during the operation, by help of a staff, springs from the face of the rocks, to avoid injury from the projecting parts.

But the most singular species of bird-catching is on the holm of Nofs, a vast rock severed from the isle of Nofs by some unknown convulsion, and only about sixteen fathoms distant. It is of the same stupendous

height as the opposite precipice, with a raging sea between; so that the intervening chafin is of matchless horror. Some adventurous climber has reached the rock in a boat, gained the height, and fastened several flakes on the small portion of earth which is to be found on the top; correspondent flakes are placed on the edge of the correspondent cliffs. A rope is fixed to the flakes on both sides, along which a machine, called a craddle, is contrived to slide; and, by the help of a small parallel chord fastened in like manner, the adventurer wafts himself over, and returns with his booty.

The manner of bird-catching (see Pl. XCVII. fig. 7.) in the Feroe islands is so very strange and hazardous, that the description should by no means be omitted. Necessity compels mankind to wonderful attempts. The cliffs which contain the objects of their search are often two hundred fathoms in height, and are attempted from above and below. In the first case, the fowlers provide themselves with a rope 80 or 100 fathoms in length. The fowler fastens one end about his waist and between his legs, recommends himself to the protection of the Almighty, and is lowered down by six others, who place a piece of timber on the margin of the rock, to preserve the rope from wearing against the sharp edge. They have besides a small line fastened to the body of the adventurer, by which he gives signals that they may lower or raise him, or shift him from place to place. The last operation is attended with great danger, by the loosening of the stones, which often fall on his head, and would infallibly destroy him, was it not protected by a strong thick cap; but even that is found unequal to save him against the weight of the larger fragments of rock. The dexterity of the fowlers is amazing; they will place their feet against the front of the precipice, and dart themselves some fathoms from it, with a cool eye survey the places where the birds nestle, and again shoot into their haunts. In some places the birds lodge in deep recesses. The fowler will alight there, disengage himself from the rope, fix it to a stone, and at his leisure collect the booty, fasten it to his girdle, and resume his pendulous seat. At times he will again spring from the rock, and in that attitude, with a fowling-net placed at the end of a staff, catch the old birds which are flying to and from their retreats. When he hath finished his dreadful employ, he gives a signal to his friends above, who pull him up, and share the hard-earned profit. The feathers are preserved for exportation: the flesh is partly eaten fresh, but the greater portion dried for winter's provision.

The fowling from below has its share of danger. The party goes on the expedition in a boat; and when it has attained the base of the precipice, one of the most daring, having fastened a rope about his waist, and furnished himself with a long pole with an iron hook at one end, either climbs or is thrust up by his companions, who place a pole under his breech, to the next footing spot he can reach. He, by means of the rope, brings up one of the boat's crew; the rest are drawn up in the same manner, and each is furnished with his rope and fowling-staff. They then continue their progress upwards in the same manner, till they arrive at the region of birds; and wander about the face of the cliff in search of them. They then act in pairs;

Bird.

Bird.

one fastens himself to the end of his associate's rope, and, in places where birds have nested beneath his footing, he permits himself to be lowered down, depending for his security on the strength of his companion, who has to haul him up again; but it sometimes happens that the person above is overpowered by the weight, and both inevitably perish. They sling the fowl into the boat, which attends their motions, and receives the booty. They often pass seven or eight days in this tremendous employ, and lodge in the crannies which they find in the face of the precipice.

Pl. XCVII.
fig 8.

In some remote parts of Russia there is practised a singular invention for taking great quantities of gelinottes or grouse. They choose the most open places in the birch woods; and there they plant long forks in the earth opposite the larger trees. On these forks is laid a horizontal stick, gallows-wise, to which are tied small bundles of ears of corn. At a small distance from this part of the contrivance, is a kind of large funnel or inverted cone, made with long birch twigs, thin and flexible, the lower extremities of which are stuck in the earth, very near to one another; but by spreading towards the top, forms there an opening of above a yard in diameter. In this opening is placed a wheel made of two circles that intersect each other, and are surrounded with straw and ears of corn. This wheel turns on an axis fastened to the sides of the funnel in such a manner, that there is room enough between the sticks of the cone and the circles to admit of the wheel's turning freely about. The birds first perch upon the transverse stick near the tree; and when they have a mind to fall upon the corn tied to the wheel, they must necessarily stand upon one of the projecting parts of the circles of which it is composed. At that instant the wheel turns, and the gelinotte falls, head foremost, to the bottom of the trap, which is there so contracted that he cannot get out. They sometimes find the machine half full of gelinottes.

The following method of netting or catching of wild pigeons is eagerly pursued as a diversion in different parts of Italy, particularly by the inhabitants of Cava in the Hither Principato, and is thus described by Mr Swinburne. The people "assemble in parties; and if any stranger chances to stray to their rendezvous, give him a most cordial welcome. I am not in the least surpris'd (says Mr Swinburne) at their passionate fondness for this sport, as I found it extremely bewitching, keeping the attention constantly alive, and the springs of the mind pleasingly agitated by expectation; the situations where the toils are spread are incomparably beautiful, the air is pure and balsamic, and every thing around breathes health and satisfaction. When the periodical flights of stock-doves return from the northern and western parts of Europe to gain warmer regions for their winter abode, the fowler repairs to the mountain and spreads his nets across the intermediate hollows, the passes through which the birds direct their course, to avoid unnecessary elevation in their flight. These nets are hung upon a row of large trees planted for the purpose. The branches being very thick and close at top, and the bole lofty and bare, a great opening is left below for the toils, which reach to the ground; and by means of pulleys, fall in a heap with the least effort. Sometimes they are extended upon poles that exceed the

height of the trees. At a small distance is a lofty circular turret, like a column with a little capital or cap, upon which a man is stationed to watch the approach of the game. As he commands a free view over all the country, and practice has made his sight as acute as that of the lynx, he desceries the birds at a wonderful distance. The doves advance with great velocity; but the alert watchman is prepared for them; and just as they approach his post, hurls a stone above them with a sling: upon this the whole flock, whose fears have birds of prey for their great object, supposing the stone to be an enemy of that kind ready to pounce them, dart down like lightning to avoid the blow by passing under the trees; but there they rush into the jaws of death, by dashing against the net, which instantly drops and so entangles them that not one of them can escape the active hands of the fowler. These birds are sometimes taken by dozens at one fall, and are accounted fine eating. The dexterity with which the slingers manage their weapon is very remarkable; they throw the stone to a great height without any violent effort, and even without whirling the sling round before they discharge the pellet. In the Pyrenean mountains, where the same diversion is followed, the watchmen use a bow and arrow, trimmed with the feathers of a hawk."

The following simple but ingenious method of catching aquatic birds is used in Mexico by the natives. The lakes of the Mexican vale, as well as others of the kingdom, are frequented by a prodigious multitude of ducks, geese, and other water-birds. The Mexicans leave some empty gourds to float upon the water, where those birds resort, that they may be accustomed to see and approach them without fear. The bird-catcher goes into the water so deep as to hide his body, and covers his head with a gourd: the ducks come to peek at it; and then he pulls them by the feet under water, and in this manner secures as many as he pleased.

BIRD-LIME, a viscid substance, prepared after different ways. The most common bird-lime among us is made from holly-bark, boiled ten or twelve hours; when the green coat being separated from the other, it is covered up a fortnight in a moist place; then pounded into a tough paste, so that no fibres of the wood are discernible, and washed in a running stream till no motes appear; put up to ferment four or five days, skimmed as often as any thing arises, and laid up for use. To use it, a third part of nut-oil, or thin grease, must be incorporated with it over the fire.

The juice of holly-bark is a very peculiar substance. But if trials were made, it seems probable, that many other juices would be found to have the same clammy nature. The mistletoe affords a juice, even superior to that of the holly; and if a young shoot of the common alder be cut through, there will a stringy juice draw out in threads, and follow the knife like bird-lime or the juice of the holly. It seems in this tree to be lodged, not in the bark, but in certain veins just within the circle of the wood. The roots of all the hyacinths also afford a tough and stringy juice of the same kind; and so does the asphodel, the narcissus, and the black bryony root, in a surprizing quantity.

When twigs, &c. smeared with bird-lime, are to be put in places subject to wet, the common bird-lime is

apt

Bird.

apt to have its force soon taken away. It is necessary, therefore, to have recourse to a particular sort, which from its property of bearing water unhurt, is called *water bird-lime*; and is prepared thus: Take a pound of strong and good bird-lime; wash it thoroughly in spring-water, till the hardness is all removed; and then beat it well, that the water may be clean separated, so as not a drop remains; then dry it well, and put it into an earthen pot; add to it as much capon's grease as will make it run. Then add two spoonfuls of strong vinegar, one spoonful of oil, and a small quantity of Venice turpentine. Let the whole boil for some minutes over a moderate fire, stirring it all the time. Then take it off; and when there is occasion to use it, warm it, and cover the flocks well with it. This is the best sort of bird-lime for snipes and other birds that love wet places.

The most successful method of using the common bird-lime is this: Cut down the main branch or bough of any bushy tree whose twigs are thick, straight, long, and smooth, and have neither knots nor prickles. The willow and the birch-tree afford the best of this kind. Let all the superfluous shoots be trimmed off, and the twigs all made neat and clean; they must all be well covered with the bird-lime, within four inches of the bottom; but the main bough from which they grow, must not be touched with the lime. No part of the bark, where the lime should come, must be left bare: but it is a nice matter to lay it on properly; for if it be too thick it will give the birds a distaste, and they will not come near it; and if there be too little of it, it will not hold them when they are there. When the bush is thus prepared, it must be set up in some dead hedge, or among some growing bushes near the outskirts of a town, a farmer's back-yard, or the like, if it be in the spring; for these places are the resort of the small birds at that time. If it be used in summer, the bush must be placed in the midst of a quick-set hedge, or in groves, bushes, or white-thorn trees, near fields of corn, hemp, flax, and the like; and in the winter, the proper places are about stacks of corn, hovels, barns, and the like. When the lime-bush is thus planted, the sportsman must stand as near it as he can, without being discovered; and with the mouth, or otherwise, make such sort of notes as the birds do when they attack or call to one another. There are bird-calls to be bought for this use; but the most expert method is to learn the notes of call of the several birds, and imitate them by a sort of whistling. When one bird is thus enticed to the bush, and hung fast, the business of the sportsman is not to run up to take it, but to be patient; for it will hang itself more fast, by its struggling to get away; and its fluttering will bring more to the bush, so that several may be taken together. The time of the day for this sport is from sun-rise to ten o'clock, and from one to sun-set. Another very good method of bringing the birds together, is by a stake: a bat makes a very good stake; but it must be fastened, so as

to be in sight at a distance. An owl is a still better stake; for this bird never goes abroad but it is followed by all the small birds in the neighbourhood. They will gather together in great numbers about it; and having no convenient place to sit on but the lime-bush, will be taken in great numbers. If a living owl or bat is not to be had, the skin stuffed will serve the purpose, and will last twenty years. Some have used the image of an owl carved in wood, and painted in the natural colours; and it has been found to succeed very well.

Divination by BIRDS. }
Migration of BIRDS. } See { AUGURY.
Nidification of BIRDS. } { MIGRATION.
 { ORNITHOLOGY.

Singing BIRDS are, the nightingale, blackbird, starling, thrush, linnet, lark, thrush, Canary-bird, bulfinch, goldfinch, &c. See some very curious experiments and observations on the singing of birds, Phil. Transf. vol. lxiii. part ii. N 31. Their first sound is called *chirp*, which is a single sound repeated at short intervals; the next *call*, which is a repetition of one and the same note; and the third sound is called *recording*, which a young bird continues to do for ten or eleven months, till he is able to execute every part of his song; and when he is perfect in his lesson, he is said to *sing his song round*. Their notes are no more innate than language in man; they all sing in the same key. The honourable author Daines Barrington has there attempted to reduce their comparative merits to a scale: and to explain how they first came to have particular notes. See *SONG of Birds*.

Methods of preserving BIRDS from putrefaction, and so as to retain their natural form and position, as well as the beauty of their colours and plumage—A good antiseptic for animal substances has been much inquired after; as for want of it, many curious animals, and birds particularly, come to our hands in a very imperfect state; some from foreign parts entirely miscarry, and others of the finest plumage are devoured by insects. Various methods of preservation, therefore, have been of late described*; but the following improved methods by Dr Lettson † seem to be the least troublesome and the most complete.

“After opening the bird by a longitudinal incision from the breast to the vent; dissecting the fleshy parts from the bones; and removing the entrails, eyes, brains (F), and tongue; the cavities and inside of the skin are to be sprinkled with the powders mentioned below: the eyes (G) are then to be inserted, and the head stuffed with cotton or tow: in the next place, a wire is to be passed down the throat through one of the nostrils, and fixed into the breast-bone: wires are also to be introduced through the feet, up the legs and thighs, and inserted into the same bone; next, fill the body with cotton to its natural size, and sew the skin over it: the attitude is lastly to be attended to; and in whatever position the subject is placed to dry, that same position will be retained afterwards.

“The

(F) In large birds, the brains may be extracted by the eyes; the best instrument for this purpose is a director used by surgeons, which may be had of an instrument-maker at a trilling expence.

(G) Wax (used by some) is not a proper substance for eyes; there are persons in London, whose business it is to make glass-eyes of any size or colour, at a penny or two-pence a pair.

Bird.

“ The drying compound is as follows :

Corrosive sublimate,	-	-	$\frac{1}{4}$ lb.
Saltpetre prepared or burnt,	-	-	$\frac{1}{2}$ lb.
Alum burnt,	-	-	$\frac{1}{2}$ lb.
Flowers of sulphur,	-	-	$\frac{1}{2}$ lb.
Camphor,	-	-	$\frac{1}{4}$ lb.
Black pepper,	-	-	1 lb.
Tobacco ground coarse,	-	-	1 lb.

Mix the whole together, and keep it in a glass vessel stopp'd close.

“ Small birds may be preserv'd in brandy, rum, arack, or first runnings; though in this manner the colour of the plumage is liable to be extract'd by the spirit.

“ Large sea-fowl have thick strong skins, and such may be skinn'd; the tail, claws, head, and feet, are carefully to be preserv'd, and the plumage stain'd as little as possible with blood. The inside of the skin may be stuff'd as recommended above.

† Phil.

Transf. Vol. LX. p. 319.

“ Kuckahn observes †, that ‘ baking is not only useful in fresh preservations, but will also be of very great service to old ones, destroying the eggs of insects; and it should be a constant practice once in two or three years to bake them over again, and to have the cases fresh wash'd with camphorated spirit, or the sublimate solution, which would not only preserve collections from decay much longer, but also keep them sweet.’

“ One of the best preservatives, is to procure close boxes, well glazed: with such a precaution I have kept them in a dry room many years without the least appearance of injury.—Baking is apt to crimp and injure the plumage, unless great care be us'd; and therefore the proper degree of heat should be ascertain'd by means of a feather, before such subjects are bak'd.

“ When the subject is to be kept for some time in a hot climate, it should be secur'd in a box fill'd with tow, oakum, or tobacco, well sprinkled with the sublimate solution.”

In Guiana, the number and variety of beautiful birds is so great, that several persons in the colony advantageously employ themselves, with their slaves and dependants, in killing and preserv'g these animals for the cabinets of naturalists in different parts of Europe. The method of doing this, as related by Mr Bancroft *, is, “ to put the bird which is to be preserv'd in a proper vessel, and cover him with high wines, or the first running of the distillation of rum. In this spirit he is suffer'd to remain for 24 or 48 hours, or longer, according to his size, till it has penetrat'd through every part of his body. When this is done, the bird is taken out; and his feathers, which are no ways chang'd by this immersion, are plac'd smooth and regular. It is then put into a machine, made for the purpose, among a number of others, and its head, feet, wings, tail, &c. are plac'd exactly agreeable to life. In this position they are all plac'd in an oven, very moderately heated, where they are slowly dried; and will ever after retain their natural position, without danger of putrefaction.”

Mr Edwards's Recipe for making Pictures of BIRDS, with their natural feathers †. First, take a thin board, or pannel of deal, or wainscot well season'd, that it may not shrink; then smoothly paste on it white paper, and let it dry; and if the wood casts its colour through,

you may paste on a second paper, and it will be whiter: let the second paper dry; then get ready any bird that you would represent, and draw it as exact as may be on your papered pannel, of its natural size (middle-sized birds are best for this work); then paint what ground-work, or tree, or other thing, you design to set your bird on, together with the bill and legs of the bird in water-colours, leaving the bird to be cover'd with its own natural feathers. You must first prepare the part to be feather'd, by laying on pretty thick gum Arabic, dissolv'd in water, with a large hair-pencil: then lay the pannel flat, and let it dry hard; and when dry, cover it with your gum-water a second time, and let it dry; and then a third, in case you do not find it lie with a good body on the paper; the thickness of a shilling, when dried hard, is sufficient. When your piece is thus prepar'd, take the feathers off from your bird as you use them; beginning always at the tail and points of the wing, and working upwards to the head; observing to cover that part of your draught with the feather that you take from the same part in your bird, letting them fall one over another in their natural order: you must prepare your feathers by cutting off the downy part that is about their bottoms; and the larger feathers must have the insides of their shafts shaved off with a knife to make them lie flat; the quills of the wings must have their inner webs clipped off, that in laying them the gum may hold them by their shafts. When you begin to lay them, take a pair of steel pliers to hold the feathers in; and have some gum-water, not too thin, and a large pencil, ready to moisten the gummed ground-work by little and little as you work it: then lay your feathers on the moisten'd parts; which must not be waterish, but something tacky or clammy to hold the feathers. You should prepare a parcel of small leaden weights, in the form of fugar-loaves; which you may cast in sand, by first making holes in its surface with a pointed stick: these weights will be necessary to set on the feathers you have newly laid on, to hold them to the gum till they are dry and fixed: but you must be cautious lest the gum come through the feathers; for it not only smears them, but dries to the bottoms of the weights, and you will be apt to pull off the feathers with the weights, which will disorder your work: when you have wholly cover'd your bird with feathers, you must with a little thick gum stick on a piece of paper cut round, of the bigness and in the place of the eye, which you must colour like the eye of the bird. When the whole is dry, dress the feathers round the outline that may chance to stare a little, and rectify what may be mended in any other part: then lay a sheet of clean paper on it; and on that a heavy book, or some such thing, to press it: after which it may be preserv'd in a frame cover'd with a glass.

BIRDS, in heraldry, according to their several kinds, represent either the contemplative or active life. They are the emblems of liberty, expedition, readiness, swiftness, and fear. They are more honourable bearings than fishes, because they participate more of air and fire, the two noblest and highest elements, than of earth and water.—Birds must be borne in coat-armour, as is best fitting the propriety of their natural actions of going, sitting, standing, flying, &c. Birds that are either whole-footed, or have their feet divided, and yet

Bird.

* Natural History of Guiana.

† Nat. Hist. of Birds, Vol. II. p. 119, &c.

Bird.

have no talons, are said to be *membered*; but the cock, and all birds of prey with sharp and hooked beaks and talons for encounter or defence, are termed *armed*. In the blazoning of birds, if their wings be not displayed, they are said to be borne close; as, *he beareth an eagle, &c. close*.

BIRDS-Nests, in cookery, the nest of a small Indian swallow †, very delicately tasted, and frequently mixed among soups. On the sea-coasts of China, at certain seasons of the year, there are seen vast numbers of these birds; they leave the inland country at their breeding time, and come to build in the rocks, and fashion their nests out of a matter which they find on the shore, washed thither by the waves. The nature of this substance is scarcely yet ascertained. According to Kempfer, it is molluscæ or sea-worms; according to M. le Poivre, fish-spawn; according to Dalrymple, sea-weeds; and according to Linnaeus, it is the animal substance frequently found on the beach, which fishermen call *blubbers* or *jellies*. The nests are of a hemispheric figure, and of the size of a goose's egg, and in substance much resemble the *ichthyocolla* or *isinglass*. The Chinese gather these nests, and sell them to all parts of the world; they dissolve in broths, &c. and make a kind of jelly of a very delicious flavour.

These nests (Mr Marsden informs us) are found in great abundance in the island of Sumatra, particularly about Croe, near the south end of the island. Four miles up the river of that name is a large cave, where the birds build in vast numbers. The nests are distinguished into white and black; of which the first are by far the more scarce and valuable, being found in the proportion of one only to twenty-five. "The white sort (says Mr Marsden) sells in China at the rate of 1000 to 1500 Spanish dollars the pecul; the black is usually disposed of at Batavia for about 20 dollars the same weight, where it is chiefly converted into glue, of which it makes a very superior kind. The difference between the two has by some been supposed to be owing to the mixture of the feathers of the birds with the viscous substance of which the nests are formed; and this they deduce from the experiment of steeping the black nests for a short time in hot water, when they are said to become in a great degree white. Among the natives I have heard a few assert that they are the work of a different species of bird. It was suggested to me, that the white might probably be the recent nests in which they were taken; and the black, such as had been used for a number of years successively. This opinion appearing plausible, I was particular in my inquiries as to that point, and learned what seemed much to corroborate it. When the natives prepare to take the nests, they enter the caves with torches, and forming ladders according to the usual mode, of a single bamboo notched, they ascend and pull down the nests, which adhere in numbers together, from the side and top of the rock. They informed me, that the more frequently and regularly the cave is stripped, the greater proportion of white nests they are sure to find, and that on this experience they often make a practice of beating down and destroying the old nests in larger quantities than they trouble themselves to carry away, in order that they may find white nests the next season in their room. The birds, during the building time, are seen in large flocks on the beach,

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collecting in their bills the foam which is thrown up by the surf, of which there is little doubt but they construct their nests, after it has undergone perhaps a preparation, from a commixture with their saliva, or other secretion with which nature has provided them for that purpose."

BIREMIS, in Roman antiquity, a vessel with two rows of oars; concerning the disposition of which authors are not agreed.

BIRETUM, or *BIRRETUM*, a sort of black bonnet, or covering of the head, in form of a pyramid, much used in Italy and France, about 500 or 600 years ago, as a badge of victory, honour, or sacerdotal preference.

BIRKENHEAD, or *BERKENHEAD* (Sir John), a famous political author, born about the year 1615. Being recommended to Dr William Laud archbishop of Canterbury, he became his secretary; in which office he showed such capacity and diligence, that the archbishop, by his diploma, created him master of arts in 1639; and in the year following, by letter commendatory from the same prelate, he was chosen probationer fellow of All-Soul's College. This obliged him to reside constantly at Oxford; and on King Charles I.'s making that city his head-quarters during the civil war, our author was made choice of to write a kind of journal in defence of the royal cause, by which he gained great reputation. By his majesty's recommendation, he was chosen reader in moral philosophy; which employment he enjoyed till 1648, when he was expelled by the parliament visitors. He retired afterwards to London, where he wrote several poetical pieces; and having adhered steadily to his principles, he acquired the title of the *loyal poet*, and suffered several imprisonments. He published, while he thus lived in obscurity, some very satirical compositions, mostly levelled against the republican grandees, and written with great poignancy. Upon the restoration of King Charles II. our author was rewarded for his loyalty. He was created, April 6. 1661, on the king's letters sent for that purpose, doctor of the civil law by the university of Oxford; and in that quality, as an eminent civilian, was consulted by the convocation on the question, Whether bishops ought to be present in capital cases? He was about the same time elected to serve in parliament for Wilton in the county of Wilts. He was knighted November 14. 1662; and upon Sir Richard Fanshawe's going in a public character to the court of Madrid, he was appointed to succeed him as master of requests. He lived afterwards in credit and esteem, and received various favours from the court, which, however, drew upon him some very severe attacks from those who opposed the court. Mr Wood has treated him with great severity; but his memory has been transmitted with honour to posterity by others, particularly by Dryden, Langbaine, and Winstanley. He died in West minister December 4. 1679; and was buried in St Martin's in the Fields.

BIRKENFIELD, a town of Germany, capital of a county of the same name in the circle of the Upper Rhine. It is seated near the river Nave, in E. Long. 7. 9. N. Lat. 49. 35.

BIRMINGHAM, a very large town of Warwickshire in England, situated in W. Long. 1. 35. N. Lat. 52. 30. It is no corporation, being only go-

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verned by two constables and two bailiffs; and it is therefore free for any person to come and settle there; which has contributed greatly not only to the increase of the buildings, but also of the trade, which is the most flourishing of any in England for all sorts of iron work, besides many other curious manufactures. The town stands on the side of a hill, nearly in the form of a half-moon. The lower part is filled with the workshops and warehouses of the manufacturers, and consists chiefly of old buildings. The upper part of the town contains a number of new and regular streets, and a handsome square elegantly built. It has several churches; particularly one in the lower part of the town, which is an ancient building with a very tall spire; and another, which is a very grand modern structure, having a square stone tower with a cupola and turret above it. The houses in this town amount to between 7000 and 8000, and their number is continually increasing.

BIRON (Armand de Gontault, Lord of), Marshal of France, and a celebrated general in the 16th century, signalized himself by his valour and conduct in several sieges and battles. He was made grand master of the artillery in 1569, and no body dared to assault him at the massacre of St Bartholomew. He was the first who declared for Henry IV. He brought a part of Normandy under his subjection, and dissuaded him from retiring to England or Rochelle. But he was killed by a cannon-ball, at the siege of Epernay, on the 26th of July 1592. He was a very universal scholar: and used to carry a pocket-book, in which he wrote down every thing that appeared remarkable; which gave rise to a proverb very much used at court: When a person happened to say any thing uncommon, they told him, *Tu have found that in Biron's pocket-book.*

BIROTA, or **BIROTUM**, in Roman antiquity, a kind of vehicle, so denominated from its moving upon two wheels. It carried about 200 pound weight, and was drawn by three mules.

BIRRUS, in Roman antiquity, a cloak, made of woollen cloth, worn by the soldiers. Also a robe anciently worn by the priests or bishops.

BIRTH, in midwifery, signifies the same with delivery. See **MIDWIFERY**.

BIRTH is also used for a person's descent; and is said to be high or low according to the circumstances of his ancestry.

There is scarce any truth (Mr Knox observes in his *Essays*) of which the world has been more frequently reminded by the moralists, than the unreasonableness of that veneration which is paid to birth. They have been told, that virtue alone is true nobility; but though they have acknowledged the assertion to be founded in reason, they have continued, with uniform perseverance, in the same error. The luminous glory of an illustrious ancestor, seems to have diffused a brilliancy over a long line of descendants, too opaque of themselves to emit any original irradiations.

“Gratitude (continues our elegant author), which first raises a benefactor to a distinguished rank in civil honours, is willing to continue its kindness to his immediate offspring. The distinction is rendered hereditary. This predilection for an ancestor soon leads to the accumulation of honours and possessions in his successors; and the incense originally offered, because

it was deserved, is at last lavished at the shrine of opulence, independently of merit.

“Subordination is, indeed, essential to society. The order of nobles, as hereditary guardians of the laws, is found an useful political establishment; and none seem so well adapted to supply it, as they who have been raised to eminence by their ancestors, and who possess a territorial patrimony in the land which they are to protect. All that is contended for is, that the recommendation of birth may not set aside or depreciate real merit, the praise of learning, and the intrinsic value of virtuous exertions.

“It is a remarkable circumstance in the history of mankind, that some of the best books have been written, and some of the greatest achievements performed, by those whose origin was truly plebeian. The politest and genteelst books, whether the sentiments or the style be considered, have been produced by slaves, or the descendants of slaves. Horace, Phœdrus, and Terence, wrote in a style which must have been the standard of a court, to an intercourse with which they were by no means intitled by their extraction. The founders of the most distinguished families emerged from the middle and the lower classes, by the superior vigour of their natural abilities, or by extraordinary efforts, assisted by fortune: and unless the adventitious circumstances of wealth and civil honours can effect a change in the constituent principles of the mind and body, there is certainly no real superiority to be derived in a boasted pedigree of Tudors and Plantagenets. And yet there have appeared flatterers who have indirectly suggested, that the minds of the nobility seem to be cast in a finer mould, and to have an elegance inherent in their original constitution. According to this hypothesis, we must go on to suppose, that the mind of a commoner exalted to the higher order of senators, catches this elegance by the contagion of invisible effluvia. On his creation he undergoes a kind of new birth, and puts off the exuvie which encumbered and degraded him in the lower regions. Thus are all the occult perfections of noble blood to be infused by the mandate of a monarch. ‘But no,’ said Maximilian to a man who asked to be ennobled by him, ‘though I can give you riches and a title, I cannot make you noble.’

“In truth, there is many a nobleman, according to the genuine idea of nobility, even at the loom, at the plough, and in the shop; and many more in the middle ranks of mixed society. This genuine idea contains in it generosity, courage, spirit, and benevolence, the qualities of a warm and open heart, totally unconnected with the accidental advantages of riches and honour; and many an English sailor has possessed more of the real hero than a lord of the admiralty.

“If indeed there is any substantial difference in the quality of their blood, the advantage is probably on the side of the inferior classes. Their indigence and their manual employments require temperance and exercise, the best purifiers of the animal juices. But the indolence which wealth excites, and the pleasures which fashionable life admits without restraint, have a natural tendency to vitiate and enfeeble the body as well as the mind: and among the many privileges inherited by him who boasts nobility in his veins, he commonly receives the seeds of the most painful and

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Birth. the impurest diseases. He displays indeed a coronet on his coat of arms, and he has a long pedigree to peruse with secret satisfaction; but he has often a gout or a scrophula, which make him wish to exchange every drop derived from his Norman ancestors, for the pure tide that warms a peasant's bosom.

"The spirit of freedom, moral, mental, and political, which prevails in Britain, precludes that unreasonable attachment to birth, which, in the countries of despotism, tends to elevate the noble to a rank superior to humanity. In our neighbour's land, the region of external elegance united with real meanness, the implicit veneration paid to birth adds to the weight of legal oppression. A Frenchman of the plebeian order attends to a Count or a Marquis with all the silent submission of idolatry: on the contrary, there is no doubt but that an English gondolier would box with the best lord in the land, if he were affronted by him, without the least regard for his star and ribbon. It would indeed be an additional pleasure to the natural delight of conquest, to have bruised a puny lord. Even the more refined and polished do not idolise illustrious birth. In truth, wealth appears to be the object of more universal veneration. Noble blood and noble titles, without an estate to support them, meet with great compassion indeed, but with little respect; nor is the man who has raised himself to eminence, and who behaves well in it, neglected and despised because he derives no lustre from his forefathers. In a commercial country, where gain is the general object, they who have been most successful in its pursuit will be revered by many, whatever was their origin. In France, where honour is pursued from the monarch to the cleaner of a jakes, the distinction of birth, even with extreme poverty, is enviable. The brother of a Marquis would rather starve on a beggarly pension, than pollute himself with a trade by which he might acquire the revenues of a German kingdom. In our land of good sense this folly is losing ground; and the younger brothers of noble houses, often think it no disgrace to rival the heir in a princely fortune acquired by honourable merchandize.

"As the world becomes more enlightened, the exorbitant value which has been placed on things not really valuable will decrease. Of all the effects of man's capricious admiration, there are few less rational than the preference of illustrious descent to personal merit, of diseased and degenerate nobility to health, to courage, to learning, and to virtue. Of all the objects of pursuit which are not in our own power, the want of distinguished birth may most easily be dispensed with, by those who possess a solid judgment of that which makes and keeps us happy. There may be some reason to repine at the want of wealth and fame; but he who has derived from his parent health, vigour, and all the powers of perception, need not lament that he is unnoticed at the herald's office.

"It has been observed, that virtue appears more amiable when accompanied with beauty; it may be added, that it is more useful when recommended to the notice of mankind by the distinction of an honourable ancestry. It is then greatly to be wished, that the nobly born would endeavour to deserve the respect which the world pays them with alacrity, by employ-

ing their influence to benevolent purposes; to those purposes which can at all times be accomplished, even when the patriotic exertions of the field and cabinet are precluded."

BIRTH, or *Birth*, the station in which a ship rides at anchor either alone or in a fleet, or the distance between the ship and any adjacent object, comprehending the extent of the space in which she ranges at the length of her cables: as, *she lies in a good birth*, i. e. in a convenient situation, or at a proper distance from the shore and other vessels; and where there is good anchoring ground, and shelter from the violence of the wind and sea.

BIRTH also signifies the room or apartment where any particular number of the officers and ship's company usually mess and reside. In a ship of war there is commonly one of these between every two guns.

BIRTH-DAY, the anniversary return of the day whereon a person was born. The ancients placed a good deal of religion in the celebration of birth-days, and took omens from thence of the felicity of the coming year. The manner of celebrating birth-days was by a splendid dress: wearing a sort of rings peculiar to that day: offering sacrifices; the men to their genius, of wine, frankincense; the women to Juno: giving suppers, and treating their friends and clients; who in return made them presents, wrote and sung their panegyrics, and offered vows and good wishes for the frequent happy returns of the same day. The birth-days of emperors were also celebrated with public sports, feasts, vows, and medals struck on the occasion.—But the ancients, it is to be observed, had other sorts of birth-days besides the days on which they were born. The day of their adoption was always reputed as a birth-day, and celebrated accordingly. The emperor Adrian, we are told, observed three birth-days; viz. the day of his nativity, of his adoption, and of his inauguration. In those times it was held, that men were not born only on those days when they first came into the world, but on those also when they arrived at the chief honours and commands in the commonwealth, *e. gr.* the consulate. Hence that of Cicero in his oration *ad Quirites*, after his return from exile: *A parentibus, id quod necesse erat, parvus sum procreatus; a vobis natus sum consularis.*

BIRTHWORT, in botany. See **APISTOLOCHIA**.

BIRVIESCA, a town of Old Castile in Spain, and capital of a small territory called *Bureva*. W. Long. 2. 15. N. Lat. 56. 35.

BIRZA, a town of Poland in the province of Samogitia. E. Long. 25. 5. N. Lat. 56. 35.

BISA, or *BIZA*, a coin of Pegu, which is current there for half a ducat. It is also a weight used in that kingdom.

BISACCIA, a small handsome town of Italy, in the Ulterior Principato, and in the kingdom of Naples, with a bishop's see. E. Long. 15. 35. N. Lat. 41. 3.

BISACUTA, in middle-age writers, an axe with two edges, or which cuts either way; or a missive weapon pointed at both ends. Walsingham represents the *securis bisacuta* as peculiar to the Scottish nation. See **BATTLE-AXE**.

BISBÆA, a feast celebrated by the Messapii after the

Birth
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Bisbæa.

Biscara,
Biscay.

the pruning of their vines, to obtain of the gods that they might grow again the better. The word is formed from *βισκην*, used by some for a vine.

BISCARA, a town of Africa in the kingdom of Algiers, seated in the eastern or Levantine government, in E. Long. 5. 50. N. Lat. 35. 10. This city belonged to the province of Zeb in Numidia, which lies south of the kingdom of Labez; but the Algerines, in their annual incursions to carry off slaves, made themselves masters of Biscara, in order to facilitate their entrance into the southern provinces. It retains still some remains of the ancient city that gave name to this territory; and hath a garrison to keep the inhabitants in awe, and who usually bring lions, tigers, and other wild beasts for sale to strangers. The city of Algiers is never without a great number of Biscarans, who are employed in the hardest and lowest offices, as cleaning of streets, emptying of vaults, sweeping chimneys, &c.; and when they have got about 10 or 12 crowns by this drudgery, they return to their country, where they are respected as worthy men on account of their money, the inhabitants of this province being almost entirely destitute of coin, and reckoned the most miserable of all the Arabian tribes.

BISCAY, a province of Spain, bounded on the north by the sea called the *Bay of Biscay*, on the south by Old Castile, on the west by Asturias of Santilana, and on the east by the territories of Alava and Guipuscoa. It is in length about seventy-four miles; but the breadth is much less, and very unequal. This country in general is mountainous and barren; but in some places it produces corn, and every where a great quantity of apples, oranges, and citrons. They make cyder with the apples, which is their common drink. Besides this, they have wine called *chacolino*, which is pleasant, but will not keep long, and therefore is used instead of small beer. Their valleys produce a little flax, and their hills a great deal of timber for ships. The sea affords them excellent fish of all sorts. The wool that is exported here comes from Old Castile; but their greatest riches are produced by their mines of iron; which metal is extremely good, and is transported to all parts. They have likewise artificers that work in iron; and are, in particular, famous for working swords and knives. Biscay is the country of the ancient Cantabri, so imperfectly subdued by Augustus, and so slightly annexed to the Roman empire. Their mountains have in all ages afforded them temptations and opportunities of withdrawing themselves from every yoke that has been attempted to be imposed upon them. Their language is accounted aboriginal, and unmixed with either Latin, French, or Spanish. It is so totally different from the Castilian, that we seldom meet with any of the peasants that understand one word of Spanish. The Biscayners are stout, brave, and choleric to a proverb. The best sailors in Spain belong to the ports of Biscay, and its mountains produce a very valuable race of soldiers. Their privileges are very extensive, and they watch over them with a jealous eye. They have no bishops in the province, and style the king only *Lord of Biscay*. The men are well-huilt and active, like all mountaineers. The most singular thing in their dress is the covering of their legs: they wrap a piece of coarse grey or black woollen cloth round them, and fasten it on with many turns of tape. The women are

beautiful, tall, light, and merry; their garb is neat and pastoral; their hair falls in long plaits down their backs; and a veil or handkerchief, twined round in a coquetish manner, serves them for a very becoming head-dress. On Sundays they generally wear white, tied with rose-coloured knots. The chief towns in it are Bilboa, Ordunna, Durango, Fontarabia, St Sebastian, Tolosa, and Victoria.

BISCAY (New), a province of North America, in the audience of Guadalajara. It has New Mexico on the north, Culiacan on the west, Zacatecas on the south, and Panuca with Florida on the east. It is about 300 miles from east to west, and 360 from north to south. In general it is well watered, fruitful, moderately temperate, and abounds in all sorts of provisions, except the mountains of Topia, which are barren. The original inhabitants are not all brought under subjection, they having four large towns in the morasses, that are of difficult access; for this reason the Spaniards have built three small fortified towns, which are well inhabited, for the defence of their silver mines. The latitude is from 25 to 28 degrees.

BISCHOFISHEIM, a town of Germany, in the archbishopric of Mentz, and circle of the Lower Rhine, seated on the river Tauber, near the frontiers of Franconia, E. Long. 9. 37. N. Lat. 49. 40.

BISCHOFF-ZELL, a town of Switzerland, belonging to the bishop of Constance. There is a castle wherein the bishop's bailiff resides, who receives half the fines; but he has nothing to do with the town, nor is there any appeal from the council of the town. It is seated on the Thur, at the place where the Sitter falls into this river almost half way between Constance and St Gall. E. Long. 9. 23. N. Lat. 47. 33.

BISCHOP, or BISKOP, (John de), an excellent artist, born at the Hague in 1646. He is spoken of with great commendation as a painter, and his drawings from the great masters are held in the highest estimation by the curious. In these he has succeeded so happily, as to preserve with the greatest exactness the style of the painter whose pictures he copied. But as an engraver he is most generally known; and his works are numerous. They are chiefly etchings, harmonized with the graver; and though slight, yet free, spirited, and pleasing. He gives a richness to the colour, and a roundness to the figures, far beyond what is usually done with the point, so little assisted by the graver. His figures in general are well drawn; but in a manner, rather than a correct, style. The extremities indeed are not always well marked, or his heads equally expressive or beautiful. It is said of him, that he owed his excellency to his own genius alone, having never studied under any master by whose instruction he might have been benefited. He worked chiefly at Amsterdam, where he died in 1686, aged 40 years.

BISCHOP (Cornelius), portrait and history painter, was born at Antwerp in 1630, and was the disciple of Ferdinand Bol. His pencil, his tint of colouring, his style and manner, had a strong resemblance of his master; and by many competent judges he is esteemed not inferior to him in historical subjects as well as in portrait, having been always assiduous to study after nature. A painting by this master, consisting of a few figures by candle light, was so much admired by Louis XIV. that he purchased it at an high price, and it is placed

Biscay'
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Bischop.

Bishop placed in the royal collection; and the King of Denmark admitted his works among those of the best masters. However, notwithstanding the encomiums bestowed on this master by the Flemish writers, an impartial judge would perhaps think his compositions but heavy and without expression, and his works in general not worthy of all that commendation which is lavished upon them. He died in 1674.

BISCHOP (Abraham), son of Cornelius Bischof, was instructed by his father to design historical subjects and portraits; but preferred the painting of fowl, particularly those of the domestic kind, to any other subjects which were recommended to him. He designed every object after nature, and usually painted in a large size, such as ornamental furniture for grand halls; and every species of fowl was so exactly like nature in its attitude, character, and plumage, that his works were beheld with universal approbation.

BISCHWELLER, a fortress of Alsace, seated in E. Long. 7. 0. N. Lat. 48. 40.

BISCHROMA, in music, the same as our triple quaver. See **CHROMA**.

BISCUTELLA, **BUCKLER-MUSTARD**, or *Bastard Mithridate-mustard*: A genus of the tetradynamia order, belonging to the siliculosa class of plants; and in the natural method ranking under the 39th order, *Siliquose*: The silicula is flat-compressed, rounded, above and below two-lobed, and the leaves of the calyx are gibbous at the base.

Of this there are three species: the auriculata, with small pods joined to the style; the didyma, with a double orbicular pod diverging from the style; and the apula, with flowers growing in spikes, and a shorter style. They are natives of France, Italy, and Germany.

BISEGLIA, a populous town of Italy in the kingdom of Naples and Terra de Bari, with a Bishop's see, seated near the Gulph of Venice, in E. Long. 16. 49. N. Lat. 41. 18.

BISERRULA: A genus of the decandria order, belonging to the diadelphica class of plants; and in the natural method ranking under the 32d order, *Papilionaceæ*: The legumen is bilocular and flat; and the partition contrary. Of this genus there is only one species known; viz. the pelecinus, an annual plant with purple flowers, growing in Italy, Sicily, Spain, and the south of France.

BISERTA, a town of the kingdom of Tunis in Africa, seated on a gulf of the same name, in E. Long. 10. 40. N. Lat. 37. 20. The gulf is a very large one, and the *Sinus Hipponensis* of the ancients. It is formed by the Capes Blanco and Ziebeh; and has a beautiful sandy inlet near four leagues wide, which once admitted the largest vessels, but through the negligence of the Turks can now admit only those of the smallest size, and is in danger in a short time of being totally choked up. Some remains of the great pier of Hippo are still extant; by which it appears to have run out into the sea so as to break the north-east wind, and make this one of the safest and most beautiful heavens in these parts. On the south, this gulf hath a communication with a lake of the same name, so as to form a kind of canal between it and the Mediterranean Sea. Through this canal a constant stream is observed alternately discharging itself from the sea to the lake, and from the

lake to the sea, in the same manner as the Atlantic Ocean is observed to do in the Mediterranean, and back again; so that what the lake loses by exhalations is soon recruited by the sea, which in hot seasons runs into it with a very brisk current to keep up the equilibrium. The millets of this lake are the best in Barbary; great quantities of their roes dried and made into **BOTARGO**, are sent from hence into the Levant, where they are accounted a great dainty. The town was formerly very considerable; and, though not above a mile in circuit, is said to have contained 6000 houses; whereas both it and the villages under it now scarce contain that number of inhabitants. It has still, however, some strong castles and batteries to defend it, especially towards the sea. There are also two very capacious prisons for slaves, a large magazine or warehouse for merchandize, and two towers with some other outworks to defend the entrance of the haven. The city, though so near the sea, is well supplied with fresh water from springs that surround it on every side towards the land. It is likewise well furnished with variety of fish from the adjacent lake. Most of the inhabitants of Biserta, as well as of the adjacent country on both sides of the canal, are employed in the fishing trade, which begins about the end of October, and ends in the beginning of May; for the rains then sweetening the waters, make the fish come into it in vast quantities during that season; but afterwards they either disappear or grow lean, dry, and unfit to eat. The people here are extremely poor; yet very proud, ill-natured, and faithless; inasmuch that Mutey Hasun Bey, one of their sovereigns, used to say, that none of his subjects deserved his resentment so much as they, since neither fear nor love could keep them faithful.—Biserta hath about eight villages under its government; a large plain called *Matter* or *Mater*; and the territory of Choros, the *Clypea* or *Corobis* of the ancients. This is a tract of great extent, and would be very fertile were it not for the frequent incursions of the Arabs. The people are very poor, live meanly, and go worse clad. Their choicest dainty is their coscou, a kind of cake made of flour, eggs, and salt, which they dry and keep all the year round. Their dress is nothing else than a piece of coarse cloth wrapped round their bodies, and another round their heads by way of a turban; and most of them go barefooted and barelegged. The poorer sort have nothing but a few skins laid on the floor to sleep upon; but the rich have narrow couches fixed against the wall, about five or six feet high, to which they mount by a ladder. They are very expert horsemen, as most in these countries are, and ride without saddle or bridle; nor do they ever shoe their horses. They are still more miserable from the neighbourhood of the Arabs, who living altogether by plunder, robbery, and murder, oppress the poor inhabitants with their frequent inroads and cruel exactions. The Bisertines, both of the city and country, are the most superstitious people in Barbary, scarce going any where without hanging a quantity of amulets about their own, or if they ride, their horses neck also. These amulets are only scraps of parchment or paper, with some strange characters written upon them, which they sew up in a piece of leather, silk, &c. and imagine when worn about them to be a preservative against all accidents.

B. ferta.

Biset,
Bishop.

BISET (Charles Emanuel), a painter of considerable eminence, was born at Mechlin in 1633; and even in his early productions showed a lively and ready invention. He was remarkable for introducing a multitude of figures into his designs, with an extraordinary variety of drapery peculiar to every nation. His general subjects were conversations, balls, concerts, and assemblies of gay and genteel persons, which were correctly designed and well coloured; though their actions and attitudes were sometimes very indelicate. His pictures had a strong effect at a distance; yet when they were more nearly inspected, they showed a neatness of pencil, a spirited touch, and a good expression.

BISHOP, a prelate or person consecrated for the spiritual government and direction of a diocese. The word comes from the Saxon *bischof*, and that from the Greek *επισκοπος*, an *overseer* or *inspector*: which was a title the Athenians gave to those whom they sent into the provinces subject to them, to see whether every thing were kept in order; and the Romans gave the same title to those who were inspectors and visitors of the bread and provision. It appears from a letter of Cicero, that he himself had a bishopric; being *episcopus Oræ & Campaniæ*.

A bishop differs from an archbishop in the following particulars: That an archbishop with bishops consecrate a bishop as a bishop with priests ordain a priest; that the archbishop visits a province as the bishop a diocese; that the archbishop convokes a provincial synod as the bishop a diocesan one; and that the archbishop has canonical authority over all the bishops of his province as the bishop over the priests in his diocese. It is a long time since bishops have been distinguished from mere priests or presbyters; but whether that distinction be of divine or human right, whether it was settled in the apostolical age or introduced since, is much controverted. But whether the apostles settled any thing of this kind themselves, or whether they left the spiritual œconomy in the hands of the presbyters, or of those together with the people, it appears that in a little time the functions of the priesthood were divided, and the priests distinguished into degrees; the political part of religion being, according to some, assigned principally to bishops, and the evangelical to the priests, &c. Or, according to others, the functions of teaching and preaching were reserved to the bishop, and that of ordination superadded; which was their principal distinction, and the mark of their sovereignty in their diocese.

By the ancient discipline, bishops were to be married once, and not to put away their wives on pretence of religion; but a second marriage was a disqualification for this order. If they lived chaste, they were ranked as confessors. Some bishops, in the middle age, on account of their *regalia* or temporalities, were obliged to a military service called *hostis*, by which they were to lead their vassals into the field, and attend the king in his military expeditions. This Charlemagne excused, and even forbid; but the prohibition was little regarded; since we find the thing often practised afterwards.

The election of bishops was anciently placed in the clergy, and the people of the parish, province, or diocese; but afterwards, princes and magistrates, patriarchs

and popes, usurped the power. The election was to be within three months after the vacancy of the see; and the person to be chosen out of the clergy of that church. Formerly the bishop claimed a share in the election of an archbishop; but this was set aside by the popes.

In England, during the Saxon times, all ecclesiastical dignities were conferred by the king in parliament. At length, however, after several contests, (specially between archbishop Anselm and Henry I. in consequence of a grant of king John, recognized in Magna Charta, and established by stat. 25 Edw. III. stat. 6. § 3. bishops were elected by the chapters of monks or canons, some shadow of which still remains in the present method of disposing of bishoprics; but by stat. 25 Hen. VIII. cap. 20. the right of nomination was restored to the crown.

Ordinarily at least three bishops are required in the ceremony of consecrating a bishop; but in some cases a single one might suffice. The English succession of Protestant bishops stands on this last ground. In England, the king being certified of the death of a bishop by the dean and chapter, and his leave requested to elect another, the *conge d'elire* is sent to them, with a letter missive, nominating the person whom he would have chosen. The election is to be within twelve days after the receipt of it, otherwise the king by letters patent appoints whom he pleases; and the chapter, in case of refusing the person named by the king, incurs a *præmunire*. After election, and its being accepted of by the bishop, the king grants a mandate under the great seal for confirmation; which the bishop consigns to his vicar-general; consisting mostly in a solemn citation of such as have any objections to the bishop elect, a declaration of their contumacy in not appearing, and an administration of the oaths of allegiance and supremacy, of simony, and canonical obedience. Sentence being read by the vicar-general, the bishop is installed in the province of Canterbury by the arch-deacon; the fact is recorded by a public notary; and the bishop is invested with full powers to exercise all spiritual jurisdictions, though he cannot sue for his temporalities till after consecration. Then follows the consecration by the archbishop or some other bishop appointed by lawful commissions, and two assistant bishops: the ceremony of which is much the same as in the Romish church, save that having put on the episcopal robes, the archbishop and bishops lay their hands on the new prelate's head, and consecrate him with a certain form of words. The process of the translation of a bishop to another bishopric only differs in this, that there is no consecration. The age of a bishop is to be at least thirty years; and by the ancient discipline, none were to be chosen but those who had passed through all the inferior orders; but in some cases of necessity this was dispensed with, and deacons, nay laymen, were raised *per saltum* to the episcopal dignity.

The form of consecrating a bishop is different in different churches. In the Greek church, the bishop elect, being by the assistant bishops presented for consecration, and the instrument of election put in his hand; after several prayers (the first called *diaconicum*) demanding consecration, makes profession of his faith;

Bishop

Bishop. after which he receives a benediction. He is then interrogated as to the belief of the Trinity; to which he answers by a *long profession of faith*, and receives a second benediction. Lastly, he is asked what he thinks of the *incarnation*; to which he answers in a *third profession of faith*; which is followed by a third benediction: after which the consecrator gives him the pastoral staff: then he is led up to the altar; where, after certain prayers, and three crosses on his head, he receives the *pallium*, if he be an archbishop or patriarch; he then receives the kiss of peace of his consecrator and two assistants; and sitting down, reads, prays, and gives the communion to his consecrator and others.

In the Romish church, the bishop elect being presented by the elder assistant to the consecrator, takes the oath: he is then examined as to his faith; and after several prayers, the New Testament is drawn over his head, and he receives the chrism or unction on his head. The pastoral staff, ring, and Gospel, are then given him; and after communion, the mitre is put on his head: each ceremony being accompanied with proper prayers, &c. the consecration ends with Te Deum. These last mentioned ceremonies are laid aside in the consecration of English bishops. Nevertheless, the book of consecration set forth in the time of Edward VI. and confirmed by act of parliament, in which some of them are enjoined, is declared to be the standard for this purpose by the thirty-sixth article.

The function of a bishop in England may be considered as two-fold; *viz.* what belongs to his order, and what belongs to his jurisdiction. To the episcopal order belong the ceremonies of dedication, confirmation, and ordination; to the episcopal jurisdiction, by the statute law, belong the licensing of physicians, chirurgeons, and schoolmasters, the uniting small parishes (though this last privilege is now peculiar to the bishop of Norwich), assisting the civil magistrate in the execution of statutes relating to ecclesiastical matters, and compelling the payment of tithes and subsidies due from the clergy. By the common law, the bishop is to certify the judges, touching legitimate and illegitimate births and marriages; and by that and the ecclesiastical law, he is to take care of the probate of wills and granting administrations; to collate to benefices, grant institutions on the presentation of other patrons, command induction, order the collecting and preserving the profits of vacant benefices for the use of the successors, defend the liberties of the church, and visit his diocese once in three years. To the bishop also belong suspension, deprivation, deposition, degradation, and excommunication.

All bishops of England are peers of the realm, except the bishop of Man; and, as such, sit and vote in the House of Lords: they are barons in a threefold manner, *viz.* feudal, in regard to the temporalities annexed to their bishoprics; by writ, as being summoned by writ to parliament; and lastly, by patent and creation: accordingly they have the precedence of all other barons, and vote as barons and bishops; and claim all the privileges enjoyed by the temporal lords, excepting that they cannot be tried by their peers, because, in cases of blood, they themselves cannot pass upon the trial, for they are prohibited by the canons of the church (as already observed) to be judges of life and death. They have the title of *Lords and Right Reve-*

rend Fathers in God. Besides two archbishops, there are 24 bishops in England; exclusive of the bishop Sodor and Man, who has no seat in the House of Peers: The bishops of London, Durham, and Winchester, take place from the other bishops, who are to rank after them according to their seniority of consecration.—There is now also a bishop in our settlement of Nova Scotia.—In Scotland, before the Presbyterian establishment, there were two archbishoprics and 12 bishoprics.

BISHOP'S COURT, an ecclesiastical court, held in the cathedral of each diocese, the judge whereof is the bishop's chancellor, who judges by the civil and canon law; and if the diocese be large, he has his commissaries in remote parts, who hold what they call *consistory courts*, for matters limited to them by their commission.

BISHOP and his Clerks, some little islands and rocks on the coast of Pembrokehire near St David's in Wales, which are very dangerous to mariners.

BISHOP'S-AUKLAND. See AUKLAND.

BISHOP'S CASTLE, a town of Shropshire in England, seated near the river Clun. It is a corporation, sends two members to parliament, and its market is much frequented by the Welch. W. Long. 2. 55. N. Lat. 52. 30.

BISHOP'S-STORTFORD, a town of Hertfordshire in England, seated on the side of a hill, in E. Long. 0. 25. N. Lat. 51. 50. It has several good inns, but the streets are not paved. It has a large church, one Presbyterian, and one Quaker meeting. Here was formerly a castle called *Weymore castle*, wherein a garrison was kept, but no remains of it are now left.

BISHOPING, a term among horse-dealers, to denote the sophistications used to make an old horse appear young, a bad one good, &c.

BISHOPRIC, the district over which a bishop's jurisdiction extends, otherwise called a diocese.

In England there are 24 bishoprics besides that of Sodor and Man; in Scotland, none at all; in Ireland 18.

BISI (Bonaventura), a celebrated miniature painter, was born at Bologna, and was a disciple of Lucio Massari. But his sole delight was in miniature painting, and in that way he arrived at great excellence. Instead of working from his own invention, or original design, he employed himself to imitate, in small size, the pictures of Guido, Correggio, Titian, and other great masters, and those he finished with astonishing grace, neatness, and beauty. A great number of the works of this master are in the Duke's gallery at Modena, and are highly valued. He died in 1662, his age unknown.

BISIGNANO, a town of Italy, in the kingdom of Naples, and in the Hither Calabria. It hath a strong fort, a bishop's see, and the title of a principality. It is seated on a mountain near the river Boceana, in E. Long. 16. 40. N. Lat. 39. 37.

BISK, or **BISQUE**, in cookery, a rich sort of broth or soup, made of pigeons, chickens, force-meat, mutton-gravy, and other ingredients. The word is French, formed, as some think, from *biscotta*; because the bisque, consisting of a diversity of ingredients, needs several repeated coctions to bring it to perfection. There is also a *demi-bisque*, made at a low expence, in which only half the ingredients are used; and a bis-

Bishop

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Bisq.

Bisket
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Bismuth.

que of fish, made of carps, minced with their roes and lobsters.

BISKET, a kind of bread prepared by the confectioners, of fine flour, eggs, and sugar, and rose or orange water; or of flour, eggs, and sugar, with aniseeds and citron-peel, baked again and again in the oven, in tin or paper moulds. There are divers sorts of biskets; as feed-bisket, fruit-bisket, long-bisket, round-bisket, Naples-bisket, sponge-bisket, &c.

Sea-BISKET, is a sort of bread much dried by passing the oven twice, to make it keep for sea-service. For long voyages they bake it four times, and prepare it six months before the embarkation. It will hold good a whole year.

To preserve sea-bisket from insects, Mr Hales advises to make the fumes of burning brimstone pass through the casks full of bread. Bisket may be likewise preserved a long time, by keeping it in casks well calked, and lined with tin.

The ancients had their bisket prepared after the like manner, and for the like use, as the moderns. The Greeks called it *απιον βισκουον*, *q. d.* bread put twice to the fire. The Romans gave it the name of *panis nauticus*, or *capta*. Pliny denominates it *vetus aut nauticus panis iustus atque iterum coctus*. By which it appears, that, after the first baking, they ground or pounded it down again for a second. In some middle-age writers, it is called *paximas*, *paximus*, and *panis paximatus*. Among the Romans, we also meet with a kind of land-bisket for the camp-service, called *buccellatum*, sometimes *expeditionalis annonæ*, which was baked much, both to make it lighter for carriage, and less liable to corrupt, the coction being continued till the bread was reduced one-fourth of its former weight.

BISKOP, See **BISCHOP**.

BISMILLAH, a solemn form used by the Mahometans at the beginning of all their books and other writings, signifying, *In the name of the most merciful God*.

BISMILLAH is also used among the Arabs as a word of invitation to eat. An Arab prince will frequently sit down to eat in the street before his own door, and call to all that pass, even beggars, in this word, who do not fail to come and sit down to eat with him; for the Arabs are great levellers, and set every body upon a footing with them.

BISMUTH, or **TIN-GLASS**, one of the semi-metals, of a reddish or yellowish-white colour and a lamellated texture, and moderately hard and brittle, so that it not only breaks into pieces under the strokes of the hammer, but may even be beat into powder. It is the heaviest of all the semi-metals, weighing from 9.600 to 9.700, and is about as fusible as lead. It is found,

1. *Nat.ve.* Bismuth is found more commonly in a native state than any other metallic substance. It is usually crystallized in cubes or octagons, or in the form of dendrites or thin laminæ invelling the ores of other metals, particularly cobalt.

2. *Native Calx of Bismuth*, in which the metal is mineralized by aerial acid, is either in form of a powder or indurated like mortar. It is frequently of a greenish-yellow colour, being mixed with the ores of other metals. The red and yellow part is most commonly cobalt ore; though it has often been mistaken for bis-

N^o 47.

mith. It is frequently found in glittering particles interspersed through stones of various kinds. Silver, iron, and other metals, are also found in it.

3. *Mineralized by the Vitriolic Acid*. This is said to be of a yellowish, reddish, or variegated colour, and to be found mixed with the calx of bismuth in-crusting other ores.

4. *By Sulphur*. This is found chiefly in Sweden, is of a bluish-grey colour, a lamellated texture and tessellar form like galena, but much heavier; sometimes presenting parallel striæ like antimony. It is said to contain cobalt and arsenic as well as bismuth. It is very fusible, and the sulphur it contains may be most-ly separated by scorification.

5. *By Sulphur and Iron*. This ore is said to be of a lamellar cuneiform texture, and to be found in Norway. This kind of ore yields a fine radiated regulus; for which reason it has been ranked among the antimonial ores by those who have not taken proper care to melt from it a pure regulus, or one destitute of sulphur. In Schneeberg they have what is called *columbine* bismuth and *plumose* bismuth; the former taking its name from the colour, the latter from its texture. The latter is said to contain a great quantity of cobalt.

6. *With Sulphur and Arsenic*. This ore is generally of a whitish-yellow or ash colour, has a shining appearance, and is composed of small scales or plates intermixed with small yellow flakes. Its texture is hard and solid; sometimes it strikes fire with steel. It has a disagreeable smell when rubbed; does not effervesce with acids, but is partially dissolved by the nitrous acid. The solution, diluted with water, becomes a kind of sympathetic ink; the words written with it on white paper being invisible when dry, but assuming a yellowish colour when heated before the fire. There is also a grey bismuth ore of the arsenicated kind, with a striated form, found at Helsingland in Sweden and at Annaberg in Germany. Another of the same kind, with variegated colours of red, blue, and yellowish-grey, is likewise found at Schneeberg in Saxony. At Misnia in Germany, and at Gillebeck in Norway, it is also found striated with green fibres like an amianthus. At Georgenstadt in Germany, and at Annaberg in Saxony, it is intermixed with reddish-yellow shining particles, called by the French *Mines de Bismuth Tigreas*. The *minera bismuthi arenacea* mentioned by Wallerius and Bomare belongs also to the same kind of arsenicated ores.

This semi-metal is scarcely altered by exposure to the light. In close vessel, it sublimes without any alteration; and if permitted to cool slowly, it crystallizes in Greek volutes. It crystallizes also more easily than any other metallic substance. Heated with access of air, its surface, when melted, soon becomes covered with a greenish-grey or brown calx. If the metal be heated a once to ignition, it burns with a small blue flame scarcely sensible, and the calx evaporates in a yellowish smoke, which condenses into flowers of the same colour. Mr Geoffroy observed, that the flowers which rise last are of a beautiful yellow colour like orpiment. By exposure to the heat of a porcelain furnace, a part of the semi-metal flowed out through a crack in the vessel, and the portion which remained in the vessel formed a glass of a dirty violet colour, while the bismuth melted in contact with the external

6

air

Bismuth. air was yellowish. By exposure to the atmosphere the surface of this metal becomes somewhat tarnished, and its surface covered with a whitish rust. It is not attacked by water, nor does it combine with earths; but its calces give a greenish-yellow tinge to glasses. It is employed by pewterers to communicate hardness to tin; and may be used instead of lead in the expellation of metals. It resembles lead in many respects, and is thought to be dangerous when taken internally.

Most metallic substances unite with bismuth, and are thereby rendered more fusible than before; hence it is used in the making of solder, printers types, &c. as well as pewter. When native, it is of a yellowish-white colour, and so fusible that it melts at the flame of a candle. By calcination it gains about half an ounce in the pound. This calx is said to promote the vitrification of earths, and of the refractory metallic calces more powerfully than lead, and likewise to act as a more violent corrosive on crucibles than the glass of lead itself. Hence it is preferable to lead for the purification of gold and silver, destroying more effectually the baser metals with which they have been adulterated. In all operations of this kind, where sulphur makes one of the heterogeneous matters to be destroyed, bismuth is of the greatest service, on account of its forming with sulphur an extremely fusible compound, while that of lead and sulphur proves very refractory.

Bismuth readily amalgamates with mercury, and the compound adheres to iron. On exposing the iron, thus coated with amalgam, to a considerable heat, the mercury exhales, and the greatest part of the bismuth adheres to the iron, which thus looks as if it had been silvered. If mixtures of bismuth with some other metals, particularly lead, be amalgamated, the lead becomes so thin as to pass through leather along with the mercury; but on standing, the bismuth is thrown up to the surface in form of a dark-coloured powder, the quicksilver and lead remaining united. From this property it is too often used for the purpose of adulterating quicksilver; as rendering a very considerable portion of lead intimately combined with it. One part of this metal with another of bismuth, may be united with three of quicksilver, without affecting its fluidity. The quicksilver thus adulterated is not only unfit for medicinal uses, but even for the common mechanical purposes of gilding and silvering; as the workmen find, in this case, that it leaves a leaden hue upon the gold or silver, which spoils the fine appearance of the work. If the abuse happens to be discovered, the mercury may be purified by distillation to a certain degree, though, according to Boerhaave, it is impossible ever to free it totally from a mixture of any of the imperfect metals.

This semimetal readily unites by cementation with sulphur, and melts with a more gentle heat than when alone; but on continuing the fire, a separation takes place, the bismuth falling to the bottom, and a sulphureous scoria swimming on the surface. Sulphur is likewise very readily absorbed by the calx of bismuth. A curious needle-formed mass is the product of their union, in appearance exactly resembling antimony, but contracting a reddish tinge on the outside by exposure to the air. The calx cannot take up quite half its weight of sulphur.

Silver melts with the compound of calx of bismuth
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and sulphur in a very gentle heat into a brittle regulus. With a stronger fire gold also unites with it, forming a brittle compound, whose particles somewhat resemble an ore, with some striz and shining ones among them. Copper melts with it in a gentle heat, and the compound retains a remarkable degree of fusibility: on the addition of lead a new combination takes place; the copper and sulphur rise to the top in scoria resembling an ore, whilst the bismuth and lead unite into a regulus at the bottom. Zinc and Bismuth will not unite; the former melting and burning on the surface as it does by itself. Equal parts of lead, tin, and bismuth, form a blackish sparkling compound resembling the small dried ores of lead.

The specific gravity of a mixture of bismuth and copper is exactly the mean betwixt that of the two ingredients unmixed. With iron the compounds are specifically lighter than each of the ingredients; but with gold, silver, tin, lead, and regulus of antimony, they turn out heavier than either of the ingredients.

Bismuth reduced to powder, and applied with the white of eggs to turned wood, makes it look as if it had been silvered, after being properly dried and rubbed over with an hard polisher. Some pretend that the calx of bismuth, by long reverberation, becomes red like that of lead; but this is found to be a mistake. In this case it scarcely even retains the form of a calx; for a part of the bismuth is soon revived into its metallic state by the contact of the flame. None of the destructible metallic substances is capable of being revived so easily as bismuth. The calx heated strongly in a close vessel melts into glass.

This semimetal is most commonly ledged in cobalt-ores; which, when of a high red, or peach-bloom colour, are called *bismuth bloom* or *flowers of bismuth*. It has been supposed, that bismuth communicates to glass the same blue colour with cobalt, because the dross which remains after the bismuth has been melted out, and called by the smelters *bismuth-grain*, sometimes produces that effect. But as no such grains or colouring-matter remains from pure bismuth, it is plain, that this property must depend on something mixed with the semimetal, and which was undoubtedly nothing but some cobalt-ore united with the bismuth.

To the same mixture we must ascribe the property which bismuth-ore has of making sympathetic ink of the same kind with that formed directly by solution of regulus of cobalt. For this purpose a tincture is to be drawn from the ore with aquafortis, and this afterwards mixed with a saturated solution of sea-salt, and inspissated, yields a reddish salt: its watery solution is the curious liquor called *Green Sympathetic Ink*; though there is an impropriety in calling it *green*, when in fact it is red. If any words are written with this ink on white paper, the characters disappear as soon as dry; but on holding the paper to the fire, they become *green* and legible; on cooling they disappear again, and this repeatedly any number of times. Bomare informs us, that words written with this sympathetic ink may also be rendered legible, by wetting them with a sponge or pencil dipped in an aqueous solution of *hepar sulphuris*. The experiments succeed best when the tincture drawn from the calcined ore is mixed with a solution of one-fourth its weight of sea-salt: this mixture is then evaporated

Bisnagar.

nearly to dryness, and the residuum dissolved in water, which is then the sympathetic ink. If the tincture be mixed with nitre or borax instead of sea-salt, the characters will become rose-coloured when varnished; and by passing sea-salt over them they afterwards become blue; but if mixed with as much alkali as is sufficient to saturate the acid, they change by heat to a purple and red colour. See CHEMISTRY-Index.

BISNAGAR, formerly a very large and powerful kingdom of Asia, comprehending the kingdoms of Kanara, Malabar, Travankor, Madura, Marava, and Tanjour. It was called *Bisnagar* from its capital city, and took the name of *Narsinga* from one of its rajahs or kings. We know nothing certain concerning this kingdom before the year 1520, when Khrisna Rajah, king of Bisnagar, made war with Adel Khan king of Vissapur, from whom he resolved to take the city of Rachol, situated in the island of Salfette near Goa, which he said had belonged to his ancestors. The king of Bisnagar's army consisted of 733,000 foot, 35,000 horse, 586 elephants with towers on their backs, each of which had four men in it; besides these were 12,000 water-carriers, and the army was followed by 20,000 common women. The city, however, resisted this formidable army for three months; at the end of which, Adel Khan came to its relief with an army of 120,000 foot, 18,000 horse, 150 elephants, and many heavy cannon. In the engagement the king of Bisnagar proved victorious, and almost entirely destroyed the army of Adel Khan, taking from him 4000 horses, 100 elephants, 400 cannon, &c. Soon after he took the city by assault; but consented to restore the booty taken in the former battle, provided Adel Khan consented to come and kiss his foot as the sovereign lord of Kanara. This base condition was accepted, but accidentally prevented from being put in execution. From this time we hear of nothing remarkable till the year 1558, when a Portuguese of the city of *Meliapur* or *St Thomas*, on the coast of Coimandel, persuaded Rama Rajah, then king of Bisnagar, to march against that place, telling him the plunder would be worth 2,000,000, and that the destruction of Meliapur would be of great service to the images in the Pagods which were thrown down by the Christians. The king set out accordingly with an army of 500,000 men; but the inhabitants, instead of preparing for their defence, sent him a present of 4000 ducats. This somewhat appeased him: however, he would not enter the city, but ordered the inhabitants of both sexes, with all their valuable effects, to be brought into his presence; which being done, he found that the value of their whole substance did not exceed 80,000 ducats. On this he ordered the informer to be thrown to the elephants, who tore him in pieces; after which he dismissed the citizens, and restored all their goods so punctually, that only a silver spoon happening to be missing, it was sought for, and returned to the owner. In 1565, the happy state of this kingdom excited the envy of the kings of Dekan; who, having raised an army of 500,000 foot and 50,000 horse, defeated and killed the king of Bisnagar, though at the head of an army almost twice as numerous, and took the royal city itself. They are said to have spent five months in plundering it, although the inhabitants had before carried off 1550 elephants loaded with money and jewels to the amount of upwards

of 100,000,000 of gold; besides the royal chair for state days, whose price could not be estimated. The victors, however, found a diamond of the size of an ordinary egg, besides another of a size somewhat inferior, and several other jewels of immense value. Afterwards, however, they were forced to abandon the kingdom, as being too large for them to keep in their hands. From this time the kingdom of Bisnagar remained pretty much unmolested till about the year 1627, when it was subdued by Aurengzebe, second son to Shah Jehan, and hath ever since remained subject to the Great Mogul. In some places of this kingdom it is said the roads have great forests of bamboos on each side, which are so thick that it is impossible for a man to pass. These forests are full of monkeys; and what is singular, those on the one side seem to be enemies to those on the other; for if a basket of rice is set down on the road with a parcel of small sticks about it, the monkeys on each side will come out, and fall a-fighting with the sticks till one of the parties retreats. This, it is said, is often done by travellers for diversion. They catch the wild elephants here in pitfalls, and then tame them by means of others already tamed: the latter seldom fail of beating the wild ones into a good behaviour. The town of Bisnagar is situated in E. Long. 78. o. N. Lat. 13. 20.

BISNOW, or BISHNOU, a sect of the Banians in the East Indies; they call their god Ram-ram, and give him a wife: They adorn his image with golden chains, necklaces of pearls, and all sorts of precious stones. They sing hymns in honour of their god, mixing their devotion with dances and the sound of drums, flagelets, brazen basons, and other instruments. This sect lives wholly upon herbs and pulse, butter and milk. In this sect, the wives do not burn themselves after their husbands death, as is practised by those of the *Jamarath* sect; but content themselves with a perpetual widowhood.

BISOMUM, or DISOMUM, in Roman antiquity, a tomb for two dead bodies, or the ashes of two. The ancients frequently buried two, three, or four bodies in the same sepulchre, disposed aside of each other; for it was held an impiety to lay one a-top of another. Hence the sepulchres of the primitive Christians had the words *bisomi*, *trisomi*, *quadsomi*, &c. inscribed on them to indicate the number of bodies deposited in them.

BISON, in zoology, the trivial name of a species of bos. See Bos.

BISQUET, or BISKET. See BISKET.

BISSAGOS, a cluster of islands on the coast of Negroeland in Africa, situated between the mouth of the river Gambia and Rio Grande. Their names are, *Bulam*, *Cassuabac*, *La Gallinci*, *Cazegut*, *Catacha*, and *Oranguana*, with some other small islands; but the only one which merits a particular description is that of *Bulam*. Each of these islands is governed by a king of its own; and as all those petty monarchs are quite independent, they frequently make war with each other, yet they always unite against the inhabitants of *Bistara*, who are their common enemies. They have canoes that carry from 25 to 40 men with their provisions and arms, which are sabres, and bows, and arrows. The inhabitants are negroes; who are tall, strong, and healthy, though they live only on fish, nuts, and palm-

Bissagos.
||
Bissagos.

Bissao.

palm-oil; choosing rather to sell the rice, mullet, and other grain produced in their country, to the Europeans, than not to gratify their passion for trinkets and ornaments. In general, they are idolaters; cruel and savage in their disposition, not only to strangers but to one another, when they happen to quarrel, as they frequently do about trifles; and if they happen to be disappointed of their revenge, they frequently drown or stab themselves.

BISSAO, an island on the coast of Africa, a few leagues to the south-east of the river Gambia, and separated from the continent only by the channel of the river Geves. In this island the French have a factory, and there is also a fort belonging to the Portuguese, at both of which a great trade is carried on. The island is about 35 or 40 miles in circumference, having an agreeable prospect to the sea, from which it rises by a gentle ascent on every side to an eminence in the centre of the island. There are however a great many hills inferior in height to that in the middle, and separated by beautiful and fertile valleys divided by little rivulets, which at the same time augment the richness and elegance of the scene. So rich is the soil of Bissao, that wheat and maize spring up to the size of Indian corn, or rather resemble a field covered over with reeds or homboos. The cattle also are of an extraordinary size, and seem to keep pace with the extravagant growth of the corn. Milk and wine are in the greatest abundance; but the island affords neither hogs nor horses. The former are forbid by the natives to be imported; and something in the soil or climate renders it unfit for the increase of the latter, which never thrive here. The dress of the men of all ranks in Bissao is only a skin fixed to the girdle before and behind. The dress of the married women consists of a cotton petticoat; but virgins go entirely naked, wearing only bracelets of different kinds on their arms and legs. If they are of high quality, their bodies are marked or painted with a variety of hideous forms of snakes and other figures, which, as their colour is jet-black, gives their skins somewhat the appearance of flowered sattin. Even the princess royal herself, the eldest daughter of the emperor, is only distinguished from other women by the elegance of those paintings and the richness of her bracelets. One very extraordinary ornament used in this country is a large iron ring with a flat round surface on the outside instead of a stone, upon which the ring changes with a bit of iron, in such a manner as to converse with the greatest facility by means of the different sounds produced; but this kind of language is used only among the polite and the great. All the Bissaons are idolaters, nor has commerce introduced the smallest change in their manners, but their ideas of religion are exceedingly confused. Their chief idol is a little image called *China*, of which the worshippers give very absurd accounts; but, besides this, every man invents a god for himself; trees are held sacred; and if not adored as gods, are worshipped as the residence of some divinity. The government is despotic, the will of the emperor being a law to his people. Of this we have an instance in Bissao, not to be matched in any other country whatever. This is no other than a present which one subject may make of the house and estate of his neighbour to the emperor: and as it is most commonly

his majesty's pleasure to accept of such presents, the proprietor dares not resist, but immediately sets about building another house, though even this he cannot do without the prince's leave; and if this should not be readily granted, he must live with his family in the open air till permission to build a new house can be obtained.

BISSAT (Peter), professor of canon law in the university of Bononia in Italy, was descended from the earls of Fife in Scotland, and born in that county in the reign of James V. He was educated at St Andrew's: from thence he removed to Paris; and, having spent some time in that university, proceeded to Bononia, where he commenced doctor of laws, and was afterwards appointed professor of canon law. He continued in that honourable employment several years with great reputation, and died in the year 1568. He is said to have been not only a learned civilian, but an excellent poet, orator, and philosopher. *Patricii Bissarti opera omnia, viz. poemata, orationes, lectiones seriales, &c. Lib. de irregularitate, &c.* were published at Venice in 1565, 4to.

BISSENPOUR, a small district of the kingdom of Bengal, in the East Indies, which has all along preserved its independence. It has been governed time immemorial by a Bramin family of the tribe of Rajahputs. Here the purity and equity of the ancient political system of the Indians is found unadulterated. This singular government, the finest and most striking monument in the world, has till now been beheld with too much indifference. We have no remains of ancient nations but brass and marble, which speak only to imagination and conjecture, those uncertain interpreters of manners and customs that no longer exist. Were a philosopher transported to Bissenpour, he would immediately be a witness of the life led by the first inhabitants of India many thousand years ago; he would converse with them; he would trace the progress of this nation, celebrated as it were from its very infancy; he would see the rise of a government which, being founded in happy prejudices, in a simplicity and purity of manners, in the mild temper of the people, and the integrity of the chieftains, has survived those innumerable systems of legislation, which have made only a transitory appearance in the stage of the world with the generations they were designed to torment. More solid and durable than those political structures, which, raised by imposture and enthusiasm, are the scourges of human kind, and are doomed to perish with the foolish opinions that gave them birth, the government of Bissenpour, the offspring of a just attention to order and the laws of nature, has been established and maintained upon unchangeable principles, and has undergone no more alteration than those principles themselves. The singular situation of this country has preserved to the inhabitants their primitive happiness and the gentleness of their character, by securing them from the danger of being conquered, or of imbruing their hands in the blood of their fellow-creatures. Nature has surrounded them with water; and they need only open the sluices of their rivers to overflow the whole country. The armies sent to subdue them have so frequently been drowned, that the plan of enslaving them has been laid aside; and the projectors of it have thought proper to content themselves with an appearance of submission.

Bisse,
Bissen-pour.

Bisextile
||
Bistire.

Liberty and property are sacred in Bissenpour. Robbery, either public or private, is never heard of. As soon as any stranger enters the territory, he comes under the protection of the laws, which provide for his security. He is furnished with guides at free cost, who conduct him from place to place, and are answerable for his person and effects. When he changes his conductors, the new ones deliver to those they relieve an attestation of their conduct, which is registered and afterwards sent to the Raja. All the time he remains in the country, he is maintained and conveyed with his merchandise at the expence of the state, unless he desires leave to stay longer than three days in the same place. In that case, he is obliged to defray his own expences; unless he is detained by any disorder, or other unavoidable accident. This beneficence to strangers is the consequence of the warmth with which the citizens enter into each others interests. They are so far from being guilty of an injury to each other, that whoever finds a purse, or other thing of value, hangs it upon the first tree he meets with, and informs the nearest guard, who give notice of it to the public by beat of drum. These maxims of probity are so generally received, that they direct even the operations of government. Out of about 350,000 l. on an average it annually receives, without injury to agriculture or trade, what is not wanted to supply the unavoidable expences of the state, is laid out in improvements. The Raja is enabled to engage in these humane employments, as he pays the Moguls only what tribute and at what times he thinks proper.

BISSEXTILE, in chronology, a year consisting of 366 days, being the same with our leap-year. See **CHRONOLOGY**.

BISTI, in commerce, a small coin of Persia: Some say that it is among the current silver coins of Persia, and worth only a little above three farthings of our money; others speak of it again as a money of account.

BISTONIS, (anc. geog.), a lake of Thrace near Abdera, on which dwelt the Bistones: hence *Bisnius Tyrannus* is by Lucan used to denote Diomedes king of Thrace, who fed his horses with human flesh; and *Bisfontius turbo*, a wind blowing from Thrace.

BISTORT, or **KNOTGRASS**, in botany, the trivial name of a species of polygonum. See **POLYGONUM**.

BISTOURY, in surgery, an instrument for making incisions; of which there are different kinds, some being of the form of a lancet, others straight and fixed in the handle like a knife, and others crooked with the sharp edge on the inside.

BISTRE, among painters, signifies the burnt oil extracted from the foot of wood.

It is of a brown transparent colour, having much the same effect in water-painting, where alone it is used, as brown pink in oil. Though this colour is extremely serviceable in water-colours, and much valued by those who know and can procure it; yet it is not in general use here, perhaps on account of its not being easily procured of a perfect kind; hardly any of it being good, except that imported from France. Perhaps the principal reason for this is, that dry beech-wood affords the best foot for making it: and it is not easy to procure such here without mixture of the foot of green wood, or other combustibles that deprave it for

this purpose: or it is possible that they who have pretended to prepare it, have been ignorant of the proper means; there not being any recipe or directions in books that treat of these matters, from whence they could learn the proper process.

Bistre may, however, be prepared with great ease in the following manner.—Take any quantity of foot of dry wood, but let it be of beech wherever that can be procured. Put it into water in the proportion of two pounds to a gallon; and boil them half an hour: then after the fluid has stood some little time to settle, but while yet hot, pour off the clearer part from the earthy sediment at the bottom; and if on standing longer it forms another earthy sediment, repeat the same method, but this should be done only while the fluid remains hot: evaporate then the fluid to dryness; and what remains will be good bistre, if the foot was of a proper kind.—The goodness of bistre may be perceived by its warm deep brown colour, and transparency when moistened with water.

BISTRICZ, a handsome strong town of Transilvania, seated on a river of the same name, in E. Long. 25. 3. N. Lat. 47. 33.

BIT, or **BITT**, an essential part of a bridle. Its kinds are various. 1. The muscol, snaffle, or watering-bit. 2. The canon-mouth, jointed in the middle. 3. The canon with a fast mouth, all of a piece, only kneeed in the middle, to form a liberty or space for the tongue; fit for horses too sensible, or ticklish, and liable to be continually bearing on the hand. 4. The canon-mouth, with the liberty in form of a pigeon's neck; proper where a horse has too large a tongue. 5. The canon with a port mouth, and an upset or mounting liberty; where a horse has a good mouth, but large tongue. 6. The scatch-mouth, with an upset; ruder but more secure than a canon mouth. 7. The canon mouth with a liberty; proper for a horse with a large tongue, and round bars. 8. The masticadour, or flavinging bit, &c. The several parts of a snaffle, or curb-bit, are the mouth piece, the cheeks and eyes, guard of the cheek, head of the cheeks, the port, the welts, the campanel or curb and hook, the bosses, the bolsters and rabbets, the water-chains, the side-bolts, and rings, kirbles of the bit or curb, trench, top-rol, flap and jieve. The importation of bits for bridles is now prohibited.

BIT, or *Bitts*, in ship-building, the name of two great timbers, usually placed abast the manger, in the ship's loof, through which the cross-piece goes: The use of it is to belay the cable thereto, while the ship is at anchor.

BIT is also used in commerce for a piece of coin current in Jamaica, and valued at 7½d.

BITBURGH, a town of the Netherlands, in the duchy of Luxemburg. E. Long. 6. 43. N. Lat. 50. 0.

BITCH, the female of the dog kind. See **CANIS**.

BITCHE, a town of Lorrain, capital of a territory of the same name, and seated at the foot of the mountains near the river Swolbe. E. Long. 7. 44. N. Lat. 49. 5.

BITETO, a town of Italy, in the kingdom of Naples, and in the Terra di Barri. E. Long. 16. 56. N. Lat. 41. 8.

BITHYNIA, an ancient kingdom of Asia, formerly known by the names of *Mysia*, *Mygdonia*, *Babryicia*, *Mariandynia*,

Bistricz
Bithynia.

Mariandynia, and *Bithynia*. It was bounded on the west by the Bosphorus Thracicus and part of the Propontis, on the south by the river Rhyndacus and mount Olympus, on the north by the Euxine sea, and on the east by the river Parthenius. The chief cities were *Myrlea*, *Nicomedia*, *Chalcedon*, *Heraclea*, and *Prusa*.—As to its history, we find nothing of moment recorded; except the famous conduct of Prussia, one of its kings, in delivering up to the Romans Hannibal, the great Carthaginian general, who fled to him for protection. His great grandson Nicomedes IV bequeathed the kingdom to the Romans. From them it was taken by the Turks, to whom it still remains subject, but has no modern name.

BITONTO, an episcopal town of Italy, in the kingdom of Naples and Terra di Bari. It is seated in a plain eight miles south of the gulph of Venice, in E. Long. 16. 52. N. Lat. 41. 13.

BITTACLE. See BINACLE.

BITTER, an epithet given to all bodies of an opposite taste to sweetness. For the medical virtues of bitters, see MATERIA MEDICA.

BITTER, a sea-term, signifying any turn of the cable about the bits, so as that the cable may be let out by little and little. And when a ship is stopped by a cable, she is said to be brought up by a bitter. Also that end of the cable which is wound about the bits is called the bitter end of the cable.

BITTER-apple, in botany. See COLCYNTHIS.

BITTER-Salt. See EPSOM-Salt,

BITTER-Sweet, in botany. See SOLANUM.

BITTERN, in ornithology. See ARDEA.

BITTERS, in the salt-works, the brine remaining after the salt is concreted: this they laddle off, that the salt may be taken out of the pan, and afterwards put in again; when, being farther boiled, it yields more salt. See SALT.

BITUMENS, in natural history, are oily matters, of a strong smell, and of different consistencies, which are found in many places within the earth. See CHEMISTRY, *Inlex*.

BITUMEN JUDAICUM, See ASPHALTUM.

BITUREX, BITURIGES, or *Biturica*, afterwards corrupted to *Bourges*; the name of *Avaricum*, from the custom of the lower age of calling towns from the names of the people. See AVARICUM.

BITURIGES (Cæsar); *Bituriges Cubi* (Strabo, Pliny, Ptolemy): a people in that part of Gallia Celtica afterwards assigned to Aquitania. Now called *Berry*.

BITURIGES Vibisci (Ptolemy), a people of Aquitain.

BIVALVES, a term sometimes used for such shells as consist of two pieces.—It is also an appellation given by botanists to such pods or capsules as consist of two valves including the seeds.

BIVENTER, in anatomy, called also *digastric*, or *two-bellied*, a muscle of the lower jaw. See ANATOMY, *Table of the Muscles*.

BIUMBRES, in geography, an appellation given to the inhabitants of the torrid zone, by reason, at two different seasons of the year, their shadows are projected two different ways. The biumbres are the same with those otherwise denominated *amphiscii*.

BIXA, the Roucou or *Arnutt-Tree*: A genus of

the Monogynia order, belonging to the polyandria class of plants; and in the natural method ranking under the 37th order, *Columniferae*. The corolla is ten-petaled; the calyx quinque-dentate; the capsule hispid and bivalved. Of this genus there is but one species known, *viz.* the orellana, a native of the warm parts of America. This rises with an upright stem to the height of eight or ten feet, sending out many branches at the top forming a regular head, garnished with heart-shaped leaves ending in a point, and having long footstalks. The flowers are produced in loose panicles at the end of the branches: these are of a pale peach colour, having large petals, and a great number of bristly stamina of the same colour in the centre. After the flower is past, the germen becomes a heart-shaped, or rather a nitre-shaped, vessel, covered on the outside with bristles opening with two valves, and filled with angular seeds. These seeds are covered with a red waxen pulp or pellicle, from which the colour called ANOTINA is prepared, according to the process described under that article. These plants, in the countries where they grow, thrive best in a cool rich soil, and shoot most luxuriantly near springs and rivulets. With us, they may be propagated by seeds procured from America. These are to be sown in pots in the spring, and plunged in a bed of tanner's bark: the plants must afterwards be removed into separate pots, and always kept in the stove.

BIZARRE, denoting *capricious*, &c. a term used among florists for a particular kind of carnation, which has its flowers striped or variegated with three or four colours.

BIZARRO, in the Italian music, denotes a fanciful kind of composition, sometimes fast, slow, soft, strong, &c. according to the fancy of the composer.

BIZOCHI, or BISOCHI, in church-history, certain heretical monks, said to have assumed the religious habit contrary to the canons, rejected the sacraments, and maintained other errors.

BLACK, a well known colour, supposed to be owing to the absence of light, most of the rays falling upon black substances being not reflected but absorbed by them. Concerning the peculiar structure of such bodies as fits them for appearing of this or that particular colour, see the article COLOUR.

Concerning black colours in general, we have the following remarks by Dr Lewis.

“ 1. Of black, as of other colours, there are many shades or varieties; different bodies, truly and simply *Phil. sept.* black, or which have no sensible admixture of any of *Commece* the rest of the colours, as black velvet, fine black cloth, *of Arts,* the feathers of the raven, &c. appearing, when placed together, of tints very sensibly different. 317.

“ 2. One and the same body also assumes different degrees of blackness, according to the disposition of the sensible part of its surface; and in this respect, there is not, perhaps, any other colour which is so much affected by an apparent mechanism. Thus black velvet, when the pile is raised, appears intensely black, much more so than the silk it was made from; but on pressing the pile smooth, it looks pale, and in certain positions shows somewhat even of a whitish cast.

“ 3. This observation is agreeable to the physical theory, which ascribes the blackness of bodies to the luminous

Black. luminous rays, that fall upon them, being in great part absorbed or stifled in their pores. When the surface is composed of a multitude of loose filaments, or small points, with the extremities turned towards the eye, much of the light is stifled in the interstices between them, and the body appears dark: when the filaments are pressed close, or the surface smoothed and polished, more of the light is reflected from it, and the intensity of the blackness is diminished; though the beauty may be improved by the glossiness which results from the smoothing.

"4. There is one case, however, in which a high polish may, on the same principle, produce blackness, in bodies otherwise even white. We find that specula of white metal, or of quicksilvered glass, which reflect the rays of light to one point or in one direction, look always dark, unless when the eye is directly opposed to the reflected rays.

"5. As the absorption of the luminous rays, except in the case just mentioned, makes the physical cause of blackness; it is concluded that black bodies receive heat more freely than others. Black marble or tiles, exposed to the sun, become sensibly hotter than white ones. Black paper is kindled by a burning glass much sooner than white, and the difference is strongly marked: a burning-glass, too weak to have any visible effect at all upon white paper, shall readily kindle the same paper rubbed over with ink. Hence black clothes when wetted, are said to dry faster; black habits, and rooms hung with black, to be warmer; black mould to be a hotter soil for vegetables; and garden walls, painted black, to answer better for the ripening of wall-fruit than those of lighter colours.

"6. It is not, however, to be affirmed that the like differences obtain in the impressions made by common fire. Black paper, held to the fire, does not seem to be affected sooner, or in a greater degree, than such as is white. It may be proper to observe also, that the combustibility of the paper may be increased, by impregnating it with substances of themselves not combustible, and which give no colour to it. This is the foundation of one of the *sympathetic inks*, as they are called, made of a strong solution of sal ammoniac in water, which, though colourless when written with on paper, becomes very legible on exposing the paper to the fire; that is, it occasions the parts moistened with it to scorch or burn, before the rest of the paper is hurt, to a brown or black. All the salts I have tried produced this effect in a greater or less degree; nitre, alum, tartar, very weakly; sea-salt more strongly; fixed alkaline salts still more so; sal ammoniac the most strongly of all. Metallic solutions, made in acids, and diluted so as not to corrode the paper, acted in the same manner.

"7. Besides the simple blacks, there are a multitude of compound ones, inclining more or less to other colours. Thus the painters have blue-blacks, brown-blacks, &c. which may be made by mixing pigments of the respective colours with simple black ones, in greater or less quantity, according to the shade required. The dyers also have different blacks, and often darken other colours by slightly passing them through the black dyeing liquor; but the term *brown-black* is in this business unknown, brown and black being here looked upon as opposite to one another. In effect,

the colour called *brown-black* is no other than that which ill-died black clothes change to in wearing: no wonder then that it is excluded from the catalogue of the dyers colours.

"8. The true or simple blacks, mixed with white, form different shades of gray, lighter or darker according as the white or black ingredients prevail in the mixt. The black pigments, spread thin upon a white ground, have a like effect.

"9. Hence the painter, with one true black pigment, can produce on white paper, or on other white bodies, all the shades of grey and black, from the slightest discoloration of the paper up to a full black: and the dyer produces the same effect on white wool, silk, or cloth, by continuing the subjects for a shorter or longer time in the black bath, or making the bath itself weaker or stronger.

"10. Hence also the dilution of black pigments with white, or the spreading of them thin upon a white ground, affords a ready method of judging of the quality or species of the colour; which if it be a true black, will in this diluted state look of a pure or simple grey; but if it has a tendency to any other colour, that colour will now betray itself.

"11. All the colours in a very deep or concentrated state approach to blackness. Thus the red liquor prepared by boiling or infusing madder-root in water, and the yellow decoction or infusion of liquorice-root, evaporated in a gentle heat till they become thick, look of a dark black colour, or of a colour approaching to blackness; and these thick masses, drawn out into slender strings, or diluted with water, or rubbed on paper, exhibit again the red and yellow colours, which the liquors had at first. Nature affords many black objects, whose blackness depends upon the same principle, being truly a concentration of some of the other colours. Thus in black-berries, currants, elderberries, &c. what seems to be black is no other than an opaque deep red: their juice appears black when its surface is looked down upon in an opaque vessel, but red when diluted or spread thin. The black flint, as it is called, of the island of Ascension, held in thin pieces between the eye and the light, appears greenish; and one of the deep black stones called *black agate*, viewed in the same manner, discovers its true colour to be a deep red."

The most remarkable black colours in the mineral kingdom are, *Black CHALK*, *Pit-COAL*, *Black SANDS*, and *Black LEAD* (see these articles).—The only native vegetable black is the juice of the anacardium orientale, which possibly may be the tree that produces the excellent black varnish of China and Japan (see *VARNISH*).—The juices of most allringent vegetables produce a black with iron, and for this purpose some of them are used in dyeing and callico-printing (see the article *DYEING*).—There are also a number of black colours artificially prepared for the use of painters, such as lamp-black, ivory-black, German-black, &c. for an account of the preparation and qualities of which, see the article *COLOUR-Making*.

BLACK-Act; the statute of 9 Geo. I c. 22. is commonly called the *Waltham black act*, because it was occasioned by the devastations committed near Waltham in Essex, by persons in disguise, or with their faces blacked. By this statute it is enacted, that persons hunting armed and disguised, and killing or stealing deer, or robbing

robbing warrens, or stealing fish out of any river, &c. or any persons unlawfully hunting in his majesty's forests, &c. or breaking down the head of any fish-pond, or killing, &c. of cattle, or cutting down trees, or setting fire to house, barn, or wood, or shooting at any person, or sending letters either anonymous or signed with a fictitious name demanding money, &c. or refusing such offenders, are guilty of felony, without benefit of clergy. This act is made perpetual by 31 Geo. II. c. 42.

Black-Bird, in ornithology. See *TURDUS*.

Black-Book of the Exchequer. See *EXCHEQUER*.

Black-Books, a name given to those which treat of necromancy, or, as some call it, *nigromancy*. The black-book of the English monasteries was a detail of the scandalous enormities practised in religious houses, compiled by order of the visitors under king Hen. VIII. to blacken, and thus hasten their dissolution.

Black-Cap, in ornithology. See *MOTACILLA*.

Black-Cock. See *TETRAO*.

Black-Eagle. See *FALCO*.

Black Eunuchs, in the customs of eastern nations, are Ethiopians castrated, to whom their princes commonly commit the care of their women. See *EUNUCH*.

Black-Forest, a forest of Germany, in Suabia, running from north to south between Orttau, Bülzau, part of the duchy of Wirtemberg, the principality of Fustemburg towards the source of the Danube, as far as the Rhine above Basil. It is part of the ancient Hyrcanian forest.

Black-Friars, a name given to the dominican order; called also *predicants* and *preaching friars*; in France, *jacchins*.

Black-Jack, or *Blend*, is a mineral called also *falsa galena*, *blinde*, &c. See *BLINDE*.

Black-Land, in agriculture, a term by which the husbandmen denote a particular sort of clayey soil, which, however, they know more by its other properties than by its colour, which is rarely any thing like a true black, and often but a pale grey. This, however pale when dry, always blackens by means of rains, and when ploughed up at these seasons it sticks to the ploughshares, and the more it is wrought the muddier and duskier coloured it appears. This sort of soil always contains a large quantity of sand, and usually a great number of small white stones.

Black-Lead (Plumbago). See *Black-LEAD*.

Black-Leather, is that which has passed the curriers hands, where, from the russet as it was left by the tanners, it is become black, by having been scoured and rubbed three times on the grain-side with copers-water. See *LEATHER*.

Black-Legs, a name given in Leicestershire to a disease frequent among calves and sheep. It is a kind of jelly which settles in their legs, and often in the neck, between the skin and flesh.

Black-Mail, a certain rate of money, corn, cattle, or other matter, anciently paid by the inhabitants of towns in Westmoreland, Cumberland, Northumberland, and Durham, to divers persons inhabiting on or near the borders, being men of name, and allied with others in those parts, known to be great robbers and spoil-takers; in order to be by them freed and protected from any pillage. Prohibited by 43 El. c. 13. The origin of this word is much contested, yet there

is ground to hold the word *black* to be here a corruption of blank or white, and consequently to signify a rent paid in a small copper coin called *blinks*. This may receive some light from a phrase still used in Picardy, where speaking of a person who has not a single halfpenny, they say, *il n'a pas une blanche maille*.

Black-Blonks, a denomination given to the Benedictines, called in Latin *nigri monachi*, or *nigri monachi*; sometimes *ordo nigrorum*, "the order of blacks."

Black-Cats. See *CATS*.

Black-Procession, in ecclesiastical writers, that which is made in black habits, and with black ensigns and ornaments." See *PROCESSION*. Anciently at Malta there was a black-procession every Friday, where the whole clergy walked with their faces covered with a black veil.

Black-Rents, the same with black-mail, supposed to be rents formerly paid in provisions and flesh, not in specie.

Black-Rod. See *ROD*.

Black-Row Grains, a species of iron-stone or ore found in the mines about Dudley in Staffordshire.

Black-Sea. See *EUXINE-SEA*.

Black-Sheep, in the Oriental history, the ensign or standard of a race of Turkimans settled in Armenia and Mesopotamia; hence called the *dynasty of the black sheep*.

Black-Stones and *Gems*, according to Dr Woodward, owe their colour to a mixture of tin in their composition.

Black-Strakes, a range of planks immediately above the wales in a ship's side. They are always covered with a mixture of tar and lamp-black.

Black-Tin, in mineralogy, a denomination given to the tin-ore when dressed, stamped, and washed ready for the blowing-house, or to be melted into metal. It is prepared into this state by means of beating and washing; and when it has passed through several buddles or washing troughs, it is taken up in form of a black powder, like fine sand, called *black-tin*.

Black-Wadd, in mineralogy, a kind of ore of manganese, remarkable for its property of taking fire when mixed with linseed-oil in a certain proportion. It is found in Derbyshire, and is used as a drying ingredient in paints; for when ground with a large quantity of oily matter, it loses the property above mentioned. See *MANGANESE*.

Black-Water, the name of two rivers in Ireland; one of which runs through the counties of Cork and Waterford, and falls in Yougal Bay; and the other, after watering the county of Armagh, falls into Lough-Neah.

Black-Whye, in our old writers, bread of a middle fineness betwixt white and brown, called in some parts *ravel-bread*. In religious houses, it was the bread made for ordinary guests, and distinguished from their household loaf, or *panis conventualis*, which was pure manchet, or white bread.

Black-Work, iron wrought by the blacksmith; thus called by way of opposition to that wrought by white-smiths.

BLACKALL (Dr Offspring), bishop of Exeter in the beginning of the 18th century, was born at London 1654, and educated at Catharine-Hall, Cambridge. For two years he refused to take the oath of allegiance

Black,
Pa kall.

Backbank
||
Blacking.

allegiance to King William and Queen Mary, but at last submitted to the government, though he seemed to condemn the Revolution, and all that had been done pursuant to it. He was a man of great piety, had much primitive simplicity and integrity, and a constant evenness of mind. In a sermon before the house of commons, Jan. 30th 1699, he animadverted on Toland's assertion in his *Life of Milton*, that Charles I. was not the writer of the *Ivon Basilike*, and for some insinuations against the authenticity of the Holy Scriptures; which produced a controversy between him and that author. In 1700, he preached a course of sermons in St Paul's at Boyle's lecture, which were afterwards published; and was consecrated bishop of Exeter in 1707. He died at Exeter in 1716, and was interred in the cathedral there.

BLACKBANK, a town of Ireland, in the county of Armagh and province of Ulster, seated in W. Long. 6. 55. N. Lat. 54. 12.

BLACKBERRY, in botany. See RUBUS.

BLACKBURN, a town of Lancashire in England, seated near the river Derwent. It takes its name from the brook Blackwater which runs thro' it. W. Long. 2. 15. N. Lat. 53. 40.

BLACKING is sometimes used for a factitious black; as lamp-black, shoe-black, &c. A mixture of ivory or lamp-black with linseed-oil makes the common oil blacking. For a shining blacking, small-beer or water is used instead of oil, in the proportion of about a pint to an ounce of the ivory-black, with the addition of half an ounce of brown sugar, and as much gum arabic. The white of an egg substituted for the gum makes the black more shining; but is supposed to hurt the leather, and make it apt to crack.

BLACKMORE (Sir Richard), a physician, and voluminous writer of theological, poetical, and physical works. Having declared himself early in favour of the Revolution, King William, in 1697, chose him one of his physicians in ordinary, and conferred the honour of knighthood on him. On Queen Anne's accession, Sir Richard was also appointed one of her physicians, and continued so for some time. Dryden and Pope treated the poetical performances of Blackmore with great contempt; and in a note to the mention made of him in the *Dunciad*, we are informed that his "indefatigable muse produced no less than six epic poems: *Prince and King Arthur*, 20 books; *Eliza*, 10; *Alfred*, 12; *The Redeemer*, six; beside *Job*, in folio; the whole book of *Psalms*; *The Creation*, seven books; *Nature of Man*, three books; and many more." But notwithstanding Blackmore was much ridiculed by the wits, he is not without merit; and Addison has, in the *Spectator*, bestowed some liberal commendations on his poem on the Creation. It must be mentioned too in honour of Sir Richard, that he was a chaste writer, and a warm advocate for virtue, at a time when an almost universal degeneracy prevailed. He had been very free in his censures on the libertine writers of his age; and it was owing to some liberty he had taken of this kind, that he drew upon him the resentment of Mr Dryden. He had likewise given offence to Mr Pope; for having been informed by Mr Curl that he was the author of a travestie on the first Psalm, he took occasion to reprehend him for it in his *Essay on Polite Learning*. Besides what are above men-

N^o 47.

tioned, Sir Richard wrote some theological tracts, and several treatises on the plague, small-pox, consumptions, the spleen, gout, dropsy, &c. and many other poetical pieces. He died October 9, 1729.

BLACKNESS, the quality of a black body; or a colour arising from such a texture and situation of the superficial parts of the body as does as it were deaden, or rather absorb, the light falling on it, without reflecting any, or very little of it, to the eye.—In which sense, *blackness* stands directly opposed to *whiteness*; which consists in such a texture of parts as indifferently reflects all the rays thrown upon it, of what colour soever they be.

Descartes, says Dr Priestley, though mistaken with respect to the nature of light and colours, yet distinguishes justly between black and white; observing, that black suffocates and extinguishes the light that falls upon it, but that white reflects them. See BLACK.

BLACKS, in physiology. See NEGROES.

BLACKS is also a name given to an association of disorderly and ill-designing persons, formerly herding chiefly about Waltham in Essex, who destroyed deer, robbed fish-ponds, ruined timber, &c. See *BLACK-ALL*.

BLACKSTONE (Sir William), an eminent English lawyer, was born at London in July 1723. His father, Mr Charles Blackstone, a silk-man, citizen, and bowyer of London, died some months before the birth of our author, who was the youngest of four children; and their mother died before he was 12 years old. Even from his birth, the care both of his education and fortune was kindly undertaken by his maternal uncle Mr Thomas Bigg, an eminent surgeon in London, and afterwards, on the death of his elder brothers, owner of the Chilton estate, which is still enjoyed by that family. In 1730 being about seven years old, he was put to school at the Charter-house; and in 1735 was, by the nomination of Sir Robert Walpole, on the recommendation of Charles Wither of Hall in Hampshire, Esq; his cousin by the mother's side, admitted upon the foundation there. In this excellent seminary he applied himself to every branch of youthful education, with the same assiduity which accompanied his studies through life. His talents and industry rendered him the favourite of his masters, who encouraged and assisted him with the utmost attention: so that at the age of 15 he was at the head of the school, and although so young, was thought well qualified to be removed to the university. He was accordingly entered a commoner at Pembroke college in Oxford, on the 30th of November 1738, and was the next day matriculated. At this time he was elected to one of the Charter-house exhibitions by the governors of that foundation, to commence from the Michaelmas preceding; but was permitted to continue a scholar there till after the 12th of December, being the anniversary commemoration of the founder, to give him an opportunity of speaking the eulogary oration which he had prepared, and which did him much credit. About this time also he obtained Mr Benson's gold prize-medal of Milton, for verses on that poet. In the February following, the society of Pembroke college unanimously elected him to one of Lady Holford's exhibitions for Charter-house scholars in that house. Here he prosecuted his studies with unremitting ardour; and although the classics, and particularly

Blackstone. particularly the Greek and Roman poets, were his favourites, they did not entirely engross his attention: logic, mathematics, and the other sciences, were not neglected. At the early age of 20, he compiled a treatise entitled *Elements of Architecture*, intended for his own use only, and not for publication; but esteemed by those judges who have perused it, in no respect unworthy his maturer judgment and more exercised pen.

Having determined on his future plan of life, and made choice of the law for his profession, he was entered in the Middle Temple on the 20th of November 1741. He now found it necessary to quit the more amusing pursuits of his youth, for the severer studies to which he had dedicated himself; and betook himself seriously to reading law. He expressed his disagreeable sensations on this occasion in a copy of verses, since published by Doddsley in vol. 4th of his miscellanies, intitled *The Lawyer's Farewell to his Muse*; in which the struggle of his mind is expressed so strongly, so naturally, with such elegance of sense and language, and harmony of versification, as must convince every reader that his passion for the muses was too deeply rooted to be laid aside without much reluctance; and that, if he had pursued that flowery path, he would perhaps have proved inferior to few of our English poets. Several little fugitive pieces besides this, have at times been communicated by him to his friends; and he left (but not with a view of publication) a small collection of juvenile pieces, both originals and translations, inscribed with this line from Horace,

Nec luisse pudet, sed non incidere lulum.

Some notes on Shakespeare, which just before his death he communicated to Mr Steevens, and which were inserted by him in his last edition of that author, show how well he understood the meaning, as well as the beauties, of that his favourite among the English poets.

In November 1743, he was elected into the society of All-Souls college; and in the November following, he spoke the anniversary speech in commemoration of archbishop Chicheley the founder, and the other benefactors to that house of learning, and was admitted actual fellow. From this period he divided his time between the university and the Temple, where he took chambers in order to attend the courts: in the former he pursued his academical studies, and on the 12th of June 1745 commenced bachelor of civil law; in the latter he applied himself closely to his profession, both in the hall and in his private studies, and on the 28th of November 1746 was called to the bar. Though he was little known or distinguished in Westminster-hall, he was actively employed, during his occasional residence at the university, in attending to its interests, and mingling with and improving its interior concerns. In May 1749, as a small reward for his services, and to give him further opportunities of advancing the interests of the college, Mr Blackstone was appointed steward of their estates. And in the same year, on the resignation of his uncle Seymour Richmond, Esq; he was elected recorder of the borough of Wallingford in Berkshire, and received the king's approbation on the 30th of May. The 26th of April 1750, he commenced doctor of civil law, and thereby became a member of the con-

vocation, which enabled him to extend his views beyond the narrow circle of his own society, to the general benefit of the university at large. In the summer 1753, he took the resolution of wholly retiring to his fellowship and an academical life, still continuing the practice of his profession as a provincial counsel.

His Lectures on the Laws of England appears to have been an early and favourite idea; for in the Michaelmas term, immediately after he quitted Westminster-hall, he entered on the province of reading them at Oxford; and we are told by the author of his life, that even at their commencement, such were the expectations formed from the acknowledged abilities of the lecturer, they were attended by a very crowded class of young men of the first families, characters, and hopes; but it was not till the year 1758, that the lectures in the form they now bear were read at the university. Mr Viner having by his will left not only the copyright of his abridgment, but other property to a considerable amount, to the university of Oxford, to found a professorship, fellowships, and scholarships of common law, he was on the 20th of October 1758 unanimously elected Vinerian professor; and on the 25th of the same month read his first introductory lecture, which he published at the request of the vice-chancellor and heads of houses, and afterwards prefixed to the first volume of his Commentaries. His lectures had now gained such universal applause, that he was requested by a noble personage who superintended the education of our present sovereign then prince of Wales, to read them to his Royal Highness; but as he was at that time engaged to a numerous class of pupils in the university, he thought he could not, consistently with that engagement, comply with this request, and therefore declined it. But he transmitted copies of many of them for the perusal of his royal highness; who, far from being offended at an excuse grounded on so honourable a motive, was pleased to order a handsome gratuity to be presented to him. It is doubtful whether the Commentaries were originally intended for the press; but many imperfect and incorrect copies having got abroad, and a pirated edition of them being either published, or preparing for publication in Ireland, the learned lecturer thought proper to print a correct edition himself; and in November 1765 published the first volume, under the title of *Commentaries on the Laws of England*; and in the course of the four succeeding years, the remaining parts of this admirable work. It ought to be remarked, that before this period the reputation his lectures deservedly acquired him had induced him to resume his practice in Westminster-hall; and in a course somewhat inverted from the general progress of his profession, he who had quitted the bar for an academic life, was sent back from the college to the bar, with a considerable increase of business. He was likewise elected into parliament, first for Hindon, and afterwards for Westbury in Wilts; but in neither of these departments did he equal the expectations his writings had raised. The part he took in the Middlesex election drew upon him the attack of some persons of ability in the senate, and likewise a severe animadversion of one of the keenest polemical writers* in the paper-war of that day. This circumstance probably strengthened the aversion he professed to parliamentary attendance; * Junius. "where, (he said) amidst the rage of contending parties,

Blackwall,
Blackwell.

ties, a man of moderation must expect to meet with no quarter from any side:" and when, on the resignation of Mr Dunning in 1770, he was offered the place of solicitor-general, he refused that office; but shortly afterwards, on the promotion of Sir Joseph Yates to a seat in the court of common-pleas, accepted a seat on the bench, and by the death of Sir Joseph succeeded him there also. As a judge, he was not inactive; but, when not occupied in the duties of his station, was generally engaged in some scheme of public utility. The act for detached houses for hard labour for convicts, as a substitute for transportation, owed its origin in a great measure to him.

It ought not to be omitted, that the last augmentation of the judges salaries, calculated to make up the deficiencies occasioned by the heavy taxes they are subject to, and thereby render them more independent, was obtained in a great measure by his industry and attention. This respectable and valuable man died on the 14th of February 1780, in the 50th year of his age.

BLACKWALL, (Anthony, A. M.), a learned author, after completing his academical education at Emanuel college, Cambridge, was appointed head master of the free school at Derby, and lecturer of All-hallows there, where he first distinguished himself in the literary world by an edition of Theognis, printed at London in 1706, and was afterwards head master of the free school at Market-Bosworth in Leicestershire. The Grammar whereby he initiated the youth under his care into Latin, was of his own composing, and so happily fitted for the purpose, that he was prevailed on to make it public, though his modesty would not permit him to fix his name to it, because he would not be thought to prescribe to other instructors of youth. It is intitled, "A New Latin Grammar; being a short, clear, and easy Introduction of young Scholars to the Knowledge of the Latin Tongue; containing an exact Account of the two first Parts of Grammar." In his "Introduction to the Classics," first published in 1718, 12mo, he displayed the beauties of those admirable writers of antiquity, to the understanding and imitation even of common capacities; and that in so concise and clear a manner, as seemed peculiar to himself. But his greatest and most celebrated work was, "The Sacred Classics defended and illustrated; or, An Essay humbly offered towards preserving the Purity, Propriety, and True Eloquence of the Writers of the New Testament," in 2 vols. Mr Blackwall had the felicity to bring up many excellent scholars in his seminaries at Derby and Bosworth; among others, the celebrated Richard Dawes, author of the *Miscellanea Critica*. A gentleman who had been his scholar, being patron of the church of Clapham in Surrey, presented him to that living as a mark of his gratitude and esteem. This happening late in life, and Blackwall having occasion to wait upon the bishop of the diocese, he was somewhat pertly questioned by a young chaplain as to the extent of his learning. "Boy (replied the indignant veteran), I have forgot more than ever you knew!" He died at Market-Bosworth, April 8, 1730.

BLACKWELL (Thomas), an eminent Scottish writer, was son of a minister at Aberdeen, and born there 1701. He had his grammatical learning at a school in Aberdeen, studied Greek and philosophy in the Marischal college there, and took the degree of

M. A. in 1718. Being greatly distinguished by uncommon parts, and an early proficiency in letters, he was, Dec. 1723, made Greek professor in the college where he had been educated; and continued to teach that language with applause even to his death. In 1737, was published at London, but without his name, "An Enquiry into the life and writings of Homer," 8vo; a second edition of which appeared in 1736; and not long after, "Proofs of the Enquiry into Homer's life and writings," which was a translation of the Greek, Latin, Spanish, Italian, and French notes, subjoined to the original work. In 1748, he published "Letters concerning Mythology," 8vo; without his name also. The same year, he was made principal of the Marischal college in Aberdeen, and is the only layman who hath been appointed principal of that college, since the patronage came to the Crown, by the forfeiture of the Marischal family, in 1716; all the other principals having been ministers of the church of Scotland. March 1752, he took the degree of doctor of laws: and the year following came out the first volume of his *Memoirs of the Court of Augustus*, 4to. The second volume appeared in 1755; and the third, which was posthumous, and left incomplete by the author, was fitted for the press by John Mills, Esq; and published in 1764. At the same time was published a third edition of the two former volumes: Which is a proof of the good reception the work met with from the public; though it must be acknowledged that the parade with which it is written, and the peculiarity of its language, exposed it to some severity of censure.

Soon after he became principal of his college, he married a merchant's daughter of Aberdeen, by whom he had no children. Several years before his death, his health began to decline: his disorder was of the consumptive kind, and thought to be forwarded by an excess of abstemiousness which he imposed upon himself. His disease increasing, he was advised to travel, and accordingly set out in Feb. 1757; however, he was not able to go farther than Edinburgh, in which city he died the 8th of March following, in his 56th year. He was a very ingenious and very learned man: he had an equalle flow of temper, and a truly philosophic spirit, both which he seems to have preserved to the last; for on the day of his death he wrote to several of his friends.

BLACKWELL (Alexander), son of a dealer in knit hosiery at Aberdeen, where he received a liberal education, studied physic under Boerhaave at Leyden, took the degree of M. D. and acquired a proficiency in the modern languages. On his return home, happening to stay some time at the Hague, he contracted an intimacy with a Swedish nobleman. Marrying a gentleman's daughter in the neighbourhood of Aberdeen, he proposed practising his profession in that part of the kingdom; but in two years finding his expectations disappointed, he came to London, where he met with still less encouragement as a physician, and commenced corrector of the press for Mr Wilkins a printer. After some years spent in this employment, he set up as a printer himself; and carried on several large works till 1734, when he became bankrupt. In what manner he subsisted from this event till the above-mentioned application we do not learn, unless it was by the ingenuity of his wife, who published "A curious

Bladder. Herbal containing 500 Cuts of the most useful Plants which are now used in the Practice of Physic, engraved on folio Copperplates, after Drawings taken from the Life, by Elizabeth Blackwell. To which is added, a short Description of the Plants, and their common Uses in Physic, 1739," 2 vols folio. In or about the year 1740 he went to Sweden, and renewing his intimacy with the nobleman he knew at the Hague, again assumed the medical profession, and was very well received in that capacity; till turning projector, he laid a scheme before his Swedish majesty for draining the fens and marshes, which was well received, and many thousands employed in prosecuting it under the doctor's direction, from which he had some small allowance from the king. This scheme succeeded so well, he turned his thoughts to others of greater importance, which in the end proved fatal to him. He was suspected of being concerned in a plot with Count Tessin, and was tortured; which not producing a confession, he was beheaded August 9th 1748; and soon after this event appeared "A genuine Copy of a Letter from a merchant in Stockholm, to his correspondent in London; containing an Impartial Account of Doctor Alexander Blackwell, his Plot, Trial, Character, and Behaviour, both under Examination and at the Place of Execution; together with a Copy of a Paper delivered to a Friend upon the Scaffold." He possessed a good natural genius, but was somewhat flighty and a little conceited. His conversation, however, was facetious and agreeable; and he might be considered on the whole as a well-bred accomplished gentleman.

BLADDER, in anatomy, a thin expanded membranous body, found in several parts of an animal, serving as a receptacle of some juice, or of some liquid excrement; from whence it takes various denominations, as *urine-bladder*, *gall-bladder*, &c.

BLADDER, by way of eminence, is a large vessel which serves as a receptacle of the urine of animals, after its secretion from the blood in the kidneys. This is sometimes also called, by way of distinction, the *urinary bladder*, *vesica urinaria*. The bladder is situated in the pelvis of the abdomen; in men immediately on the rectum; in women on the vagina uteri. See ANATOMY.

Though the urinary bladder be naturally single, yet there have been instances of nature's varying from herself in this particular. The bladder of the famous Casaubon, upon dissecting his body after his death, was found to be double; and in the Philosophical Transactions, we have an account of a triple bladder found in the body of a gentleman who had long been ill and no one could guess the cause.

The urinary bladders of brutes are differently contrived from the human bladder, and from each other according to the structure, œconomy, and manners of living of each creature. See *Comparative Anatomy*.

Bladders, when below a certain magnitude, are more usually denominated by the diminutive vesicles, *vesiculae*. Of these we meet with many sorts both in the animal and vegetable world; some natural, as in the lungs, especially of frogs, and as some also imagine, in the muscles; others morbid or preternatural, as the *hydatids*, and those observable in the itch. Naturalists have also discovered bladders in the thorax and abdo-

men of birds, as well as others in the belly of fishes, called *air-bladders* and *scumms*.

Vegetable bladders are found every where in the structure of the bark, the fruit, pith, and *parenchyma* or pulp; besides those morbid ones raised on the surface of leaves by the puncture of insects.

BLADDER-NUT. See STAPHYLEA.

BLADDER-Senna. See COLUTEA.

BLADE, in commerce, a thin slender piece of metal either forged by the hammer or run and cast in moulds to be afterwards sharpened to a point, edge, or the like.

Sword-blades are made by the armourers, knife-blades by the cutlers, &c. The English and Damascus-blades are most esteemed among the French, those of Vienne in Dauphiny have the preference. The conditions of a good blade of a small sword are, that it be light and tough, apter to bend than break. When it will stand in the bend, it is called a *poor man's blade*.

BLADEN, (Martin), a translator and dramatic author, was formerly an officer in the army, bearing the commission of a lieutenant-colonel in queen Anne's reign, under the great duke of Marlborough, to whom he dedicated a translation of Cæsar's Commentaries, which he had completed, and which is to this day a book held in good estimation. In 1714, he was made one of the Lords Commissioners of Trade and Plantations; and in 1717 was appointed envoy extraordinary to the court of Spain, in the room of — Brett, Esq; but declined it, choosing rather to keep the post he already had, which was worth L. 1000 *per annum*, and which he never parted with till his death, which was in May 1746. He was also many years member of parliament for the town of Portsmouth. He wrote two dramatic pieces; both of which (for the one is only a masque introduced in the third act of the other) were printed in the year 1705, without the author's consent. Their names are, 1. Orpheus and Euridice, a Masque. 2. Solon, a Tragic Comedy.

BLADUM, in middle-age writers, is taken for all sort of standing corn in the blade and ear. The word is also written *blatum*, *blava*, and *blavium*.

In our old charters, the word *bladum* included the whole product of the ground, fruit, corn, flax, grass, &c. and whatever was opposed to living creatures. It was sometimes also applied to all sorts of grain or corn threshed on the floor. But the word was more peculiarly appropriated to bread-corn, or wheat, called in French *blé*. Thus the knights Templars are said to have granted to Sir Wido de Meriton's wife *duas sarrinas bladi*.

BLAEU (William), a famous printer of Amsterdam, a disciple and friend of Tycho Brahe's: his Atlas, his Treatise of the Globes, Astronomical Institutions, &c. and his fine impressions, have secured his memory. He died in 1638.

BLAFART, in commerce, a small coin, current at Cologne, worth something more than a farthing of our money.

BLAGRAVE (John), the second son of John Blaggrave, of Bulmarsh-court near Sunning in Berkshire, descended of an ancient family in that country. From a grammar-school at Reading he was sent to St John's college in Oxford, where he applied himself chiefly to the study of mathematics, and without taking any

Blade
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Blaggrave.

Blain,
Blair.

degree, afterwards retired to his patrimonial seat of Southcote-lodge near Reading, where he spent the remainder of his life. In this mansion he died in the year 1611; and was buried in the church of St Lawrence, where a sumptuous monument was erected to his memory. Having never married, he bequeathed to all the posterity of his three brothers, the sum of 50*l.* each payable at the age of 26; and he calculated his donation so well, that near fourscore of his nephews and their descendants have reaped the benefit of it. He also settled certain lands at Swallowfield in the same county, as a provision for the poor for ever. Among other charities, he left ten pounds to be annually disposed of in the following manner: On good-Friday, the church-wardens of each of the three parishes of Reading send to the town-hall *one virtuous maid, who has lived five years with her master*: there, in the presence of the magistrates, these three virtuous maids throw dice for the ten pounds. The two losers are returned with a fresh one the year following, and again the third year, till each has had three chances. He is said to have been not more remarkable for his mathematical knowledge than for his candour and generosity to his acquaintance. His works are, 1. *A mathematical jewel*. Lond. 1585, fol. 2. *Of the making and use of the familiar staff*. Lond. 1590, 4to. 3. *Astronomium uranicum generale*. Lond. 1596, 4to. 4. *The art of dialing*. Lond. 1609, 4to.

BLAIN, among farriers, a distemper incident to beasts, being a certain bladder growing on the root of the tongue, against the wind-pipe, which swells to such a pitch as to stop the breath. It comes by great chaffing and heating of the stomach, and is perceived by the beast's gaping and holding out his tongue, and foaming at the mouth. To cure it, cast the beast, take forth his tongue, and then, sitting the bladder, wash it gently with vinegar and a little salt.

BLAIR (John), a Scottish author, was contemporary with, and the companion, some say the chaplain, of Sir William Wallace. He attended that great hero in almost all his exploits; and, after his death, which left so great a stain on the character of Edward I. of England, he wrote his memoirs in Latin. The injury of time has destroyed this work, which might have thrown the greatest light on the history of a very busy and remarkable period. An inaccurate fragment of it only has descended to us, from which little can be learned, and which was published, with a commentary, by Sir Robert Sibbald.

BLAIR (James), an eminent divine, was born and bred in Scotland, where he had at length a benefice in the episcopal church; but meeting with some discouragements, he came to England, in the latter end of the reign of king Charles II. and was sent by Dr Compton as a missionary to Virginia, and was afterwards, by the same bishop, made commissary for that colony, the highest office in the church there. He distinguished himself by his exemplary conduct and unwearied labours in the work of the ministry; and finding that the want of proper seminaries for the advancement of religion and learning was a great damp upon all attempts for the propagation of the gospel, he formed a design of erecting and endowing a college at Williamsburgh, in Virginia, for professors and students in academical learning. He therefore not only

Blair.

set on foot a voluntary subscription; but, in 1693, came to England to solicit the affair at court: when queen Mary was so well pleased with the noble design, that she espoused it with particular zeal; and king William readily concurring with her majesty, a patent was passed for erecting and endowing a college by the name of the *William and Mary college*, of which Mr Blair was appointed president, and enjoyed that office near 50 years. He was also rector of Williamsburgh, and president of the council in that colony. He wrote, *Our Saviour's divine Sermon on the Mount* explained in several sermons, 4 vols, octavo; and died in 1743.

BLAIR (John), an eminent chronologist, was educated at Edinburgh; and coming to London was for some time usher of a school in Hedge-Lane. In 1754, he obliged the world with that valuable publication, "The Chronology and History of the World, from the Creation to the year of Christ 1753. Illustrated in LVI. Tables; of which four are introductory and contain the centuries prior to the first Olympiad; and each of the remaining LII. contain in one expanded View 50 Years, or half a Century." This volume, which is dedicated to lord chancellor Hardwicke, was published by subscription, on account of the great expence of the plates, for which the author apologized in his preface, where he acknowledged great obligations to the earl of Bath, and announced some chronological dissertations, wherein he proposed to illustrate the disputed points, to explain the prevailing systems of chronology, and to establish the authorities upon which some of the particular æras depend. In January 1755 he was elected a fellow of the Royal Society, and in 1761 of the Society of Antiquaries. In 1756 he published a second edition of his "Chronological Tables." In Sept. 1757, he was appointed chaplain to the Princess Dowager of Wales, and mathematical tutor to the Duke of York; and on Dr Townshend's promotion to the deanery of Norwich, the services of Dr Blair were rewarded, March 10. 1761, with a prebendal stall at Westminster. The vicarage of Hinckley happening to fall vacant six days after, by the death of Dr Morres, Dr Blair was presented to it by the dean and chapter of Westminster; and in August that year he obtained a dispensation to hold with it the rectory of Burton Coggles in Lincolnshire. In September 1763 he attended his royal pupil the duke of York in a tour to the continent; had the satisfaction of visiting Lisbon, Gibraltar, Minorca, most of the principal cities in Italy, and several parts of France; and returned with the duke in August 1764. In 1768 he published an improved edition of his "Chronological Tables," which he dedicated to the Princess of Wales, who had expressed her early approbation of the former edition. To the new edition were annexed, "Fourteen Maps of Ancient and Modern Geography, for illustrating the Tables of Chronology and History. To which is prefixed a Dissertation on the Progress of Geography." In March 1771, he was presented by the dean and chapter of Westminster to the vicarage of St Bride's in the city of London; which made it necessary for him to resign Hinckley, where he had never resided for any length of time. On the death of Mr Sims, in April 1776, he resigned St Bride's, and was presented to the rectory of St John the Evangelist in Westminster; and in June that year obtained a dispensation

Blake
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Blake

penfation to hold the rectory of St John with that of Horton, near Colebrooke Bucks. His brother captain Blair falling gloriously in the service of his country in the memorable sea-fight of April 12th 1782, the shock accelerated the Doctor's death. He had at the same time the influenza in a severe degree, which put a period to his life, June 24th 1782. His library was sold by auction December 11-13th, 1781; and a course of his "Lectures on the Canons of the Old Testament" hath since been advertised as intended for publication by his widow.

BLAIR of Athol, a castle belonging to the duke of Athol, seated in the county of Athol in Scotland, 28 miles north-west of Perth. W. Long. 3. 30. N. Lat. 56. 46. This castle was besieged by the Highland army in 1746; and bravely defended by Sir Andrew Agnew, who was reduced to eat horse's flesh, until he was relieved by the Hessians under the earl of Crawford.

BLAISE, a military order instituted by the kings of Armenia, in honour of St Blaise, anciently bishop of Sebasta in that country, the patron saint of that nation.

Justinian calls them knights of St Blaise and St Mary, and places them not only in Armenia but in Palestine. They made a particular vow to defend the religion of the church of Rome, and followed the rule of St Basil. The precise year of the institution of the knights of St Blaise is not known; but they appear to have commenced about the same time with the knights Templars and Hospitallers; to the former of which they bore a near affinity, the regulars being the same in both.

BLAISONS, a province of France, bounded on the north by Beauce, on the east by the Orlannois, on the south by Berry, and on the west by Touraine. Blois is the capital town.

BLAKE (Robert), a famous English admiral, born August 1589 at Bridgwater in Somersetshire, where he was educated at the grammar-school. He went from thence to Oxford in 1615, where he was entered at St Alban's Hall. From thence he removed to Wadham college; and on the 10th of February 1617, he took the degree of bachelor of arts. In 1623, he wrote a copy of verses on the death of Mr Camden, and soon after left the university. He was tinctured pretty early with republican principles, and disliking that severity with which Dr Laud, then bishop of Bath and Wells, pressed uniformity in his diocese, he began to fall into the puritanical opinions. His natural bluntness causing his principles to be well known, the puritan party returned him member for Bridgwater in 1640; and he served in the parliament army with great courage during the civil war: but when the King was brought to trial, he highly disapproved the measure as illegal, and was frequently heard to say, *he would as freely venture his life to save the King, as ever he did to serve the parliament.* But this is thought to have been chiefly owing to the humanity of his temper, since after the death of the King he fell in wholly with the republican party, and, next to Cromwell, was the ablest officer the parliament had.

In 1648 he was appointed, in conjunction with Colonel Dean and Colonel Popham, to command the fleet; and soon after blocked up Prince Maurice and Prince

Rupert in Kinsale harbour. But these getting out, Black followed them from port to port: and at last attacked them in that of Malaga, burnt and destroyed their whole fleet, two ships only excepted, the Reformation in which Prince Rupert himself was, and the Swallow commanded by his brother Prince Maurice. In 1652, he was constituted sole admiral; when he defeated the Dutch fleet commanded by Van Trump, Ruyter, and De Wit, in three several engagements, in which the Dutch lost 11 men of war, 30 merchant ships, and, according to their own accounts, had 15,000 men slain. Soon after, Blake and his colleagues, with a grand fleet of 100 sail, stood over to the Dutch coast; and forced their fleet to fly for shelter into the Texel, where they were kept for some time by Monk and Dean, while Blake sailed northward. At last, however, Trump got out, and drew together a fleet of 120 men of war; and, on the 3d of June, the generals Dean and Monk came to an engagement with the enemy off the north Foreland with indifferent success: but the next day Blake coming to their assistance with 18 ships, gained a complete victory; so that if the Dutch had not saved themselves on Calais sands, their whole fleet had been sunk or taken.

In April 1653, Cromwell turned out the parliament, and shortly after assumed the supreme power. The states hoped great advantages from this; but were disappointed. Blake said on this occasion to his officers, "It is not for us to mind state affairs, but to keep foreigners from fooling us."—In November 1654, Cromwell sent him with a strong fleet into the Mediterranean, with orders to support the honour of the English flag, and to procure satisfaction for the injuries that might have been done to our merchants. In the beginning of December, Blake came into the road of Cadiz, where he was treated with all imaginable respect: a Dutch admiral would not hoist his flag while he was there; and his name was now grown so formidable, that a French squadron having stopped one of his tenders, which had been separated from Blake in a storm, the admiral, as soon as he knew to whom it belonged, sent for the captain on board, and drank Blake's health before him with great ceremony, under a discharge of five guns, and then dismissed him. The Algerines were so much afraid of him, that, stopping the Saltee rovers, they obliged them to deliver up what English prisoners they had on board, and then sent them freely to Blake, in order to purchase his favour. This, however, did not prevent his coming on the 10th of March before Algiers, and sending an officer on shore to the dey to demand satisfaction for the piracies committed on the English, and the release of all the English captives. The dey, in his answer, alleged, that the ships and captives belonged to private men, and therefore he could not restore them without offending all his subjects, but that he might easily redeem them: and if he thought good, they would conclude a peace with him, and for the future offer no acts of hostility to the English: and having accompanied this answer with a large present of fresh provisions, Blake left Algiers, and sailed on the same errand to Tunis; the dey of which place not only refused to comply with his request, but denied him the liberty of taking in fresh water. "Here (said he), are our castles of Goletto and Porto Terino; do your worst." Blake, at hearing this, began, as his custom

Blake.

Blake.

was when highly provoked, to curl his whiskers; and after a short consultation with his officers, bore into the bay of Porto Ferino with his great ships and their seconds; and coming within musket shot of the castle and the line, fired on both so warmly, that in two hours time the castle was rendered defenceless, and the guns on the works along the shore were dismounted, though 60 of them played at a time on the English. Blake found nine ships in the road, and ordered every captain to man his long boat with choice men, to enter the harbour and fire the Tuniseens; which they happily effected, with the loss of 25 men killed and 48 wounded, while he and his men covered them, from the castle by playing continually on them with their great guns. This daring action spread the terror of his name thro' Africa and Asia. From Tunis he sailed to Tripoli, caused the English slaves to be set at liberty, and concluded a peace with that government. Thence returning to Tunis, the Tuniseens implored his mercy, and begged him to grant them peace, which he did upon terms highly advantageous to England. He next sailed to Malta, and obliged the knights to restore the effects taken by their privateers from the English; and by these great exploits so raised the glory of the English name, that most of the princes and states in Italy thought fit to pay their compliments to the Protector, by sending solemn embassies to him.

He passed the next winter either in lying before Cadiz, or in cruising up and down the Straits; and was at his old station, at the mouth of that harbour, when he received information that the Spanish plate fleet had put into the bay of Sancta Cruz, in the island of Teneriffe: upon this he weighed anchor, with 25 men of war, on the 13th of April 1657; and on the 20th rode with his ships off the bay of Sancta Cruz, where he saw 16 Spanish ships lying in the form of a half-moon. Near the mouth of the haven stood a castle furnished with great ordnance; besides which there were seven forts round the bay, with six, four, and three guns on each, joined to each other by a line of communication manned with musketeers. To make all safe, Don Diego Diagues, general of the Spanish fleet, caused all the smaller ships to be moored close along the shore; and the six large galleons stood farther out at anchor, with their broadsides towards the sea. Blake having prepared for the fight, a squadron of ships was drawn out to make the first onset, commanded by Captain Stayner in the *Speaker* frigate: who no sooner received orders, than he sailed into the bay, and fell upon the Spanish fleet, without the least regard to the forts, which spent their shot prodigally upon them. No sooner were these entered into the bay, but Blake, following after, placed several ships to pour broadsides into the castle and forts; and these played their parts so well, that, after some time, the Spaniards found their forts too hot to be held. In the mean time, Blake struck in with Stayner, and bravely fought the Spanish ships, out of which the enemy were beaten by two o'clock in the afternoon; when Blake, finding it impossible to carry them away, ordered his men to set them on fire; which was done so effectually, that they were all reduced to ashes, except two, which sunk downright, nothing remaining above the water but part of the masts. The English having now obtained a complete victory, were reduced to another difficulty by the wind, which blew so strong

Blamont,
Blanc.

into the bay, that they despaired of getting out. They lay under the fire of the castles and of all the forts, which must in a little time have torn them to pieces. But the wind suddenly shifting, carried them out of the bay; where they left the Spaniards in astonishment at the happy temerity of their audacious victors. This is allowed to have been one of the most remarkable actions that ever happened at sea. "It was so miraculous (says the Earl of Clarendon), that all men who knew the place wondered that any sober man, with what courage soever endowed, would ever have undertaken it; and they could hardly persuade themselves to believe what they had done; whilst the Spaniards comforted themselves with the belief, that they were devils and not men who had destroyed them in such a manner." This was the last and greatest action of the gallant Blake. He was consumed with a dropsy and scurvy; and hastened home, that he might yield up his last breath in his native country, which he had so much adorned by his valour. As he came within sight of land, he expired.—Never man, so zealous for a faction, was so much respected and esteemed even by the opposite factions. Disinterested, generous, liberal; ambitious only of true glory, dreadful only to his avowed enemies; he forms one of the most perfect characters of that age, and the least stained with those errors and violences which were then so predominant. The Protector ordered him a pompous funeral at the public charge: but the tears of his countrymen were the most honourable panegyric on his memory. The Lord Clarendon observes, "that he was the first man who brought ships to condemn castles on shore, which had ever been thought very formidable, and were discovered by him to make a noise only, and to fright those who could be rarely hurt by them. He was the first that infused that degree of courage into seamen, by making them see by experience what mighty things they could do if they were resolved; and the first that taught them to fight in fire as well as in water.

BLAMONT, a town of Lorraine in France, seated on a little river called *Vesouze*. E. Long. 6. 51. N. Lat. 48. 35.

BLANC. See BLANK.

BLANC, a town of Berry in France, seated on the river *Creuse*, by which it is divided into two parts. The land about it is barren, and full of trees, heath, and lakes. E. Long. 1. 13. N. Lat. 46. 38.

Mont-BLANC, a stupendous mountain in Savoy, the highest of the Alps, and encompassed by those wonderful collections of snow and ice called the *Glaciers*. See ALPS.

Of these glaciers there are five, which extend almost to the plain of the vale of Chamouni, and are separated by wild forests, corn-fields, and rich meadows; so that immense tracts of ice are blended with the highest cultivation, and perpetually succeed to each other in the most singular and striking vicissitude. All these several valleys of ice, which lie chiefly in the hollows of the mountains, and are some leagues in length, unite together at the foot of Mont-Blanc; the highest mountain in Europe, and probably of the ancient world.

The summit of this mountain was deemed inaccessible before Dr Paccard, a physician at Chamouni, attempted to reach it in August 1786, and succeeded in the attempt.

attempt. Soon after, the same undertaking was resolved upon and accomplished by M. de Saussure, who has published a narrative of the journey.—He arrived at Chamouni, situated at the foot of the mountain, in the beginning of July 1787; but bad weather prevented him from ascending until the first of August, when he began his expedition, accompanied by a servant and eighteen guides, who carried his philosophical and other apparatus. His son was left at the Priory in Chamouni, and was employed in making meteorological observations, with which those made on the top of the mountain might be compared. Although it is scarcely six miles and three quarters in a straight line from the Priory of Chamouni to the top of Mont-Blanc, it requires nevertheless eighteen hours to gain the summit, owing to the bad roads, the windings, and the great perpendicular height of the mountain. That he might be perfectly at liberty to pass the night on what part of the mountain he pleased, he carried a tent with him; and he and his company slept in it the first night on that eminence which is first met with, and which is on the south of the Priory, and about a mile perpendicularly above the village.

Hitherto the journey was free from danger, or even difficulty; the road being either rocky or covered with grass: but thence upwards it was either wholly covered with snow or consisted of the most slippery ice. But the second day's journey was attended with many difficulties. The ice valley on the side of the hill must be passed, in order to gain the foot of that chain of rocks bordering on the perpetual snows which cover Mont-Blanc. The passage through this valley is extremely dangerous, since it is intersected with numerous wide, deep, and irregular chasms, which can only be crossed by means of bridges naturally formed of snow, and these often very slender, extended as it were over an abyss. One of the guides had almost perished here the evening before, as he with two others went to reconnoitre the road. They had the precaution to tie themselves together with a long rope, and he in the middle had the misfortune to have the snow-bridge, over a wide and deep chasm, break under him, so that he remained suspended between his two comrades. M. de Saussure and his retinue passed very near the opening through which this man had fallen, and shuddered at the danger in which the poor fellow had been involved. The difficulties they had to encounter in this valley, and the winding road they were obliged to take through it, occasioned their being three hours in crossing it, although in a straight line its breadth is not above three quarters of a mile.

After having reached the rocks, they mounted in a serpentine direction to a valley filled with snow, which runs from north to south to the foot of the highest pinnacle. The surface of the snow in this valley has numerous fissures, which penetrate so deep, that their bottom is nowhere to be seen, although they are of considerable breadth. The sides of these fissures, where the snow is broken perpendicularly, afford an opportunity of observing the successive horizontal layers of snow which are annually formed.

The guides were desirous of passing the night near one of the rocks on the side of this valley; but as the loftiest of them is at least 1400 yards perpendicularly lower than the summit of the mountain, M. de Saussure

was desirous of ascending higher; in consequence of which it would be necessary to encamp on the snow: but he found it difficult to convince his companions of the practicability of the plan. They imagined that during the night an insupportable cold prevailed in those heights which were eternally covered with snow, and they were seriously afraid of perishing. By proper encouragements, however, he induced them to proceed; and at four in the afternoon they arrived at the second of the three plains of snow which they had to pass. Here they encamped at the height of 3100 yards above the Priory of Chamouni, and 4250 yards above the level of the sea, which is about 200 yards higher than the peak of Teneriffe. They did not proceed to the last plain, on account of the day having been far advanced; and they were also apprehensive of exposing themselves to the Avalanches which are frequently tumbling from the summit of the mountain. They dug a deep hole in the snow, sufficiently wide to contain the whole company, and covered its top with the tent cloth.

In making this encampment, they began to experience the effects of the rarity of the atmosphere. Robust men, to whom seven or eight hours walking or rather climbing were an absolute nothing, had scarcely raised five or six shovels full of snow before they were under the necessity of resting and relieving each other, almost incessantly. One of them who had gone back a small distance to fill a cask with some water which he had seen in one of the crevices of the snow, found himself so much disordered in his way, that he returned without the water, and passed the night in great pain. M. de Saussure, who is so much accustomed to the air of mountains as to say, "That in general I feel myself better in such air than in that of the plains," was exhausted with the fatigue of making his meteorological observations. The principal inconvenience which the thinness of the air produces, is an excessive chill. They had no means of procuring water but by melting the snow; and the little stove which they had carried with them, afforded but a feeble supply for twenty men.

This region of the mountain presents to the view nothing but snow of the purest and most dazzling whiteness, forming a very singular contrast with the sky, which appears remarkably black.

"No living creature (says M. de Saussure) is to be seen in these desolate regions, nor is the least trace of vegetation to be discovered. It is the habitation of cold and silence! When I reflected that Dr Paccard, and his guide Jacques Balmat, who first visited these deserts, arrived here at the decline of the day, without shelter, without assistance, and wholly ignorant where or how they were to pass the night, without even the certainty that it was possible for men to exist in the places they had undertaken to visit; and yet that they were able to pursue their journey with unremitting intrepidity, I could not but admire their strength and courage. My guides were so firmly prepossessed with the fear of cold, that they shut up every aperture of the tent with the utmost exactness; so that I suffered very considerably from the heat and the vitiated air, which had become highly noxious from the breaths of so many people in a small room. I was frequently obliged, in the course of the night, to go out of the tent, in order

Blanc.

to relieve my breathing. The moon shone with the brightest splendor, in the midst of a sky as black as ebony. Jupiter, rayed like the sun, arose from behind the mountain in the east. The light of these luminaries was reflected from the white plain or rather basin in which we were situated; and dazzling eclipsed every star except those of the first and second magnitude. At length we composed ourselves to sleep. We were, however, soon awakened by the noise of an immense mass of snow (*avalanche*), which had fallen down from the top of the mountain, and covered part of the slope over which we were to climb the next day."

As they were obliged to melt a great quantity of snow, and prepare many necessaries for their farther progress in their journey, it was late the next morning before they took their departure.

"We began our ascent (continues M. de Saussure) to the third and last plain, and then turned to the left, in our way to the highest rock, which is on the east part of the summit. The ascent is here very steep, being about 39 degrees inclined to the horizon, and bounded on each side by precipices. The surface of the snow was so hard and slippery, that our pioneers were obliged to hew out their footsteps with hatchets. Thus we were two hours in climbing a hill of about 530 yards high. Having arrived at this last rock, we turned to the westward, and climbed the last ascent, whose height is about 300 yards, and its inclination about 28 or 29 degrees. On this peak the atmosphere is so rare, that a man's strength is exhausted with the least fatigue. When we came near the top, I could not walk fifteen or sixteen steps without stopping to take breath; and I frequently perceived myself so faint, that I was under the necessity of sitting down from time to time; and in proportion as I recovered my breath, I felt my strength renewed. All my guides experienced similar sensations, in proportion to their respective constitutions. We arrived at the summit of Mont-Blanc at 11 o'clock in the forenoon.

"I now enjoyed the grand spectacle which was under my eyes. A thin vapour, suspended in the inferior regions of the air, deprived me of the distinct view of the lowest and most remote objects, such as the plains of France and Lombardy; but I did not so much regret this loss, since I saw with remarkable clearness what I principally wished to see, *viz.* the assemblage of those high ridges, with the true form and situations of which I had long been desirous of becoming thoroughly acquainted. I could scarce believe my eyes. I thought myself in a dream when I saw below my feet so many majestic peaks, especially the Needles, the Midi, Argentière, and Géant, whose bases had proved so difficult and dangerous of access. I obtained a perfect knowledge of their proportion to, and connection with, each other; of their form and structure; and a single view removed more doubts, and afforded more information, than whole years of study.

"While I was thus employed, my guides pitched my tent and were fixing the apparatus for the experiments I had proposed to make on boiling water; but when I came to dispose my instruments for that purpose, I was obliged, almost at every instant, to desist from my labours, and turn all my thoughts to the means of respiration. When it is considered that the mercury in the barometer was no higher than 16 inches

N^o 47.

and a line (17.145 inches English), and that this air had consequently little more than half the density of that on the plains, the breathing must necessarily be increased, in order to cause, in a given time, the passage of a sufficient quantity of air through the lungs. The frequency of respiration increased the circulation of the blood, more especially as the arteries on the surface of the body had not the pressure they were usually accustomed to. We were all in a feverish state, as will be seen in the sequel.

"While I remained perfectly still, I experienced but little uneasiness more than a slight oppression about my heart; but, on the smallest bodily exertion, or when I fixed my attention on any object for some moments together, and particularly when I pressed my chest in the act of stooping, I was obliged to rest and pant for two or three minutes. My guides were in a similar condition. We had no appetite; and our provisions, which were all frozen, were not well calculated to excite it: nor had we any inclination for wine or brandy, which increased our indisposition, most probably by accelerating the circulation of the blood. Nothing but fresh water relieved us; and much time and trouble were necessary to procure this article, as we could have no other than melted snow. I remained on the summit till half past three; and though I did not lose a single moment, I was not able to make all these experiments in four hours and an half which I have frequently done in less than three on the sea-side. However, I made with great exactness those which were most essential.

"We returned much easier than I could have expected; since, in descending, we did not experience any bad effects from the compression of the thorax; our respiration was not impeded, and we were not under the necessity of resting, in order to recover our breath and strength. The road down to the first plain was nevertheless by no means agreeable, on account of the great declivity; and the sun, shining so bright on the tops of the precipices below us, made so dazzling an appearance, that it required a good head to avoid growing giddy from the prospect. We pitched our tent again on the snow, though we were more than 400 yards below our last night's encampment. I was here convinced that it was the rarity of the air, and not the fatigue of the journey, that had incommoded us on the summit of the mountain, otherwise we should not have found ourselves so well, and so able to attack our supper with a good appetite. I could now also make my meteorological observations without any inconvenience. I am persuaded that the indisposition in consequence of the rarity of the atmosphere is different in different people. For my own part, I felt no inconvenience at the height of 4000 yards, or nearly two miles and a quarter; but I began to be much affected when I was higher in the atmosphere.

"The next day we found that the ice-valley which we had passed on our first day's journey had undergone a considerable change from the heat of the two preceding days, and that it was much more difficult to pass than it had been in our ascent. We were obliged to go down a declivity of snow of no less than 50 degrees of inclination, in order to avoid a chafin which had happened during our expedition. We at length got down as low as the first eminence on the side, about

half

Blanc.

Blanc,
Blanc-
Manger.

half after nine, and were perfectly happy to find ourselves on a foundation which we were sure would not give way under our feet."

From the narrative we learn, that the summit of the mountain is a ridge nearly horizontal, lying east and west: the slope at each extremity is inclined from 28 to 30 degrees, the south side between 15 and 20, and the north about 45 or 50. This ridge is so narrow as scarcely to allow two people to walk abreast, especially at the west end, where it resembles the roof of a house. It is wholly covered with snow; nor is any bare rock to be seen within 150 yards of the top. The surface of the snow is scaly, and in some places covered with an icy crust, under which the snow is dusty and without consistence. The highest rocks are all granites; those on the east side are mixed with steatites; those on the south and the west contain a large quantity of schoerl, and a little *lapis corneus*. Some of them, especially those on the east, which are about 150 yards below the summit, seem to have been lately shivered with lightning.

M. de Saussure saw no animals on the mountain except two butterflies, which he supposes must have been driven thither by the wind. Lichens are the only vegetables which are found on the more elevated parts of these mountains: the *silene acaulis*, which grows in great quantities on the lower parts, disappears at the height of about two miles above the level of the sea.

M. de Saussure has given us the height of the barometer on the top of Mont-Blanc. August 3. at noon, 16 inches, 0 lines, and $\frac{1}{8}$ of a line, French measure (i. e. 16.181 English); and Reaumur's thermometer was 2.3 below the freezing point. M. Sennebler, at the same time, observed at Geneva the barometer 27 2 $\frac{10886}{10000}$ (29.020 inches English); and the thermometer 22.6 above freezing. From these data he makes the height of Mont-Blanc 2218 toises, or 14180 English feet (about 2 $\frac{1}{2}$ miles), according to M. de Luc's rule; and 2272 toises, or 14525 English feet, according to M. Trembley's. To these heights 13 toises, or 83 feet, the height of M. Sennebler's room above the lake of Geneva, must be added, to give the height of the mountain above the level of the lake 14263 feet, according to M. de Luc, and 14608 feet according to M. Trembley. Sir George Shuckburgh made the height of Mont-Blanc, by trigonometrical measurement, 14429 feet above the lake, which is almost the mean between the other two. The result of the observations made at Chamouni, contemporary with those on Mont-Blanc, agrees still nearer with Sir George's measurement. The general mean result makes the summit of Mont-Blanc 2450 toises, 15673 English feet, or three miles nearly, above the level of the sea.

M. de Saussure found by his electrometer, that the electricity of the air on the summit of the mountain was positive. Water boiled at 68.993 degrees of a thermometer, which rises to 80 with the barometer 27 French inches high. The wind was north and extremely piercing on the summit; but, southward of the ridge, the temperature of the air was agreeable. The experiments with lime-water, and with the caustic alkali, show that the air was mixed with atmospheric acid or fixed air. See ATMOSPHERE, n^o 12, 13.

Blanc-Manger, Fr. *q. d.* white food, is a preparation of dissolved singlats, milk, sugar, cinnamon, &c.

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boiled into a thick consistence, and garnished for the table with blanched almonds. It is cooling and strengthening.

Blancards
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Blanching.

BLANCCARDS, a name given to certain linen cloth, thus called, because the thread used to weave them has been half blanched or bleached before it was used. They are manufactured in Normandy, particularly in the places which are in the district or under the jurisdiction of Pont-Audemer, Bernay, and Lisieux.

BLANCH-FERME, or *Blank farm*, a white farm, that is, where the rent was to be paid in silver, not in cattle. In ancient times, the crown rents were many times reserved to be paid in *libris albis*, called *blanch firmes*: in which case the buyer was holden *dealbare firmam*, viz. his base money or coin, worse than standard, was melted down in the exchequer, and reduced to the fineness of standard silver; or instead thereof be paid to the king 12 d. in the pound by way of addition.

BLANCH-Holding, in law, a tenure by which the vassal is only bound to pay an customary yearly duty to his superior merely as an acknowledgment of his right. See LAW, Part III. N^o clxv. 5.

BLANCHARD (James), an excellent painter, was born at Paris, and learnt the rudiments of his profession under Nicholas Boller his uncle; but left him at 20 years of age, and travelled into Italy. He staid two years at Rome, and from thence went to Venice, where he was so charmed with the works of Titian, Tintoret, and Paul Veronese, that he resolved to follow their manner; and in this he succeeded so far, that at his return to Paris he soon became generally esteemed for the novelty, beauty, and force of his pencil. He painted two galleries at Paris, one belonging to Perault, the first president, and the other to Bullion, superintendent of the finances; but his capital piece is a picture of the descent of the Holy Ghost in the church of Notre Dame. He was seized, in the flower of his age, with a fever and imposthume in the lungs, of which he died in 1683. Of all the French painters Blanchard was esteemed the best colourist, he having carefully studied this part of painting in the Venetian school.

Carte-BLANCHE. See CARTE.

BLANCHING, the art or manner of making any thing white. See BLEACHING.

BLANCHING of Iron-plates, is performed with aquafortis and tin.

BLANCHING of Woollen Stuffs, is done with soap, or with chalk, or with sulphur or brimstone.

BLANCHING of Silk, is performed with soap and brimstone.

BLANCHING of Wax, is by exposing it to the sun and dew. See WAX.

BLANCHING, in coinage, the operation performed on the planchets, or pieces of silver, to give them the requisite lustre and brightness. They also blanch pieces of plate, when they would have them continue white, or have only some parts of them burnished. Blanching, as it is now practised, is performed by heating the pieces on a kind of pecl with a wood fire, in the manner of a reverberatory; so that the flame passes over the pecl. The pieces being insufficiently heated and cooled again, are put successively to boil in two pans, which are of copper: in these they put water, common

L I fult,

Blanching salt, and tartar of Montpellier. When they have been well drained of this water in a copper sieve, they throw sand and fresh water over them; and when dry, they are well rubbed with towels.

BLANCHING, among gardeners, an operation whereby certain fallots, roots, &c. are rendered whiter than they would otherwise be.—It is thus: After pruning off the tops and roots of the plants to be blanched, they plant them in trenches about ten inches wide, and as many deep, more or less as is judged necessary; as they grow up, care is taken to cover them with earth, within four or five inches of their tops: this is repeated from time to time, for five or six weeks; in which time they will be fit for use, and of a whitish colour where covered by the earth.

BLANCHING also denotes the operation of covering iron plates with a thin coat or crust of tin. See LAT-TEN.

BLANCO, a cape or promontory of Africa, in the Atlantic ocean. W. Long. 18. 30. N. Lat. 20. 0.

BLANCO, a promontory of Peru in South America, in the South Sea. W. Long. 81. 10. N. Lat. 11. 50.

BLANDA (anc. geog.), a Roman city in the territory of Barcino in Hispania Citerior: Now *Blanes*, a sea-port town of Catalonia, situated near the river Tordara. E. Long. 3. 40. N. Lat. 41. 30.

BLANDFORD, a town of Dorsetshire in England. It is pleasantly seated on the river Stour near the Downs, but has been subject to several dreadful fires, particularly in 1731, when almost the whole town was burnt down; but it has since been rebuilt finer than before. It has the title of a marquissate, and lies in W. Long. 2. 15. N. Lat. 50. 50.

BLANDONONA (anc. geog.), a small city of Liguria in Italy: Now *Bron*, or *Broni*. See that article.

BLANES. See BLANDA.

BLANK, or BLANC, in a general sense, signifies white; and *blancus*, or *blanca*, is more particularly used for a kind of white or silver money, of base alloy, coined by Henry V. in those parts of France then subject to England, valued at 8d. Sterling. They were forbidden by his successor to be current in this realm. In some ancient charters they are called *solida blanci*, *white shillings*.

BLANK also denotes a small copper coin, formerly current in France, at the rate of five deniers Tournois. They had also great blanks, or pieces of three blanks, and others of six, in respect whereof the single sort were called little blanks; but of late they are all become only monies of account.

BLANK, or *BLANK-Ticket*, in lotteries, that to which no prize is allotted. The French have a game, under the denomination *blanque*, answering to our lottery.

BLANK, in coinage, a plate, or piece of gold or silver, cut and shaped for a coin, but not yet stamped.

BLANK-Bar, in law, is used for the same with what we call a *common bar*, and is the name of a *plea in bar*, which in an action of trespass is put in to oblige the plaintiff to assign the certain place where the trespass was committed.

BLANKS, in judicial proceedings, certain void spaces sometimes left by mistake. A blank (if something material be omitted) in a declaration, abates the same: and such a blank is a good cause of demurrer.

BLANK-Verse, in the modern poetry, that composed of a certain number of syllables, without the assistance of rhyme. See POETRY, Part iii.

Point-BLANK. See POINT-Blank.

BLANKENBERG, a town of Germany, in the circle of Westphalia and duchy of Berg. E. Long. 7. 18. N. Lat. 50. 54.

BLANKENBURG, a town of Germany, in the circle of Lower Saxony, and capital of the county of the same name, subject to the Duke of Brunswic-Wolfembutte. The castle or palace is a modern building, and is the residence of the princess dowager. E. Long. 11. 20. N. Lat. 51. 50.

BLANKENHEIM, a small territory of Germany with the title of a county, which is part of that of Eysfel, near the archbishopric of Cologne and duchy of Juliers.

BLANKET, in commerce, a warm woolly sort of stuff, light and loose woven, chiefly used in bedding. The manufacture of blankets is chiefly confined to Witney in Oxfordshire, where it is advanced to that height, that no other place comes near it. Some attribute a great part of the excellency of the Witney blankets to the absterive nitrous water of the river Windrush, wherewith they are scoured; others rather think they owe it to a peculiar way of loose spinning which the people have thereabouts. Be this as it will, the place has engrossed almost the whole trade of the nation for this commodity; insomuch that the wool fit for it centres here from the furthest parts of the kingdom. Blankets are made of felt-wool, *i. e.* wool from off sheep-skins, which they divide into several sorts. Of the head wool and bay wool they make blankets of twelve, eleven, and ten quarters broad; of the ordinary and middle sort blankets of eight and seven quarters broad; of the best tail wool blankets of six quarters broad, commonly called *cuts*, serving for seamen's hammocks. See HYRES.

Testing in a BLANKET, a ludicrous kind of punishment, of which we find mention in the ancients under the denomination *sagatio*. Martial describes it graphically enough. *Ibis ad excusse, missus ad astra, sags*. A late writer represents it as one of Otho's imperial delights. But this is turning the tables: that emperor's diversion, as related by Suetonius, was not to be the subject, but the agent, in the affair; it being his practice to stroll out in dark nights, and where he met with a helpless or drunken man to give him the discipline of the blanket.

BLANKOF (John Tennisz), a painter of great abilities, was born at Alkmaar in 1628, and received his earliest instruction from Arent Tierling: but afterwards he was successively the disciple of Peter Scheyenburg and Cæsar Van Everdingen. When he had spent some years with those masters, he went to Rome, where, during his continuance in that city, he was studiously diligent in copying the works of the best masters, and was admitted into the society of Flemish painters called *Bentvogels*, who gave him the name of *Jan Maat* (which in Dutch signifies mate or companion), and by that name he is most generally known. His subjects were landscapes, with views of rivers or sea-shores, havens or ports, which he executed with a light free pencil; and in the representation of storms and calms (as nature was always his model) he described those sub-

jects

Blanquille jets with great truth, exactness, and neatness of handling. The pictures of this master which are most commended are the Italian sea-ports, with vessels lying before them. He possessed a lively imagination; nor was his hand less expeditious than his thoughts; and the connoisseurs agreed in opinion, that if he had bestowed more labour on his pictures than he usually did, or if he had finished them more highly, he would certainly have destroyed a great deal of their spirit, force, and effect. His most capital performance is a view of the sea-shore, with the waves retiring at ebb tide; which is described by Houbraken as being wonderfully beautiful and natural. He died in 1670.

BLANQUILLE, in commerce, a small silver coin current in the kingdom of Morocco, and all that part of the coast of Barbary; it is worth about three-halfpence of our money.

BLARE, in commerce, a small copper coin of Bern, nearly of the same value with the ratz.

BLAREGNIES, a town of the Austrian Netherlands, in the province of Hainault, seated in E. Long. 3. 35. N. Lat. 50. 30. Near this place the English and their allies under the Duke of Marlborough obtained a very bloody victory over the French in 1709. This is most commonly called the *battle of Malplaquet*. See **MALPLAQUET**.

BLASE, bishop of Sebasta in Cappadocia, in the second and third centuries, suffered death under Dioclesian by decapitation, after being whipped and having his flesh torn with iron combs. He is a person of great note among the vulgar, who in their processions relative to the woollen trade, always carry a representation of him as the inventor or patron of the art of wool-combing; though that art must have been known long before his time. It is difficult to say how the invention came to be attributed to him; but it had probably no better origin than the circumstance of his being tortured by instruments used in combing of wool.

BLASIA, **LEATHER-CUP**: A genus of the order of algæ, belonging to the cryptogamia class of plants; and in the natural method ranking under the 57th order, *Algæ*. The male calyx is cylindric, replete with grains; the female calyx is naked; the fruit roundish, immersed in the leaves, and many-seeded.—Of this genus there is but one species known, the pusilla, which grows naturally on the banks of ditches and rivulets, in a gravelly or sandy soil, both in England and Scotland. It grows flat upon the ground in a circle or patch, composed of numerous thin, green, pellucid, leaves, marked with a few whitish veins near the base, divided and subdivided into obtuse segments obscurely crenated on the edges. The margins of the leaves are a little elevated, but the interior parts adhere close to the ground by a fine down which answers the purpose of roots. The seeds are so small as to be almost imperceptible.

BLASPHEMY (*blasphemia*, or *blasphemium*), in middle-age writers, denotes simply the blaming or condemning of a person or thing. The word is Greek, *βλασφημία*, from *βλαττω*, *ledo*. Among the Greeks to blaspheme was to use words of evil omen, or that portended something ill, which the ancients were careful to avoid, substituting in lieu of them other words

of softer and gentler import, sometimes the very reverse of the proper ones.

BLASPHEMY is more peculiarly restrained to evil or reproachful words spoken of the Deity. Augustin says, *Jam vulgo blasphemia non accipitur nisi mala verba de Deo dicere*.

According to Lindwood, blasphemy is an injury offered to God, by denying that which is due and belonging to him; or attributing to him what is not agreeable to his nature. By the Mosaic law, blasphemy was punished with death; Levit. chap. xxiv. ver. 13—16. As also by the civil law; Novel. 77. In Spain, Naples, France, and Italy, the pains of death are not now inflicted. In the Empire, either amputation or death is made the punishment of this crime.

By the canon law, blasphemy was punished only by a solemn penance; and by custom either by a pecuniary or corporal punishment. By the English laws, blasphemies of God, as denying his being or providence, and all contumelious reproaches of Jesus Christ, &c. are offences by the common law, and punishable by fine, imprisonment, and pillory. And, by the statute law, he that denies one of the persons in the Trinity, or asserts there are more than one, or denies Christianity to be true, for the first offence is rendered incapable of any office; for the second, adjudged incapable of suing, being executor or guardian, receiving any gift or legacy, and to be imprisoned for three years.

According to the law of Scotland, the punishment of blasphemy is death. The first species thereof consists in railing at or cursing God; and here the single act constitutes the crime. The second consists in denying the existence of the Supreme Being, or any of the persons of the Trinity; and therein obstinately persevering to the last. For reiterated denial does not fully constitute the crime, because the stat. of Charles II. 1661, admits of repentance before conviction, as a complete expiation.

This statute of 1661 is ratified by a statute of king William, whereby the calling in question the existence of God, or of any of the persons of the Trinity, or the authority of Scripture, or the Divine Providence, is made penal: For the first offence, imprisonment till satisfaction given by public repentance in sack-cloth; for the second, a fine of a year's valued rent of the real estate, and twentieth part of the personal estate; and the trial in both these cases is competent to inferior judges. The trial of the third offence is death, to be tried only by the justices.

BLASPHEMY against the Holy Ghost. Divines are not agreed with respect to the nature of the crime thus denominated (Mat. chap. xii. ver. 31.), and the grounds of the extreme guilt ascribed to it. Dr Tillotson maintains, that it consisted in maliciously attributing the miraculous operations which Christ performed by the power of the Holy Ghost to the devil. Dr Whitby refers it to the dispensation of the Holy Ghost, which commenced after our Lords resurrection and ascension; and those were guilty of the crime who persisted in their unbelief and blasphemed the Holy Ghost, representing him as an evil spirit. The crime was unpardonable, because it implied a wilful opposition to the last and most powerful evidence which God would vouchsafe to mankind, and precluded the possibility of a recovery to faith and repentance.

Blast
||
Blatta.

BLAST, *fatus*, in the military art, a sudden compression of the air, caused by the discharge of the bullet out of a great gun. The blast sometimes throws down part of the embrasures of the wall.

BLAST is also applied in a more general sense to any forcible stream of wind or air, excited by the mouth, bellows, or the like.

BLAST is also used in agriculture and gardening, for what is otherwise called a *blight*.

Blasts or blights are by some supposed owing to cold; by others to the want of a due supply of sap; by others to ascending fumes of the earth; by others to sharp winds and froils, immediately succeeding rains. That species called *uredines* or *fire-blasts*, is supposed by Mr Hales owing to the solar rays reflected from or condensed in the clouds, or even collected by the dense steams in hop gardens and other places. The effect of them is to wither, shrivel, scorch, turn black, and as it were burn up the leaves, blossoms, and fruits of trees, shrubs, herbs, grafs, corn, even for whole tracts of ground.

Physicians also speak of a kind of blasts affecting human bodies, and causing erysipelas, pallies, &c.

BLASTS, among miners. See **DAMPS**.

BLASTED, something struck with a blast. Among the Romans, places blasted with lightning were to be consecrated to Jupiter, under the name of *bidentalia* and *putealia*. It was also a ceremonial of religion to burn blasted bodies in the fire.

BLASTING, among miners, a term for the tearing up rocks, which they find in their way, by gunpowder. The method of doing which is this: they make a long hole like the hollow of a large gun-barrel in the rock they would split; this they fill with gunpowder; then they firmly stop up the mouth of the hole with clay, except a touch-hole, at which they leave a match to fire it. A small quantity of powder does great things this way.

BLATOBULGIUM (anc. geog.), Antonine; a place of the Brigantes in Britain, having a camp of exploratores or scouts near Solway Frith and promontory; now called *Bulnesh*, (Camden).

BLATTA, or **COCKROACH**, a genus of insects belonging to the order of hemiptera, or such as have four membranaceous incumbent wings. The head of the *blatta* is inflexed towards the breast; the antennæ, or feelers, are hard like bristles; the elytra and wings are plain, and resemble parchment; the breast is smooth, roundish, and is terminated by an edge or margin; the feet are fitted for running; and there are two small horns above the tail. This insect resembles the beetle; and there are 10 species, *viz.* 1. The *gigantea* is of a livid colour, and has square brownish marks on the breast. It is found in Asia and America, and is about the size of a hen's egg. 2. The *alba* is red, and the margin of the breast is white. It is found in Egypt. 3. The *surinamensis* is livid, and the breast edged with white. It is a native of Surinam. 4. The *americana* is of an iron colour, and the hind part of the breast is white. The wings and elytra are longer than its body. It is found in America and the south of France. 5. The *pivea* is white, with yellow feelers. It is a native of America. 6. The *africana* is ash-coloured, and has some hairs on its breast. It is found in Africa. 7. The *orientalis* is of a dusky ash-colour, has short elytra,

with an oblong furrow in them. This species is frequent in America. They get into chests, &c. and do much hurt to cloaths; they infest peoples beds in the night, bite like bugs, and leave a very unfavoury smell behind them. They avoid the light, and seldom appear but in the night-time. The female resembles a kind of caterpillar, as it has no wings; she lays an egg of about one half the bulk of her belly. They eat bread, raw or dressed meat, linen, books, silk-worms and their bags, &c. Sir Hans Sloane says, that the Indians mix their ashes with sugar, and apply them to ulcers in order to promote the suppuration. 8. The *germanica* is livid and yellowish, with two black parallel lines on the breast. It is found in Denmark. 9. The *laponica* is yellow, and the elytra are spotted with black. It is found in Lapland; and feeds upon cheese, fishes, &c. 10. The *oblongata* is of an oblong figure; the colour is livid and shining; and it has two black spots on the breast. The feelers are red and clavated; and the feet are very hairy. It is a native of America.

BLATTARIE (from *Blatta*, a moth or little worm), the title of Scopoli's 12th natural class, in his *Flora Carniolica*. It is taken from the *Blattaria*, which was Tournefort's generic name for the *verbascum* of Linnæus. See **VERBASCUM**.

BLAUBEUREN, a town of Germany in the circle of Suabia, and duchy of Wirtemberg. E. Long. 9. 57. N. Lat. 48. 22.

BLAVET, a sea-port town of Brittany in France, situated at the mouth of a river of the same name. It is one of the stations of the royal navy of France, and is sometimes called *Port Lewis*. W. Long. 3. 5. N. Lat. 47. 40.

BLAVIA, or **BLAVIUM**, (anc. geog.), a town of Aquitain, on the north bank of the Garonne, below its confluence with the Dordone: Now *Blyz*; which see.

BLAYE, an ancient and strong town of France, in Guienne. It is situated on the river Garonne, has a harbour much frequented by foreigners, and the ships which sail to Bourdeaux are obliged to leave their guns here. The river is 3800 yards broad at Blaye; for which reason a battery was built upon an island in 1689, to command the vessels that sail up. The city is built on a rock, and has a citadel with four bastions, which is called the *Upper Town*. The lower town is separated from the upper by a small river; and in the lower town the merchants reside with their magazines. The neighbourhood produces a great deal of corn, which they send abroad when the exportation of it is allowed. W. Long. 1. 23. N. Lat. 45. 6.

BLAZE, a white spot in a horse's face.

BLAZONING, or **BLAZONRY**, in heraldry, the decyphering the arms of noble families. The word originally signified the blowing or winding of a horn; and was introduced into heraldry as a term denoting the description of things borne in arms, with their proper significations and intendments, from an ancient custom the heralds, who were judges, had of winding an horn at jousts and tournaments, when they explained and recorded the achievements of knights. See **HERALDRY**.

BLEA, in the anatomy of plants, the inner rind or dry bark. See **PLANTS**.

BLEACHING, the art of whitening linen cloth, thread,

Blattaria
||
Bleaching.

ing. thread, &c. which is conducted in the following manner by the bleachers of this country.

After the cloth has been sorted into parcels of an equal fineness, as near as can be judged, they are latched, linked, and then steeped. Steeping is the first operation which the cloth undergoes, and is performed in this manner. The linsens are folded up, each piece distinct, and laid in a large wooden vessel; into which is thrown, blood-warm, a sufficient quantity of water, or equal parts of water and lye, which has been used to white cloth only, or water with rye-meal or bran mixed with it, till the whole is thoroughly wet, and the liquor rises over all. Then a cover of wood is laid over the cloth, and that cover is secured with a post betwixt the boards and the joisting, to prevent the cloth from rising during the fermentation which ensues. About six hours after the cloth has been steeped in warm water, and about twelve in cold, bubbles of air arise, a pellicle is formed on the surface of the liquor, and the cloth swells when it is not pressed down. This intestine motion continues from 36 to 48 hours, according to the warmth of the weather; about which time the pellicle or scum begins to fall to the bottom. Before this precipitation happens, the cloth must be taken out; and the proper time for taking it out, is when no more air-bubbles arise. This is allowed to be the justest guide by the most experienced bleachers.

The cloth is then taken out, well rinsed, disposed regularly by the selvage, and washed in the put-mill to carry off the loose dust. After this it is spread on the field to dry: When thoroughly dried, it is ready for bucking; which is the second operation.

Bucking, or the application of salts, is performed in this manner. The first, or mother lye, is made in a copper, which we shall suppose, for example, when full, holds 170 Scots gallons of water. The copper is filled three-fourths full of water, which is brought to boil: just when it begins, the following proportion of ashes is put into it, *viz.* 30 lb. of blue, and as much white pearl ashes; 200 lb. of Marsoft ashes (or, if they have not these, about 300 lb. of Cashub); 300 lb. of Muscovy, or blanch ashes; the three last ought to be well pounded. This liquor is allowed to boil for a quarter of an hour, stirring the ashes from the bottom very often; after which the fire is taken away. The liquor must stand till it has settled, which takes at least six hours, and then it is fit for use.

Out of their first, or mother-lye, the second, or that used in bucking, is made in this manner. Into another copper, holding, for example, 40 Scots gallons, are put 38 gallons of water, 2 lb. soft soap, and 2 gallons of mother-lye; or, for cheapness, in place of the soap, when they have lye which has been used to white linen, called *white linen lye*, they take 14 gallons of it, leaving out an equal quantity of water. This is called *bucking-lye*.

After the linsens are taken up from the field dry, they are set in the *vat* or *cave*, as their large vessel is called, in rows, endwise, that they may be equally wet by the lye; which, made blood-warm, is now thrown on them, and the cloth is afterwards squeezed down by a man with wooden shoes. Each row undergoes the same operation, until the vessel is full, or all the cloth in it. At first the lye is put on milk-warm, and, after standing a little time on the cloth, it is again let off by a cock

into the bucking-copper, heated to a greater degree, and then put on the cloth again. This course is repeated for six or seven hours, and the degree of heat gradually increased, till it is, at the last turn or two, thrown on boiling hot. The cloth remains after this for three or four hours in the lye; after which the lye is let off, thrown away, or used in the first buckings, and the cloth goes on to another operation.

It is then carried out, generally early in the morning, spread on the grass, pinned, corded down, exposed to the sun and air, and watered for the first six hours, so often, that it never is allowed to dry. Afterwards it is allowed to lie till dry (spots appear before it is watered. After seven at night it gets no more water, unless it be a very drying night. Next day, in the morning and forenoon, it is watered twice or thrice if the day be very dry; but if the weather be not drying, it gets no water: After which it is taken up dry if the green be clean; if not, it is rinsed, mill-washed, and laid out to dry again, to become fit for bucking.

This alternate course of bucking and watering is performed for the most part from ten to sixteen times, or more, before the linen is fit for souring; gradually increasing the strength of the lye from the first to the middle bucking, and from that gradually decreasing it till the souring begins. The lyes in the middle buckings are generally about a third stronger than the first and last.

Souring, or the application of acids to cloth, is the fourth operation. It is difficult to say when this operation should commence, and depends mostly on the skill and experience of the bleacher. When the cloth has an equal colour, and is mostly freed from the sprat, or outer bark of the lint, it is then thought fit for souring; which is performed in the following manner. Into a large vat or vessel is poured such a quantity of buttermilk, or sour milk, as will sufficiently wet the first row of cloth; which is tied up in loose folds, and pressed down by two or three men bare footed. If the milk is thick, about an eighth of water is added to it; if thin, no water. Sours made with bran, or rye-meal and water, are often used instead of milk, and used milk-warm. Over the first row of cloth a quantity of milk and water is thrown, to be imbibed by the second; and so it is continued till the linen to be soured is sufficiently wet, and the liquor rises over the whole. The cloth is then kept down by covers filled with holes, and secured with a post fixed to the joist, that it may not rise. Some hours after the cloth has been in the sour, air-bubbles arise, a white scum is found on the surface, and an intestine motion goes on in the liquor. In warm weather it appears sooner, is stronger, and ends sooner, than in cold weather. Just before this fermentation, which lasts five or six days, is finished, at which time the scum falls down, the cloth should be taken out, rinsed, mill-washed, and delivered to the women to be washed with soap and water.

Washing with soap and water is the fifth operation; and is performed thus. Two women are placed opposite at each tub, which is made of very thick slaves, so that the edges, which slope inwards, are about four inches in thickness. A small vessel full of warm water is placed in each tub. The cloth is folded so that the selvage may be first rubbed with soap and warm water lengthwise, till it is sufficiently impregnated with it.

bleaching.

Bleaching. In this manner all the parcel is rubbed with soap, and afterwards carried to be bucked.

The lye now used has no soap in it, except what it gets from the cloth; and is equal in strength to the strongest formerly used, or rather stronger, because the cloth is now put in wet. From the former operation these lyes are gradually made stronger, till the cloth seems of an uniform white, nor any darknes or brown colour appears in its ground. After this the lye is more speedily weakened than it was increased; so that the last which the cloth gets is weaker than any it got before.

But the management of fours is different; for they are used strongest at first, and decreased so in strength, that the last four, considering the cloth is then always taken up wet, may be reckoned to contain three-fourths of water.

From the bucking it goes to the watering, as formerly, observing only to overlap the selvages, and tie it down with cords, that it may not tear; then it returns to the four, milling, washing, bucking, and watering again. These operations succeed one another alternately till the cloth is whitened; at which time it is blued, starched, and dried.

This is the method used in the whitening fine cloths. The following is the method used in the whitening of coarse cloths.

Having sorted the cloths according to their quality, they are steeped in the same manner as the fine, rinsed, washed in the mill, and dried before boiling.

In this process boiling supplies the place of bucking, as it takes less time, and consequently is thought cheapest. It is done in the following manner: 200 lb. Castub-ashes, 100 lb. white Muscovy, and 30 lb. pearl-ashes, boiled in 105 Scots gallons of water for a quarter of an hour, as in the process for the fine cloth, makes the mother or first lye. The cloth-boiler is then to be filled two-thirds full with water and mother-lye, about nine parts of the former to one of the latter; so that the lye used for boiling the coarse cloth is about a third weaker than that used in bucking the fine. Such a quantity of cloth is put into the foregoing quantity of lye, when cold, as can be well covered by it. The lye is brought gradually to the boil, and kept boiling for two hours; the cloth being fixed down all the time, that it does not rise above the liquor. The cloth is then taken out, spread on the field, and watered, as mentioned before in the fine cloth.

As the salts of the lye are not exhausted by this boiling, the same is continued to be used all that day, adding, at each boiling, so much of the mother-lye as will bring it to the same strength as at first. The lye by boiling loses in quantity somewhat betwixt a third and a fourth; and they reckon that in strength it loses about a half, because they find in practice, that adding to it half its former strength in fresh lye, has the same effect on cloth. Therefore some fresh lye, containing a fourth part of the water, and the half of the strength of the first lye, makes the second boiler equal in strength to the first. To the third boiler they add somewhat more than the former proportion, and go on still increasing gradually to the fourth and fifth, which is as much as can be done in a day. The boiler is then cleaned, and next day they begin with fresh lye. These additions of fresh lye ought always to be made by the ma-

ster-bleacher, as it requires judgment to bring succeeding lyes to the same strength as the first.

When the cloth comes to get the second boiling, the lye should be a little stronger, about a thirtieth part, and the deficiencies made up in the same proportion. For six or seven boilings, or fewer, if the cloth be thin, the lye is increased in this way, and then gradually diminished till the cloth is fit for souring. The whitest cloth ought always to be boiled first, that it may not be hurt by what goes before.

In this process, if the cloth cannot be got dry for boiling, business does not stop as in the fine; for after the coarse has steeped on racks made for the purpose, it is boiled, making the lye strong in proportion to the water in the cloth.

The common method of souring coarse linen is, to mix some warm water and bran in the vat, then put a layer of cloth, then more bran, water, and cloth: and so on, till the cave is full. The whole is tramped with mens feet, and fixed as in the former process. A thousand yards of cloth, yard-broad, require betwixt four and six pecks of bran. The cloth generally lies about three nights and two days in the four. Others prepare their four twenty-four hours before, by mixing the bran with warm water in a separate vessel; and before pouring it on the cloth, they dilute it with a sufficient quantity of water. After the cloth is taken from the four, it ought to be well washed and rinsed again. It is then given to men to be well soaped on a table, and afterwards rubbed betwixt the rubbing-boards. When it comes from them, it should be well milled, and warm water poured on it all the time, if conveniency will allow of it. Two or three of these rubbings are sufficient, and the cloth very seldom requires more.

The lye, after the souring begins, is decreased in strength by degrees; and three boilings after that are commonly sufficient to finish the cloth. Afterwards it is starched, blued, dried, and bottled in a machine made for that purpose, which supplies the place of a calender, and is preferred by many to it.

This method used in the bleaching of our coarse cloths, is very like that practised in Ireland for both fine and coarse. The only material difference is, that there the bleachers use no other ashes but the kelp or castub. A lye is drawn from the former by cold water, which dissolves the salts, and not the sulphureous particles of the kelp-ashes. This lye is used till the cloth is half whitened, and then they lay aside the kelp-lye for one made of castub-ashes.

In the preceding history of bleaching we may observe, that it naturally divides itself into several different branches or parts, all tending to give linen the degree of whiteness required. How they effectuate that comes next to be considered.

The general process of bleaching divides itself into these different parts. 1. Steeping and milling. 2. Bucking and boiling. 3. Alternate watering and drying. 4. Souring. 5. Rubbing with soap and warm water, starching, and bluing. We shall treat of these different parts in their order.

Steeping Green linen, in the different changes which it has undergone before it arrives at that state, contracts a great foulness. This is chiefly communicated to it by the dressing composed of tallow and sowen, which

ing. is a kind of slummary made of bran, flour, or oat-meal feeds. The first thing to be done in the bleachfield is to take off all that filth which is foreign to the flax, would blunt the future action of the salts, and might, in unskilful hands, be fixed in the cloth. This is the design of steeping.

To accomplish this end, the cloth is laid to steep in blood-warm water. A smaller degree of heat would not dissolve the dressing so soon; and the greater might coagulate and fix, in the body of the linen, those particles which we design to carry off. In a few hours the dressing made use in weaving is dissolved, mixed with the water; and as it had acquired some degree of acidity before application, it becomes a species of ferment. Each ferment promotes its own particular species of fermentation or intestine motion; the putrid ferment sets in motion the putrefactive fermentation; the vinous ferment gives rise to the vinous fermentation; and the acid ferment to the acetous fermentation. That there is a real fermentation going on in steeping, one must be soon convinced, who attends to the air-bubbles which immediately begin to arise, to the scum which gathers on the surface, and to the intestine motion and swelling of the whole liquor. That it must be the acetous fermentation, appears from this, that the vegetable particles, already in part soured, must first undergo this process.

The effect of all fermentations is to set the liquor in motion; to raise in it a degree of heat; and to emit air-bubbles, which, by carrying up some of the light oleaginous particles along with them, produce a scum. But as the dressing is in small quantity in proportion to the water, these effects are gentle and slow. The acid salts are no sooner separated, by the acetous fermentation, from the absorbent earth, which made them not perceptible to the tongue in their former state, than they are united to the oily particles of the tallow, which likewise adhere superficially, dissolve them, and render them in some degree miscible with water. In this state they are soon washed off by the intestine motion of the liquor. The consequence of this operation is, that the cloth comes out freed in a great measure from its superficial dirt, and more pliant and soft than what it was.

Whenever this intestine motion is pretty much abated, and before the scum subsides, bleachers take out their cloth. The scum, when no more air-bubbles rise to support it, separates and falls down; and would again communicate to the cloth great part of the filth. But a longer stay would be attended with a much greater disadvantage. The putrid follows close upon the acetous fermentation: when the latter ends, the former begins. Were this to take place in any considerable degree, it would render the cloth black and tender. Bleachers cannot be too careful in this article.

The first question that arises to be determined on these principles is, What is the properest liquor for steeping cloth? those used by bleachers are plain water; white linnen lye and water, equal parts; and rye-meal or bran mixed with water. They always make use of lye when they have it.

After steeping, the cloth is carried to the putstock-mill, to be freed of all its loose foulness. There can be nothing contrived so effectual to answer the purpose as this mill. Its motion is easy, regular, and safe. While it presses gently, it turns the cloth; which is continu-

ally washed with a stream of water. Care must be taken that no water be detained in the folds of the linen, otherwise that part may be damaged. Bleaching

Bucking and boiling. This is the most important operation of the whole process, and deserves a thorough examination. Its design is to loosen, and carry off, by the help of alkaline lixives or lyes, that particular substance in cloth, which is the cause of its brown colour.

All ashes used in lye, the pearl excepted, ought to be well pounded, before they are put into the copper; for the Marcock and Cashub are very hard, and with some difficulty yield their salt. As these two last contain a very considerable proportion of a real sulphureous matter, which must in some degree tinge white cloth; and as this is dissolved much more by boiling than by the inferior degrees of heat, while the salts may be as well extracted by the latter; the water should never be brought to boil, and should be continued for some time longer under that degree of heat. The pearl-ashes should never be put in till near the end, as they are easily dissolved in water.

If the salts were always of an equal strength, the same quantities would make a lye equally strong; but they are not. Salts of the same name differ very much from one another. The Muscovy ashes are turning weaker every day, as every bleacher must have observed, till at last they turn quite effete. A decoction from them when new, must differ very much from one when they have been long kept. Hence a necessity of some exact criterion to discover when lyes are of an equal strength. The taste cannot serve as that is so variable; cannot be described to another, and is blunted by repeated trials. The proof-ball will serve the purpose of the bleachfield sufficiently; and, by discovering the specific gravity, will show the quantity of alkaline salts dissolved. But it cannot show the dangerous qualities of these salts; for the less caustic and less heavy this liquor is, the more dangerous and corrosive it may be for the cloth.

The third lye, which they draw from these materials by an infusion of cold water, in which the taste of lime is discoverable, appears plainly to be more dangerous than the first. The second lye, which they extract from the same ashes, and which is reckoned about a third in strength, when compared to the first, must be of the same nature; nor should it be used without an addition of pearl-ashes, which will correct it.

It is taken for a general rule, That the solution of any body in its menstruum is equally diffused through the whole liquor. The bleachers depending on this, use equal quantities of the top and bottom of their lye, when once clear and settled; taking it for granted, that there is an equal quantity of salts in equal quantities of the lye. But if there is not, the mistake may be of fatal consequence, as the lye may be in some places stronger than what the cloth can with safety bear. That general law of solution must have taken its rise from particular experiments, and not from reasoning. Whether a sufficient number of experiments have been tried to ascertain this point, and to establish an undoubted general rule, may be called in question.

“ But (says Dr Home) when I had discovered that lime makes part of the dissolved substance, and reflected how long its grosser parts will continue suspended in water, there appeared stronger reasons for suspecting.

Bleaching. suspecting that this rule, tho' it may be pretty general, does not take place here; at least it is worth the pursuit of experiment.

"I weighed at the bleachfield a piece of glass in some cold lye, after it had been boiled, stood for two days, and about the fourth part of it had been used. The glass weighed 3 drams $1\frac{1}{2}$ grains in the lye, and 3 drams $7\frac{1}{2}$ grains in river-water. The same glass weighed in the same lye, when almost all used, 2 grains less than it had done before. This shows, that the last of the lye contained a third more of the dissolved body; and, consequently, was a third stronger than the first of the lye.

"As this might, perhaps, be owing to a continuation of the solution of the salts, I repeated the experiment in a different way.

I took from the surface some of the lye, after the salts were dissolved, and the liquor was become clear. At the same time I immersed a bottle, fixed to a long stick, so near the bottom, as not to raise the ashes there, and, by pulling out the cork by a string, filled the bottle full of the lye near the bottom. The glass weighed in river-water 3 drams $38\frac{1}{2}$ grains; in the lye taken from the surface 3 drams $34\frac{1}{2}$ grains; and in the lye taken from the bottom 3 drams $31\frac{1}{2}$ grains. This experiment shows, that the lye at the bottom was, in this case, $\frac{1}{4}$ th stronger than the lye at the surface.

"At other times when I tried the same experiment, I found no difference in the specific gravity; and therefore, I leave it as a question yet doubtful, though deserving to be ascertained by those who have an opportunity of doing it. As the lye stands continually on the ashes, there can be no doubt but what is used last must be stronger than the first. I would therefore recommend, to general practice, the method used by Mr John Christie, who draws off the lye, after it has settled into a second receptacle, and leaves the ashes behind. By this means it never can turn stronger; and he has it in his power to mix the top and bottom, which cannot be done so long as it stands on the ashes."

Having considered the lye, let us next inquire how it acts. On this inquiry depends almost the whole theory of bleaching, as its action on cloth is, at least in this country, absolutely necessary. It is found by experiment, that one effect they have on cloth is the diminishing of its weight; and that their whitening power is, generally, in proportion to their weakening power. Hence arises a probability, that these lyes act by removing somewhat from the cloth, and that the loss of this substance is the cause of whiteness. This appears yet plainer, when the bucking, which lasts from Saturday night to Monday morning, is attended to.

There are various and different opinions with regard to the operations of these salts: that they act by altering the external texture of the cloth, or by separating the mucilaginous parts from the cell. or by extracting the oil which is laid up in the cells of the plant. The last is the general opinion, or rather conjecture, for none of them deserves any better name; but we may venture to affirm, that it is so without any better title to pre-eminence than what the others have. Alkaline salts dissolve oils, therefore these salts dissolve the cellular oil of the cloth, is all the foundation which this

theory has to rest on; too slight, when unsupported by experiment, to be relied on.

Dr Home endeavours to settle this question by the following experiments and observations.

"Wax (says he) is whitened by being exposed to the influence of the sun, air, and moisture. A discovery of the change made on it by bleaching may throw a light upon the question.

"Six drams of wax were sliced down, exposed on a south window, September 10. and watered. That day being clear and warm, bleached the wax more than all the following. It seemed to me to whiten quicker when it had no water thrown on it than when it had. September 15. it was very white, and 1 dram 3 grains lighter. $3\frac{1}{2}$ drams of this bleached wax, and as much of unbleached, taken from the same piece, were made into two candles of the same length and thickness, having cotton wicks of the same kind. The bleached candle burnt 1 hour 33 minutes; the unbleached 3 minutes longer. The former run down four times, the latter never. The former had an obscure light and dull flame; the latter had a clear pleasant one, of a blue colour at the bottom. The former when burning seemed to have its wick thicker, and its flame nearer the wax, than the latter. The former was brittle, the latter not. It plainly appears from these facts, that the unbleached wax was more inflammable than the bleached; and that the latter had lost so much of an inflammable substance as it had lost in weight; and consequently the substance lost in bleaching of wax is the oily part.

"As I had not an opportunity of repeating the former experiment, I do not look on it as entirely conclusive; for it is possible that some of the dust, flying about in the air, might have mixed with the bleached wax, and so have rendered it less inflammable. Nor do I think the analogical reasoning from wax to linen without objections. Let us try then if we cannot procure the substance extracted from the cloth, show it to the eye, and examine its different properties. The proper place to find it, is in a lye already used, and fully impregnated with these colouring particles.

"I got in the bleachfield some lye, which had been used all that day for boiling coarse linen, which was tolerably white, and had been twice boiled before. There could be no dressing remaining in these webs. No soap had ever touched that parcel; nor do they mix soap with the lye used for coarse cloth. Some of this impregnated lye was evaporated, and left a dark coloured matter behind. This substance felt oily betwixt the fingers, but would not lather in water as soap does. It deflagrated with nitre in fusion, and afforded a tincture to spirit of wine. By this experiment the salts seem to have an oily inflammable substance joined with them.

"Could we separate this colouring substance from these salts, and exhibit it by itself, so that it might become the object of experiment, the question would be soon decided. Here chemistry lends us its assistance. Whatever has a stronger affinity or attraction to the salts with which it is joined than this substance has, must set it at liberty, and make it visible. Acids attract alkaline salt from all other bodies; and therefore will serve our purpose.

Bleaching. "Into a quantity of the impregnated lye mentioned in the former experiment, I poured in oil of vitriol. Some bubbles of oil arose, an intestine motion was to be perceived, and the liquor changed its colour from a dark to a turbid white. It curdled like a solution of soap, and a foam soon gathered on the surface, about half an inch in thickness, the deepness of the liquor not being above six inches. What was below was now pretty clear. A great deal of the same matter lay in the bottom; and I observed that the substance on the surface was precipitated, and showed itself heavier than water, when the particles of air, attached to it in great plenty, were dispelled by heat. This substance was in colour darker than the cloth which had been boiled in it.

"I procured a considerable quantity of it by skimming it off. When I tried to mix it with water, it always fell to the bottom. When dried by the air, it diminished very much in its size, and turned as black as a coal. In this state it deflagrated strongly with nitre in fusion; gave a strong tincture to spirit of wine; and when put on a red-hot iron, burnt very slowly, as if it contained a heavy ponderous oil; and left some earth behind.

"From the inflammability of this substance, its rejecting of water, and dissolving in spirit of wine, we discover its oleaginous nature; but from its great specific gravity we see that it differs very much from the expressed or cellular oil of vegetables; and yet more from their mucilage. That it dissolves in spirit of wine, is not a certain argument of its differing from expressed oils; because these, when joined to alkaline salts, and recovered again by acids, become soluble in spirit of wine. The quantity of earthy powder left behind after burning, shows that it contains many of the solid particles of the flax. The substance extracted from cloth by alkaline lyes appears then to be a composition of a heavy oil, and the solid earthy particles of the flax.

"In what manner these salts act so as to dissolve the oils, and detach the solid particles, is uncertain; but we see evidently how much cloth must be weakened by an improper use of them, as we find the solid particles themselves are separated."

It is necessary that cloth should be dry before bucking, that the salts may enter into the body of the cloth along with the water; for they will not enter in such quantity if it be wet; and by acting too powerfully on the external threads, may endanger them.

The degree of heat is a very material circumstance in this operation. As the action of the salts is always in proportion to the heat, it would appear more proper to begin with a boiling heat, by which a great deal of time and labour might be saved. The reason why this method is not followed appears to be this. If any vegetable or vegetable substance is to be softened and to have its juices extracted, it is found more proper to give it gentle degrees of heat at first, and to advance gradually, than to plunge it all at once in boiling water. This last degree of heat is so strong, that when applied at once to a vegetable it hardens instead of softening its texture. Dried vegetables are immediately put into boiling water by cooks, that these substances may preserve their green colour, which is only to be done by hindering them from turning too

Bleaching. soft. Boiling water has the same effect on animal substances; for if salt beef is put into it, the water is kept from getting at the salts from the outside of the beef being hardened.

But when we consider how much of an oily substance there is in the cloth, especially at first, which will for some time keep off the water, and how the twisting of the threads, and closeness of the texture, hinders the water from penetrating, we shall find, that if boiling water were put on it at once, the cloth might be liable, in several parts, to a dry heat, which would be much worse than a wet one. That the lyes have not access to all parts of the cloth, at first, appears plainly from this, that when it has lain, after the first bucking, till all the lyes are washed out, it is as black, in some parts, as when it was steeped. This must be owing to the discharge of the colouring particles from those places to which the lye has access, and to their remaining where it has not. It would seem advisable then, in the first bucking or two, when the cloth is foul, to use the lye considerably below the boiling point; that by this soaking or maceration, the foulness may be entirely discharged, and the cloth quite opened for the speedy reception of the boiling lye in the buckings which follow.

The lyes should likewise be weakest in the first buckings, because then they act only on the more external parts; whereas, when the cloth is more opened, and the field of action is increased, the active powers ought to be so too. For this reason they are at the strongest after some sourings.

The only thing that now remains to be considered, is, the management of the coarse cloth, where boiling is substituted in place of bucking. This species of linen cannot afford the time and labour necessary for the latter operation; and therefore they must undergo a shorter and more active method. As the heat continues longer at the degree of boiling, the lyes used to the coarse cloth must be weaker than those used to the fine. There is not so much danger from heat in the coarse as in the fine cloth, because the former is of a more open texture, and will allow the lye to penetrate more speedily. In the closer kinds, however, the first application of the salts should be made without a boiling heat.

Alternate watering and drying. After the cloth has been bucked, it is carried out to the field, and frequently watered for the first six hours. For if, during that time, when it is strongly impregnated with salts, it is allowed to dry, the salts approaching closer together, and assisted by a greater degree of heat, increasing always in proportion to the dryness of the cloth, act with greater force, and destroy its very texture. After this time, dry spots are allowed to appear before it gets any water. In this state it profits most, as the latter part of the evaporation comes from the more internal parts of the cloth, and will carry away most from those parts. The bleaching of the wax, in a preceding experiment, helps to confirm this; for it seemed to whiten most when the last particles of water were going off.

This continual evaporation from the surface of the cloth shows, that the design of the operation is to carry off somewhat remaining after the former process of bucking. This appears likewise from a fact known to

Bleaching. all bleachers, that the upper side of cloth, where the evaporation is strongest, attains to a greater degree of whiteness than the under side. But it is placed beyond all doubt by experiment, which shows, that cloth turns much lighter by being exposed to the influence of the sun, air, and winds, even though the salts have been washed out of it.

What, then, is this substance? As we have discovered in the former section, that the whitening, in the operation of bucking, depends on the extracting or loosening the heavy oil, and solid particles of the flax; it appears highly probable, that the effects of watering, and exposition to the sun, air, and winds, are produced by the evaporation of the same substance, joined to the salts, with which composite body the cloth is impregnated when exposed on the field. That these salts are in a great measure carried off or destroyed, appears from the cloth's being allowed to dry without any danger after the evaporation has gone on for some time. "If we can show (says Dr Home) that oils and salts, when joined together, are capable of being exhaled, in this manner, by the heat of the atmosphere, we shall reduce this question to a very great degree of certainty.

"September 10. I exposed in a south-west window half an oz. of Castile soap, sliced down and watered. September 14. when well dried; it weighed but 3 dr. 6 gr. September 22. it weighed 2 dr. 2 gr. September 24. it weighed 1 dr. 50 gr. It then seemed a very little whiter; but was much more mucilaginous in its taste, and had no degree of saltiness which it had before.

"It appears from this experiment, that soap is so volatile, when watered, and exposed to air not very warm, that it loses above half its weight in 14 days. The same must happen to the saponaceous substance, formed from the conjunction of the alkaline salts, heavy oil, and earthy particles of the flax. The whole design; then, of this operation, which by way of pre-eminence, gets the name of *bleaching*, is to carry off, by the evaporation of water, whatever has been loosened by the former process of bucking.

"Against this doctrine there may be brought two objections, seemingly of great weight. It is a general opinion amongst bleachers, that linen whitens quicker in March and April than in any other months: but as the evaporation cannot be so great at that time as when the sun has a greater heat; hence the whitening of cloth is not in proportion to the degree of evaporation; and therefore the former cannot be owing to the latter. This objection vanishes, when we consider, that the cloth that comes first into the bleachfield, in the spring, is closely attended, having no other to interfere with it for some time; and as it is the whitest, gets, in the after-buckings, the first of the lye; while the second parcel is often bucked with what has been used to the first. Were the fact true, on which the objection is founded, this would be a sufficient answer to the objection. But it appears not to be true, from an observation of Mr John Christie, That cloth laid down in the beginning of June, and finished in September, takes generally less work, and undergoes fewer operations, than what is laid down in March, and finished in June.

"The other objection is, That cloth dries much faster in windy weather than in calm sun-shine; but it

does not bleach so fast. This would seem to show, that the sun has some particular influence independent on evaporation. In answer to this objection, let it be considered, that it is not the evaporation from the surface, but from the more internal parts, that is of benefit to the cloth. Now, this latter evaporation must be much stronger in sunshine than in windy weather, on account of the heat of the sun, which will make the cloth more open; while the coldness of windy weather must shut it up, so that the evaporation will all be from the surface. Clear sun-shine, with a very little wind, is observed to be the best weather for bleaching; a convincing proof that this reasoning is just.

"It would seem to follow as a corollary from this reasoning, that the number of waterings should in general be in proportion to the strength of the lye; for the stronger the lye is, the more there is to be evaporated; and the greater the danger, in case the cloth should be allowed to dry. But there is an exception to this general rule, arising from the consideration of another circumstance. It is observed, that cloth when brown, dries sooner than when it becomes whiter, arising from the closeness and oiliness which it then has not allowing the water a free passage. Perhaps that colour may retain a greater degree of heat, and in that way assist a very little. Cloth therefore, after the first buckings, must be more carefully watered than after the last.

"It follows likewise from this reasoning, that the soil of the bleachfield should be gravelly or sandy, that the water may pass quickly through it, and that the heat may be increased by the reflection of the soil, for the success of this operation depends on the mutual action of heat and evaporation. It is likewise necessary that the water should be light, soft, and free from mud or dirt, which not being able to rise along with the water, must remain behind. When there is much of this, it becomes necessary to rinse the cloth in water, and then give it a milling, to take out the dirt; else it would be fixed in the cloth by the following bucking, as it is not soluble by the lye.

"This operation has more attributed to it by bleachers than it can justly claim. The cloth appears, even to the eye, to whiten under these alternate waterings and dryings; and these naturally get the honour of it, when it more properly belongs to the former operation. Here lies the fallacy. Alkaline salts give a very high colour to the decoctions or infusion of vegetables. This is probably owing to the solution of the oleaginous colouring particles of the plant; which particles, being opened and separated by the salts, occupy a greater space, and give a deep colour to the liquor. The cloth participates of the liquor and colour. Hence bleachers always judge of the goodness of the bucking by the deepness of its colour. The rule, in general, is good. I observe that in those buckings which continue from the Saturday night to the Monday morning, the cloth has always the deepest colour. When that cloth has been exposed some hours to the influence of the air, these colouring particles which are but loosely attached to it, are evaporated, and the linen appears of a brighter colour. This operation does no more than complete what the former had almost finished. If its own merit were thoroughly known, there would be no occasion to attribute that of another operation to it. Thread, and open cloths, such as diaper, may be reduced to a great
1 degree

eaching. degree of whiteness, after one bucking, by it alone. No cloth, as would appear, can attain to a bright whiteness without it.

“ Since the only advantage of watering is the removal of the salts, and what they have dissolved, might we not effectuate this by some cheaper and more certain method? For it occupies many hands; and must depend altogether on the uncertainty of the weather; so that in the beginning of the season, the bleacher is often obliged to repeat his buckings without bleaching. We might take out the alkaline salts by acids; but then the other substance would be left alone in the cloth, nor would any washing be able to remove it. Mill-washing appears a more probable method of taking out both salts and oils; and it would seem that this might in a great measure supply the place of watering; but upon trial it does not succeed. Two parcels of linen were managed equally in every other respect, except in this, that one was watered, and exposed to the influence of the air, and the other was only mill-washed. This method was followed until they were fit for souring. The cloth which had been mill-washed had a remarkable green colour, and did not recover the bright colour of the pieces managed in the common way, until it had been treated like them for a fortnight. The green colour was certainly owing to a precipitation of the sulphureous particles, with which the lye is impregnated, upon the surface of the cloth; owing to the salts being washed off more speedily than the sulphur, to which they are united in the lye. The attachment betwixt these two bodies we know is very loose, and the separation easily made. Evaporation then alone is sufficient to carry off these sulphureous particles.”

Souring. It is well known to all chymists, that alkaline salts are convertible, by different methods, into absorbent earths. Frequent solution in water, and evaporation of it again, is one of these. This transmutation then of these salts, which are not volatilised or washed away, must be continually going on in the cloth under these alternate waterings and dryings of the former process: not much indeed after the first two or three buckings; because the salts, not having entered deep into the cloth, are easily washed off, or evaporated. But when they penetrate into the very composition of the last and finest fibres, of which the first vessels are made, they find greater difficulty of escaping again, and must be more subject to this transmutation. But if we consider the bleaching ashes as a composition of lime and alkaline salts, we must discover a fresh fund for the deposition of this absorbent earth. The common caustic, a composition of this very kind, soon converts itself, if exposed to the open air, into a harmless earthy powder.

Frequent buckings and bleachings load the cloth with this substance. It becomes then necessary to take it out. No washing can do that, because earth is not soluble in water. Nothing but acids can remove it. These are attracted by the absorbent earth, join themselves to it, and compose a kind of neutral imperfect salt, which is soluble in water, and therefore easily washed out of the cloth. The acid liquors commonly used are butter-milk, which is reckoned the best, sour-milk, infusion of bran, rye-meal, &c. kept for some days till they sour. Sour whey is thought to give the cloth a yellow colour.

Bleaching. The linen ought to be dried before it is put in the sour, that the acid particles may penetrate, along with the watery, through the whole. A few hours after it has been there, air-bubbles arise, the liquor swells, and a thick scum is formed; manifest signs of a fermentation. The following experiment, says Dr Home, shows the degree of heat which attends it.

“ May 25. I put a thermometer of Fahrenheit’s into some butter-milk, of which the bleachers were composing their sours, and which stood in a vat adjoining to another, where the milk was the same, and the souring process had been going on for two days. After the thermometer had been 20 minutes in the butter-milk, the mercury stood at 64 degrees. In the souring vat it rose to 68 degrees. An increase of four degrees shows a pretty brisk intestine motion.

“ To what are all these effects owing? To the acetous fermentation going on in these vegetable liquors, whose acids, extricating themselves, produce heat, intestine motion, and air-bubbles. As the change is slow, the process takes five or six days before it is finished. During this time the acid particles are continually uniting themselves to the absorbent earth in the cloth. That this fermentation goes on in the liquor alone, appears from this consideration, that the same effects, *viz.* air-bubbles, and scum, are to be seen in the butter-milk alone. The only effect then it has is, by the small degree of heat, and intestine motion, which attend it, to assist the junction of the acid and absorbent particles. We shall presently see that this process may be carried on to as great advantage, without any fermentation; and therefore it appears not absolutely necessary.

“ When these absorbent particles are fully saturated, the remaining acids may unite with, and have some small effect in extracting the colouring particles. This appears from the two following experiments.

“ Sept. 20. A piece of cloth which had been steeped, weighing 41½ gr. was put into a half-pound of butter-milk, whigged, and well soured, by a mixture of water, and by boiling. Sept. 24. When taken out, and washed in water, it appeared a very little whiter. The mineral acids, as will appear afterwards, whiten cloth, even though they are very much diluted.

“ Just before the acetous fermentation is finished, the cloth should be taken out; otherwise the scum will fall down and lodge in the cloth, and the putrefaction which then begins will weaken it. This appears from the following experiment.

“ Sept. 16. A piece of cloth weighing 42 gr. was laid in butter-milk unwhigged. Novem. 15. The milk had a putrefied smell. The cloth was a little whiter, but very tender; and weighed, when well washed in warm water and dried, 40 gr.”

All the sours made of bran, rye-meal, &c. ought to be prepared before use; for by this means so much time will be saved. Besides, when the water is poured upon the cloth and bran, as is done in the management of coarse cloth, the linen is not in a better situation than if it had been taken up wet from the field; and by this means the acid particles cannot penetrate so deep. Again, this method of mixing the bran with the cloth, may be attended with yet worse consequences. All vegetable substances, when much pre-

Bleaching. fed, fall into the putrescent, and not the acetous fermentation. This often happens to the bran pressed betwixt the different layers on the linen, which must weaken the cloth. Hence, all fours should be prepared before the cloth is steeped in them; and none of the bran or meal should be mixed with the cloth.

The fours are used strongest at first, and gradually weakened till the cloth has attained to its whiteness. In the first fourings, there is more of the earthy matter in the cloth, from the many buckings it has undergone, than what there can be afterwards. As the quantity of this matter decreases, so should the strength of the four. There is not, however, the least danger, at any time, from too strong a four.

What is most wanted in this operation is a more expeditious and cheaper method of obtaining the same end. As it takes five or six days, it retards the whitening of the cloth considerably; and as bleachers are obliged to send for milk to a great distance, it becomes very dear. This last consideration makes them keep it so long, that, when used, it can have no good effect; perhaps it may have a bad one.

There is one consideration that may lead us to shorten the time. It is observed, that the souring process is sooner finished in warm than in cold weather. Heat quickens the fermentation, by aiding the intestine motion. The vats therefore should not be buried in the ground, as they always are, which must keep them cold; there should rather be pipes along the walls of the room, to give it that degree of heat which, on trial, may be found to answer best. There are few days in summer so hot as is necessary; and the beginning and end of the season is by much too cold. That this is no ideal scheme, the following fact is a sufficient proof. There are two vats in Salton bleachfield, adjoining to a partition wall, at the back of which there is a kitchen-fire. In these vats the souring process is finished in three days, whereas it lasts five or six days in the other placed round the same room.

This improvement, tho' it shortens the time of souring a very little, yet is no remedy against the scarcity and dearth of milk fours. Such a liquor as would serve our purpose, must be found either among the vegetable acids, which have no further fermentation to undergo, or among the mineral acids. The former are a large class, and contain within themselves many different species; such as the acid juice of several plants, vinegars made of fermented liquors, and acid salts, called *tartars*. But there is one objection against these vegetable acids: they all contain, along with the acid, a great quantity of oily particles, which would not fail to discolour the cloth. Besides, the demand of the bleachfields would raise their price too high.

The mineral acids have neither of these objections. They are exceedingly cheap, and contain no oil. "I will freely own (says Dr Home), that at first I had no great opinion of success from the mineral, from two reasons; their want of all fermentation, which I then looked on as necessary; and their extreme corrosiveness. But the experience of two different summers, in two different bleachfields, has convinced me, that they will answer all the purposes of the milk and bran fours; nay, in several respects be much preferable to them. I have seen many pieces of fine cloth, which had no

other fours but those of vitriol, and were as white and strong as those bleached in the common way. I have cut several webs through the middle, and bleached one half with milk and the other with vitriol; gave both the same number of operations, and the latter were as white and strong as the former."

The method in which it has been hitherto used is this. The proportion of the oil of vitriol to the water, with which it is diluted, is half an ounce or at most three quarters, to a gallon of water. As the milk-fours are diminished in strength, so ought the vitriol-fours. The whole quantity of the oil of vitriol to be used, may be first mixed with a small quantity of water, then added to the whole quantity of water, and well mixed together. The water should be milk-warm; by which means the acid particles will penetrate further, and operate sooner. The cloth should then be put dry into the liquor.

It is observed, that this four performs its task much sooner than those of milk and bran; so that Mr John Christie, in making the trial, used to lay the milk-fours 24 hours before the vitriol. Five hours will do as much with this four as five days with the common sort. But the cloth can receive no harm in allowing it to remain for some days in the four; but rather, on the contrary, an advantage. The cloth is then taken out, well rinsed, and mill-washed in the ordinary way.

The liquor, while the cloth lies in this four, is less acid the second day than the first, less the third than the second, and so diminishes by degrees. At first it is clear, but by degrees a mucilaginous substance is observed to float in it, when put into a glass. This foulness increases every day. This substance, extracted by the acid, is the same with what is extracted by the alkaline salts; and blunts the acidity of the former, as it does the alkalescency of the latter. Hence the liquor loses by degrees its acidity. But as the acid salts do not unite so equally with oily substance as the alkaline do, the liquor is not so uniformly tinged in the former as in the latter case, and the mucous substance presents itself floating in it.

It is observed, that in the first souring, which is the strongest, the liquor, which was a pretty strong acid before the cloth was put in, immediately afterwards becomes quite vapid; a proof how very soon it performs its task. But in the following operations, as the linen advances in whiteness, the acidity continues much longer; so that in the last operations the liquor loses very little of its acidity. This happens although the first buckings after the first fourings are increased in strength, while the fours are diminished. There are two causes to which this is owing. The texture of the cloth is now so opened, that although the lyes are strong, the alkaline salts and absorbent earth are easily washed out; and the oily particles are in a great measure removed which help to blunt the acidity of the liquor.

Two objections are made against the use of vitriol-fours. One is, that the process of souring with milk is performed by a fermentation; and as there is no fermentation in the vitriol-fours, they cannot serve the purpose so well: the other, that they may hurt the texture of the cloth. The answer to the former objection is very short; that the vitriol-fours operate successfully without a fermentation, as experience shows; and therefore in them a fermentation is not necessary.

ing. As to the latter objection, that oil of vitriol, being a very corrosive body, may hurt the cloth; that will vanish likewise, when it is considered how much the vitriol is diluted with water, that the liquor is not stronger than vinegar, and that it may be safely taken into the human body.

That it may be used with safety, much stronger than what is necessary in the bleachfield, appears from the following experiment with regard to the stamping of linen. After the linen is boiled in a lye of ashes, it is bleached for some time. After this, in order to make it receive the colour, it is steeped in a sour of water and oil of vitriol, about 15 times stronger than that made use of in the bleachfield; for to 100 gallons of water are added two and a half of oil of vitriol. Into this quantity of liquor, made so warm as the hand can just be held in it, is put seven pieces of 28 yards each. The linen remains in it about two hours, and comes out remarkably whiter. The fine cloth often undergoes this operation twice. Nor is there any danger if the oil of vitriol is well mixed with the water. But if the two are not well mixed together, and the oil of vitriol remains in some parts undiluted, the cloth is corroded into holes.

Let us now take a view of the advantages which the vitriol-sours must have over the milk. The latter is full of oily particles, some of which must be left in the cloth; but the case is worse when the scum is allowed to precipitate upon the cloth. The former is liable to neither of these objections.

The common sours hasten very fast to corruption; and if, from want of proper care, they ever arrive at that state, must damage the cloth very much. As the milk is kept very long, it is often corrupted before it is used; and without acting as a sour, has all the bad effects of putrefaction. The vitriol-sours are not subject to putrefaction.

The milk takes five days to perform its task; but the vitriol-sours do it in 25 many hours; nay, perhaps as many minutes. Their junction with the absorbent particles in the cloth must be immediate, whenever these acid particles enter with the water. An unanswerable proof that the fact is so, arises from the circumstances which happen when the cloth is first steeped in the vitriol-sour; the cloth has no sooner imbibed the acid liquor, than it loses all acidity, and becomes immediately vapid. This effect of vitriol-sours must be of great advantage in the bleachfield, as the bleachers are at present hindered from enjoying the season by the tediousness of the souring-process. The whole round of operations takes seven days; to answer which they must have seven parcels which are often mixing together, and causing mistakes. As three days at most will be sufficient for all the operations when vitriol-sours are used, there will be no more than three parcels. The cloth will be kept a shorter time in the bleachfield, and arrive sooner at market.

The milk-sours are very dear, and often difficult to be got; but the vitriol are cheap, may be easily procured, and at any time.

There is yet another advantage in the use of vitriol, and that is its power of whitening cloth. Even in this diluted state, its whitening power is very considerable. We have already seen, that it removes the same colouring particles which the alkaline lyes do. What

of it then remains, after the alkaline and absorbent particles are neutralized in the cloth, must act on these colouring particles, and help to whiten the cloth. That this is really the case, appears from the following fact. Mr Christie being obliged to choose 20 of the whitest pieces out of 100, five of the twenty were taken out of seven pieces which were bleached with vitriol.

From both experience and reason, it appears, that it would be for the advantage of our linen-manufacture to use vitriol in place of milk-sours.

Hand-rubbing with soap and warm water, rubbing-boards, starching, and bluing.—After the cloth comes from the souring, it should be well washed in the washing-mill, to take off all the acid particles which adhere to its surface. All acids decompose soap, by separating the alkaline salts and oily parts from one another. Were this to happen on the surface of the cloth, the oil would remain; nor would the washing-mill afterwards be able to carry it off.

From the washing-mill the fine cloth is carried to be rubbed by womens hands, with soap and water. As the liquors, which are generally employed for souring, are impregnated with oily particles, many of these must lodge in the cloth, and remain, notwithstanding the preceding milling. It is probable, that all the heavy oils are not evaporated by bleaching. Hence it becomes necessary to apply soap and warm water, which unite with, dissolve, and carry them off. It is observed, that if the cloth, when it is pretty white, gets too much soap, the following bleaching is apt to make it yellow; on that account they often wring out the soap.

It is a matter worth inquiring into, whether hard or soft soap is best for cloth. Most bleachers agree, that hard soap is apt to leave a yellowness in the cloth. It is said, that the use of hard soap is discharged in Holland. As there must be a considerable quantity of sea-salt in this kind, which is not in the soft, and as this salt appears prejudicial to cloth, the soft soap ought to be preferred.

The management of the coarse cloth is very different, in this operation, from fine. Instead of being rubbed with hands, which would be too expensive, it is laid on a table, run over with soap, and then put betwixt the rubbing-boards, which have ridges and grooves from one side to another, like teeth. These boards have small ledges to keep in the soap and water, which saves the cloth. They are moved by hands or a water-wheel, which is more equal and cheaper. The cloth is drawn by degrees through the boards, by men who attend; or which is more equal and cheaper, the same water-wheel moves two rollers, with ridge and groove, so that the former enters the latter, and by a gentle motion round their own axis, pull the cloth gradually through the boards.

This mill was invented in Ireland about thirty years ago. The Irish bleachers use it for their fine as well as coarse cloth. These rubbing-boards were discharged some years ago in Ireland, by the trustees for the manufactures of that country, convinced from long experience of their bad effects. But as proper care was not taken to instruct the bleachers by degrees in a safer method, they continued in the old, made a party, and kept possession of the rubbing-boards. There were considerable improvements made in them in this country;

Bleaching such as the addition of the ledges, to keep the cloth moist; and of the rollers, which pull the cloth more gradually than mens hands. These improvements were first made in Salton bleachfield.

The objections against these rubbing-boards are unanswerable. By rubbing on such an unequal surface, the solid fibrous part of the cloth is wore; by which means it is much thinned, and in a great measure weakened before it comes to the market. As a proof of this, if the water which comes from the cloth in the rubbing-boards be examined, it will be found full of cottony fibrous matter. These boards give the cloth a cottony surface, so that it does not keep long clean. Again, they flatten the threads, and take away all that roundness and firmness which is the distinguishing property of cloth bleached in the Dutch method.

For these reasons they must be very prejudicial to fine cloth, and should never be used in bleaching it. As they seem to be in some measure necessary to lessen the expence of bleaching coarse linen, they ought never to be used above twice, or thrice at most. They might be rendered much more safe, by lining their insides with some soft elastic substance, that will not wear the cloth so much as the wooden teeth do. Mr Christie at Perth has lined his boards with stout hair for some years past, and finds that it answers very well.

After the coarse cloth has undergone a rubbing, it should be immediately milled for an hour, and warm water poured now and then on it to make it lather. This milling has very good effects; for it cleans the cloth of all the dirt and filth which the rubbing-boards have loosened, and which, at the next boiling, would discolour the cloth. Besides, it is observed, that it makes the cloth less cottony, and more firm, than when whitened by rubbing alone.

The last operation is that of starching and bluing. It often happens, that the cloth, when exposed to the weather to be dried after this operation, gets rain: which undoes all again, and forces the bleacher to a new expence. To remedy this inconvenience, Mr Christie, some years ago, invented the dry-house, where the cloth may be dried, after this operation, in any weather. This invention meets with universal approbation.

A method of bleaching safely with lime.—Dr Home has found by repeated trials, that alkaline salts added to lime, diminish its power of weakening and corroding cloth; and that in proportion to the quantity of these salts added to the lime. This composition, as it is not so dangerous as lime alone, so it is not so expeditious in whitening. When equal parts of each are used, the whitening power is strong, and the weakening power not very considerable; so that they might be used with safety to bleach cloth, in the proportion of one part of lime to four of pure alkaline salts. This fully accounts for an observation made by all bleachers, That the bleaching salts, when mixed together, operate safer and better than when used separately. For the corrosive power of the Muscovy, Marcost, and Castub ashes, is corrected by the pearl ashes, and the whitening quality of the latter is increased by that of the former.

There is not a more corroding substance, with regard to animals, than alkaline salts and lime joined together, especially when fused in the fire. This is the composi-

tion of the common caustic. But lime, and lime-water alone, preserve animal substances in a sound entire state. It appears then surprising, that salts and lime should be found so little destructive of cloth, when lime, or lime-water alone, destroys it so remarkably. But that this is a fact, is made evident by many experiments, and has been practised both with success and safety, by a bleacher who gives the following account of his method of bleaching with lime.

“First (says he) I steep the cloth in warm water for 24 hours; then clean it in a washing-mill, of all the dressing, or sown, as the vulgar term it. Afterwards I buck cloth with cow-dung and water, and bleach it with this for three days; then clean it again, and boil it with a lye made of Castub ashes. A pound to each piece of 18 or 20 yards long is sufficient. This I do twice, as no lime ought to be given to cloth before it is a full third whitened; as it by no means advances the whitening of the cloth, but, on the contrary, protracts it: For, instead of loosening the oil and dirt in the cloth, when brown, it rather fixes them; just as when fine cloth is bucked with over-warm lyes in the first buckings. Lime is by no means fit for discharging the oil in the cloth, but for cleaning it of the dead part, commonly called *sprat*. The cloth, being cleaned, is laid upon a dreeper. It must not be drier before bucking with lime, otherwise it will take in more than can be got out again before the next application: for as I have observed already, that lime is only fit for discharging the dead part, bucking thus wet makes it rest on the outside of the cloth. I take a lippy of the finest and richest powdered lime that can be got, of the brightest white colour, as poor lime does more hurt than good, to thirty pieces of the above length; and make a cold lye of it, by stirring and pouring water off the lime, until all be dissolved but the dross, which is thrown away: then I add a little soap, which makes the lye have the nearest resemblance to milk that breaks in boiling, of any thing I can think of: for this soap blunts the hotness of the lime. Then I take the cloth and dip it in the lime-lye, and that moment out again, and lay it on a dreeper until it be bucked; then put it on the field, watering it carefully; for if allowed to dry, it is much damaged. This is done always in the morning; as it cannot be done at night, in regard of the hot quality of the lime, which soon heats the cloth and tenders it. If a hot sun-shine follows, it has great effect; for lime is just like all other materials for bleaching, that have more or less effect according as the weather is good or bad. I take it up the second day after bucking, and give it a little milling, or hand-rubbing, or bittling, commonly called *knocking*; and lay it on the field again, watering it carefully as before. The effect is more visible the second than the first day. As all cloth when limed should have a great deal of work, otherwise more than half the effect is lost; and not only that, but a great deal of labour and pains is requisite to take the lime out of the cloth again; it must never be exposed on the Sabbath day, but carefully kept wet always while used in this way. Thus bucking for three or four times at most, is sufficient for any cloth, except that made of flax pulled either over-green, or which grows in a drougthy season, or perhaps not so well heckled as it should be. This sort occasions great trouble and expence to the bleacher. But the most

aching. most effectual and expeditious way I ever found for this kind was, after boiling, to take a little of the warm lye, and mix a very small quantity of lime with it, and draw the cloth through that as hot as possible, and put it on the field directly, watering it carefully. This will clean it of the sprat surprisngly. Then I boil it with pearl ashes, and give it the last boil with soap.

“There are innumerable mistakes in the use of lime committed by the vulgar, who are ignorant of its quality and effects. They know only this in general, that it is a thing which whitens cloth cheap, and is easy purchased; therefore they will use it. Some of them begin whitening of their cloth with it, which I have already observed to be wrong, and given reasons for it, and continue it until the cloth is bleached; give it a boil or two at most, and then wash it up while the gross body of the lime is in the substance of the cloth. This makes limed cloth easily distinguishable from unlimed, as the former has a yellowish colour, and is full of a powder. Besides, as lime is of a very hot corroding nature, it must by degrees weaken the cloth. The bad effects of this substance do not end here. When the cloth is put on board, it contracts a dampness, which not only makes it yellow, and lose any thing of colour it has, but directly rots it. And although it should escape this, which it is possible it may, by a quick and speedy passage; yet whenever it is put in any warehouse, it will meet with moisture there, especially if the winter season should come on before it is disposed or made use of. These I take to be the principal reasons for so much complaint in bleaching with this material.”

The whole art and safety in using the lime, according to this method, depends on the junction of the alkaline salts, during the bucking, to the particles of lime which were on the surface of the cloth.

As the operation of bleaching depends on the extraction of a certain quantity of phlogistic matter from the cloth, it is natural to suppose that it might be accelerated by rendering the alkali very caustic. Thus the salt would be entirely freed from the encumbrance of fixed air, with which in the usual experiments of chemistry it appears to have a greater affinity than with oil; for soap may be partially decomposed by fixed air, nor can it be prepared without an exceedingly caustic alkaline lye. In this light the matter has appeared to some very eminent chemists; and Dr Black thought it of importance sufficient to publish printed directions to the practical bleachers how to render their alkali sufficiently caustic with lime, and at the same time recover it from the chalky residuum with as little loss as possible. This method has accordingly been tried; but is not found altogether to answer the sanguine expectations at first raised by the proposal. It is found that in the large way of operating, fixed alkali quits the fixed air to unite with the oily or other matter to be extracted from the cloth. The only advantage therefore to be gained by Dr Black's improvement is, that the action of the alkali is thus quickened, and some quantity of fuel saved; but this is not, by the bleachers, reckoned an equivalent to the trouble of rendering the alkali caustic, unless in places where fuel is very scarce.

The use of acids in bleaching was formerly in a great measure unaccounted for; but from the late disco-

veries concerning the use of dephlogisticated spirit of Bleaching. salt in this art, it appears probable that they act by means of the dephlogisticated air they contain. This, however, is not always the case; for silk is rendered yellow by the action of dephlogisticated air, though rendered white by the action of the volatile sulphureous acid, which undoubtedly contains a portion of this kind of air, though much less than the concentrated vitriolic. The nitrous acid, which contains a great quantity of dephlogisticated air, likewise communicates a yellow colour to silk; and indeed seems very much inclined to produce this colour upon all the substances it touches. At any rate, its price would be a sufficient objection against its use in bleaching. The spirit of salt in its common state is said by M. Berthollet to be used with success by some bleachers in France instead of the vitriolic; but such experiments as have been made upon it in this country have not answered the purpose. The new method of bleaching is founded upon that remarkable property which dephlogisticated spirit of salt possesses of destroying vegetable colours; and various attempts have been made to introduce it into practice, though in this country the difficulties or disadvantages attending it have prevented it from coming into general use. M. Scheele was the inventor of this substance; but M. Berthollet seems to have been the first who attempted to apply it to the practice of bleaching. In consequence of his observations, a treatise has appeared on the new method of bleaching, collected and translated from his works by Mr Kerr surgeon in Edinburgh; of which the following is an abridgment.

1. M. Berthollet having procured the dephlogisticated spirit in as strong and concentrated a state as he could, immersed into it thread and cloth; which by that means were considerably whitened. In a short time the liquor seemed to lose its strength; upon which it was poured off, and more put in its place; and so on until the substance immersed became perfectly white. Thus, however, the process was not only very expensive, but the stuff was considerably injured; sometimes even losing its cohesion altogether, so that there was a necessity for trying some other method.

2. Using a diluted spirit, he succeeded perfectly in rendering the cloths completely white; but by keeping them for some time, or exposing them for a little to the action of an alkaline lye, they became again brown or yellow.

3. On considering the process of bleaching in the common method, he found that the action of the sun and air are subservient to bleaching only as they prepared the colouring particles for being dissolved and separated by alkaline lixivium. To investigate this subject, he examined the nature of the dews, both such as are precipitated from the atmosphere and those which transpire from vegetables. Both of these were found so strongly impregnated with dephlogisticated air, that they destroyed the colour of paper when faintly tinged with turnsole. Hence our author observes, that it is by no means improbable that the ancient prejudices concerning May-dews might have arisen from some observations analagous to this, more especially as in that month the transpiration of plants is extremely copious.

4. By imitating with the dephlogisticated marine acid and alkaline lye the common process of bleaching, he succeeded

² New method of bleaching.

³ M. Berthollet's account of this method.

Bleaching. succeeded in making a perfect and permanent white. For this purpose an alkaline lixivium was employed alternately with the dephlogisticated marine acid; the latter being no longer used in a concentrated state. Thus he avoided both the inconvenience arising from the suffocating smell of the liquid, and that of its destroying the texture of the stuff immersed in it.

5. The cloth is prepared for bleaching in this manner by steeping it 24 hours in water, to extract the dressing it receives from the weaver: a little old lye, which has already lost the greatest part of its strength in other processes, may be used with advantage. It is next to be exposed once or twice to the action of some good fresh alkaline lye; in order to separate by means of this cheaper liquid all the colouring matter which it can extract, and thereby save the dephlogisticated acid.

6. The stuff must now be carefully washed with water to separate any remains of the lye which might adhere to it and weaken the action of the liquor. It is then to be disposed of in wooden troughs, so that the dephlogisticated acid may pass freely through every part of it; to allow which, it must lie quite loose, without being tightened or straitened in any part. All these troughs ought to be constructed entirely of wood without any iron, as that would easily be corroded and stain the cloth.

7. The first immersion in the dephlogisticated acid is to continue 3 hours; after which the cloth is to be removed, and the liquor wrung out of it. It must then be washed a second time with alkaline lye; which being also washed out, it is to be again immersed in dephlogisticated acid.

8. The second immersion in the acid is to continue only about half an hour; after which it is to be taken out and wrung as before. The same liquor may serve for several immersions; only when it appears to be much exhausted, it is to be restored by an addition of fresh liquor.

9. After the cloth seems to be sufficiently whitened, excepting only some few black threads and the selvages, it is to be filled with black soap, and strongly rubbed for some time; after which it is to be again washed in alkaline lye, and receive another immersion in the acid liquor.

10. It has not yet been determined what number of immersions in the acid are necessary to whiten linen cloth, though our author supposes from six to eight to be sufficient for the purpose.

Method of preparing the dephlogisticated acid. 11. To prepare the dephlogisticated acid, M. Berthollet recommends six ounces of black manganese finely powdered, 16 ounces of sea-salt likewise in powder, and 12 ounces of concentrated vitriolic acid diluted with eight ounces of water; though the quantity of this last must be variable according to the strength of the acid and the dryness of the salt. If the manganese is impure, its quantity is to be augmented in proportion to the supposed impurity; and it is known whether a sufficient quantity has been employed, by a portion remaining behind and retaining its black colour. When the materials are prepared, the manganese and common salt, both reduced to fine powder, must be mixed accurately together, and put into the distilling vessel placed in a sand-bath; the vitriolic acid diluted with water and allowed to cool is then to be poured upon them, and the junctures exactly luted. The re-

ceiver may be of wood covered in the inside with wax, and of a very large size; for the gas is absorbed in proportion to the surface of the water it acts upon. Our author describes an apparatus rather complicated, and which our limits will not allow us to describe in this place, especially as the preparation of this liquid is not as yet so generally practised that it can be determined how far one apparatus is preferable to another. The requisites are, that the receiver should not only be capacious but broad, in order that the gas, which is very volatile, may meet with a large surface of water to absorb as much of it as possible. It is very improbable, however, that all the gas can be absorbed by a single receiver let us make it as large as we will; for which reason it will be proper to have several of them connected with each other by glass tubes, so that what escapes from one may be absorbed by another. Thus we are sure of having the water fully impregnated with the gas; though we cannot by any means concentrate this liquid like the mineral acids. By means of condensing engines, indeed, a greater quantity of it might be forced into the water than it can naturally contain: but this could answer no useful purpose; for the moment that a bottle containing such liquor was opened, the superfluous gas would fly off with violence and danger to the person who opened it. The bottles themselves would also be liable to burst on every slight alteration of temperature in the atmosphere. It is proper therefore not to attempt the preparation of the liquor in any great degree of strength; though this is indeed attended with a very considerable inconvenience, viz. the difficulty of transporting it from the place where it is prepared to the bleachfield, on account of the great bulk and weight of it. M. Berthollet proposes to have it made at the place where the cloth is to be bleached; and so near, that the dephlogisticated spirit of salt might be conveyed by spouts to the troughs which contain the cloth. This, however, must in many cases be impracticable, unless we suppose the generality of bleachers to be possessed of a skill in managing chemical operations which at present they have not. When great quantities of liquor are to be brought from distant places, however, it must undoubtedly be a great discouragement, especially if the best methods have not been used in the preparation so that the liquor could not be afforded at a very low price.

It would add much to the importance of this new method if a comparative estimate of the expences of it and of the old one were fairly laid before the public, and the preference in this respect appeared justly due to the former. This hath not yet been done; nor even the first and most essential step towards it taken, viz. the determining how much stuff a certain quantity of dephlogisticated spirit of salt will whiten. From such experiments as we have made on the subject, it is probable that the acid drawn from one pound of salt will whiten four of linen cloth without any addition.— This may seem a small expence; but if we consider the vitriolic acid to be made use of, and that the residuum is useless, it would soon be found very considerable. Glauber's salt may indeed be prepared from the residuum of the distillation; but so much of that article is prepared otherwise, that at present the making of it is no object. M. Berthollet mentions the separation of the

teaching. the mineral alkali from the residuum; and says he has received some instructions on this head from M. Morveau and others, but conceals them on account of their being communicated as secrets. Under the article CHEMISTRY, we have taken notice that some celebrated chemists assert that the calces of lead, or lead itself, will decompose sea-salt, and thus afford an easy method of procuring the mineral alkali. On this principle indeed attempts have been made to procure it, but hitherto without success; and from such experiments as we have made it seems to be totally impracticable. The method of decomposing Glauber's salt and other vitriolic salts by means of charcoal, described under the article CHEMISTRY, n^o 716. is the only one that seems to promise success. The difficulty here is, that the salt is converted into an hepar sulphuris, which cannot be decomposed but by means of an acid. A method of applying sorrel for this purpose has lately been tried with great probability of success. The particulars hitherto discovered concerning this method are, 1. Sea-salt yields one half its weight of pure alkali. 2. From 20 to 25 pounds of fresh sorrel leaves are to be used for every pound of sea-salt. 3. The plant is easily cultivated, yields three crops annually if properly managed, and is superior in acidity in its cultivated state to the wild sorrel. The above calculation was made with wild sorrel. 4. An acre of ground will produce as much sorrel as is sufficient for making from a ton to a ton and an half of alkali. It will not thrive except in moist ground. From these particulars it is probable, that by combining the process of making dephlogisticated spirit of salt with that of preparing the mineral alkali, bleaching might be performed at an easier and cheaper rate than has yet been done; though even here there is some doubt, that without an encouragement from government by taking off the duties from salt and sulphur used in the different operations, a project of this kind might miscarry, to the great detriment of the individual who should attempt it. The reason of such difficulty in the new method of bleaching is, that little or none of the alkali commonly used can be saved. The air also and light of the sun, which in the common way is had for nothing, must in the new way be bought at a certain price. The only advantage therefore is, that in the new method, a considerable portion of time is saved. Hence it is impossible to make an exact comparative calculation of the expence of both methods, without estimating how much labour is saved in the new way. If the price of the labour saved exceeds that of the dephlogisticated spirit of salt, there is no doubt that the use of it will be attended with profit, but not otherwise. It is asserted by M. Berthollet, that in the new way of bleaching, the texture of the cloth is less hurt than in the old one: this too must be reckoned an advantage; though by the bleachers, and indeed by the public in general, it will probably be overlooked, unless they are induced by the *cheapness* to prefer the new to the old method.

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the use
lime.
With regard to the various methods of bleaching with lime described in the former part of this treatise, we cannot help remarking, that from such experiments as we have tried on the subject, this substance seems to possess no power whatever of whitening cloth; on the contrary, in all cases where we either tried it our-

elves or saw it tried by others, it manifestly prevented the effect of the sun and air in a remarkable degree. When alkali is mixed with it, we are not to ascribe the effect to the lime, but to the alkali; for by the attraction of fixed air from the salt the lime is converted into chalk and becomes wholly inert, while the alkali has its activity augmented by being rendered caustic. Lime-water is totally insignificant unless we put the cloth with it into a close vessel; for lime-water when exposed to the atmosphere instantly loses its activity, the lime being converted into mild calcareous earth, and falling in that state to the bottom. The reason of its destroying the cloth is supposed to be its retaining a quantity of moisture among the threads, so that it never allows the cloth to dry thoroughly: to prevent which, it has been recommended to put the limed cloth through a weak solution of salt, which would no doubt answer the purpose of dissolving the calcareous earth; but when we consider that the lime is a substance, if not pernicious, at least totally useless, it ought certainly to be discouraged as much as possible in the practice of bleaching.

BLEAK, in ornithology. See CYPRINUS.

BLECHINGLY, a town of Surry in England, which sends two members to parliament, and the bailiff who returns the members is chosen annually at the lord of the manor's court. The town stands on a hill, and has a fine prospect as far as the South Downs in Sussex. W. Long. 0. 15. N. Lat. 51. 20.

BLEEDING, in therapeutics; see MEDICINE-Index. As a surgical operation, see SURGERY-Index.

BLEEDING at the Nose, called *Epistaxis*. See MEDICINE-Index.

BLEEDING is also used for a hæmorrhage or flux of blood from a wound, rupture of a vessel, or other accident. See HÆMORRHAGY.

BLEEDING of a Corpse, is a phenomenon said to have frequently happened in the bodies of persons murdered, which, on the touch, or even the approach, of the murderer, began to bleed at the nose, ears, and other parts; so as formerly to be admitted in England, and still allowed in some other parts, as a sort of detection of the criminal and proof of the fact. Numerous instances of these posthumous hæmorrhages are given by writers. But this kind of evidence ought to be of small weight: for it is to be observed, that this bleeding does not ordinarily happen, even in the presence of the murderer; yet sometimes in that even of the nearest friends, or persons most innocent; and sometimes without the presence of any, either friend or foe. In effect, where is the impossibility that a body, especially if full of blood, upon the approach of external heat, having been considerably stirred or moved, and a putrefaction coming on, some of the blood-vessels should burst, as it is certain they all will in time?

BLEEDING is also used for the drawing out the sap of plants, otherwise called *tapping*. See TAPPING.

BLEKING, a territory in the south part of Sweden, having the Baltic Sea on the south, Smaland on the north, and the province of Schonen on the west. Its principal towns are Christianstadt, Elleholm, Ahuys, Roteby, and Christianople, which last is the capital.

BLEMYES, or BLENMYES, a fabulous people of Ethiopia, said to have had no heads; their eyes, mouth,

Bleak
||
B'emyes.

Bletonism.

tions. There are also artificial processes, which concur in leading us to distinguish the different focuses or conductors of mineral electricity; and in these processes the use of electrometrical rods deserves the attention of philosophers, who might perhaps in process of time substitute in their place a more perfect instrument. Their physical and spontaneous mobility, and its electrical cause, are demonstrated by indisputable experiments.

On the other hand, our author proves, by very plausible arguments, the influence of subterraneous electrical currents, compares them with the electrical currents of the atmosphere, points out the different impressions they produce according to the number and quality of the bodies which act, and the diversity of those which are acted upon. The ordinary sources of cold water make impressions proportional to their volume, the velocity of their currents, and other circumstances. Their stagnation destroys every species of electrical influence; at least, in this state they have none that is perceptible. Their depth is indicated by geometrical processes, founded upon the motion and divergence of the electrical rays; but there are second causes which sometimes diversify these indications, and occasion seeming errors. These errors, however, according to our author, are only exceptions to the general rule; exceptions which depend on the difference of mediums and situations, and not on the inconslancy or incertitude of the organical, sensitive, or convulsive faculties of the Bletonist.

All the hot springs in France, traced by our author from the places where they flow to the places where their formation commences (sometimes at a distance of 15 leagues), led him constantly to masses of coal; where they are collected and heated in basons of different depths and dimensions, nourished by the filtration of lakes and the course of torrents, and mineralized by saline, sulphureous, metallic, and bituminous substances, in the natural furnaces where they are heated, or in the strata through which they flow.

The last and the most singular and important phenomenon which our author met with in the course of his experiments must not be here omitted. Over the veins of iron mines alone the electrometrical rods assume a motion of rotation diametrically opposite to that which they exhibit over all other mines. This phenomenon takes place with the same distinction when iron and other metals are extracted from their mines and deposited under ground. But the most remarkable circumstance in this distinctive action of these metals is, that it has a uniform and constant direction from east to west in all metals, iron excepted, just as iron rendered magnetic has an action directed from south to north. The action of red metals is more palpable than that of the white; but the latter, though weaker, has nevertheless a real existence in the sulphur. In the supplement to this memoir, there is an accurate account of the processes that have furnished these invariable results. They will naturally suggest, says our author, the idea of constructing an electrical compass, which may be of as eminent use in experimental philosophy as the magnetic compass is in navigation. The natural and spontaneous direction of metallic emanations towards the west being ascertained, it only remains to render them palpable by the construction of

an instrument which may be substituted in the place of the electrometrical twig that goes vulgarly by the name of the *divining rod*.

Bletonism, Blight.

His analysis of the hot springs of Bourbon-Lancy, to the source of which in the great mountains of Burgundy he was led by the electrical sensations of Bleton, shows the great intelligence and sagacity of our author in operations of this nature. He found the origin of these famous hot springs in the centre of an oblong rising ground, full of coal, and commanded on three sides by a group of mountains, of which the greatest part was filled with the same mineral. From a particular case, here circumstantially described, in which the electrical rays of the subterraneous water and those of the adjacent coal crossed each other, our author deduces a very natural account of the errors which may sometimes, though rarely, mislead for a time the greatest adepts in Bletonism, when they find themselves in combined spheres of electrical activity. Another observation, which seems confirmed by several facts, accounts farther for this fallibility: the observation is, that electrical rays, whether direct or collateral, issuing from subterranean focuses, seem to undergo in certain cases a sort of refraction as they pass from one medium to another, or traverse bodies which differ with respect to the property of transmitting this electricity. In a word, it follows from these observations, that when such privileged investigators of currents or minerals as Bleton are placed upon the electrical spheres of these bodies, they will indicate their situation and their respective depths according to the impressions they feel within themselves, or the motions they observe in the electrometrical instruments which they employ: and if they meet with second accidental causes or complications of electrical spheres, which modify or alter these methods of trial, this will necessarily occasion mistakes in the results of their operations which they may probably rectify; but which, at all events, it would be unjust to lay to their charge, or allege as an objection against the reality of their talent.

BLIGHT, in husbandry, a disease incident to plants, which affects them variously, the whole plant sometimes perishing by it, and sometimes only the leaves and blossoms, which will be scorched and shrivelled up, the rest remaining green and flourishing.

Some have supposed that blights are usually produced by an easterly wind, which brings vast quantities of insects eggs along with it, from some distant place, that, being lodged upon the surface of the leaves and flowers of fruit-trees, cause them to shrivel up and perish.

To cure this distemper, they advise the burning of wet litter on the windward side of the plants, that the smoke thereof may be carried to them by the wind, which they suppose will stifle and destroy the insects, and thereby cure the distemper.

Others direct the use of tobacco-dust, or to wash the trees with water wherein tobacco-stalks have been infused for 12 hours; which they say will destroy those insects, and recover the plants.

Pepper-dust scattered over the blossoms of fruit-trees, &c. has been recommended as very useful in this case; and there are some that advise the pulling off the leaves that are distempered.

The true cause of blights seem to be continued dry easterly

Blighted,
Blind.

easterly winds for several days together, without the intervention of showers, or any morning dew, by which the perspiration in the tender blossom is stopped; and if it so happens that there is a long continuance of the same weather, it equally affects the tender leaves, whereby their colour is changed, and they wither and decay.

The best remedy for this distemper, is gently to wash and sprinkle over the tree, &c. from time to time with common water; and if the young shoots seem to be much infected, let them be washed with a woollen cloth, so as to clear them, if possible, from this glutinous matter, that their respiration and perspiration may not be obstructed. This operation ought to be performed early in the day, that the moisture may be exhale before the cold of the night comes on: nor should it be done when the sun shines very hot.

Another cause of blights in the spring, is sharp hoary frosts, which are often succeeded by hot sunshine in the day-time. This is the most sudden and certain destroyer of the fruits that is known.

BLIGHTED CORN. See SMUT.

BLIND, an epithet applied to a person or sensitive creature deprived of the use of his eyes; or, in other words, to one from whom light, colours, and all the glorious variety of the visible creation, are intercepted by some natural or accidental disease. Such is the literal acceptation of the term: but it is likewise used in a metaphorical sense, to signify mental or intellectual darkness; and frequently implies, at the same time, some moral or spiritual depravity in the soul thus blinded, which is either the efficient or continuing cause of this internal malady. Yet, even in metaphor, the epithet of *blind* is sometimes applied to a kind of ignorance, which neither involves the ideas of real guilt nor of voluntary error. It is, however, our present intention to consider the word, not in its figurative, but in its natural and primary sense. Nor do we mean in this place to regard it as a subject of medical speculation, or to explore its causes and enumerate its cures.

These are in the department of another science. It is rather our design to consider, By what means this inexpressible misfortune may be compensated or alleviated to those who sustain it; what advantages and consolations they may derive from it; of what acquisitions they may be susceptible; what are the proper means of their improvement; or by what culture they may become useful to themselves, and important members of society.

There is not perhaps any sense or faculty of the corporeal frame, which affords so many resources of utility and entertainment as the power of vision; nor is there any loss or privation which can be productive of disadvantages or calamities so multifarious, so various, and so bitter, as the want of sight. By no avenue of corporeal perception is knowledge in her full extent, and in all her forms, so accessible to the rational and inquiring soul, as by the glorious and delightful medium of light. For this not only reveals external things in all their beauties, in all their changes, and in all their varieties; but gives body, form, and colour, to intellectual ideas and abstract essences; so that the whole material and intelligent creation lie in open prospect, and the majestic frame of nature in its whole extent, is, if we may speak so, perceived at a single glance. To the

blind, on the contrary, the visible universe is totally annihilated; he is perfectly conscious of no space but that in which he stands, or to which his extremities can reach. Sound, indeed, gives him some ideas of distant objects; but those ideas are extremely obscure and indistinct. They are obscure, because they consist alone of the objects whose oscillations vibrate on his ear, and do not necessarily suppose any other bodies with which the intermediate space may be occupied, except that which gives the sound alone: they are indistinct, because sounds themselves are frequently ambiguous, and do not uniformly and exclusively indicate their real causes. And though by them the idea of distance in general, or even of some particular distances, may be obtained; yet they never fill the mind with those vast and exalting ideas of extension which are inspired by ocular perception. For though a clap of thunder, or an explosion of ordnance, may be distinctly heard after they have traversed an immense region of space; yet, when the distance is uncommonly great, it ceases to be indicated by sound; and therefore the ideas, acquired by auricular experiment, of extension and interval, are extremely confused and inadequate. The living and comprehensive eye darts its instantaneous view over expansive valleys, lofty mountains, protracted rivers, illimitable oceans. It measures, in an indivisible point of time, the mighty space from earth to heaven, or from one star to another. By the assistance of telescopes, its horizon is almost indefinitely extended, its objects prodigiously multiplied, and the sphere of its observation nobly enlarged. By these means, the imagination, inured to vast impressions of distance, can not only recal them in their greatest extent with as much rapidity as they were at first imbibed; but can multiply them, and add one to another, till all particular boundaries and distances be lost in immensity. Thus nature, by profusely irradiating the face of things, and clothing objects in a robe of diversified splendour, not only invites the understanding to expatiate on a theatre so extensive, so diversified, and so attractive; but entertains and inflames the imagination with every possible exhibition of the sublime or beautiful. The man of light and colours beholds the objects of his attention and curiosity from far. Taught by experience, he measures their relative distances; distinguishes their qualities; determines the situations, positions, and attitudes; presages what these tokens may import; selects his favourites; traverses in security the space which divides them from him; stops at the point where they are placed; and either obtains them with ease, or immediately perceives the means by which the obstacles that intercept his passage to them may be surmounted. The blind not only may be, but really are, during a considerable period, apprehensive of danger in every motion towards any place from whence their contracted powers of perception can give them no intelligence. All the various modes of delicate proportion, all the beautiful varieties of light and colours, whether exhibited in the works of nature or art, are to them intrievably lost. Dependent for every thing, but mere subsistence, on the good offices of others; obnoxious to injury from every point, which they are neither capacitated to perceive nor qualified to resist; they are, during the present state of being, rather to be considered as prisoners at large, than citizens of nature. The sedentary life, to which by

Blind.

Disadvantages of blindness.

Blindness, what.

Either natural or metaphorical.

See the index subjoined to Medicine.

How the blind may be rendered useful in an individual or a society.

Blind.

privation of sight they are destined, relaxes their frame, and subjects them to all the disagreeable sensations which arise from dejection of spirits. Hence the most feeble exertions create lassitude and uneasiness. Hence the native tone of the nervous system, which alone is compatible with health and pleasure, destroyed by inactivity, exasperates and embitters every disagreeable impression. Natural evils, however, are always supportable; they not only arise from blind and undesigned causes, but are either mild in their attacks, or short in their duration: it is the miseries which are inflicted by conscious and reflecting agents alone, that can deserve the name of evils. These excruciate the soul with ineffable poignancy, as expressive of indifference or malignity in those by whom such bitter portions are cruelly administered. The negligence or wantonness, therefore, with which the blind are too frequently treated, is an enormity which God alone has justice to feel or power to punish.

5
The situation of the blind described by poets.

Those amongst them who have had sensibility to feel, and capacity to express, the effects of their misfortunes, have described them in a manner capable of penetrating the most callous heart. The venerable father of epic poetry, who in the person of Demodocus the Phæacian bard is said to have described his own situation, proceeds thus:

6
Homer.

Τον περι Μυσ' επιλασει, διδυ δ' αγαρον τε, κακον τε
Ορθαλμων μιν αμειρετε, διδυ δ' ηδσαν αοιδην. OVS. 6

Dear to the muse, who gave his days to flow
With mighty blessings mix'd with mighty wo,
In clouds and darkness quench'd his visual ray,
Yet gave him power to raise the lofty lay. POPE.

Milton, in his address to light, after a sublime description of his arduous and gloomy journey from the regions of primeval darkness to this our visible diurnal sphere, thus continues to apostrophise the celestial beam:

7
Milton.

Taught by the heav'nly muse to venture down
The dark descent, and up to reascend,
Though hard and rare; thee I revisit safe,
And feel thy sov'reign vital lamp: but thou
Revisit'st not these eyes, that roll in vain
To find thy piercing ray, and find no dawn;
So thick a drop serene hath quench'd their orbs,
Or dim suffusion veil'd. Yet not the more
Cease I to wander, where the muses haunt
Clear spring, or shady grove, or sunny hill,
Smit with the love of sacred song: but chief
Thee, Sion, and the flow'ry brooks beneath,
That wash thy hallow'd feet, and warbling flow,
Nightly I visit; nor sometimes forget
Those other two equall'd with me in fate,
So were I equall'd with them in renown,
Blind Thamyras, and blind Mæonides,
And Tiresias and Phineus prophets old:
Then feed on thoughts, that voluntary move
Harmonious numbers; as the wakeful bird
Sings darkling, and in shadiest covert hid
Tunes her nocturnal note. Thus with the year
Seasons return; but not to me returns
Day, or the sweet approach of ev'n or morn,
Or light of vernal bloom, or summer's rose,
Or flocks, or herds, or human face divine;
But cloud instead, and ever during dark,

Blind.

Surrounds me. from the cheerful ways of men
Cut off, and for the book of knowledge fair
Presented with a universal blank,
Of nature's works to me expung'd and ras'd,
And wisdom at one entrance quite shut out.

PAR. LOST, Book III.

The same inimitable author, in his tragedy of Sampson Agonistes, and in the person of his hero, deploras the misfortune of blindness with a pathos and energy sufficient to extort the deepest sighs from the most unfeeling hearts:

————— But chief of all,
O loss of sight, of thee I must complain!
Blind among enemies, O worse than chains,
Dungeon, or beggary, decrepid age.
Light, the prime work of God, to me is extinct,
And all her various objects of delight
Annul'd, which might in part my grief have eas'd,
Inferior to the vilest now become
Of man or worm. The vilest here excel me:
They creep, yet see; I dark in light expos'd
To daily fraud, contempt, abuse, and wrong,
Within doors, or without, still as a fool,
In power of others, never in my own;
Scarce half I seem to live, dead more than half.
O dark, dark, dark, amid the blaze of noon,
Irrecoverably dark, total eclipse
Without all hope of day!

O first created Beam, and thou great Word,
Let there be light, and light was over all;
Why am I thus bereav'd thy prime decree?
The sun to me is dark,
And silent, as the moon
When she deserts the night,
Hid in her vacant interlunar cave.
Since light so necessary is to life,
And almost life itself, if it be true
That light is in the soul,
She all in every part; why was the fight
To such a tender ball as th' eye confin'd?
So obvious, and so easy to be quench'd?
And not, as feeling, throughout all parts diffus'd,
That she might look at will through ev'ry pore?
Then had I not been thus exil'd from light,
As in the land of darkness, yet in light
To live a life half dead, a living death:
And bury'd; but yet more miserable!
Myself the sepulchre, a moving grave;
Bury'd, yet not exempt
By privilege of death and burial
From worst of other evils, pains and wrongs,
But made hereby obnoxious more
To all the miseries of life.

Ossian, the Caledonian bard, who lived before the authenticated history of his nation dates its origin, who in his old age participated the same calamity, has in more than one passage of his works described his situation in a manner so delicate, yet so pathetic, that it pierces the inmost recesses and excites the finest feelings of the heart. Of these passages, take the following:

“ O thou that rollest above, round as the shield of Ossian.
my fathers! whence are thy beams, O sun! whence
thy everlasting light? Thou comest forth in thy awful
beauty, and the stars hide themselves in the sky; the
moon,

Blind. moon, cold and pale, sinks in the western wave. But thou thyself movest alone: who can be a companion of thy course? The oaks of the mountains fall; the mountains themselves decay with years; the ocean shrinks and grows again; the moon herself is lost in heaven: but thou art for ever the same; rejoicing in the brightness of thy course. When the world is dark with tempests; when thunder rolls and lightning glances through the heavens; thou lookest in thy beauty from the clouds, and laughest at the storm. But to Ossian thou lookest in vain: for he beholds thy beams no more; whether thy yellow hair flows on the eastern clouds, or thou tremblest at the gates of the west. But thou art, perhaps, like me, for a season; and thy years will have an end: thou shalt sleep in thy clouds, careless of the voice of the morning.—Exult then, O sun, in the strength of thy youth! age is dark and unlovely; it is like the glimmering light of the moon, when it shines through broken clouds, and the mist is on the hills, the howling blast of the north is on the plain, the traveller shrinks in the midst of his journey.”

dejec- attend- Blind- a ac- ited for. Thus dependent on every creature, and passive to every accident, can the world, the uncharitable world, be surpris'd to observe moments when the *blind* are at variance with themselves and every thing else around them? With the same instincts of self-preservation, the same irascible passions which are common to the species, and exasperated by a sense of debility either for retaliation or defence; can the blind be real objects of resentment or contempt, even when they seem peevish or vindictive? This, however, is not always their character. Their behaviour is often highly expressive, not only of resignation, but even of cheerfulness; and tho' they are often coldly, and even inhumanly, treated by men, yet are they rarely, if ever, forsaken of heaven. The common Parent of nature, whose benignity is permanent as his existence and boundless as his empire, has neither left his afflicted creatures without consolation nor resource. Even from their loss, however oppressive and irretrievable, they derive advantages; not indeed adequate to recompense, but sufficient to alleviate, their misery. The attention of the soul, confined to these avenues of perception which she can command, is neither dissipated nor confounded by the immense multiplicity nor the rapid succession of surround-

ing objects. Hence her contemplations are more uniformly fixed upon herself, and the revolutions of her own internal frame. Hence her perceptions of such external things as are contiguous and obvious to her observation become more lively and exquisite. Hence even her instruments of corporeal sensation are more assiduously cultivated and improved, so that from them she derives such notices and presages of approaching pleasure or impending danger as entirely escape the attention of those who depend for security on the reports of their eyes. A blind man, when walking swiftly, or running, is kindly and effectually checked by nature from rudely encountering such hard and extended objects as might hurt or bruise him. When he approaches bodies of this kind, he feels the atmosphere more sensibly resist his progress; and in proportion as his motion is accelerated, or his distance from the object diminished, the resistance is increased. He distinguishes the approach of his friend from far by the sound of his steps, by his manner of breathing, and almost by every audible token which he can exhibit. Prepared for the dangers which he may encounter from the surface of the ground upon which he walks, his step is habitually firm and cautious. Hence he not only avoids those falls which might be occasioned by its less formidable inequalities, but from its general bias he collects some ideas how far his safety is immediately concerned; and though these conjectures may be sometimes fallacious, yet they are generally so true, as to preserve him from such accidents as are not incurred by his own temerity. The rapid torrent and the deep cascade not only warn him to keep a proper distance, but inform him in what direction he moves, and are a kind of audible synoures to regulate his course. In places to which he has been accustom'd, he as it were recognises his latitude and longitude from every breath of varied fragrance that tinges the gale, from every ascent or declivity in the road, from every natural or artificial sound that strikes his ear; if these indications be stationary, and confined to particular places. Regulated by these signs, the *blind* have not only been known to perform long journeys themselves, but to conduct others through dangerous paths at the dark and silent hour of midnight, with the utmost security and exactness (A)

Blind.

It

(A) We have read, in authors of good credit, of a very surprising blind guide who used to conduct the merchants through the sands and deserts of Arabia. Vide *Leo Afric.* Deser. Afr. lib. vi. p. 246. and *Casfab.* Treat. of Eathuf. c. ii. p. 45.

An instance not less marvellous, exists at this present time, and in our own country. “John Metcalf, a native of the neighbourhood of Manchester, where he is well known, became blind at a very early age, so as to be entirely unconscious of light and its various effects. This man passed the younger part of his life as a waggoner, and occasionally as a guide in intricate roads during the night or when the tracks were covered with snow. Strange as this may appear to those who can see, the employment he has since undertaken is still more extraordinary: it is one of the last to which we could suppose a blind man would ever turn his attention. His present occupation is that of a projector and surveyor of highways in difficult and mountainous parts. With the assistance only of a long staff, I have several times met this man traversing the roads, ascending precipices, exploring valleys, and intelligating their several extents, forms, and situations, so as to answer his designs in the best manner. The plans which he designs, and the estimates he makes, are done in a method peculiar to himself; and which he cannot well convey the meaning of to others. His abilities in this respect are nevertheless so great, that he finds constant employment. Most of the roads over the Peak in Derbyshire, have been altered by his directions; particularly those in the vicinity of Buxton: and he is at this time constructing a new one betwixt Wilmshill and Congleton, with a view to open a communication to the great London road, without being obliged to pass over the mountains.” Account by Dr Brew, published in the *Transactions of the Manchester Society.*

Blind.
 Whether
 the blind
 are able to
 distinguish
 colours.

It were endless to recapitulate the various mechanical operations of which they are capable, by their nicety and accuracy of touch. In some the tactile powers are said to have been so highly improved, as to perceive that texture and disposition of coloured surfaces by which some rays of light are reflected and others absorbed, and in this manner to distinguish colours. But the testimonies for this fact still appear to us too vague and general to deserve public credit. We have known a person who lost the use of his sight at an early period of infancy, who in the vivacity or delicacy of his sensations was not perhaps inferior to any one, and who had often heard of others in his own situation capable of distinguishing colours by touch with the utmost exactness and promptitude. Stimulated, therefore, partly by curiosity to acquire a new train of ideas, if that acquisition were possible; but still more by incredulity with respect to the facts related; he tried repeated experiments, by touching the surfaces of different bodies, and examining whether any such diversities could be found in them as might enable him to distinguish colours: but no such diversity could he ever ascertain. Sometimes, indeed, he imagined that objects which had no colour, or, in other words, such as were black, were somewhat different and peculiar in their surfaces: but this experiment did not always nor universally hold. His scepticism therefore still continues to prevail (B). That their acoustic perceptions are distinct and accurate, we may fairly conclude from the rapidity with which they ascertain the acuteness or gravity of different tones, as relative one to another; and from their exact discernment of the various kinds and modifications of sound, and of sonorous objects, if the sounds themselves be in any degree significant of their causes. From this vivacity and accuracy of external sensation, and from the assiduous and vigorous

applications of a comprehensive and attentive mind alone, we are able to account for the rapid and astonishing progress which some of them have made, not only in those departments of literature which were most obvious to their senses and accessible to their understandings, but even in the abstractest, and (if we may be allowed the expression) in the most occult sciences. What, for instance, can be more remote from the conceptions of a blind man than the abstract relations and properties of space and quantity? yet the incomprehensible attainments of Dr Saunderson in all the branches of mathematics are now fully known and firmly believed by the whole literary world, both from the testimony of his pupils and the publication of his works. But should the fact be still uncertain, it might be sufficiently verified by a living prodigy of this kind with which our country is at present honoured. The gentleman of whom we now speak, though blind from his infancy, by the ardour and assiduity of his application, and by the force of a genius to which nothing is impenetrable, has not only made incredible advances in mechanical operations, in music, and in the languages; but is likewise profoundly skilled in geometry, in optics, in algebra, in astronomy, in chemistry, and in all the other branches of natural philosophy as taught by Newton and received by an admiring world. We are sorry that neither the modesty of this amiable philosopher, nor the limits of this article, will permit us to delineate his character in its full proportions. All we can do is to exhibit his example, that by it the vulgar prejudice, which presumes to think blindness and learning incompatible, may be dissipated; and that an instance of success so noble and recent may inflame the emulation and encourage the efforts of such as have genius and opportunity to pursue the same laudable path (C). If these glorious attempts should neither be

Blind.
 12
 Instances
 how far
 they are
 susceptible
 of abstract
 learning.

(B) See, however, the extraordinary case subjoined to this article.

(C) As particular anecdotes of this astonishing genius have been, since the former edition of the Encyclopedia, delivered to the Manchester Society by G. Bew, M. D. and afterwards published, we shall here take the liberty to transcribe them from the original volume in which they are inserted, as this freedom is authorized by a letter from Dr Bew's own hand.

“Dr Henry Moyes, who occasionally read Lectures on Philosophical Chemistry at Manchester, like Dr Saunderson, the celebrated professor of Cambridge, lost his sight by the small-pox in his early infancy. He never recollected to have seen: ‘but the first traces of memory I have (says he), are in some confused ideas of the solar system.’ He had the good fortune to be born in a country where learning of every kind is highly cultivated, and to be brought up in a family devoted to learning.

“Possessed of native genius, and ardent in his application, he made rapid advances in various departments of erudition; and not only acquired the fundamental principles of mechanics, music, and the languages, but likewise entered deeply into the investigation of the profounder sciences, and displayed an acute and general knowledge of geometry, optics, algebra, astronomy, chemistry, and in short of most of the branches of the Newtonian philosophy.

“Mechanical exercises were the favourite employments of his infant years. At a very early age he made himself acquainted with the use of edged tools so perfectly, that notwithstanding his entire blindness, he was able to make little wind-mills; and he even constructed a loom with his own hands, which still show the cicatrices of wounds he received in the execution of these juvenile exploits.

“By a most agreeable intimacy and frequent intercourse which I enjoyed with this accomplished blind gentleman, whilst he resided in Manchester, I had an opportunity of repeatedly observing the peculiar manner in which he arranged his ideas and acquired his information. Whenever he was introduced into company, I remarked that he continued some time silent. The sound directed him to judge of the dimensions of the room, and the different voices of the number of persons that were present. His distinction in these respects was very accurate; and his memory so retentive, that he seldom was mistaken. I have known him instantly recognize a person, on first hearing him speak, though more than two years had elapsed since the time of their last meeting.

He

Blind. perceived nor rewarded by an unfeeling world, if human nature should forget to recognize its own excellence so nobly displayed in instances of this kind; yet besides the enjoyments resulting from a sublime and comprehensive understanding, besides the immortal and inexhaustible sources of delight which are the peculiar portion of a self-approving mind, these happy pupils and favourites of Nature are as it were indulged with her personal intercourse. They become more intimately acquainted with her laws, till by exploring the beneficence of her œconomy, the sublimity of her ends, the regularity of her procedure, and the beauties of her frame, they imbibe the spirit, and feel the presence, of her glorious Author:

By swift degrees the love of nature works,
And warms the bosom; till at last, sublim'd
To rapture and enthusiastick heat,
We feel the present deity, and taste
The joys of God to see a happy world.

THOMSON.

counts of Much labour has been bestowed to investigate, both effects of from reason *à priori* and from experiment, what might be the primary effects of light and luminous objects upon such as have been born blind, or early deprived of sight, if at a maturer period they should instantaneously recover their visual powers. But upon this topic there is much reason to fear, that nothing satisfactory has yet been said. The fallacy of hypothesis and conjecture, when formed *à priori* with respect to any organ of corporeal sensation and its proper object, is too obvious to demand illustration. But from the nature of the eye, and the mediums of its perception, to attempt an investigation of the various and multiform phenomena of vision, or even of the varieties of which every particular phenomenon is susceptible according as

Blind. the circumstances of its appearance are diversified, would be a project worthy of philosophy in a delirium. Nay, even the discoveries which are said to accrue from experiment, may still be held as extremely doubtful and suspicious; because in these experiments it does not appear to have been ascertained, that the organs to which visible objects were presented immediately after chirurgic operations, could be in a proper state to perceive them. Yet after all, it is extremely probable, that figure, distance, and magnitude, are not immediate objects of ocular sensation, but acquired and adjusted by long and reiterated experience (D). There are, however, many desiderata, which the perceptions of a man born blind might considerably illustrate, if his instruments of vision were in a right state, and assisted by a proper medium. Such a person might perhaps give a clearer account, why objects, whose pictures are inverted upon the retina of the eye, should appear to the mind in their real positions; or why, though each particular object is painted upon the retina of both our eyes, it should only be perceived as single. Perhaps, too, this new spectator of visible nature might equally amuse our curiosity and improve our theory, by attempting to describe his earliest sensations of colour, and its original effects upon his organ and his fancy. But, as we have already hinted, it is far from being certain, that trials of this kind have ever been fairly made. Such readers as may wish to see a more minute detail of these questions, may consult M. Diderot's *Lettre sur les aveugles, à l'usage de ceux qui voyent*: "A letter concerning the blind for the use of those who see." To these may be added, *Mr Cheselden's Anatomy*, and *Locke's Essay on the human understanding*. Vol. II.

When we ruminate on the numberless advantages derived from the use of light, and its immense importance,

He determined pretty nearly the stature of those he was speaking with by the direction of their voices; and he made tolerable conjectures respecting their tempers and dispositions, by the manner in which they conducted their conversation.

"It must be observed, that this gentleman's eyes were not totally insensible to intense light. The rays refracted through a prism, when sufficiently vivid, produced certain distinguishable effects on them. The red gave him a disagreeable sensation, which he compared to the touch of a saw. As the colours declined in violence, the harshness lessened, until the green afforded a sensation that was highly pleasing to him, and which he described as conveying an idea similar to what he felt in running his hand over smooth polished surfaces. Polished surfaces, meandering streams, and gentle declivities, were the figures by which he expressed his ideas of beauty: Rugged rocks, irregular points, and boisterous elements, furnished him with expressions for terror and disgust. He excelled in the charms of conversation; was happy in his allusions to visual objects; and discoursed on the nature, composition, and beauty of colours, with pertinence and precision.

"Doctor Moyes was a striking instance of the power the human soul possesses of finding resources of satisfaction, even under the most rigorous calamities. Though involved 'in ever during darkness,' and excluded from the charming views of silent or animated nature; though dependent on an undertaking for the means of his subsistence, the success of which was very precarious; in short, though destitute of other support than his genius, and under the mercenary protection of a person whose integrity he suspected, still Dr Moyes was generally cheerful, and apparently happy. Indeed it must afford much pleasure to the feeling heart to observe this hilarity of temper prevail almost universally with the blind. Though 'cut off from the ways of men, and the contemplation of the human face divine,' they have this consolation; they are exempt from the discernment and contagious influence of those painful emotions of the soul that are visible on the countenance, and which hypocrisis itself can scarcely conceal. This disposition likewise may be considered as an internal evidence of the native worth of the human mind, that thus supports its dignity and cheerfulness under one of the severest misfortunes that can possibly befall us."

(D) The gentleman couched by Mr Cheselden, had no idea of distance; but thought that all the objects he saw, touched his eyes, as what he felt did his skin. It was also a considerable time before he could remember which was the cat and which the dog, though often informed, without first feeling them.

Blind. *ance*, in extending the human capacity, or in improving and cultivating every faculty and every function of the mind, we might be strongly tempted to doubt the fidelity of those reports which we have heard concerning such persons as, without the assistance of light, have arrived at high degrees of eminence even in those sciences which appear absolutely unattainable but by the interposition of external mediums. It has, however, been demonstrated by a late ingenious author, that *blind* men, by proper instruction, are susceptible almost of every idea, and of every truth which can be impressed on the mind by the mediation of light and colours, except the sensations of light and colours themselves †.

† See Dr Reid's *Inquiry into the Human Mind*, chap. vi. § 1, 2.

14
How the blind catch the enthusiasm inspired by visual perceptions, a paradox.

Yet there is one phenomenon of this kind which seems to have escaped the attention of that great philosopher, and for which no author either of this or any former period has been able to offer any tolerable account. Still, however, it seems to merit the attention of a philosopher. For though we should admit, that the blind can understand with great perspicacity all the phenomena of light and colours; though it were allowed, that in these subjects they might extend their speculations beyond their instructions, and investigate the mechanical principles of optics by the mere force of genius and application, from the data which they had already obtained; yet it will be difficult, if not impossible, to assign any reason why these objects should be more interesting to a blind man than any other abstract truths whatever. It is possible for the blind, by a retentive memory, to tell you, That the sky is an azure; that the sun, moon, and stars, are bright; that the rose is red, the lily white or yellow, and the tulip variegated. By continually hearing these substantives and adjectives joined, he may be mechanically taught to join them in the same manner: but as he never had any sensation of colour, however accurately he may speak of coloured objects, his language must be like that of a parrot; without meaning, or without ideas. Homer, Milton, and Ossian, had been long acquainted with the visible world before they were surrounded with clouds and ever-during darkness. They might, therefore, still retain the warm and pleasing impressions of what they had seen. Their descriptions might be animated with all the rapture and enthusiasm which originally fired their bosoms when the grand or delightful objects which they delineated were immediately beheld. Nay, that enthusiasm might still be heightened by a bitter sense of their loss, and by that regret which a situation so dismal might naturally inspire. But how shall we account for the same energy, the same transport of description, exhibited by those on whose minds visible objects were either never impressed, or have been entirely obliterated? Yet, however unaccountable this fact may appear, it is no less certain than extraordinary. But delicacy and other particular circumstances forbid us to enter into this disquisition with that minuteness and precision which it requires. We only mention the fact as one amongst the few resources for entertainment, and avenues to reputation, which are still reserved for the *blind*. Whoever thinks the subject of sufficient consequence to merit a nicer scrutiny, may consult the

N^o 48.

Preface to Blacklock's Poems, written by G. G. Esq. and printed at Edinburgh 1754; or the account of his life and writings by the Rev. Mr Spence, prefixed to a quarto edition of his poems published at London in 1756.

It is hoped, however, that we shall not be suspected of partiality for inserting a character of the same author by one who was a foreigner, a stranger to his person, and prepossessed in his favour by his works alone.

“Blacklock will appear to posterity a fabulous character: even now he is a prodigy. It will be thought a fiction and a paradox, that a man quite blind since he was three years old (F), besides having made himself so good a master of various languages, of Greek, Latin, Italian, and French, should also be a great poet in his own; and without hardly ever having seen the light, should be so remarkably happy in description †.”

It is impossible to enter into a detail of particulars with respect to the education of the blind. These must be left to be determined by the genius, the capacity, the circumstances, of those to whom the general rules which may be given should be applied. Much therefore must depend on their fortunes, much on their temper and genius; for unless these particulars were known, every answer which could be given to questions of this kind must be extremely general, and of consequence extremely superficial. Besides, the task is so much more arduous, because whoever attempts it can expect to derive no assistance from those who have written on education before him: And though the blind have excelled in more than one science; yet, except in the case of Saunderson, professor of mathematics in the university of Cambridge, concerning whom we shall afterwards have occasion to speak, it does not appear, that any of them have been conducted to that degree of eminence, at which they arrived, upon a premeditated plan. One should rather imagine, that they have been led through the general course and ordinary forms of discipline; and that, if any circumstances were favourable to their genius, they rather proceeded from accident than design.

This fact, if not supported by irrefragable evidence, should, for the honour of human nature, have been suppressed. When contemplated by a man of benevolence and understanding, it is not easy to guess whether his mortification or astonishment would be most sensibly felt. If a heart that glows with real philanthropy must feel for the whole vital creation, and become, in some measure, the *sensorium* of every suffering insect or reptile; how must our sympathy increase in tenderness and force, when the distressed individuals of our own species become its objects? Nor do the blind bear so small a proportion to the whole community, as, even in a political view, to be neglected. But in this, as in every other political crime, the punishment returns upon the society in which it is committed. Those abandoned and unimproved beings, who, under the influence of proper culture and discipline, might have successfully concurred in producing and augmenting the general welfare, become the nuisances and burdens of those very societies who have neglected them.

There

(E) The author is here mistaken: Dr Blacklock only saw the light for five months.

Blind.
16
Why the
ind de-
rive, and
why they
pay repay.
Public sym-
athy.

There is perhaps no rank of beings in the sensible universe, who have suffered from nature or accident, more meritorious of public compassion, or better qualified to repay its generous exertions, than the blind. They are meritorious of compassion; for their sphere of action and observation is infinitely more limited than that of the deaf, the lame, or of those who labour under any other corporeal infirmity consistent with health. They are better qualified to repay any friendly interposition for their happiness; because, free from the distraction which attends that multiplicity of objects and pursuits that are continually obvious to the sight, they are more attentive to their own internal œconomy, to the particular notices of good and evil impressed on their hearts, and to that peculiar province in which they are circumscribed by the nature and cultivation of their powers.

17
proper em-
loyments
of the
blind.

It will easily occur to the reader, that, if the pupil should not be placed in easy circumstances, music is his readiest and most probable resource. Civil and ecclesiastical employments have either something in their own nature, or in the invincible prejudices of mankind, which renders them almost entirely inaccessible to those who have lost the use of sight. No liberal and cultivated mind can entertain the least hesitation in concluding, that there is nothing, either in the nature of things, or even in the positive institutions of genuine religion, repugnant to the idea of a blind clergyman. But the novelty of the phenomenon, while it astonishes vulgar and contracted understandings, inflames their zeal to rage and madness. Besides, the adventitious trappings and ceremonies assumed by some churches as the drapery of religion, would, according to these systems, render the sacerdotal office painful, if not impracticable, to the blind.

Dr Ni-
son,

We have, some years ago, read of a blind gentleman*, descended from the same family with the celebrated lord Verulam, who, in the city of Brussels, was with high approbation created doctor of laws; since that period we have been honoured with his correspondence. He was deprived of sight at nine years of age by an arrow from a cross-bow whilst he was attempting to shoot it. When he had recovered his health, which had suffered by the shock, he pursued the same plan of education in which he had been engaged: and having heard that one Nicæus de Voude, born blind, who lived towards the end of the 15th century, after having distinguished himself by his studies in the university of Lovain, took his degree as doctor of divinity in the university of Cologne; this motive prevailed with him to make the same attempt. But the public, cursed with prejudices for which the meanest sensitive nature might blush, prejudices equally beneath the brutality and ignorance of the lowell animal-instinct, treated his intention with ridicule: even the professors were not far from being of that sentiment; and they admitted him into their schools, rather from an impression that it might amuse him, than become of any use to him. He had the good fortune, however, contrary to their expectations, to obtain the first places among his condisciples. It was then said, that such rapid advances might be made in the preliminary branches of his education; but would soon be effectually checked by studies of a more profound and abstracted nature. This, it seems, was repeated from school to school, through the whole climax

of his pursuits; and when, in the course of academical learning, it became necessary to study poetry, it was the general voice that all was over, and that at length he had reached his *ne plus ultra*. But here he likewise confronted their prepossessions, and taught them the immense difference between blindness of body and blindness of soul. After continuing his studies in learning and philosophy for two years more, he applied himself to law, took his degree in that science, commenced pleading counsellor or advocate in the council of Brabant, and has had the pleasure of terminating almost every suit in which he has been engaged to the satisfaction of his clients.

Blind.
18
Law dis-
cult, tho'
not im-
possible, for
the blind.

Had it not been for a fact so striking and so well authenticated, though there could have been no doubt that a blind-man might discharge the office of a chamber-counsellor with success; yet, as a banister, his difficulties must have appeared more formidable, if not absolutely insuperable. For he should remember all the sources, whether in natural equity or positive institutions, whether in common or statutory law, from whence his argument ought to be drawn. He must be able to specify, and to arrange in their proper order, all the material objections of his antagonists: these he must likewise answer as they were proposed, *extempore*.

When, therefore, it is considered how difficult it is to temper the natural associations of memory with the artificial arrangements of judgment, the desultory flights of imagination with the calm and regular deductions of reason, the energy and perturbation of passion with the coolness and tranquillity of deliberation; some idea may be formed of the arduous task which every blind man must achieve, who undertakes to pursue the law as a profession. Perhaps assistances might be drawn from Cicero's treatise on Topics and on Invention; which if happily applied and improved, might lessen the disparity of a blind man to others, but could scarcely place him on an equal footing with his brethren. And it ought to be fixed as an inviolable maxim, that no blind man ought ever to engage in any province in which it is not in his power to excel. This may at first sight appear paradoxical; but it is easily explained. For the consciousness of the obvious advantages possessed by others, habitually predisposes a blind man to despondency: and if he ever gives way to despair (which he will be too apt to do when pursuing any acquisition where others have a better chance of success than himself), adieu, for ever adieu, to all proficiency. His soul sinks into irretrievable depression; his abortive attempts incessantly prey upon his spirit; and he not only loses that vigour and elasticity of mind which are necessary to carry him through life, but that patience and serenity which alone can qualify him to enjoy it.

19
The blind,
naturally
subject to
desponden-
cy, should
be stimula-
ted by the
prospect of
attainable
excellence.

In this recapitulation of the learned professions, we have intentionally omitted physic; because the obstacles which a blind man must encounter, whether in the theory or practice of that art, will be more easily conceived by our readers than described in detail. From this, therefore, let us pass to more general subjects.

20
Physic be-
cause the ob-
stacles in-
trinsic
to the art

It has been formerly hinted, that the blind were objects of compassion, because their spheres of action and observation were limited: and this is certainly true.

Blind.

For what is human existence, in its present state, if you deprive it of action and contemplation? Nothing *then* remains but the distinction which we derive from form or from sensitive and locomotive powers. But for these, unless directed to happier ends by superior faculties, few rational beings would, in our opinion, be grateful. The most important view, therefore, which we can entertain in the education of a person deprived of sight, is to redress as effectually as possible the natural disadvantages with which he is encumbered; or, in other words, to enlarge as far as possible the sphere of his knowledge and activity. This can only be done by the improvement of his intellectual, imaginative, or mechanical, powers; and which of these ought to be most assiduously cultivated, the genius of every individual alone can determine. Were men to judge of things by their intrinsic natures, less would be expected from the blind than others. But, by some pernicious and unaccountable prejudice, people generally hope to find them either possessed of preternatural talents, or more attentive to those which they have than others: For it was not Rochester's opinion alone,

That if one sense should be suppress'd,
It but retires into the rest.

Hence it unluckily happens, that blind men, who in common life are too often regarded as rare shows, when they do not gratify the extravagant expectations of their spectators, too frequently sink in the general opinion, and appear much less considerable and meritorious than they really are. This general diffidence of their powers at once deprives them both of opportunity and spirit to exert themselves; and they descend, at last, to that degree of insignificance in which the public estimate has fixed them. From the original dawning, therefore, of reason and spirit, the parents and tutors of the blind ought to inculcate this maxim, That it is their indispensable duty to excel, and that it is absolutely in their power to attain a high degree of eminence. To impress this notion on their minds, the first objects presented to their observation, and the first methods of improvement applied to their understanding, ought, with no great difficulty, to be comprehensible by those internal powers and external senses which they possess. Not that improvement should be rendered quite easy to them, if such a plan were possible: For all difficulties, which are not really or apparently insuperable, heighten the charms and enhance the value of those acquisitions which they seem to retard. But care should be taken that these difficulties be not magnified or exaggerated by imagination; for it has before been mentioned, that the blind have a painful sense of their own incapacity, and consequently a strong propensity to despair continually awake in their minds.

For this reason, parents and relations ought never to be too ready in offering their assistance to the blind in any office which they can perform, or in any acquisition which they can procure for themselves, whether they are prompted by amusement or necessity. Let a blind boy be permitted to walk through the neighbourhood without a guide, not only though he should run some hazard, but even though he should suffer some pain.

If he has a mechanical turn, let him not be denied the use of edge-tools; for it is better that he should

lose a little blood, or even break a bone, than be perpetually confined to the same place, debilitated in his frame, and depressed in his mind. Such a being can have no employment but to feel his own weakness, and become his own tormentor; or to transfer to others all the malignity and peevishness arising from the natural, adventitious, or imaginary evils which he feels. Scars, fractures, and dislocations in his body, are trivial misfortunes compared with imbecility, timidity, or fretfulness of mind. Besides the sensible and dreadful effects which inactivity must have in relaxing the nerves and consequently in depressing the spirits, nothing can be more productive of jealousy, envy, peevishness, and every passion that corrodes the soul to agony, than a painful impression of dependence on others, and of our insufficiency for our own happiness. This impression, which, even in his most improved state, will be too deeply felt by every blind man, is redoubled by that utter incapacity of action which must result from the officious humanity of those who would anticipate or supply all his wants, who would prevent all his motions, who would do or procure every thing for him without his own interposition. It is the course of nature, that blind people, as well as others, should survive their parents; or, it may happen, that they should likewise survive those who, by the ties of blood and nature, are more immediately interested in their happiness than the rest of mankind. When, therefore, they fall into the hands of the world in general, such exigences as they themselves cannot redress will be but coldly and languidly supplied by others. Their expectations will be high and frequent, their disappointments many and sensible; their petitions will often be refused, seldom fully gratified; and, even when granted, the concession will be so ungraceful, as to render its want infinitely more tolerable than its fruition. For all these reasons, we repeat it once more (because it can never be too frequently reiterated), that, in the formation of a blind man, it is infinitely better to direct than supersede his own exertions. From the time that he can move and feel, let him be taught to supply his own exigences; to dress and feed himself; to run from place to place, either for exercise, or in pursuit of his own toys or necessities.

In these excursions, however, it will be highly proper for his parent or tutor to superintend his motions at a distance, without seeming to watch over him. A vigilance too apparent, may impress him with a notion that malignity or some other selfish motive may have produced it. When dangers are obvious and great, such as we incur by rivers, precipices, &c. those who are entrusted with the blind will find it neither necessary nor expedient to make their vigilance a secret. They ought then to acquaint their pupil, that they are present with him; and to interpose for his preservation, whenever his temerity renders it necessary. But objects of a nature less noxious, which may give him some pain without any permanent injury or mutilation, may with design be thrown in his way; providing, however, that this design be always industriously concealed. For his own experience of their bad effects will be an infinitely more eloquent and sensible monitor, than the abstract and frigid counsels of any adviser whatever.

When the volatile season of puerile amusement is expired,

21
Too much
often expect-
ed from
the blind.

22
The ele-
ments of
education
for the
blind should
neither be
too difficult
nor too
easy.

23
The powers
of action
possessed by
the blind
should never
be super-
seded.

Blind.

Blind. expired, and the impetuous hurry of animal-spirits
 24 subdues, through the whole demeanour of his pupil the
 exercises tutor will probably observe a more sensible degree of
 (table to timidity and precaution, and his activity will then re-
 be blind quire to be stimulated more than restrained. In this
 25 crisis, exercise will be found requisite, rather to pre-
 ferre health, and facilitate the vital functions, than
 merely for recreation. Of all the different kinds of
 exercise, riding, not in a machine, but on horseback,
 is by far the most eligible, and most productive of its
 end. On these occasions, however, care must be ta-
 ken that the horse employed may neither be capricious
 nor unmanageable; for on the manufacture of the crea-
 ture which he rides, not only his safety, but his con-
 fidence, will entirely depend. In these expeditions,
 whether long or short, his companion or attendant ought
 constantly to be with him; and the horse should always
 either be taught implicitly to follow its guide, or be
 conducted by a leading rein besides the bridle which
 he himself holds. Next to this mode of exercise, is
 26 walking. If the constitution of the blind may be tolerably
 robust, let him be taught to endure every vicissitude of
 weather which the human species can bear with impunity.
 For if he has been bred with too much delicacy, particular
 accidents may supersede all his former scruples, and sub-
 ject him to the necessity of suffering what will not only be
 severe in its immediate sensation, but dangerous in its
 future consequences. Yet, when the cold is so intense,
 or the elements so tempestuous, as to render air and
 exercise abroad impracticable, there are methods of
 domestic exercise, which, though not equally salutary,
 may still be eligible; such as dumb-bells, or the bath-
 27 chair. The first of these are made of lead, consisting
 of a cylinder, the middle of which may either be recti-
 lineal or arcuated for the conveniency of holding, and
 terminates at each end in a semiglobular mass. Their
 weight should be conformed to the strength and age of
 the person who uses them. The method of employing
 them is to take one in each hand, and swing them
 backwards and forwards over his head, describing a
 figure somewhat like a parabola. This not only
 28 strengthens the arms, and opens the chest, but pro-
 motes the circulation of the fluids. The bath-chair is
 a deal of 12 feet in length, as free from knots and as
 elastic as possible, supported by a fulcrum at each end,
 upon which may be placed two rolling cylinders to
 give it greater play; when seated upon this, by alter-
 nately depressing it with his own weight, and suffering
 it to return to its natural situation, he gives himself a
 motion, though not equal in its energy, yet somewhat
 resembling the trot of a horse. There are other elastic
 seats of the same kind constructed with steel springs,
 but one of this simple fabrication may answer the pur-
 pose.

The spring deal here recommended by the author,
 was preferred, as being suitable to the blind in all
 spheres or conditions of life; but he has since been
 taught by experience, in a valetudinary state, that the
 elastic chair is of infinitely greater utility. It consists
 of three false bottoms, and one real, which is the basis
 of the whole. The lowest is by far the most extensive.
 The highest is stuffed to render it an easy seat, and
 covered with plush, baize, or duff. Between each of
 the false bottoms, at either end, behind and before,
 are placed steel springs, fixed above and below to the

boards; not with nails, but staples, and curved in a
 spiral or serpentine form, each consisting of seven spires
 or volumina. The volumina are formed in such a
 manner, that one of them can pass through another,
 and thus give the springs full play in rising or descend-
 ing. The lowest bottom or basis of the whole is pro-
 tended about four inches; which assists you to mount
 the seat with more facility, and serves as a support for
 your feet when you ride. This operation is perform-
 ed by alternately depressing or raising yourself upon
 the seat, so that the springs yielding to your weight
 as you descend, and resisting as you rise, may give you
 a motion like that of the deal above described, but
 more violent, more rapid, and consequently more salu-
 tary. The whole frame of the seat is surrounded with
 leather, having different apertures to admit or eject
 the air occasioned by the motion. These general hints
 are sufficient to give any ingenious artisan an idea of
 the nature and structure of the machine, which he may
 alter or improve as conveniency shall dictate.

To these modes of domestic exercise may be added
 that of a swing, which is formed by a rope suspended
 from two screws, which ought to be strongly fixed, at
 proper distances, in the joists of a capacious chamber,
 with a board and a cushion for a seat, and cords fast-
 ened behind and before, lest the impetuosity of the
 motion should shake the patient out of his position. But
 this instrument of health is so often formed by chil-
 dren for their amusement, and depends so much upon
 the form and extent of the area where it vibrates, that
 a more minute detail of its nature and office would
 here be unnecessary.

His meals should be temperate, his diet light and Diet.
 of easy digestion. If the tone of his stomach be vi-
 gorous, vegetables should be preferred to animal-food,
 particularly those vegetables which are most farinaceous
 and least accefcnt. Fermented liquors and ardent spi-
 rits should never be given him but to gratify the real
 demands of exhausted nature: for though they exhi-
 larate the spirits, they at the same time corrode the
 vessels and relax the nerves; a misfortune doubly per-
 nicious to sedentary life. The safest and most whole-
 some beverages are milk and water. If he should be
 tired with these, he may be indulged with the variety
 of chocolate, halm, sage, or ground-ivy. Coffee may
 sometimes be taken with impunity: but tea should be
 interdicted with inflexible severity; for no vegetable
 juice under heaven is more noxious to sedentary peo-
 ple. Let him also, for similar reasons, be prohibited
 the use of tobacco in all its forms. In the obser-
 vations of diet and exercise, let him neither be me-
 chanically regular, nor entirely excentric. In the
 one case, he will be a slave to habit, which may
 create some inconvenience; in the other, he will form
 no habits at all, which may still be productive of
 greater.

We have more than once hinted, during the course
 of this article, that the blind, as liable to all the incon-
 veniences of sedentary life, are peculiarly subjected
 to that disorder which may be called *tachum vite* or
 low spirits. This indisposition may be said to com-
 30prehend in it all the other diseases and evils of human
 life; because, by its immediate influence on the mind,
 it aggravates the weight and bitterness of every cala-
 mity to which we are obnoxious. In a private letter,
 we

Blind.

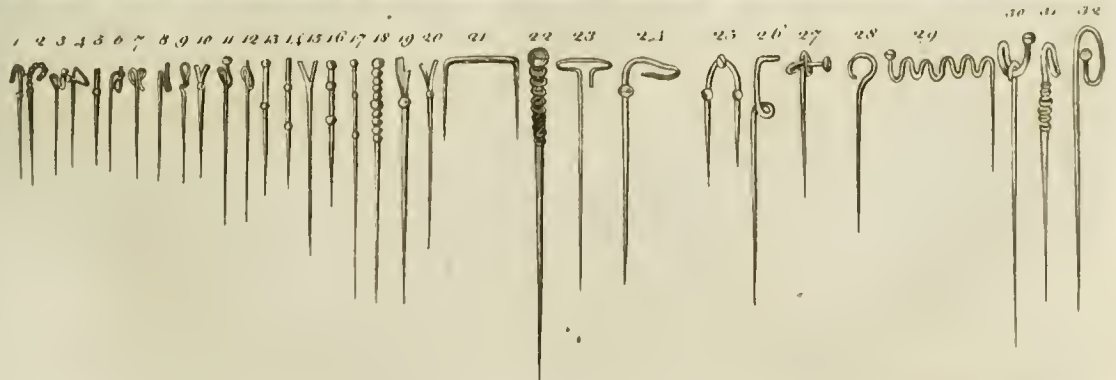
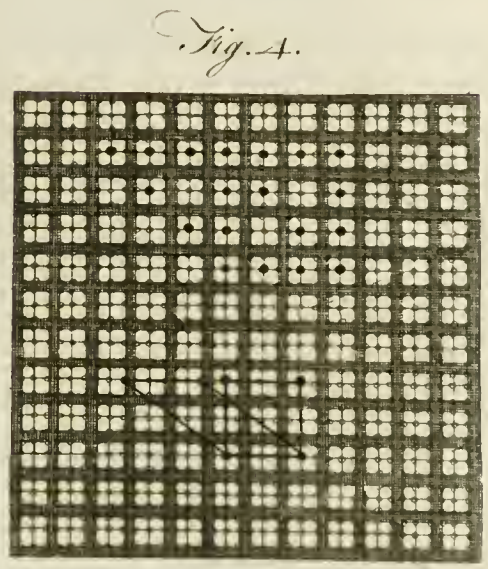
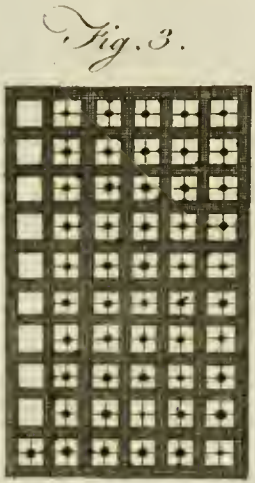
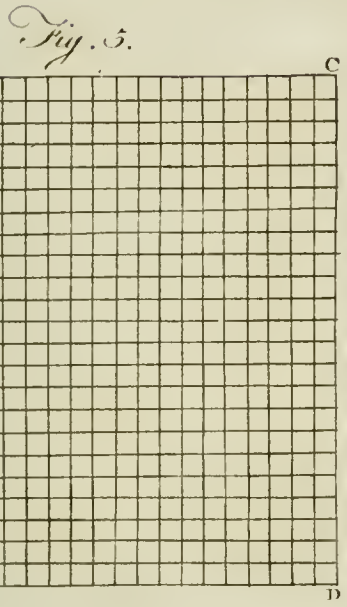
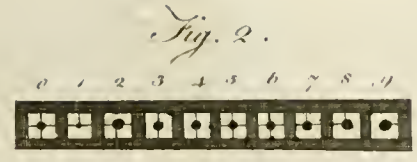
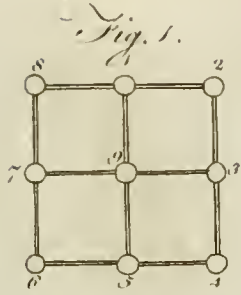
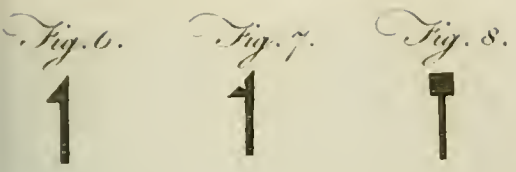
we have heard it described as a formidable precipice, in the regions of misery, between the awful gulfs of suicide on the one hand and phrenzy on the other; into either of which, a gentle breeze, according to the force of its impulse and the line of its direction, may irrecoverably plunge the unhappy victim; yet from both of which he may providentially escape. Though the shades of the metaphor may, perhaps, be unnaturally deepened, yet those who have felt the force of the malady will not fail to represent it by the most dreadful images which its own feelings can suggest. Parents and tutors therefore, if they have the least pretence to conscience or humanity, cannot be too careful in observing and obviating the first symptoms of this impending plague. If the limbs of your blind child or pupil be tremulous; if he is apt to start, and easily susceptible of surprise; if he finds it difficult to sleep; if his slumbers, when commenced, are frequently interrupted, and attended with perturbation; if his ordinary exercises appear to him more terrible and more insuperable than usual; if his appetites become languid and his digestion slow; if agreeable occurrences give him less pleasure, and adverse events more pain than they ought to inspire;—this is the crisis of vigorous interposition. The regimen and exercise above prescribed are the best preventatives of this evil, and perhaps its best remedies when unhappily incurred. But if the symptoms should escape your attention till the patient is actually seized with the distemper, you may then, according to its depth and permanency, apply the cold bath, vitriolic acid, and Peruvian bark. Magnesia alba will, from time to time, be found useful to lenify the severe and corrosive acid generated in the stomach; it is preferable to chalk, to crab's eyes, or to any of the other absorbents, because of its laxative tendency. The tincture or infusion of wild valerian, pills of asafœtida, and white mustard-seed, are likewise prescribed. Care should be taken that the patient may never be suffered to remain costive, otherwise the function of digestion will be impeded. Gentle cathartics should therefore be administered; but with caution, that their operation may clear the bowels without weakening nature. Emetics may sometimes give the patient a temporary relief, by exerting and bracing the fibres of the stomach; but if used too frequently, they will have a contrary effect: previous to the use of bark, however, they should always be taken to prepare the vessel for its reception. The symptoms above enumerated would seem to indicate the origin of the distemper from extreme weakness or relaxation of nerves: that relaxation may be caused by severe and intemperate thought; by supine indolence; by excessive or habitual drinking; and above all, by venereal gratifications prematurely and frequently indulged, by which the approaches of this evil are accelerated, its continuance insured, and its poignancy augmented. Parents and tutors, therefore, as they value the welfare of their charge, and would answer to God for their conduct, should be scrupulously careful to observe when any of these illegitimate propensities inflame the youthful mind, to check, or rather elude them; not so much by severe reprobation and solemn interdict, as by endeavouring to preoccupy the soul, and engage the intention with other favourite amusements. Against every act of arbitrary power, the

mind strongly and naturally revolts. She should therefore be rather allured to wisdom and virtue, by rational motives and gentle methods, than by cruel menaces and stern commands. Those who are afflicted with low spirits may be said to be doubly unfortunate; for they have not only their own internal sufferings to sustain, but the contempt and ridicule of a thoughtless and unfeeling world, by whom their complaints are thought to be imaginary, and their depression affected. Should the farcalle or sceptical reader apologize for his want of humanity, by asking in what these internal sufferings consist, it will be easy to give him a clear and solid answer: They arise from a severe and acute feeling of nature's incapacity to discharge the vital functions with tolerable ease; from the sharp and constant irritation inflicted on the stomach and lower intestines by every thing not sweet or insipid that passes through them; and from a degree of sensibility too exquisite for the precarious and fluctuating state of our nature: these are the vindictive, inexorable demons that arm every thought with the stings of scorpions, and render the sense of existence itself insupportable. We have heard of hypochondriacs who thought themselves made of glass; and of others who believed their persons grown to a size so enormous, that they could not enter into any door: but it has never been our fortune to be personally acquainted with any of these fantastics. Those with whom we have conversed were rather inclined to exaggerate real, than to create imaginary, evils; rather to anticipate gloomy possibilities, than to dwell upon improbable or chimerical catastrophes: the tender parent, therefore, or the faithful guardian, will beware of treating them with neglect or levity. He will suit his conversation, as much as possible, to the present tone of their feelings; he will avoid all innovations in their management, except such as are absolutely necessary for their cure.

Be careful never to reason nor expostulate with your patient on the nature of his malady. Tell him not that his uneasy feelings, far from being real, are the fictitious impositions of a depraved fancy. His disagreeable sensations will be more than sufficient to demonstrate the falsehood of your assertions: thus your argumentative and persuasive powers will not only be exerted in vain, but may considerably retard, if not finally prevent, his recovery; and may leave such indelible prepossessions against you, in his mind, as no length of time, no vicissitudes of life, will ever be able to efface. Opium has also been recommended; but excepting desperate cases, it will be found a fallacious and dangerous remedy:—fallacious, because the ease it gives is only temporary, and infallibly succeeded by sharper paroxysms:—dangerous, because it may be rendered habitual, and subject the patient to unmixed torment when omitted. Though we have already inculcated a regimen and exercise which appeared proper for the blind in general, and not incompatible with peculiar situations, it still seems necessary to add a few results of painful experience upon these subjects, as being particularly conducive to the present ease and future amendment of such as labour under the diseases now in question. And first, let it be observed, that animal food is their proper nutriment, as being of easiest digestion; better too, if well done upon the spit or gridiron: for instead of being allowed to imbibe

Blind.

adventitious



- A. Bell. Bin. Thal. Schuler. pit



adventitious fluids, it should be as much as possible drained of its own; neither should it be too fat: beef, mutton, or fowls, arrived at maturity, give the stomach least labour; veal, lamb, chickens, and every other kind of young meat, answer the purposes of nature with more difficulty, as the parts are not only too succulent, but prevented by their softness and lubricity from acting forcibly one upon another to facilitate the efforts of the stomach in digestion. Of all vegetable substances, white bread is perhaps the only ingredient which they can eat with the greatest impunity; and even this would still be safer were the paste formed with as little water as possible, and prepared without fermentation. Whether eggs are vegetable or animal substances, let physicians determine; but this we know, that by people in low spirits they may be eaten, even at supper, with great impunity. Every other herb or root is not only extremely flatulent, but productive of that sharp and intense acid for which we have formerly prescribed magnesia as the best remedy. Patients of this description should rather be frequent than liberal in their meals, and scrupulously careful of all heterogeneous mixture. Their most eligible beverage, except simple water, if they can afford it, is port wine, as being least convertible into that poignant fluid: porter likewise, if not stale, may, by its strength and bitterness, assist the action of the stomach. Neither of these fermented liquors should be taken in large quantities at once: let the clamours of nature be satisfied, and no more; for if the spirits are unnaturally elevated, they will be certain to sink proportionably when the stimulus ceases to operate. The moderate use of genuine rum or brandy, properly diluted, when the other liquors cannot be had, may be productive of good effects, but should never be used at or near natural periods of repose; because, even when diluted, they occasion a febricity or pyrexia, incompatible with sound and refreshing sleep. Care should likewise be taken that the patient may never be too much warmed, either by cloaths or exercise, especially when in bed. Exertions of body, particularly in the open air, are indispensably necessary for promoting digestion and acquiring strength; but should never be carried to fatigue. The mind should likewise be diverted from attention to itself and its disorder, by reading and conversation. But there is an uncommon degree of discernment and delicacy requisite in the topics, that they may neither be too cheerful nor too serious, for the state of the mind, when they are applied. Neither let these injunctions be esteemed trivial: such little attentions, uniformly and tenderly exerted for their satisfaction, will contribute in no small degree to their present tranquillity, and of consequence to their future restoration. We have thought it necessary to expatiate thus far, on a subject gloomy and forbidding in itself, but of sufficient importance to demand particular attention; and, besides, what we have said may not only be useful to the blind in particular, but applicable to all those who labour under the same depression. It only remains to add, that the order, the periods, and the quantities, in which the remedies above enumerated should be applied, must be determined by

wisdom and experience, or regulated by the advice of a skilful and vigilant physician. We are sorry that truth obliges us to acknowledge, that we have found the faculty less intelligent in this disease, and less attentive to its various aspects, than could be wished, or than its malignity requires.

The natural curiosity of children renders them extremely and indefatigably inquisitive. This disposition is often peculiarly prevalent in the blind. Parents and tutors, therefore, should gratify it whenever their answers can be intelligible to the pupil; when it is otherwise, let them candidly confess the impossibility or impropriety of answering his questions. At this period, if their hearts be tender and their powers inventive, they may render his amusements the vehicles, and his toys the instruments, of improvement: why, for instance, may not the centrifugal and centripetal forces be illustrated from the motion of a top, or the nature and power of elasticity by the rebound of a ball. These hints may lead to others, which, if happily improved and applied, may wonderfully facilitate the progress of knowledge. Nor will the violence of exercise, and the tumult of play, be productive of such perils and accidents as may be apprehended.

For the encouragement of such parents as choose to take these advices with regard to exercise, let us inform them, that though, till the age of twenty, some blind persons were on most occasions permitted to walk, to run, to play at large, they have yet escaped without any corporeal injury from these excursions.

Parents of middle, or of higher rank, who are so unfortunate as to have blind children, ought, by all possible means, to keep them out of vulgar company. The herd of mankind have a wanton malignity, which eternally impels them to impose upon the blind, and to enjoy the painful situations in which these impositions place them. This is a stricture upon the humanity of our species, which nothing but the love of truth and the dictates of benevolence could have extorted from us. But we (†) have known some who have suffered so much from this diabolical mirth in their own persons, that it is natural for us, by all the means in our power, to prevent others from becoming its victims.

Blind people have infinitely more to fear from the levity and ignorance, than from the selfishness and ill-nature, of mankind. In serious and important negotiations, pride and compassion suspend the efforts of knavery or spleen; and that very infirmity, which so frequently renders the blind defenceless to the arts of the insidious, or to the attempts of malice, is a powerful incentive to pity, which is capable of disarming fury itself. Villany, which frequently piques itself more upon the arts by which it prevails, than upon the advantages which it obtains, may often with contempt reject the blind, as subjects beneath the dignity of its operation; but the ill-natured buffoon considers the most malicious effects of his merriment as a mere jest, without reflecting on the shame or indignation which they inspire when inflicted on a sensible temper.

But vulgar credulity and ignorance are no less dan-

Blind.

31
Natural curiosity to be gratified, when possible; when otherwise, a reason to be given.

32
The blind not to be indulged in promiscuous company.

(†) The author of these observations, though he chooses to express himself in this manner, is blind.

Blind.

gerous to those who want sight, than the false and mechanical wit so universally practised in common life. We know, we sympathetically feel, the strong propensity of every illiterate mind, to relate or to believe whatever is marvellous and dreadful. These impressions, when early imbibed, can scarcely be eradicated by all the conspiring efforts of mature reason and confirmed experience. Those philosophers who have attempted to break the alliance between darkness and spectres, were certainly inspired by laudable motives. But they must give us leave to assert, that there is a natural and essential connection betwixt night and *orcus*. Were we endued with senses to advertise us of every noxious object before its contiguity could render it formidable, our panics would probably be less frequent and sensible than we really feel them. Darkness and silence, therefore, have something dreadful in them, because they supersede the vigilance of those senses which give us the earliest notices of things. If you talk to a blind boy of invisible beings, let benevolence be an inseparable ingredient in their character. You may, if you please, tell him of departed spirits, anxious for the welfare of their surviving friends; of ministering angels, who descend with pleasure from heaven to execute the purposes of their Maker's benignity; you may even regale his imagination with the sportive gambols and innocent frolics of fairies; but let him hear as seldom as possible, even in stories which he knows to be fabulous, of vindictive ghosts, vindictive fiends, or avenging furies. They seize and pre-occupy every avenue of terror which is open in the soul; nor are they easily dispossessed. Sooner should we hope to exorcise a ghost, or appease a fury, than to obliterate their images in a warm and susceptible imagination, where they have been habitually impressed, and where these feelings cannot be dissipated by external phenomena. If horrors of this kind should agitate the heart of a blind boy (which may happen notwithstanding the most strenuous endeavours to prevent it), the stories which he has heard will be most effectually discredited by ridicule. This, however, must be cautiously applied, by gentle and delicate gradations. If he is inspired with terror by effects upon his senses, the causes of which he cannot investigate, indefatigable pains must be taken to explain these phenomena, and to confirm that explication, whenever it can be done, by the testimony of his own senses and his own experience. The exertion of his locomotive and mechanical powers (the rights of which we have formerly endeavoured to assert) will sensibly contribute to dispel these terrors.

His inventive faculties ought likewise to be indulged with the same freedom. The data which they explore may be presented in such a manner, as to render discoveries easy: but still let invention be allowed to cooperate. The internal triumph and exultation which the mind feels from the attainment and conviction of new truths, heightens their charms, impresses them deep

on the memory, and gives them an influence in practice of which they could not otherwise have boasted.

There are a sort of people in the world, whose views and education have been strictly confined to one province, and whose conversation is of consequence limited and technical. These, in literary intercourse, or fashionable life, are treated with universal contempt, and branded with the odious name of *mere men of business*. Nor is it any wonder that the conversation of such should prove nauseous and disgusting. It would be arrogance in them to expect, that indifferent persons should either enter into their private interests, or the peculiarities of their craft, with a warmth equal to their own. We have known the intrusion of such a person involve a numerous company in gloom, and terminate the freedom and vivacity of agreeable discourse in lazy yawning and discontented silence. Of all innocent characters, this ought to be avoided by the blind; because, of all others, it is the character which they run the greatest hazard of adopting. The limitation of their powers naturally contracts their views and pursuits, and, as it were, concentrates their whole intellectual faculties in one, or at best in few objects. Care should therefore be taken to afford the mind a theatre for its exertions, as extensive as possible, without diverting it from one great end, which, in order to excel, it ought for ever to have in prospect.

There are few sciences in which the blind have not distinguished themselves: even those whose acquisition seems essentially to depend upon vision, have at last yielded to genius and industry, though deprived of that advantage. Mr Sanderfon, whom we formerly mentioned, has left behind him the most striking evidences of astonishing proficiency in those retired and abstract branches of mathematics which appeared least accessible to persons of his infirmity. Sculpture (G) and painting are not, perhaps, the most practicable arts for a blind man; yet he is not excluded from the pleasing creation and extensive regions of fancy. However unaccountable it may appear to the abstract philosopher, yet nothing is more certain in fact, than that a blind man may, by the inspiration of the muses, or, to strip the figure of its mythological dress, may, by the efforts of a cultivated genius, exhibit in poetry the most natural images and animated descriptions, even of visible objects, without either incurring or deserving the imputation of plagiarism.

In the sister art of music, there are, at present, living and noble instances how far the blind may proceed.

If we look into former periods, we shall find illustrious and pregnant examples, how amply nature has capacitated the blind to excel both in the scientific and practical departments of music. In the 16th century, when the progress of improvement both in melody and harmony was rapid and conspicuous, Franciscus Salinas was eminently distinguished. He was born A. D. 1513, at Burgos in Spain; and was son to the treasurer of

(G) Yet there are instances of persons who have been enabled to take the figure and idea of a face by the touch, and mould it in wax with the utmost exactness; as was the case of the blind sculptor mentioned by De Piles, who thus took the likenesses of the Duke de Bracciano in a dark cellar, and made a marble statue of King Charles I. with great elegance and justness. Vid. *De Piles Cours de Peint.* p. 329. and *Wolf. Psychol. Rat.* § 162.

nd. of that city. Tho' afflicted with incurable blindness, he was profoundly skilled both in the theory and practice of music. As a performer, he is celebrated by his cotemporaries with the highest encomiums. As a theorist, his book, if we may believe Sir John Hawkins, is equal in value to any now extant in any language. Tho' he was deprived of sight in his earliest infancy, he does not content himself to delineate the various phenomena in music, but the principles from whence they result, the relations of sound, the nature of arithmetical, geometrical, and harmonical ratios, which at that period were esteemed essential to the theory of music, with a degree of intelligence which would have deserved admiration though he had been in full possession of every sense requisite for these disquisitions. He was taken to Rome in the retinue of Petrus Sarmentus archbishop of Compostella; and having passed twenty years in Italy, he returned to Salamanca, where he obtained the professorship of music, an office at that time equally respectable and lucrative. Having discharged it with reputation and success for some time, he died at the venerable age of 77.

In the same period flourished Caspar Crumbhorn, blind from the third year of his age: yet he composed several pieces in many parts with so much success, and performed both upon the flute and violin so exquisitely, that he was distinguished by Augustus elector of Saxony. But preferring his native Silesia to every other country, he returned thither, and was appointed organist of the church of St Peter and Paul in the city of Lignitz, where he likewise had often the direction of the musical college, and died June 11th 1621.

To these might be added Martini Pesenti of Venice, a composer of vocal and instrumental music almost of all kinds, though blind from his nativity; with other examples equally worthy of public attention. But if vulgar prejudice is capable of blushing at its own contemptible character, or of yielding to conviction, those already quoted are more than sufficient to show the musical jugglers of our time, who are generally as absolute strangers to learning and taste as to virtue, that their art is no monopoly with which those alone who see are invested by the irreversible decree of heaven.

For Sanderfon's method of calculation, both in arithmetic and algebra, see the account prefixed to his own treatise on that subject. But there is a much fuller and more circumstantial detail both of its nature and its various uses, given by Mr Didoret in his "Letter concerning the Blind, for the use of those who see," which we shall here translate.

erson's of no- n. "It is much easier (says that author) to use signs already invented, than to become their inventor; as one is forced to do, when engaged in circumstances for which he is not provided. Of what advantage might not this be to Sanderfon to find a palpable arithmetic already prepared for him at five years of age, which he might otherwise have felt the necessity of inventing for himself at the advanced period of twenty-five? This Sanderfon, Madam, is an author deprived of sight, with whom it may not be foreign to our purpose to amuse you. They relate prodigies of him; and of these prodigies there is not one, which his pro-

gress in the belles lettres, and his mathematical attainments, do not render credible.

Blind.

"The same instrument served him for algebraical calculations, and for the construction of rectilineal figures. You would not perhaps be sorry that I should give you an explication of it, if you thought your mind previously qualified to understand it: and you shall soon perceive that it presupposes no intellectual preparations of which you are not already mistress; and that it would be extremely useful to you if you should ever be seized with the inclination of making long calculations by touch.

"Imagine to yourself a square, such as you see PL. XCVIII. fig. 1. divided into four equal parts by perpendicular lines at the sides, in such a manner, that it may present you the nine points 1, 2, 3, 4, 5, 6, 7, 8, 9. Suppose this square pierced with nine holes capable of receiving pins of two kinds, all of equal length and thickness, but some with heads a little larger than the others.

"The pins with large heads are never placed any where else but in the centre of the square; those with smaller heads never but at the sides, except in one single case, which is that of making the figure 1, where none are placed at the sides. The sign of 0 is made by placing a pin with a large head in the centre of the little square, without putting any other pin at the sides". * See fig. 2. The number 1 is represented by a pin with a small head placed in the centre of the square, without putting any other pin at the sides: the number 2, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 1: the number 3, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 2: the number 4, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 3: the number 5, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 4: the number 6, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 5: the number 7, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 6: the number 8, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 7: the number 9, by a pin with a large head placed in the centre of the square, and by a pin with a small head placed on one of the sides at the point 8.

"Here are plainly ten different expressions obvious to the touch, of which every one answers to one of our ten arithmetical characters. Imagine now a table as large as you please, divided into small squares, horizontally ranged, and separated one from the other at similar distances, as you see it in fig. 3. Thus you will have the instrument of Sanderfon.

"You may easily conceive that there is not any number which one cannot express upon this table; and, by consequence, no arithmetical operation which one cannot execute upon it.

This notation applied to non-arithmetical operations.

"Lct

Blind.

“ Let it be proposed, for instance, to find the sum, or to work the addition of the nine numbers following.

1	2	3	4	5
2	3	4	5	6
3	4	5	6	7
4	5	6	7	8
5	6	7	8	9
6	7	8	9	0
7	8	9	0	1
8	9	0	1	2
9	0	1	2	3

“ I express them on the table in the order as they are dictated to me; the first figure at the left of the first number, upon the first square to the left of the first line; the second figure, to the left of the first number, upon the second square to the left of the same line; and so of the rest.

“ I place the second number upon the second row of squares, units beneath units, and tens beneath tens, &c.

“ I place the third number upon the third row of squares, and so of the rest. Then with my fingers running over each of the rows vertically from the bottom to the top, beginning with that which is nearest to my right, I work the addition of the numbers which are expressed, and mark the surplus of the tens at the foot of that column. I then pass to the second column, advancing towards the left; upon which I operate in the same manner; from thence to the third; and thus in succession I finish my addition.

⁴⁰
The same instrument applied to the construction of rectilinear figures.

“ We shall now see how the same table served him for demonstrating the properties of rectilinear figures. Let us suppose this proposition to be demonstrated, That parallelograms which have the same basis and the same height are equal in their surfaces. He placed his pins as may be seen fig. 4. He gave names to the angular points, and finished his demonstration with his fingers.

“ If we suppose that Sanderfon only employed pins with large heads to mark the limits of his figures, around these he might arrange his pins with small heads in nine different manners, all of which were familiar to him. Thus he scarcely found any embarrassment but in those cases where the great number of angular points which he was under a necessity of naming in his demonstration obliged him to recur to the letters of the alphabet. We are not informed how he employed them.

“ We only know, that his fingers ran over the board with astonishing agility; that he undertook with success the longest calculations; that he could interrupt the series, and discover his mistakes; that he proved them with the greatest ease; and that his labours required infinitely less time than one could have imagined, by the exactness and promptitude with which he prepared his instruments and disposed his table.

Preparation of the instrument.

“ This preparation consisted in placing pins with large heads in the centres of all the squares: having done this, no more remained to him but to fix their values by pins of smaller leads, except in cases where it was necessary to mark an unit: then he placed in the centre of a square a pin with a small head, in the place of a pin with a large lead with which it had been occupied.

N^o 48.

Blind.

“ Sometimes, instead of forming an entire line with these pins, he contented himself with placing some of them at all the angular points, or points of intersection; around which he tied silk threads, which finished the formation of the limits of his figures.” See fig. 4.

It may be added by way of improvement, that for the division of one series of numbers from another, a thin piece of timber in the form of a ruler with which lines are drawn, having a pin at each end for the holes in the squares, might be interposed between the two series to be distinguished.

This geometrician left other instruments behind him; but as we do not know their uses, we need not add their descriptions.

It must be owned, that by the notation here exhibited every modification of number may be expressed, and of consequence every arithmetical operation successfully performed; but we have been recently favoured with another form of palpable arithmetic, which appears to us equally comprehensive and much more simple than that of Sanderfon. It was originally invented, and is still used in calculation, by Dr Henry Moyes; a gentleman whom we had formerly occasion to mention with merited applause in this article, and whose character and attainments we have endeavoured more fully to illustrate than had been done in the former edition, as well from personal knowledge as from the anecdotes of Dr Bew, as the most eligible introduction to the account of his notation, given in the words of his own letter, and exemplified in a figure copied from a drawing directed by himself.

“ To the Editor of Encyclopædia Britannica.

“ Sir, In compliance with your request, I send you the following brief account of a palpable notation which I have generally used for these 20 years to assist my memory in numerical computations. When I began to study the principles of arithmetic, which I did at an early period of life, I soon discovered to my mortification, that a person entirely deprived of sight could scarcely proceed in that useful science without the aid of palpable symbols representing the ten numerical characters. Being at that time unacquainted with the writings of Sanderfon, in which a palpable notation is described, I embraced the obvious, though, as I afterwards found, imperfect expedient of cutting into the form of the numerical characters thin pieces of wood or metal. By arranging these on the surface of a board, I could readily represent any given number, not only to the touch, but also to the eye; and by covering the board with a lamina of wax, my symbols were prevented from changing their places, they adhering to the board from the slightest pressure. By this contrivance, I could solve, though slowly, any problem in the science of numbers: but it soon occurred to me, that my notation, consisting of ten species of symbols or characters, was much more complicated than was absolutely necessary, and that any given number might be distinctly expressed by three species of pegs alone. To illustrate my meaning, let A, B, C, D, (fig. 5.), represent a square piece of mahogany a foot broad and an inch in thickness; let the sides A B, B C, C D, D A, be each divided into 24 equal parts; let every two opposite divisions be joined by a groove cut in the board sufficiently deep to be felt with the fingers.

⁴²
Dr Moyes form of palpable notation

ger, and let the board be perforated at each intersection with an instrument a tenth of an inch in diameter.

"The surface of the board being thus divided into 576 little squares, with a small perforation at each of their angles, let three sets of pegs or pins, resembling those represented in the plate at the figures 6, 7, 8, be so fitted to the holes in the board, that when sluck into them they may keep their positions like those of a fiddle, and require some force to turn them round. The head of each peg belonging to the first set is a right-angled triangle about one-tenth of an inch in thickness; the head of each peg belonging to the second set differs only from the former in having a small notch in its sloping side or hypotenuse; and the head of each peg belonging to the third set is a square of which the breadth should be equal to the base of the triangle of the other two. These pegs should be kept in a case consisting of three boxes or cells, each cell being allotted to a set, and the case must be placed close by the board previous to the commencement of every operation. Each set should consist of 60 or 70 pegs (at least when employed in long calculations); and when the work is finished, they should be collected from the board and carefully restored to their respective boxes.

Things being thus prepared, let a peg of the first set be fixed into the board, and it will acquire four different values according to its position respecting the calculator. When its sloping side is turned towards the left, it denotes one, or the first digit; when turned upwards, or from the calculator, it denotes two, or the second digit; when turned to the right, it represents three; and when turned downwards, or towards the calculator, it denotes four, or the fourth digit. Five is denoted by a peg of the second set, having its sloping side or hypotenuse turned to the left; six, by the same turned upwards; seven, by the same turned to the right; and eight, by the same turned directly down, or towards the body of the calculator. Nine is expressed by a peg of the third set when its edges are directed to right and left; and the same peg expresses the cypher when its edges are directed up and down. By three different pegs the relative values of the ten digits may therefore be distinctly expressed with facility; and by a sufficient number of each set the steps and result of the longest calculation may be clearly represented to the sense of feeling. It seems unnecessary to illustrate this by an example; suffice it to express in our characters the present year of the Christian æra 1783: Take a peg of the first set and fix it in the board with its sloping side turned towards the left equal to one; take now a peg of the second set and fix it in the next hole in the same groove, proceeding as usual from left to right, with its sloping side turned to the right equal to 7; next take a peg of the same set and fix it in the next hole, with its sloping side turned downwards, equal to 8; lastly, take another peg of the same set and place it in the next hole in the same position, equal to 3; and the whole will express the number required.

"When it is necessary to express a vulgar fraction, I place the numerator in the groove immediately above, and the denominator in that immediately below the groove in which the integers stand; and in decimal

arithmetic an empty hole in the integer-groove represents the comma or decimal point. By similar breaks I also denote pounds, shillings, pence, &c. and by the same expedient I separate in division the divisor and quotient from the dividend.

"This notation, which supplies me completely with coefficients and indices in algebra and fluxions, seems much superior to any of the kind hitherto made public in the west of Europe. That invented and described by Mr Grenville, having no less than ten sets of pegs, is by much too complicated for general practice; and that which we owe to the celebrated Sanderson is apt to puzzle and embarrass the calculator, as the pegs representing the numerical digits can seldom or never be in the same straight line. If you agree with me that the above notation may promote the knowledge, and therefore the happiness, of persons denied the benefit of sight, you have my consent to give it a place in the present edition of your valuable work. I am, Sir, with respect, your obedient servant,

HENRY MOYES."

We have seen the machine above mentioned, which was exhibited to the society for the improvement of polite arts, &c. by Mr Grenville, who is himself also deprived of sight. But though this has met with the approbation of Mr Stanley, we cannot forbear to think it less simple in its structure than that of Dr Moyes's, more multiform in its apparatus, and of consequence more laborious and complex in the process of its operation: for where every single peg has only one power, and acquires no diversity of value from its position, their forms must be indefinitely varied and their numbers prodigiously multiplied; which must cost both the memory and judgment of the pupil numberless painful and fatiguing exertions before he contracts a habit of using the instrument with promptitude and success. On these accounts, a particular description of it is omitted in this place.

In the higher parts of mathematics, such as conic sections, the same solid figures which are mediums of perception to those who see, may perform the same useful office to the blind. But, for the structure of superficial figures, we should imagine, that a kind of matter might be found, soft enough to be easily susceptible of impressions, yet hard enough to retain them till effaced by an equal pressure. Suppose, for instance, a table were formed, four feet broad and eight in length; for the figures, that they may be the more sensible to the touch, ought to be larger than ordinary. Suppose this table had brims, or a moulding round it, rising an inch above the surface; let the whole expanse, then, be filled with bees-wax, and the surface above pressed extremely even with a polished board, formed exactly to fit the space within the mouldings. This board will always be necessary to efface the figures employed in former propositions, and prepare the surface for new ones. We think we have pondered the minutest inconvenience that can arise from this method of delineating and conceiving geometrical truths; and, after all, the table appears to us the best and the least troublesome apparatus which a blind man can use. We can see no reason why general ideas of geography or topography might not be conveyed to him in the same manner, by spheres composed of or covered with the same incompressible matter.

43
A new mathematical instrument proposed.

44
Geographical instruments proposed for the blind.

Blind.

45
Account of
a new plan
for the im-
provement
of the blind

Such were the mediums that occurred to the author, when this article was originally written, for conveying to persons deprived of light those remote and complicated truths which vision alone was thought capable of representing; but a work has been lately published at Paris which supercedes every former attempt to promote or facilitate the improvement of the blind. The invention of a plan so arduous in its appearance and so practicable in its execution, demanded the highest exertions of the noblest genius to produce it, and the most strenuous efforts of indefatigable humanity to render it effectual. It is intitled, "An Essay on the Education of the Blind." Its object is to teach them, by palpable characters impressed on paper, not only the liberal arts and sciences, but likewise the principles of mechanical operation, in such a manner, that those who have no genius for literary improvement may yet become respectable, useful, and independent members of society, in the capacity of common artificers. By these tangible signatures they are taught to read, to write, and to print; they are likewise instructed in geometry, in algebra, geography, and, in short, in every branch of natural philosophy. Nor are their efforts circumscribed by mere utility; a taste for the fine arts has likewise been cultivated among them. They have been taught to read music with their fingers as others do with their eyes; and though they cannot at once feel the notes and perform them upon an instrument, yet are they capable of acquiring any lesson with as much exactness and rapidity as those who enjoy all the advantages of light. But we shall give a more particular account of the wonderful topics contained in this essay. In his first chapter the author discovers the end proposed by that delineation of culture which he offers to the blind; it is to enlarge their sphere of knowledge, and of consequence to increase their capacities and improve their powers of action, so that they may become happy and independent in themselves, and useful and agreeable to others. The 2d chapter contains an answer to the objections urged against the general utility of this institution. These objections are candidly stated, and answered in the most satisfactory manner; but were we to recapitulate them in detail, it would protract this article to a length much beyond its due proportion, even upon the extended plan of the Encyclopædia. The 3d chapter treats of reading as adapted to the practice of the blind. The 4th chapter consists of answers to various objections against the method of reading proposed for the blind; but these, for reasons formerly given, we cannot with propriety delineate in this article. In the 5th chapter is shown the art of printing as practised by the blind for their peculiar use. In the 6th chapter is described the manner of teaching the blind the art of printing for those that see. In the 7th is represented the manner of teaching the blind to write. The 8th chapter explains the method of teaching the blind arithmetic; the 9th, geography; the 10th, music. The 11th, contains an account of the mechanic arts in which the blind are employed, and of the way by which they are formed for such occupations. The 12th shows in general the proper manner of instructing the blind, and draws a parallel between their education and that of the deaf and dumb. Chapter 13th treats of the method of instructing them in the languages, mathe-

matics, history, &c. What remains of the book is taken up with notes which illustrate each particular chapter; a short historical account of the rise, the progress, and the present state, of the academy for the formation of the blind; an ode on the cultivation of the blind, by one that laboured under that affliction; an extract from the register of the royal academy of sciences; opinion of the printers; models of the various pieces which blind children are capable of printing; and an account of the exercises performed by blind children in presence of the king, queen, and royal family, during the Christmas solemnities 1786. Thus having given a cursory view of the various topics contained in the essay, we proceed to give some account of the manner in which the blind print and write. The blind compositor, then, has a box for every alphabetical character in use; on the outside of these boxes are palpably marked the peculiar character belonging to each; they are filled with types, which he chooses and sets as they are called for, but not in the position in which they are to be read; on the contrary, they are inverted as objects are seen painted on the retina of an eye by an optician. Having thus fixed and arranged his types, he chooses a page of the strongest paper that can be found, which he gently moistens in a degree sufficient to render it more easily susceptible of impressions, without being dilacerated or worn by the shock which it must afterwards undergo. He then lays it upon the types; and by the cautious operation of the press, or by the easy strokes of a little hammer, which are frequently repeated over the whole expanse, he causes the impression of the type to rise on the opposite side of the paper, where, when dry, it continues not only obvious to the sight but the touch, and is far from being easily effaced. On the upper side of the paper the letters appear in their proper position, and by their sensible elevation above the common surface render it practicable for the blind to read them with their fingers. Their manner of writing is analogous to this operation: the pupil, by repeated experiments, having familiarised himself to the forms of the letters, both in their inverted and in their proper position, gradually learns to delineate them upon paper, moistened as before, with the point of an iron pen, which has no split, and which is just sharp enough to impress without piercing the paper: thus, on the side next to the writer's hand, the letters are formed sunk and inverted; but when the paper is turned they appear right and *in relief*. Thus the blind are enabled to form and decypher, not only the characters required in common language, but also mathematical diagrams, arithmetical and geographical processes, and all the characters used in the written language of music. If this account should appear incredible to any of our readers, let him be informed, that the author of this article has conversed with two gentlemen of learning and veracity who saw the blind perform all the wonders here recapitulated with astonishing success, to the universal satisfaction of numberless spectators whom curiosity and compassion impelled to visit the academy, that they might behold with their own eyes a spectacle so interesting to humanity. Let the incredulous be also informed, that the composer of the article has in his own hands a copy of this work now reviewed, which is printed and bound

Blind.

46
Printing
performed
by the
blind.47
Their man-
ner of writ-
ting, &c.

by

Blind. by the blind themselves. They exhibit at their own academy every Wednesday and Saturday between one and two o'clock at noon, to crowds of charitable admirers, by whose liberal donations the institution is now chiefly supported.

48
e blind
rep the
astrono-
The knowledge of astronomy might likewise be of infinite use, both by enlarging the blind person's ideas of the universe, and by giving him higher and more confirmed impressions of that energy by which the stars are moved, and of that design by which their motions are regulated. But these objects are too vast; their distances, their magnitudes, their periods of revolution, are too complex to be comprehended in the mind, or impressed in the memory, without sensible mediums. For this purpose, an orrery, or some machine of a similar construction, will be indispensably requisite.

49
natural
dofophy.
The science of causes and effects might likewise yield him the most sublime and rational entertainment of which an intelligent being, in his present state, is susceptible. By this he might enter into the laws, the vicissitudes, the œconomy, of nature. Nor is it absolutely necessary that he should be an ocular witness of the experiments by which these laws are detected and explained. He may safely take them for granted; and if, at any time, a particular experiment should prove faithless, he may, from general principles, be able to discover its fallacy, whether in the nature of the subject, the inaptitude of the instruments, or the process of the execution. The laws of motion, the various ratios or proportions of forces whether simple or compound, he may calculate and ascertain by the same means and in the same method so happily used by Sanderfon.

50
moral
if of, by
d theo-
57.
Moral and theological knowledge he may easily obtain, either from books, or instructions delivered *viva voce*. The last, if communicated by one who understands and feels the subject, with a proper degree of perspicuity and sensibility, are infinitely the most eligible. By morals, we would not merely be understood to mean a regular and inculpable series of action, but the proper exertion and habitual arrangement of the whole internal œconomy, of which external actions are no more than mere expressions, and from which the highest and most permanent happiness alone can proceed. By theology, we do not mean that systematic or scholastic jargon, which too frequently usurps its venerable name; but those sublime and liberal ideas of the nature and government of a Supreme Being, whether discoverable by nature or revealed in scripture, which enforce every moral obligation, which teach us what is the ultimate good of our nature, which determine our efforts and animate our hopes in pursuing this most important of all objects. What Cicero says of the arts and sciences may with great propriety be applied to religion: *Nam cetera neque temporum sunt, neque ætatum omnium, neque locorum; et hæc studia adolescentiam alunt, senectutem oblectant, secundas res ornant, adversis perfugium ac solatium præbent: delectant domi, non impediunt foris; pernent nobiscum, pergrinantur, rusticantur.* Translated thus: 'For other studies are not suited to every time, to every age, and to every place: but these give strength in youth, and joy in old age; adorn prosperity, and are the support and consolation of adversity; at home they are delightful, and abroad they are

easy; at night they are company to us; when we travel, they attend us; and in our rural retirements, they do not forsake us.'

Blind.

To this may be added, that the joys of religion are for ever adequate to the largest capacity of a finite and progressive intelligence; and as they are boundless in extent, so they are endless in duration. We have already, more than once, observed, that the soul of a blind man is extremely obnoxious to melancholy and dejection. Where, therefore, can he find a more copious, intimate, permanent, and efficacious source of comfort than in religion? Let this then be inculcated with the utmost care and assiduity. Let the whole force of the soul be exerted in showing him that it is reasonable. Let all the noblest affections of the heart be employed in recommending it as amiable; for we will venture to assert, that the votary of religion alone is the man,—

*Quem, si fractus illabatur orbis,
Impavidum serient ruinae:*

Thus translated;

Whom, though with nature's wreck oppress'd,
Unmanly fears could ne'er infect.

When the situation of the blind, and its natural effects upon their characters, are considered; when we reflect how exquisite their distresses, how pungent their disappointments, how sensible their regrets, how tedious and gloomy their periods of solitude; we must be wretches indeed, if we can grudge either labour or expense in procuring them every source of entertainment, which, when procured, remains in their own power, and yields what may be in some measure termed *self-derived enjoyment*. These amusements are prolific of numberless advantages: they afford us at once entertainment and exertion; they teach us to explore a thousand resources for preservation and improvement, which would otherwise have escaped our attention; they render us awake and sensible to a thousand notices both of external and intellectual objects, which would otherwise have passed unobserved.

Thus far have we proceeded without mentioning philological learning; though we know it to be attainable by the blind in a high degree, and though we are conscious of its importance both to their use and ornament. But as it is not indispensable, and as its acquisition is tedious and operose, we thought it less necessary to be early and minutely specified. We cannot doubt, that learning different languages adds to the treasure of our ideas, and renders those which we possess more clear and definite. It must be acknowledged, that the possession of other languages elucidates our own. The technical terms of almost every science are exotic; and without clearly understanding those, we cannot properly possess the ideas of which they are the vehicles. But these motives are common to every candidate for philological improvement with the blind.

51
Of gram-
mar.
The paths of grammar, however, are dry and rugged; and it will be necessary for the pedagogue, who ever he is, to take all the opportunities that offer of enlightening the darkness and polishing the asperities of the road. When, therefore, the intellect of the pupil begins to open and exert its penetration, it will

Blind. be proper to show him how the nature, the forms, and arrangements, of words, flow from our ideas and their relations. Every substance must naturally be in some state; it must either act, or be acted upon. The actions which it performs or suffers must be performed or suffered in some definite manner or degree. It must likewise have some qualities, whether temporary and accidental, or natural and permanent. These qualities must likewise be susceptible of degrees. When different substances are considered in the same state, its common participation forms a connection: when regarded in different states, that difference forms an opposition. The constant repetition of the names of substances and qualities produces a disagreeable monotony in language. They must therefore be implied in other words, which likewise in some cases serve to connect the parts of a sentence. There is a difference between such words as imply the connection of sentences, and such as imply the connection of states or circumstances. Actions to be performed or suffered may be either positively affirmed of any substance, or merely attributed to them. Living and percipient substances have immediate sensations of pain or pleasure, which likewise are productive of desire and aversion. To these sentiments particular sounds are adapted, whether immediately inspired by nature, or resulting from association and tacit convention.

Thus we have a foundation for all the different parts of speech; and from their natures and offices their forms and arrangements may be deduced, according to the analogy of every language.

52
The blind susceptible of logic, history, and the belles lettres.

The art of reasoning, the knowledge of history, and a taste for the *belles lettres*, are easily attainable by the blind; and as they are copious funds of entertainment, they should be inculcated, though at the expence of care and labour.

53
A companion should be united to the blind by more than the ties of interest and convenience.

The relations of persons subjected to this misfortune, in easy circumstances, will find it highly conducive to the improvement of their charge, to select some one among his coevals, of a sound understanding, a sweet and patient temper, a docile mind, a warm heart, and a communicative disposition. These two should be taught to find their interest and happiness in their connection one with another. Their bed, their board, their walks, their entertainments, their lessons, should be common. These are the best eyes with which art can endow a blind man: and if properly selected, they will on some occasions yield very little, in utility and perfection, to those of nature; nay, at some junctures they may be preferable.

54
Music one of the most proper employments for the blind. Mediocrity, however, pernicious.

If the blind must depend upon the exercise of their own powers for bread, we have already pointed out music as their easiest and most obvious province; but let it at the same time be remembered, that mediocrity in this art may prove the bitterest and most effectual curse which a parent can inflict upon his offspring, as it subjects them to every vicious impression or habit which may be imbibed or contracted from the lowest and most abandoned of mankind. If your pupil, therefore, be not endowed with natural talents exquisitely proper both for the theory and practice of this art, suffer him by no means to be initiated in it. If his natural genius favours your attempts, the spinet, harp, or organ, are the most proper instruments for him to be-

Blind. gin; because by these instruments he may be made more easily acquainted with the extent of musical scales, with the powers of harmony, with the relations of which it is constituted, and of course with the theory of his art. It would be not only unnecessary, but impracticable, to carry him deep into the theory, before he has attained some facility in the practice. Let, therefore, his head and his hands (if we may use the expression), be taught to go *pari passu*. Let the one be instructed in the simplest elements, and the others conducted in the easiest operations, first: contemplation and exercise will produce light in the one and promptitude in the other. But as his capacity of speculation and powers of action become more and more mature, discoveries more abstract and retired, talks more arduous and difficult, may be assigned him. He should be taught the names and gradations of the diatonic scale, the nature and use of time, the diversity of its modes whether simple or mixed. He should be taught the quantity or value of notes, not only with respect to their pitch, but to their duration. Yet, let him be instructed not to consider these durations as absolutely fixed, but variable according to the velocity of the movements in which they are placed. Thus we reckon a semibreve equal to 4 vibrations of a pendulum; a minim to 2; a crotchet to 1, &c. But if the number of aliquot parts, into which a semibreve is divided, be great, and consequently the value of each particular part small, the minim, crotchet, quaver, &c. will increase in their intrinsic durations, though they must always preserve the same proportions relatively one to another. He should never be habituated to take a piece of music, either from the sound of a voice or an instrument. His companion ought to read the music by the names and values of its characters, with the same exactness as the words in any other language. When he becomes a considerable adept in the art, tangible signs may be invented, by which he may not only be enabled to read, but even to set, music for himself. Such exercises will render him infinitely more accurate, both in his principles and practice, than he would otherwise be.

There is a hint of such tangible signs given in Tanfure's musical grammar, p. 93. and which, though (like the rest of the book) obscure and indigested, may be improved and applied with advantage.

For the sake of those in whose hands it may not be, we quote the passage at length.

"As it is the pleasure of the Almighty, that some persons are destitute of *eye-sight*; in like manner it is his infinite goodness to make them a double amends another way, by giving them a greater share of memory, &c. whereby they become very dexterous in playing on musical instruments, mathematics, &c. as we may observe by Dr Stanley organist of St Andrew's Holburn in London, the blind professor of mathematics in the university of Cambridge, and many others too tedious here to mention, who were born *blind*, and never saw the least glance of light; yet God gave them such a light in *knowledge*, that they became the wonder of all such as had the benefit of seeing, &c.

"And as *blind persons*, at first, cannot possibly have so clear an idea of *notes* and *musical characters* as they that

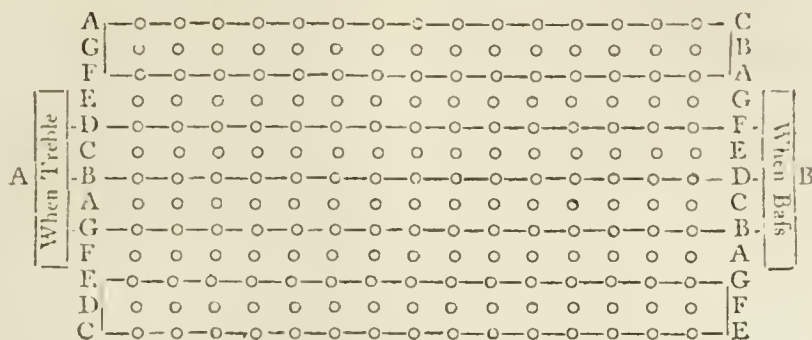
55
Scheme of musical notation.

nd. that see them, until they are taught by a master or tutor; I have (for the good-will I bear to such unfortunate persons) contrived the following table;

that, by *feeling*, they may understand notes, and learn any tune that shall be set them, in their master's absence.

Blind.

A New Music-TABLE for such as are BLIND.



EXPLANATION.

“ Let A—B be a smooth board, 3 or 4 feet long, 1 inch thick, and 9 inches wide, with 5 square ledges glued thereon, each being half an inch asunder, half an inch wide, and half an inch high; which rising ledges represent our 5 lines of music, and their spaces: and the two outward lines, being made a little lower, may serve as leger lines, on occasion. The cyphers represent so many holes bored into every line and space, half an inch asunder; wherein *pegs* of different shapes are to be set, to represent the several sorts of notes and characters of the tune: which pegs the blind person may know by feeling, as well as he does his keys of the organ or harpsichord: so that, by keeping his fingers on the 5 lines, he feels the several pegs as they come on, and are set to represent the several sorts of notes, on both line and space; whilst his right hand strikes the respective key, &c. he first knowing the names of all his keys, his lines, spaces, and the mark of every peg. Let each peg be about half an inch high, when set in very fast. [N. B. The blind person must first be taught the names of the above lines and spaces in both the treble and bass clefs; and that he must feel his treble with his right hand, and his bass with the left hand; each being contrary, as you may see by the letters of the above table, A and B; and must learn each part separate.]

“ Of pegs, he must have a great number of every sort, to set his tune with, which he may mark as follows:

- For a *Semibreve*, 4 top-notches.
- Minim*, 2 top-notches.
- Crotchet*, 1 top-notch.
- Quaver*, one corner cut off.
- Semiquaver*, 2 corners cut off.
- Demisemiquaver*, all 4 corners cut off.
- Rests*, a notch in the corner.
- A *Flat*, 1 notch on the side.
- Sharp*, 2 notches on the side.
- Point*, 3 notches on the side.
- Bar*, a flat thin top.
- Repeat*, a sharp-pointed top, &c. &c. &c.

“ But it is best for every performer to make and mark his own pegs; and deliver them one

by one as they are called for by the person that sets his *tune*.”

Thus far our author. We have already complained, that Tanfure's Musical Notation is imperfect; and perhaps every table or instrument of the same kind may be liable to the same censure, as not being comprehensive of all the characters in the written language of music, so that the blind reader may find no deficiency in acquiring any lesson: yet as the cushion of Mr Cheefe appears to have more powers than any other instrument for the same purpose that has hitherto occurred to our observation, though attended with many formidable objections, we here insert it. It may possibly, however, be best for every blind adept in the musical art, after being sufficiently instructed in its theoretical and practical principles, to invent for himself a table, by which may be expressed all the various phenomena of music, in which, by varying the forms and positions of his peggs, he may habitually associate them with sounds, durations, rests, intervals, chords, cadences, da capos, repeats, and all the various graces which give animation and expression to musical sounds: for thus, being the immediate creatures of his own imagination, they will more easily become familiar to his memory, and be more strongly and readily associated with the phenomena which they are intended to signify, than if he had assumed the inventions of any other.

Mr Cheefe's description of his machine for teaching music to people deprived of sight, and to enable them to preserve their compositions, in the art of composing, without the assistance of a copyist. — “ That part of the machine which represents the book, or paper, is a small cushion stuffed, on a little frame; along which, is sewed a number of pack thread strings at equal distances from each other; these represent the lines in a music book: the five which compose the staff, are made of large twine; and those which represent the leger or occasional lines, drawn through the heads of the notes, where the music exceeds the compass of the established staff, are made of small twine, and are on this machine of the same length as the others.”

“ If the practitioner only wishes to write harpsichord music, the cushion may be what length he pleases, and about five or six inches wide: the strings must be sewed in the following order; beginning with the first

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Cheefe's machine,
pl. XCVIII,
fig. 9.

Blind.

or lowest, near the edge of the cushion; four small ones, which correspond with the notes in the base of the instrument ff, rr, cc, ee: Next five large ones, for the staff which correspond with the lines in the book, or notes in the instrument, g, b, d, f, r; one small one, which represents the occasional line between the base and treble, or middle c; five large ones for the treble staff, which make the notes e, g, b, d, f; three small ones, which represent the ledger lines when the music goes in alt. These provide for the note a in alt, c in alt, and e in alt; in the space above which, next the edge of the cushion, the f in alt is wrote, when it is wanting, which completes the compass of the instrument.

"Those who only sing or play on single instruments, such as violins, &c. should have their cushions not above half the width of those before-mentioned, upon which there should be but one staff, and that in the following order:—Two small lines at bottom, five large ones in the middle, and three small ones at top. Neither of the outside lines of these small cushions should be sewed close to the edge, as there are notes supposed above and below. At either end of these small cushions, there should be a small wire staple, in order that any number of them may be combined together at pleasure, by running a rod through the staples: this will enable the practitioner to write what musicians call SCORE, in any number of parts he pleases; and by this means a thorough knowledge of the great works of Handel, and all other classical authors, may be acquired as well without sight as with it.

"The characters used to write on this machine are pins; some with two, three, or more heads; others bent in different forms—some, the heads taken off and the top beat flat; some of these are split; others the heads taken off, and placed near the middle. The bars are pieces of wire crooked at each end; a double bar is made by placing two single ones close together; a double sharp and double flat in the same manner.

"The characters are kept in a box in the same style as the printer keeps his types; each different compartment of which must be marked with a character in writing, signifying what each, contained in the several compartments, is intended to represent. That the master may be acquainted with them, the student must be taught to distinguish each of the characters contained in the box by the feel, as well as the names of each line and space upon the cushion. When he can do this readily, some music should be read to him, which it will be well for him to copy on the cushion: and when that is filled, let it be laid on the desk of the harpsichord before him; and then by feeling over a passage or sentence at a time, and afterwards playing it, his playing always commencing with the beginning of the piece, or at some particular part of it, this will soon enable him to recollect the whole, when the hands are taken off the cushion, to play what has been last felt. One of those characters, called a direct, must be placed against the note to be next felt: This will enable the student to go on again, after playing, without any difficulty. The person who reads the music, must be instructed not to call the lines or spaces by the letters which distinguish them, lest confusion may ensue, every eighth being the same; but must read in the following manner: first the name of the character must be mentioned, whether minim, crotchet, or quaver,

&c. then the line or space; as for example, minim on the first line, crotchet on the first space, quaver on the second, &c. &c. When the music exceeds the compass of the staff, it must be particularly mentioned whether above or below, first calling the character, then the ledger line or space.

"The technical term at the beginning of each piece, is better remembered than wrote down on the machine: The accidental terms, which are best marked by placing some character, not much used, either above or below the note on which it happens, the ingenious mind will find out a method of doing for itself.

"This machine will not only teach music; but, calling the characters letters, any one will be enabled to spell, read, or write down his sentiments on any subject, and even convey them to his friend without the assistance of a secretary. Arithmetic may be also taught upon this machine; as by calling the dot 1, and the pause 10, a complete set of figures will be formed.

"*Explanation of the figures.* A, B, C, D, the form of the cushion, which in its full size is about three feet long, and five inches and three quarters wide, having thereon a representation of musical notes, shown by different pins stuck on it. The lines a, b, c, d, e, are of large packthread; and the lines, f, g, h, are of small twine.

"Pins, N^o 1. A semibreve. 2. A semibreve rest. 3. A minim. 4. A minim rest. 5. Dots. 6. A crotchet. 7. A crotchet rest. 8. A quaver. 9. A quaver rest. 10. A sharp. 11. A semiquaver. 12. A semiquaver rest. 13. A demiquaver. 14. A demiquaver rest. 15. A flat. 16. A demisemiquaver. 17. A demisemiquaver rest. 18. A semidemiquaver. 19. A semidemiquaver rest. 20. A natural. 21. Bars. 22. A direct. 23. A tye. 24. Bass. 25. Tenor cleff. 26. Treble cleff. 27. A repeat. 28. Pause. 29. This character placed on any line or space, signifies as many notes on that line or space as there are doubles on the pins; if turned upwards, it implies the same number ascending; if downward, that number descending. 30. A beat or inverted shake. 31. A shake; and where there is a dot placed over it, signifies a turned shake. Two dots placed over each other, above the notes, without this character, signify a turn only. 32. This character is used over the note to signify *forte*; and if a dot is placed above it, *fortissimo*: if the dot is placed above the note and below the character, it implies *crescendo*; if the character is placed below the note, it signifies *piano*; and if a dot is placed under it, *pianissimo*; but if the dot is above the character, and below the note, it signifies *diminuendo*. In concertos, the inventor uses the same character placed above the note in the same manner, with two dots over it to signify *toote*; and below the notes, with two dots under it to signify *solo*: in vocal music, the same character above the notes, with three dots over it, signifies *symphony*; and below the notes, with three dots under it, signifies *song*."

It is certain, that when playing concertos, or, if you please, when performing in *score*, the blind must depend upon memory, and upon memory alone: but happily their retentive powers are remarkably strong; and there are few pieces in music which will be found either too intricate to be acquired, or too long to be remembered, by a person deprived of sight. Mr Stanley, the gentleman

gentleman formerly mentioned by Tansure, performs what is still more astonishing. If our information, which we cannot doubt, be true, he accompanies any lesson with a thorough bass, though he never has heard it before. We have never yet heard of any person, though blessed with the full use of sight, and with all the advantages accruing from it, who could thus anticipate harmony before the chords were founded, and accompany it in a manner suitable to its nature.

When he becomes a more profound theorist, if he has adopted the notion that music and geometry are congenial and inseparable (which, however, in our judgment is frivolous), he may peruse Maleson's Essay on Music, and Treydell's Theory and Practice of Music. But if he chooses to hear the same principles delivered without that unnecessary parade and ostentation of profundity, let him be instructed by D'Alombert (see the article Music in this Dictionary); by Rameau, in his principles of composition; and by Rousseau's Musical Dictionary (the substance of which is engrossed in the present Work, either under the respective detached articles, or in the notes added to the article Music). It is true, that the forms and proportions of instruments, the thickness, length, and tension of musical strings, may be mathematically adjusted; their relations one to another may be determined by the coincidence of their vibrations, or by the number and velocity of these vibrations when dissonant; but experience and a good ear are amply sufficient for these purposes. Yet, if the necessity of geometry in music should still remain an indelible article in his creed, he may peruse Dr Smith's Philosophical Principles of Harmony. There has also lately been published an explication of Tartini's theory, intitled, *The Principles and Power of Harmony*; which, after he has made considerable progress, may be read to him with sensible improvement.

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THUS we have endeavoured to form an estimate of the inconveniences suffered, and the advantages possessed, by the blind; we have attempted to show, of what kind of culture their remaining faculties are susceptible, and what appeared to us the easiest and properest means of their improvement. We have illustrated not only its possibility, but its certainty, by incontestable facts, which demonstrate, even in the eyes of scepticism and incredulity, to what degrees of eminence, both in the mechanical and liberal arts, the blind may be carried. It now remains to demand a categorical answer from society, Whether it is more humane and eligible, that such unhappy persons should be suffered to languish out their lives in torpid and miserable obscurity, wretched in themselves and burdensome to others; or to cultivate and improve their powers in such a manner, as that they may be qualified for internal enjoyment and public utility? Surely there is not a human being, who does not disgrace the works of God, that can be at any loss in answering this question. Have we not then a right to call the world to an account? have we not a right to demand, why rational beings susceptible of felicity in themselves, and capable of transfusing happiness through the societies with whom they are connected, should be abandoned to a state of insignificance and misery? Is it possible that men who are every moment subjected to the same contingencies with which they behold their fellow-creatures afflicted, should not

with all their souls endeavour to alleviate the misfortunes of their suffering brethren? Is the native and hereditary portion of human woe so light and supportable in itself, that we should neglect and despise those to whom it is embittered by accidental circumstances of horror and distress? You who are parents, who feel the strong and powerful pleadings of nature, do not, by a brutal negligence and insensibility, render the existence which you have given a curse to its possessors. Do not give them reason to upbraid your memory; and to answer those who ask what patrimony you have left them, that their sole inheritance was ignorance, incapacity, and indigence. You men of wealth and eminence, you whom Providence has rendered conspicuous on the theatre of nature, to whom it has given the noblest opportunities of participating the divine beatitude by the exercise of universal benevolence and genuine patriotism; yours is the glorious province of bringing neglected merit from obscurity, of healing the wounds inflicted by adverse fortune, and of cultivating these talents which may be exerted for your own advantage and the honour of your species. Thus you shall rise in the heraldry of heaven, and your names diffuse a lustre through the extent of space and the archives of eternity. Otherwise the temporary glare and parade of your situation can produce nothing else but a despicable mimicry of real and intrinsic greatness, and are no more than a splendid mask to cover what in itself is infamous or detestable.

By way of appendix to the preceding article, we shall add one or two very singular histories, with which it is hoped our readers will not be displeas'd.

An account of some remarkable particulars that happened to a lady after having had the confluent kind of small-pox. "In the course of this disease, during which the lady was attended by the late Sir Hans Sloane, several threatening symptoms appeared, which however were at length overcome; and the patient being thought out of danger, took several doses of such purgative medicines as are usually administered in the decline of the disease, without any bad consequence.

"But in the evening of the day on which she had taken the last dose that was intended to be given her on that occasion, she was suddenly seized with pains and convulsions in the bowels; the pain and other symptoms became gradually less violent as the force of the medicine abated, and by such remedies as were thought best adapted to the case, they seemed at length to be entirely subdued.

"They were, however, subdued only in appearance; for at eleven o'clock of the forenoon of the next day they returned with great violence, and continued some hours; when they went off, they left the muscles of the lower jaw so much relaxed, that it fell down, and the chin was supported on the breast. The strength of the patient was so much exhausted during this paroxysm, that she lay near two hours with no other signs of life than a very feeble respiration, which was often so difficult to be discerned, that those about her concluded she was dead.

"From this time the fits returned periodically every day, at about the same hour. At last they seemed to affect her nearly in the same degree; but at length all

Blind.

the symptoms were aggravated, the convulsions became more general, and her arms were sometimes convulsed alternately; it also frequently happened, that the arm which was last convulsed remained extended and inflexible some hours after the struggles were over. Her neck was often twisted with such violence, that the face looked directly backwards, and the back part of the head was over the breast; the muscles of the countenance were also so contracted and writhed by the spasms, that the features were totally changed, and it was impossible to find any resemblance of her natural aspect by which she could be known. Her feet were not less distorted than her head; for they were twisted almost to dislocation at the instep, so that she could not walk but upon her ancles.

To remove or mitigate these deplorable symptoms, many remedies were tried; and, among others, the cold bath: but either by the natural effect of the bath, or by some mismanagement in the bathing, the unhappy patient first became blind, and soon afterwards deaf and dumb. It is not easy to conceive what could increase the misery of deafness, dumbness, blindness, and frequent paroxysms of excruciating pain: yet a very considerable aggravation was added; for the loss of her sight, her hearing, and her speech, was followed by such a stricture of the muscles of her throat, that she could not swallow any kind of aliment either solid or liquid. It might reasonably be supposed that this circumstance, though it added to the degree of her misery, would have shortened its duration: yet in this condition she continued near three quarters of a year: and during that time was supported in a very uncommon manner, by chewing her food only; which having turned often, and kept long in her mouth, she was obliged at last to spit it out. Liquors were likewise gurgled about in her mouth for some time; and then returned in the same manner, no part of them having passed the throat by an act of deglutition: so that whatever was conveyed into the stomach, either of the juices of the solid food, or of liquids, was either gradually imbibed by the sponginess of the parts, which they moistened, or trickled down in a very small quantity along the sides of the vessels.

But there were other peculiarities in the case of this lady, yet more extraordinary. During the privation of her sight and hearing, her touch and her smell became so exquisite, that she could distinguish the different colours of silk and flowers, and was sensible when any stranger was in the room with her.

After she became blind, and deaf, and dumb, it was not easy to contrive any method by which a question could be asked her, and an answer received. This however was at last effected, by talking with the fingers, at which she was uncommonly ready. But those who conversed with her in this manner, were obliged to express themselves by touching her hand and fingers instead of their own.

A lady who was nearly related to her, having an apron on, that was embroidered with silk of different colours, asked her, in the manner which has been described, if she could tell what colour it was? and after applying her fingers attentively to the figures of the embroidery, she replied, that it was red, and blue, and green; which was true. The same lady having a pink coloured ribbon on her head, and being willing still fur-

ther to satisfy her curiosity and her doubts, asked what colour that was? her cousin, after feeling some time, answered that it was pink colour: this answer was yet more astonishing, because it showed not only a power of distinguishing different colours, but different kinds of the same colour; the ribbon was not only discovered to be red, but the red was discovered to be of the pale kind called a *pink*.

This unhappy lady, conscious of her own uncommon infirmities, was extremely unwilling to be seen by strangers, and therefore generally retired to her chamber, where none but those of the family were likely to come. The same relation, who had by the experiment of the apron and ribbon discovered the exquisite sensibility of her touch, was soon after convinced by an accident, that her power of smelling was acute and refined in the same astonishing degree.

Being one day visiting the family, she went up to her cousin's chamber, and after making herself known, she intreated her to go down, and sit with her among the rest of the family, assuring her, that there was no other person present: to this she at length consented, and went down to the parlour door; but the moment the door was opened, she turned back, and retired to her own chamber much displeas'd; alleging, that there were strangers in the room, and that an attempt had been made to deceive her: it happened indeed that there were strangers in the room; but they had come in while the lady was above stairs, so that she did not know they were there. When she had satisfied her cousin of this particular, she was pacified; and being afterwards asked how she knew there were strangers in the room, she answered, by the smell.

But though she could by this sense distinguish in general between persons with whom she was well acquainted and strangers, yet she could not so easily distinguish one of her acquaintance from another without other assistance. She generally distinguished her friends by feeling their hands; and when they came in, they used to present their hands to her, as a mean of making themselves known: the make and warmth of the hand produced in general the differences that she distinguished; but sometimes she used to span the wrist, and measure the fingers. A lady, with whom she was very well acquainted, coming in one very hot day, after having walked a mile, presented her hand as usual; she felt it longer than ordinary, and seemed to doubt whose it was; but after spanning the wrist, and measuring the fingers, she said, 'It is Mrs M. but she is warmer to-day than ever I felt her before.'

To amuse herself in the mournful and perpetual solitude and darkness to which her disorder had reduced her, she used to work much at her needle; and it is remarkable, that her needle-work was uncommonly neat and exact: among many other pieces of her work that are preserved in the family, is a pin-cushion, which can scarce be equalled. She used also sometimes to write; and her writing was yet more extraordinary than her needle-work: it was executed with the same regularity and exactness; the character was very pretty, the lines were all even, and the letters placed at equal distances from each other; but the most astonishing particular of all, with respect to her writing, is, that she could by some means discover when a letter had by some mistake been omitted, and would place it over that part

Blind. of the word where it should have been inserted, with a caret under it. It was her custom to sit up in bed at any hour of the night, either to write or to work, when her pain or any other cause kept her awake.

“These circumstances were so very extraordinary, that it was long doubted whether she had not some faint remains both of hearing and sight, and many experiments were made to ascertain the matter; some of these experiments she accidentally discovered, and the discovery always threw her into violent convulsions. The thought of being suspected of insincerity, or supposed capable of acting so wicked a part as to feign infirmities that were not inflicted, was an addition to her misery which she could not bear, and which never failed to produce an agony of mind not less visible than those of her body. A clergyman who found her one evening at work by a table with a candle upon it, put his hat between her eyes and the candle, in such a manner that it was impossible she could receive any benefit from the light of it if she had not been blind. She continued still at her work, with great tranquillity; till, putting up her hand suddenly to rub her forehead, she struck it against the hat, and discovered what was doing; upon which she was thrown into violent convulsions, and was not without great difficulty recovered. The family were by these experiments, and by several accidental circumstances, fully convinced that she was totally deaf and blind; particularly by sitting unconcerned at her work, during a dreadful storm of thunder and lightning, though she was then facing the window, and always used to be much terrified in such circumstances. But Sir Hans Sloane, her physician, being still doubtful of the truth of fact, which were scarce less than miraculous, he was permitted to satisfy himself by such experiments and observations as he thought proper; the issue of which was, that he pronounced her to be absolutely deaf and blind.

“She was at length sent to Bath, where she was in some measure relieved; her convulsions being less frequent, and her pains less acute: but she never recovered her speech, her sight, or her hearing in the least degree.

“Many of the letters dated at Bath, in some of which there are instances of interlineations with a caret, the writer of this narrative hath seen, and they are now in the custody of the widow of one of her brothers, who, with many other persons, can support the facts here related, however wonderful, with such evidence as it would not only be injustice, but folly, to disbelieve.”

An account of a French lady, blind from her infancy, who can read, write, and play at cards, &c.—“A young gentlewoman of a good family in France, now in her 18th year†, lost her sight when only two years old, her mother having been advised to lay some pigeons blood on her eyes, to preserve them in the small-pox; whereas, so far from answering the end, it eat into them. Nature, however, may be said to have compensated for the unhappy mistake, by beauty of person, sweetness of temper, vivacity of genius, quickness of conception, and many talents which certainly much alleviate her misfortune.

“She plays at cards with the same readiness as others of the party. She first prepares the packs allotted to her, by pricking them in several parts; yet so imper-

Blind. ceptibly, that the closest inspection can scarce discern her indexes. She sorts the suits, and arranges the cards in their proper sequence, with the same precision, and nearly the same facility, as they who have their sight. All she requires of those who play with her, is to name every card as it is played; and these she retains so exactly, that she frequently performs some notable strokes, such as show a great combination and strong memory.

“The most wonderful circumstance is, that she should have learned to read and write; but even this is readily believed on knowing her method. In writing to her, no ink is used, but the letters are pricked down on the paper; and by the delicacy of her touch, feeling each letter she follows them successively, and reads every word with her finger ends. She herself in writing makes use of a pencil, as she could not know when her pen was dry; her guide on the paper is a small thin ruler and of the breadth of her writing. On finishing a letter, she wets it, so as to fix the traces of her pencil, that they are not obscured or effaced; then proceeds to fold and seal it, and write the direction: all by her own address, and without the assistance of any other person. Her writing is very straight, well cut, and the spelling no less correct. To reach this singular mechanism, the indefatigable cares of her affectionate mother were long employed, who accustomed her daughter to feel letters cut in cards or pale-board, brought her to distinguish an A from a B, and thus the whole alphabet, and afterwards to spell words; then, by the remembrance of the shape of the letters, to delineate them on paper; and, lastly, to arrange them so as to form words and sentences.

“She has learned to play on the guitar, and has even contrived a way of pricking down the tunes as an assistance to her memory. So delicate are her organs, that in singing a tune, though new to her, she is able to name the notes.

“In figured dances she acquits herself extremely well, and in a minuet with inimitable ease and gracefulness. As for the works of her sex, she has a masterly hand; she sews and hems perfectly well; and in all her works she threads the needles for herself however small.

“By the watch her touch never fails telling her exactly the hour and minute.”

From this account, however, it would appear, that except reading and writing, the French lady has nothing to boast of in which she is not excelled by Mr Stanley already mentioned, if we may credit all that is reported of him. The works peculiar to her sex are gained mechanically; but the *distinguishing colours*, telling the precise time by a watch, naming the notes in music, and many other things depending upon the ear and touch, are said to be so familiar to him, that his friends cease to think them extraordinary. Attainments still more wonderful are ascribed to him; as, the naming the number of persons in a room on entering it; the directing his voice to each person in particular, even to strangers when they have once spoken; the missing any person absent, and telling who that person is; and, lastly, his being able to form just conceptions of youth, beauty, symmetry, and shape.

Blind
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Blindness.

Pore-BlIND, or *Pur-blind*. A person who is very short-sighted is said to be *pur-blind*.

Moon-BlIND, denotes horses that lose their sight at certain times of the moon. See FARRIERY.

BlIND-Harry. See HENRY the Minstrel.

BlIND-Worm. See ANGUIS.

BLINDE, among mineralists, a species of lead-mercurate, by our miners called mock-ore, mock-lead, and wild lead, &c. The German mineralists call it *blende*, whence our denomination *blinde*. It answers to what in Agricola is called *Galena inanis*.

It usually lies immediately over the veins of lead-ore, in the mines which produce it, for it is not found in all. When the miners see this, they know the vein of ore is very near.

BLINDS, or BLINDES, in the art of war, a sort of defence commonly made of ozers, or branches interwoven, and laid across between two rows of stakes, about the height of a man, and four or five feet asunder, used particularly at the heads of trenches, when they are extended in front towards the glacis; serving to shelter the workmen, and prevent their being overlooked by the enemy.

BLINDING, a species of corporal punishment anciently inflicted on thieves, adulterers, perjurers, and others; and from which the ancient Christians were not exempt. Sometimes lime and vinegar, or barely scalding vinegar, was poured into the eyes till their balls were consumed; sometimes a rope was twisted round the head till the eyes started out. In the middle age, they changed total blindness for a great darkness or diminution of sight; which they produced by holding a red-hot iron dish or basin before the eyes till their humours were dried and their coats shrivelled up.

The inhabitants of the city Apollonia executed it on their watch whom they found asleep.—Democritus (according to Plutarch, Cicero, and A. Gellius), put out his own eyes, that he might be less disturbed in his mental contemplations, when thus freed from the distraction of the objects of sight.

BLINDNESS, a privation of the sense of sight, arising from a total deprivation of its organs, or an involuntary obstruction of their functions. See the article BLIND.

Total Blindness, is that wherein all sight or perception, even of light, is wanting, as is the case of those who are said to be *stone-blind*. A blind man, by the civil law, cannot make a testament except under certain modifications; but in every case he is disabled from being a witness to a testament, on account of his blindness.

Partial Blindness, is that wherein some faint glimmering is left, as is always the case in people who have ripe cataracts, who are never so blind but they can discern day from night.

Perpetual Blindness, is that which remains alike under all the diversity of seasons, times, ages, &c.

Transient Blindness, is that which gives way of itself in due time, as that of whelps, which continues for several days, sometimes nine, rarely twelve, after they are littered. The Nogais Tartars, according to father Du Ban the Jesuit, who lived among them, are born blind, and open not their eyes till several days.

Periodical Blindness, is that which comes and goes

by turns, according to the season of the moon, time of day, and the like.

Diurnal Blindness, is called *hemeracopia*.

Nocturnal Blindness, called also *nyctalopia*, that which ensues on the setting of the sun in persons who see perfectly in the day, but become quite blind as soon as night comes on. Brigg, in Phil. Trans. N^o 159. p. 560, where an instance of it is given. See a singular case of this kind related by Dr Samuel Pye, in the Medic. Observ. and Inquir. Vol. I. p. 111.

The causes of blindness are either ordinary, as a decay of the optic nerve (an instance whereof we have in the Academy of Sciences, where upon opening the eye of a person long blind, the optic nerve was found extremely shrunk and decayed, and having no medulla in it); or some external violence, vicious confirmation, growth of a cataract, *gutta serena*, small-pox, or the like. See MEDICINE-Index.

Extraordinary causes of blindness are malignant stench, poisonous juices dropped into the eye, baneful vermin, long confinement in the dark, or the like. The ducks which breed under ground, and break out into the Zirchnitzer sea in Carniola after all great storms, are blind at their first eruption; but in some time come to their sight. The author of the Embassy of D. Garcias de Sylva Figueroa into Persia tells us, that in several parts of that kingdom are found vast numbers of blind people of all ages, sexes, and conditions; by reason of a species of little flies which prick the eyes and lips, and enter the nostrils, carrying certain blindness with them when they light on the eyes.

BLINDNESS, in farriery, is a disease incident to horses, especially those of an iron-grey or dapple-grey colour, when ridden too hard or backed too young. It may be discovered by the walk or step, which in a blind horse is always uncertain and unequal, because he dares not set down his feet boldly when led in one's hand; though if the same horse be mounted by an expert horseman, and the horse of himself be mettled, the fear of the spur will make him go more freely; so that his blindness can hardly be perceived. Another mark whereby a horse may be known to have lost his sight is, that upon hearing any body enter the stable, he will prick up his ears, and move them backwards and forwards, as mistrusting every thing, and being in continual alarm by the least noise. Dr Lower first showed the cause of the ordinary blindness in horses, which is a spongy excrescence, growing in one, sometimes in two, or three places of the *uvea*, which being at length overgrown, covers the pupil when the horse is brought into the light, though in a dark stable it dilates again.

BLINKS, among ancient sportsmen, denoted boughs broken down from trees, and thrown in the way where deer are likely to pass, to hinder their running, or rather to mark which way a deer runs, in order to guide the hunter.

BLINKING OF BEER, in Lincolnshire, signifies letting the wort stand for some time in the vat, till it hath acquired some degree of acidity, in order to dispose it to fine, and be the sooner ready for drinking.

BLISSOM, among husbandmen, corruptly called *blissom*, is the act of a ram when coupling with an ewe.

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Blissom.

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BLISTER, in medicine, a thin bladder containing a watery humour, whether occasioned by burns and the like accidents, or by vesicatories applied to different parts of the body for that purpose*.—Cantbarides, or Spanish flies, applied in the form of a plaster, are chiefly used with this intention. See **CANTHARIDES**.

BLITE, in botany. See **BLITUM**.

BLITH, a town of Nottinghamshire, in England, seated in W. Long. 0. 55. N. Lat. 53. 25.

BLITUM, **BLITE**, or *Strawberry Spinach*: A genus of the digynia order, belonging to the monandria class of plants; and in the natural method ranking in the 12th order, *Holeraceæ*. The calyx is trifid; no petals; the seed is one, included in a berry-shaped calyx.

Species. 1. The capitatum, with flowers in clustered heads at the joints and crown of the stalks, is a native of Spain and Portugal, but has been long preserved in the British gardens on account of the beauty of its fruit. It is an annual plant, with leaves somewhat like those of spinach; the stalk rises two feet and an half high; the upper part of the stalk hath flowers coming out in small heads at every joint, and is terminated by a little cluster of the same: after the flowers are past, the heads swell to the size of wood strawberries, and when ripe have the same appearance, but are not eatable; they are full of a purple juice, which stains the hands of those who bruise them of a deep purple colour. 2. The virgatum, with small heads growing from the sides of the stalks, is a native of the south of France and Italy. This seldom grows more than a foot high: the leaves are smaller than the first, but of the same shape: the flowers are produced at the wings of the leaves, almost the length of the stalk; they are smaller, and not so deeply coloured as the first. 3. The tartaricum, triangular, acutely indented leaves, is a native of the country from which it takes its name. Mr Miller received the seeds from Peterburg. It rises to very near three feet high; the flowers come out from the sides of the stalks, but are smaller than those of the first, as is also the fruit.

Culture. All these plants, being annuals, must be propagated by seeds; and as they are very hardy, will succeed in the common borders. If sown in March or April, covering the seed about half an inch deep with earth, and leaving the plants five or six inches asunder. When they come up, each must be supported with a small stick, or they will be borne down by the weight of the berries.

BLOATING, a puffing up or inflation of the exterior habit of the body, lodged chiefly in the adipose cells. It is the same with what physicians call an *emphysema*.

BLOCK is used for a piece of marble as it comes out of the quarry, before it has assumed any form from the hand of a workman.

Block, in the mechanic arts, a large piece of solid wood whereon to fasten work or to fashion it; strength and stability being the requisite properties. In this sense, we say a *chopping block*; a *sugar-finer's block*; a *smith's block*, on which his anvil is fastened; an *executioner's block*, on which the criminal's head is laid to be struck off.

Block, among cutters in wood, is a form made of pear-tree, box, or other hard and close-grained wood, free from knots, on which they cut their figures in relief with knives, chisels, &c.

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Block, in falconry, denotes the perch whereon a bird of prey is kept. This is to be covered with cloth.

Blocks, in sea-language, are pieces of wood belonging to ships, in which the shivers of pulleys are placed, and wherein the running-ropes go. Of these some are single, some double; and some have three, four, or five, shivers in them. They are named and distinguished by the ropes they carry, and the uses they serve for.

Mounting Block, an eminence usually of stone, cut in steps or notches, serving as a help to mount on horseback. These were much in use among the ancients, who were unacquainted with stirrups. The Romans erected them at proper stations along all their great roads.

Block (Daniel) portrait painter, was born at Stettin in Pomerania in 1580, and gave early proofs of a good genius; which induced his parents to place him as a disciple with Jacob Scherer, a master capable of giving him the best directions, to qualify him for proceeding successfully in his profession. He chiefly painted portraits, in which (according to Sandrart) he was very eminent, and had the honour to paint the portraits of Christian IV. King of Denmark, and of Gustavus Adolphus King of Sweden. The extraordinary merit of this master recommended him to the esteem of the Prince of Mecklenburg, who retained him in his service for 44 years; and by order of that Prince, he painted the portraits of his whole family at full length, as large as life, and in the antique habit; by which works his reputation was established effectually. By the agreeable manner of his colouring, and the easy attitudes of his figures, his paintings became so acceptable to all persons of rank, that before the decline of life, he had acquired a very large fortune; but unfortunately he lost it all, in the compass of a few hours, by the sudden eruption of a plundering party, and with great difficulty his own life was preserved. He died in 1661.

BLOCKADE, in the art of war, the blocking up a place, by posting troops at all the avenues leading to it, to keep supplies of men and provisions from getting into it; and by these means proposing to starve it out, without making any regular attacks.

To raise a blockade, is to force the troops that keep the place blocked up from their posts.

BLOCKLAND (Anthony de Montfort), history and portrait painter, was born of a noble family at Montfort in 1532. He learned the art of painting in the school of Francis Floris, whose manner he always followed; and became an artist of great distinction, by endeavouring principally to imitate the taste of the Roman school in design and composition. His genius was well adapted to grand compositions, of which he designed many; some at Delft, but more at Utrecht. His designs had grandeur, the airs of his heads were noble, and the profiles of his female figures approached near to the taste of Parrigiano. Several of his works are in so good a gusto, and particularly a Venus, and

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the history of Joseph and his Brethren, that they seem to have been painted by a master educated in the school of Florence. He died in 1583.

BLOCCZIL, a fortress of Over-yffel in the United Provinces, seated on the river Aa, at the place where it falls into the Zuider Zee. It has a port sufficient to contain 200 vessels, and serves to defend those ships that cross the sea. It has six good bastions, and several other regular fortifications. E. Long. 6. 0. N. Lat. 52. 44.

BLOEMART (Abraham), painter of landscape, cattle, history, and portrait, was born at Gorcum in 1564, according to Houbraken; but according to Sandrart, whose authority seems to claim the preference, he was born in 1567, and lived mostly at Utrecht. In his youth he applied himself diligently to design after the works of Francis Floris, and afterwards received instructions from several artists of no great repute; but the power of his own genius proved his principal director in the art of painting. He formed a manner peculiar to himself, making nature his model for many of the objects he painted, particularly his cattle, in which he excelled. He died in 1647. He left four sons who were all of them artists; but the most famous was *Cornelius*, the subject of the following article.

BLOEMART (Cornelius), the youngest son of Abraham, was born in 1603 at Utrecht. The first principles of drawing and painting he learned from his father; but his natural inclination for the art of engraving was so powerful, that he applied himself wholly to the pursuit of it. He first studied under Crispin de Pass, an engraver much more famous for the neatness than the good taste of his works. Not satisfied with what he learned from this artist, he went to Rome, in order to perfect himself from the works of the greatest masters: And in that city (where the far greater part of his engravings were made) he died in a very advanced age.—“The manner of engraving, adopted by this excellent artist, appears to me (says Mr Strutt) to be not only quite original, but the source from which we may trace that style in which the greatest and best French masters excelled; those I mean who worked with the graver only. He covered the lights upon his distances, and the other parts of his plates which required tinting, with great care. The lights, whether on the distant hills, trees, buildings, or figures, in the engravings prior to his time, had been left quite clear, and by so many white spots scattered in various parts of the same design, the harmony was destroyed, the subject confused, and the principal figures prevented from relieving with any striking effect. By this judicious improvement, Bloemart gave to his prints a more clear and finished appearance, than all the laboured neatness even of Jerom Wierix had been able to produce. He drew correctly; but from his style of engraving, which was executed entirely with the graver, the extremities of his figures are heavy, and his heads are not always equally beautiful or expressive. With respect to the mechanical part of the works, few indeed have excelled him, either in clearness or freedom of execution. His great fault, however, is want of variety. The naked parts of his figures, the draperies, and the back-ground, are equally neat, and engraved precisely in the same manner. Hence the effect is flat; and the flesh, for want of sufficient distinction, appears

cold and silvery. His works are justly held in high estimation. They are very numerous, and many of them difficult to be procured.”

BLOIS, a town of France, the capital of Blaisois, in Orleansois, is seated on the banks of the river Loire, partly on a plain, and partly on an eminence, in the midst of one of the most agreeable countries of France. The castle is the ornament of this city. At the first view, it seems to be two distinct buildings; but it is joined by a passage cut out of the rock. Joining to this, on the west-side, is the tower of *Chateau Regnaud*, so called because that lordship may be discovered from hence, though 20 miles distant. At the east-end of this is another small tower, which is partly ancient and partly modern. That part of the castle which was built by the Duke of Orleans, in the room of that which he demolished in 1632, is a superb edifice, but unfinished. The court, before it, where the church of St Saviour is built, is very large, and was formerly used for tournaments. The most remarkable thing in this castle is a fine long gallery, adorned with many curious and uncommon pieces; it is in the midst of two gardens, one of which is full of fruit-trees, and the other of parterres, fountains, cascades, and marble statues brought from Italy. Beyond these, there is a large park, where there is game in abundance. On all the gates of the city there is the image of the Virgin Mary, who they believe freed them from the plague in 1631. There are several parish-churches, chapters, and religious houses for both sexes. The church of St Solenne is the cathedral, and is the handsomest in the city. The front of the Jesuits church is decorated with three orders of architecture, the Doric, Ionic, and Corinthian; but there is only the Doric on the inside. The town-house is a tolerable building, and stands in a street which terminates at the quay, where there is a public walk that has a fine prospect on the Loire, over which there is a bridge that leads to the suburbs of Vienna. There are a few houses on the bridge, and a tower at each end to guard the entrance. About three quarters of a mile from the city, the water runs down the clefts of a rock into a large aqueduct, by which it is conveyed to a reservoir near the walls, and from hence distributed by leaden pipes to the several parts of the city. The country about Blois produces corn, wine, cattle, and game of every kind, and the waters a great quantity of fish. The meadows are so rich and fertile, that the cows yield excellent milk, good in consumptive cases, and which affords the best cream in the kingdom. About a league from Blois, there are mineral springs, which have the same virtues as those of Forges. The trade of Blois is chiefly in wine and brandy; but they also make some ferges and stuffs at this place. Several kings have kept their courts at Blois; for which reason they speak the French language in perfection, and the inhabitants are accounted witty and polite. E. Long. 1. 30. N. Lat. 47. 35.

BLOMARY, or BLOOMARY, in metallurgy, the first forge through which iron passes, after it is melted out of the ore.

BLOEMEN (Peter Van), a celebrated painter, born at Antwerp, was brother to John-Francis Van Bloemen, called by the Italians *ORIZONTI*, and lived for several years at Rome along with his brother. As soon

men, soon as he found himself competently skilled in colouring and penciling, as well as in designing, he returned to his native city, where, in the year 1699, he was appointed director of the academy. The composition of this master is rich, and his pictures are generally filled with a number of figures. His subjects are, the marchings of squadrons of cavalry, encampments, artillery, battles, Italian fairs, markets, and festivals; in which he showed great correctness in his design and in his drawing; and an elegance in the manner of dressing his figures; whom he frequently represented in oriental habits. He designed horses in an admirable style; and in his battles gave them abundance of spirit, graceful attitudes, and an expression that was full of life and nature. His landscapes are enriched with elegant architecture, with basso-relievos, and mutilated statues, in a noble taste; and rendered still more pleasing by a good tone of colour, by animals of different kinds, and excellent figures.—His best works are admired in all parts of Europe, and afford large prices: but it is to be observed, that some of his pictures seem rather to be too much laboured or stiff, and (according to the artists phrase) smell of the palette; and those are proportionably less estimable.

BLOEMEN (John Francis Van). Vid. ORIZONTI.

BLOEMEN (Norbert Van), brother of the preceding, was a painter of portraits and conversations; but in merit was very inferior to his brothers, although he had a good deal of employment.

BLOND (Christopher le), painter of portraits in miniature and all kinds of subjects on paper, was born in 1670. Very few circumstances relative to his education or life are mentioned by any writers till he was known at Rome in the year 1716, being at that time painter to the Count Martinetz, ambassador at the court of Rome. By the solicitation of Overbeke he was induced to go to Amsterdam, and in that city was employed to paint small portraits for bracelets, rings, and snuff-boxes; of which, although they were painted in water-colours, yet the colouring was as lively and natural as if they had been painted in oil. However, as he found his sight much impaired by the minuteness of his work, he discontinued water-colour painting, and attempted the use of oil with a reasonable degree of success. After he had resided for some years in the Low Countries, he went to England, and set up a new method of printing mezzotinto plates in colours so as to imitate the pictures of which they were copies. In this manner he executed in England several large plates, from pictures of the greatest masters, and disposed of the prints by lottery. But those who obtained the prizes (Mr Strutt says) appear not to have held them in any very great estimation. "The prints (he adds) certainly possess some merit, exclusive of their novelty; but, in general, the colours are flat and dirty; the effect is neither striking nor judiciously managed; and the drawing is frequently very incorrect, especially in the extremities of his figures." Mr Pilkington speaks of them with greater approbation. "The artist (he says) imitated his models with so much skill, such exact resemblance, such correctness of outline, such similarity of colour and expression, that at first they amazed every beholder who viewed them at a proper distance; and many of those prints are still extant, which are much esteemed by persons of good

taste." And Mr Walpole observes, that some heads, coloured progressively, according to their several gradations, bear witness to the success and beauty of his invention. He had another merit to the public, with which few inventors begin; for he communicated his secret in a thin quarto, intitled *Colbritto*, or "The harmony of colouring in painting reduced to mechanical practice, under easy precepts and infallible rules." His method was performed by several mezzotinto plates for one piece, each expressing different shades and parts of the piece in different colours. He was not, however, it is said, the original inventor of that manner of managing colours, but took it from Lullman and others, who, with much greater regularity of morals, equal capacities, and more discreet conduct, had before undertaken it without success. Le Blond, whose head was continually full of schemes, next set on foot a project for copying the cartoons of Raphael in tapestry, and made drawings from the pictures for that purpose. Houses were built and looms erected at the Mulberry Ground at Chelsea; but the expences being too great, or the contributions not equal to the first expectations, the scheme was suddenly defeated, and Le Blond disappeared, to the no small dissatisfaction of those who were engaged with him. From hence he went to Paris, where, Basan informs us, he was in the year 1737; and in that city he died, 1740, in an hospital. Le Blond was also author of a treatise, in French, on ideal beauty. It was published in 1732, and has since been translated into English.

BLONDEL (David), a protestant minister, distinguished by his skill in ecclesiastical and civil history, was born at Chalons sur Marne, and was admitted minister at a synod of the isle of France, in 1614. He wrote, 1. A defence of the reformed churches of France. 2. A work against the decretal epistles. 3. *De Episcopis et Presbyteris*; and other pieces. Bayle informs us that he had a very singular way of studying; he lay on the ground, and had round about him the books which he wanted for the work he was about. He died in 1655, aged 64.

BLONDEL (Francis), regius professor of mathematics and architecture, was employed in several negotiations, arrived at the dignity of marshal de camp and counsellor of state, and had the honour of being chosen to teach the dauphin the mathematics; he was also made member of the Academy of Sciences at Paris, and director of the Academy of Architecture. He died at Paris in 1688, aged 68. He wrote, 1. Notes on the architecture of Savot. 2. A course of architecture and mathematics. 3. The art of throwing bombs. 4. A new manner of fortifying places. 5. A comparison between Pindar and Horace; and other works.

BLONDUS (Flavius), an historian born at Forli, in Italy, in 1388, was secretary to Eugenius IV. and other popes. He composed a great many books; and, among others, a History from the year 400 to 1440. He died in 1463.

BLONIEZ, a town of Poland, in the province of Wawsovia. E. Long. 20. 35. N. Lat. 52. 0.

BLOOD, a red liquor circulating through the vessels of the human body and the bodies of the larger animals, which appears immediately and essentially necessary to the preservation of life.

Though there is no living creature as yet known whose

Blond
||
Blood.

Blood. whose life doth not immediately depend upon the circulation of some kind of fluid through its vessels, yet unless such fluid is of a red colour, it does not obtain the name of *blood*; and therefore such creatures as have a colourless or milky liquor circulating through their vessels, are called *esfanguous animals*.

1 No animal without some liquid equivalent to blood.

2 Blood of different thickness in different animals.

3 That of bulls anciently used as a poison.

The blood has a very different degree of thickness or viscosity in different animals, and even in the same animal at different times. Though it is in all cases endowed with a considerable degree of tenacity, yet in strong animals that tenacity is remarkably greater than in weak ones; and hence the blood of bulls was made use of by the ancients as a poison, its extreme viscosity rendering it totally indigestible by the powers of the human stomach. It is well known also by physicians, that there are some states of the human body in which the blood becomes vastly tenacious, so as in a great measure to refuse any intimate connection with water; and others, in which its crasis is almost totally dissolved, so as to appear, when drawn out of the body, like a fluid and half putrid mass. See *MEDICINE-Index*.

4 Appearance of the blood when drawn from a vein.

The common appearance of the blood when drawn from a vein in the human body is well known. It first seems an homogeneous red liquor; then it consolidates into one uniform mass; in a little time, a yellowish watery liquor begins to separate from it, which is more or less in quantity according to the state in which the blood happens to be; the red mass, in the mean time, contracts greatly in its dimensions, and increases in solidity. But this increase of solidity is likewise proportional to the state of the blood at the time: in strong people, if attacked with a violent inflammatory disease, the solid part is exceedingly tough, inasmuch that Dr Huxham says he has sometimes found it almost like a piece of flesh itself; whereas, in other diseases, the solid part is very soft and tender, breaking in pieces with the slightest touch. The spontaneous separation of the blood into crassamentum, serum, and coagulable lymph, hath been already taken notice of under *ANATOMY*, n^o 126.

5 Blood chemically analysed.

The attention of physiologists hath been very much engaged by inquiries into the nature and composition of the blood, and accordingly it hath been examined in all possible ways. By a chemical analysis, it discovers the same principles with other animal substances; giving over in distillation a great quantity of phlegm, a volatile spirit, with much fetid oil; after which, there remains a charred matter, that, burnt in an open fire, leaves a white earth similar to calcined hartshorn.

6 Contains an acid, according to some chemists.

Some eminent chemists, Mr Homberg particularly, have asserted that blood contains an acid as well as an alkali, but that the former doth not arise till towards the end of the distillation: but what is very singular, and indeed must throw no small suspicion on the whole account, is, that the acid and alkali, notwithstanding their great tendency on all other occasions to unite with each other, do here remain separate, so that the liquor may be even redistilled without their forming any neutral compound. An experiment in confirmation of this is recorded in the memoirs of the Royal Academy for 1712. Six pounds of human blood distilled to dryness with a gentle heat, were reduced to a pound and an half; after which, the mass was urged with a graduated fire, till the retort at last became red hot. The produce was 17 ounces of liquor; 12 of which were a red and very empyreuma-

7 Experiment in confirmation of this.

tic volatile spirit, the other five were oil. The caput mortuum was a light coal weighing four ounces and a half. On rectifying the volatile spirit in a small retort, about an ounce of a red fetid liquor remained, which had a very acid smell, and turned the juice of turnsole red. Mr Homberg now imagined, that the acid contained in the blood of animals could not disengage itself perfectly by these distillations without addition. He therefore determined to distil human blood with an admixture of some other substance; but as earths contain a salt, which might render the operation uncertain, he determined to use only the caput mortuum of a former distillation of the same substance. For this purpose, four pounds of the coagulum of human blood being well mixed with a large quantity of this residuum, and the whole dried in the sun, it was put into a retort, and distilled with a fire raised, towards the end of the operation, to the utmost violence. The oil being separated from the volatile spirit, the latter was rectified; and the consequence was, that there came over four pounds of a red acid liquor, that turned the tincture of turnsole very red. All the distillations of the aqueous liquors already mentioned, obtained by similar processes, being mixed together, and separated from their yet remaining oil, by careful dilution with water and filtration, they were at length distilled together; the liquor that came over was clear as water, and its first quantities contained a great deal of volatile salt, but the last two ounces were found to be as four as distilled vinegar.—The same products were obtained from the blood of carnivorous animals, as well as from that of animals feeding solely upon vegetables.

8 In Dr Lewis's notes on Newman's Chemistry we have the following account of the blood, and the parts into which it may be resolved. "Recent blood is equally fluid, and in taste somewhat saline. Viewed by a microscope, it appears composed of numerous red globules swimming in a transparent fluid. On standing for a little time, it separates into a thick crassamentum and fluid serum. By agitation, it continues fluid: A consistent polypous matter adheres to the stirrer, which, by repeated ablation with water, becomes white.—Received from the vein in warm water, it deposits a quantity of transparent filamentous matter, the red portion continuing dissolved in the water. On evaporating the fluid, a red powdery substance is left.—It congeals by frost, and becomes fluid again by warmth; after liquefaction, it quickly putrefies.—Fluid and florid blood exposed to a temperate air, putrefies sooner than such as is more dense. Inspissated to dryness, it leaves a dark-coloured mass, amounting, at a medium, to about one-fourth of the weight of the blood, of a bitter saline taste, easily inflammable, burning with a bluish flame. The exsiccated blood is not soluble in acid or alkaline liquors; but gives some tincture to water and to spirit of wine, and is more powerfully acted upon by dulcified spirit of nitre. Recent blood is coagulated by the mineral acids, and by most of the combinations of them with earthy and metallic bodies. With vegetable acids, and with solutions of neutral salts, it mingles equally without coagulation. Alkalis, both fixed and volatile, render it more fluid, and preserve it from coagulating.

"The serum of blood is more saline than the crassamentum,

d. famentum, and does not so speedily putrefy. It freezes somewhat more difficultly than pure water; and its aqueous part evaporates, by a gentle warmth, somewhat more readily, leaving about one-twelfth of the weight of the serum of a solid yellowish pellucid matter. Expoped to heat a little greater than that of the human body, it coagulates into a solid mass, without any considerable evaporation. Both this coagulum and the inspissated serum are readily inflammable in the fire, not dissoluble in water, or in spirit of wine, in acid or in alkaline liquors."

But the texture of the blood discoverable by a microscope, hath engaged the attention of the learned much more than the chemical analysis ever did. Lewenhoeck was the first who discovered, or fancied he discovered, that the blood, as it exists in the body of an animal, consists of a quantity of red globular particles swimming in a large quantity of transparent liquor. Each of these globules, he imagined, was composed of six smaller ones packed together. While the six continued to adhere, their colour was red; but when separated, they became yellow, and thus formed what is called the *serum*. He even pretended to have discovered that each of the ferrous globules consisted of six smaller ones, and that these when broken down constituted some more subtle and penetrating liquor than the serum, &c. This was for a long time received almost universally as an undoubted fact; and many theories were built upon it, and elaborate calculations made, of which (we hope) no account needs now be given, as the falsity of these pretended discoveries is generally allowed. Father de Torre, with microscopes which he pretended were capable of magnifying to an incredible degree, found that the red particles of the blood were of an annular figure, with a perforation in the middle; and that the ring itself was formed of several joints. Some of these extraordinary magnifiers, however, being sent over to England, those who were appointed by the Royal Society to make trial of them found them totally useless, so that the credit of Father de Torre's discoveries must have rested principally on his own evidence. The falsity of his hypothesis, as well as that of Lewenhoeck, was detected by the late Mr Hewson, whose microscopical experiments on the blood being the latest that have appeared, we shall transcribe the following particular account of them given by himself in a letter to Dr Haygarth physician in Chester.—"The red particles of the blood, improperly called *globules*, are flat in all animals, and of very different sizes in different animals. In man they are small, as flat as a shilling, and appear to have a dark spot in the middle. In order to see them distinctly, I dilute the blood with fresh serum. My predecessors, not having thought of this, could not see them distinctly. And Lewenhoeck in particular, imagining a round figure fittest for motion, concluded they must be round in the human body; though he and others allowed that in frogs, &c. where they viewed them distinctly from the blood being thinner, they were flat. Now I prove that they are flat in all animals. In the human blood, where these particles are small, it is difficult to determine what that black spot is which appears in the centre of each. Some have concluded that it was a perforation: but in a frog, where it is six times as large as in a man, it is easy to show that it

is not a perforation, but on the contrary is a little solid, which is contained in the middle of a vesicle. Instead, therefore, of calling this part of the blood red *globules*, I should call it red *vesicles*; for each particle is a flat vesicle, with a little solid sphere in its centre.

"I find that the blood of all animals contains vesicles of this sort. In human blood there are millions of them; and they give it the red colour. But in insects they are white, and less numerous in proportion than in man and quadrupeds. As they are flat in all animals, I suspect that shape is a circumstance of importance, but can be altered by a mixture with different fluids. And I find that it is by a determinate quantity of neutral salt contained in the serum, that this fluid is adapted to preserving these vesicles in their flat shape: for, if they be mixed with water, they become round, and dissolve perfectly; but add a little of any neutral salt to the water, and they remain in it, without any alteration in their shape, and without dissolving.

"Now, when it is considered, that the blood of all animals is filled with these particles, we must believe that they serve some very important purpose in the animal oeconomy; and since they are so complicated in their structure, it is improbable they should be made by mechanical agitation in the lungs or blood-vessels, as has been suspected, but probably have some organs set apart for their formation. This I shall endeavour to prove, when I have explained their structure a little more particularly, and mentioned the manner in which I exhibit it. I take the blood of a toad or frog, in which they are very large; I mix it with the serum of human blood to dilute it; I find them appear all flat; so they do in the blood-vessels of this animal, as I have distinctly seen in the web between its toes, whilst the animal was alive and fixed in the microscope. Their appearance in these animals is not unlike slices of cucumber. I next mix a little of the blood with water, which immediately makes them all round, and then begins to dissolve them whilst they are round. I incline the stage of the microscope, so as to make them roll down it; and then I can distinctly see the solid in the middle fall from side to side like a pea in a bladder. A neutral salt added to them at this time brings them back to their flat shape: but if the salt be not added, the water gradually dissolves away the vesicle; and then the little sphere is left naked. Such is the composition of these particles. I have exhibited these experiments to a considerable number of my acquaintance, who all agree in their being satisfactory.

"The microscope I use is a single lens, and therefore as little likely to deceive us as a pair of spectacles, which, as is allowed by all who use them, do not disfigure objects, but only represent them larger.

"From farther experiments, I am convinced, that the use of the thymus and lymphatic glands is to make the middle solid pieces: and I can prove it in as satisfactory a manner as you can do the use of any viscus in the human body; that is, by opening these glands, and examining the fluid contained in their cells, which I find to be full of these little solids. I moreover find, that the lymphatic vessels take them up from those glands, and convey them into the blood-vessels which carry them to the spleen, in whose cells they have the vesicles.

Blood. vesicles laid over them; so that the thymus and lymphatic glands make the central particles, and the spleen makes the vesicles that surround them. That this is the use of the spleen appears from examining the lymph which is returned from its lymphatic vessels; for that lymph, contrary to what is observed in other parts of the body, is extremely red.

“ But besides having these glands set apart for making the red vesicles of the blood, I find that they are also made in the lymphatic vessels in different parts of the body, whose coats have blood-vessels properly constructed for this secretion. So that the thymus and lymphatic glands are no more than appendages of the lymphatic system, for making the middle particles; and the spleen an appendage to the lymphatic vessels, for making the vesicles which contain these middle particles.

“ I conjecture that it is the coagulable lymph which is converted into this red part of the blood, from a curious fact that has long been known; namely, that the blood in the splenic vein does not coagulate when exposed to the air, as the blood of other veins does; so that it seems to be robbed of its coagulable lymph in passing through the spleen.

“ It is very remarkable, that the spleen can be cut out of an animal, and the animal do well without it. I made the experiment on a dog, and kept him a year and a half without observing his health to be in the least impaired. From this some have concluded the spleen to be an useless weight; which is absurd, when we consider that all animals with red blood have it. Therefore it is more consistent with what we know of the animal œconomy, to conclude, that since an animal can do well without it, there is probably some part of the body that can supply its place.

“ Insects have vesicles constructed in a similar way to ours, but differing in colour. But insects have neither spleen, thymus, nor lymphatic glands; and therefore in them probably these vesicles are entirely fabricated in the lymphatic vessels. But to us, and other of the more perfect animals, besides the lymphatic vessels, nature has given those glands, that a proper quantity of those important vesicles might be the better secured to us; just as she has given us two ears, the better to secure us hearing through life, though we can hear perfectly well with one.”

12
Objection
to his hy-
pothesis.

This letter, we apprehend, contains the strength of Mr Hewson's evidence for his hypothesis; on which we shall only remark, that if the red globules are prepared in the manner above mentioned, and the lymphatic vessels are excretories of those glands where the red particles are formed; then if there is any vessel where all these excretories unite, as mentioned ANATOMY, n^o 106, in that vessel the lymph ought to appear very red, on account of the accumulated quantity of red globules brought thither from all parts of the body. But no such redness seems ever to have been taken notice of by any anatomist: this therefore must be an objection to Mr Hewson's hypothesis; and such an one, perhaps, as will not be easily removed.

13
Opinion of
Dr Wilson.

Many other hypotheses have been invented concerning the formation of the red blood, and various opinions delivered concerning its red colour. In a lecture delivered at Newcastle in 1773, by Dr Wilson of that
N^o 48.

place, he asserts “ that it is self-evidently the office of the veins to elaborate the fluids into that form and composition which we know by the name of *red blood*.” The self-evidence here, however, is by no means apparent to us; nor doth he at all point it out in an intelligible manner.—Dr Cullen, in his physiological part of *The Institutions of Medicine*, acknowledges that we know but little of the formation of any of the animal fluids; and concerning the microscopical observations, &c. on the blood, gives his opinion in the following words, § ccliv. “ The red globules have been considered as an oily matter, and from thence their distinct and globular appearance has been accounted for: but there is no direct proof of their oily nature; and their ready union with, and diffusibility in, water, renders it very improbable. As being microscopical objects only, they have been represented by different persons very differently. Some have thought them spherical bodies, but divisible into six parts, each of which in their separate state were also spherical; but other persons have not observed them to be thus divisible. To many observers they have appeared as perfectly spherical; while others judge them to be oblate spheroids, or lenticular. To some they have appeared as annular, and to others as containing a hollow vesicle. All this, with several other circumstances relating to them, very variously represented, show some uncertainty in microscopical observations; and it leaves me, who am not conversant in such observations, altogether uncertain with respect to the precise nature of this part of the blood. The chemical history of it is equally precarious; and therefore what has been hitherto said of the production and changes happening to these red globules, we chuse to leave untouched.—We suppose that the red globules, when viewed singly, have very little colour; and that it is only when a certain number of them are laid upon one another, that the colour appears of a bright red: but this also hath its limits; so that when the number of globules laid on one another is considerable, the colour becomes of a darker red. Upon this supposition, the colour of the mass of blood will be brighter or darker as the colouring part is more or less diffused among the other parts of the mass; and we think this appears to be truly the case from every circumstance that attends the changes which have been at any time observed in the colour of the blood.”

Concerning the uncertainty of microscopical, as well as chemical experiments, we shall not dispute; though the conclusion against them seems carried too far. But with regard to the colour of the blood, we apprehend it hath been known, almost, if not altogether, since the discovery of the circulation, that the florid or dark colour depends on the presence or absence of air, and not upon any number of globules.—Thus the blood returning from the veins is of a dark colour. Though diluted with the fresh chyle from the subclavian vein, it continues of the same dark colour till it passes thro' the lungs, upon which it instantly assumes a very florid red; but it can never be proved that the globules in the pulmonary vein are at all less numerous than in the pulmonary artery.—That this change of colour may be effected by the air through membranes much thicker than we can suppose the vessels of the lungs to be, hath been demonstrated by Dr Priestley's experiments men-
tioned

Blood. tioned under the article *DEPHLOGISTICATED Air*; but whether the change is occasioned by the mere separation of phlogiston from the blood, or by the absorption of some other principle in its stead, is not yet determined, though the latter is indeed acknowledged by Dr Priestley himself to be the more probable opinion. He even supposes the redness to be owing to a portion of dephlogisticated air absorbed in the lungs; but under the above article it is shown that this fluid cannot be absorbed by any liquid without decomposition. It must therefore be the elastic principle of this air which is absorbed, while the other combined with part of the phlogiston emitted by the blood is converted into fixed air.

17. This leads us to consider the uses to which the blood is subservient in the animal œconomy, and the changes that happen to it in respiration. The uses of this fluid are so various, and of such an important nature, that some have not scrupled to affirm the blood to be actually possessed of a living principle, and that the life of the whole body is derived from it. This opinion was first broached by the celebrated Harvey, the discoverer of the circulation: but in this he was never much followed; and the hypothesis itself, indeed, has been pretty much laid aside and neglected, till of late that it was revived by Mr J. Hunter, professor of anatomy in London. This gentleman supports his opinion by the following arguments: 1. The blood unites living parts, in some circumstances, as certainly as the yet recent juices of the branch of one tree unite it with that of another. Were either of these fluids to be considered as extraneous or dead matters, he thinks they would act as stimuli, and no union would take place in the animal or vegetable kingdom. This argument, Mr Hunter imagines, is still farther established by the following experiment. Having taken off the testicle from a living cock, he introduced it into the belly of a living hen. Many weeks afterwards, upon injecting the liver of the hen, he injected the testicle of the cock; which had come in contact with the liver, and adhered to it. He alleges, that in the nature of things, there is not a more intimate connection between life and a solid, than between life and a fluid. For, although we are more accustomed to connect it with the one than the other, yet the only real difference which can be shown between a solid and a fluid is, that the particles of the one are less moveable among themselves than those of the other. Besides, we often see the same body fluid in one case and solid in another. 2. The blood becomes vascular like other living parts. Mr Hunter affirms, that, after amputations, the coagula in the extremities of arteries may be injected by injecting these arteries; and he has a preparation in which he thinks he can demonstrate vessels rising from the centre of what had been a coagulum of blood, and opening into the stream of the circulating blood. 3. Blood taken from the arm in the most intense cold which the human body can bear, raises the thermometer to the same height as blood taken in the most sultry heat. This he considers as a strong proof of the blood's being alive; as living bodies alone have the power of resisting great degrees both of heat and cold, and of maintaining in almost every situation, while in health, that temperature which we distinguish by the name of *animal heat*. 4. Blood is capable of being acted upon by a stimulus. In a proof of this, he observes, that it coagulates from ex-

posure, as certainly as the cavities of the abdomen and thorax inflame from the same cause. The more it is alive, that is, the more the animal is in health, it coagulates the sooner on exposure; and the more it has lost of its living principle, as in the case of violent inflammations, the less is it sensible to the stimulus produced from its being exposed, and it coagulates the later. 5. The blood preserves life in different parts of the body. When the nerves going to a part are tied or cut, the part becomes paralytic, and loses all power of motion; but it does not mortify. If the artery be cut, the part dies, and mortification ensues. What keeps it alive in the first case? Mr Hunter believes it is the living principle which alone can keep it alive; and he thinks that this phenomenon is inexplicable on any other supposition, than that life is supported by the blood. 6. Another argument he draws from a case of a fractured os humeri he had occasion to observe. A man was brought into St George's hospital for a simple fracture of the os humeri, and died about a month after the accident. As the bones had not united, Mr Hunter injected the arm after death. He found that the cavity between the extremities of the bones was filled up with blood which had coagulated. This blood was become vascular. In some places it was very much so. He does not maintain that all coagulated blood becomes vascular: and indeed the reason is obvious; for it is often thrown out and coagulated in parts where its becoming vascular could answer no end in the system: as, for example, in the cavities of aneurismal sacs. If it be supposed, that, in such cases as that just now mentioned, the vessels are not formed in the coagulum, but come from the neighbouring arteries, he thinks it equally an argument that the blood is alive; for the substance into which vessels shoot must be so. The very idea, that such a quantity of dead matter as the whole mass of blood, circulates in a living body, appears to him absurd.

The system which at present stands opposed to that of ^{20.} *Nervous* Mr Hunter, considers the brain and nervous system as the fountain of life; and that, so far from receiving its life ^{thought by} from the blood, the nervous system is capable of instan- ^{some to con-} taneously changing the crasis of the blood, or any other ^{tain the vi-} animal fluid; and though the nervous system cannot ^{tal prin-} continue its actions for any length of time if the action of the blood-vessels is suspended, yet the heart and blood-vessels cannot act for a single moment without the influence of the nervous fluid. Hence, say they, it is plain we must suppose the nervous system, and not the blood, to contain properly the life of the animal, and consequently to be the principal vital organ. The secretion of the vital fluid from the blood by means of the brain, is, by the supporters of this hypothesis, denied. They say, that any fluid secreted from the blood must be aqueous, inelastic, and inactive; whereas the nervous fluid is full of vigour, elastic, and volatile in the highest degree. The great necessity for the circulation of the blood through all parts of the body, notwithstanding the presence of the nervous fluid in the same parts, they say is, because some degree of tension is necessary to be given to the fibres, in order to fit them for the influx of the nervous fluid; and this tension they receive from the repletion of the blood-vessels, which are every where dispersed along with the nerves.

To follow this dispute through every argument that hath been, or that may be, used by both parties, would

18. The vital principle thought by me to reside in the blood.
19. Mr Hunter's arguments favour of his opinion.

Blood.

Blood. prove tedious, and to us appears in a great measure unnecessary, as the following short considerations seem to decide the matter absolutely against the patrons of the nervous system. In the first place, then, if we can prove the life of the human body to have existed in, or to have been communicated from a fluid to the nervous system, the analogical argument will be very strongly in favour of the supposition that the case is so still. Now, that the case once was so, is most evident; for the human body, as well as the body of every other living creature, in its first state, is well known to be a gelatinous mass, without muscles, nerves, or blood-vessels. Nevertheless, this gelatinous matter, even at that time, contained the nervous fluid. Of this there can be no doubt, because the nerves were formed out of it, and had their power originally from it; and what is remarkable, the brain is observed to be that part of the animal which is first formed. Of this gelatinous fluid we can give no other account, than that it was the nutritious matter from which the whole body appears to be formed. At the original formation of man, and other animals, therefore, the nutritious matter was the substratum of the whole body, consisting of muscles, nerves, blood-vessels, &c. nay more, it was the immediate efficient cause of the nervous power itself. Why should it not be so now as well as then? Again, in the formation of the embryo, we see a vital principle existing as it were at large, and forming to itself a kind of regulator to its own motions, or a habitation in which it chooses to reside, rather than to act at random in the fluid. This habitation, or regulator, was undoubtedly the nervous system, and continues so to this moment; but at the same time, it is no less evident that a nutritious fluid was the immediate origin of these same nerves, and of that very nervous fluid. Now we know, that the fluid which in the womb nourishes the bodies of all embryo animals, is necessarily equivalent to the blood which nourishes the bodies of adult ones; and consequently, as soon as the blood became the only nutritious juice of the body, at that same time the vital or nervous fluid took up its residence there, and from the blood diffused itself along the nerves, where it was regulated exactly according to the model originally formed in the embryo. Perhaps it may be said, that the vital power, when once it hath taken possession of the human or any other body, requires no addition or supply, but continues there in the same quantity from first to last. If we suppose the nervous power to be immaterial, this will indeed be the case, and there is an end of reasoning upon the subject; but if we call this power a volatile and elastic fluid, it is plain that there will be more occasion for recruits to such a power than to any other fluid of the body, as its volatility and elasticity will promote its escape in great quantities through every part of the body. It may also be objected, that it is absurd to suppose any fluid, or mechanical cause, capable of putting matter in such a form as to direct its own motions in a particular way: but even of this we have a positive proof in the case of the electric fluid. For if any quantity of this matter has a tendency to go from one place to another where it meets with difficulty, thro' the air for instance, it will throw small conducting substances before it, in order to facilitate its progress. Also, if a number of small and light conducting substances are laid between two metallic bo-

dies, so as to form a circle, for example; a shock of electricity will destroy that circle, and place the small conducting substances nearer to a straight line between the two metals, as if the fluid knew there was a shorter passage, and resolved to take that, if it should have objection to return*. Lastly, it is universally allowed, that the brain is a secretory organ, made up of an infinite number of small glands, which have no other excretories than the medullary fibres and nerves. As a considerable quantity of blood is carried to the brain, and the minute arteries end in these small glands, it follows, that the fluid, whatever it is, must come from the blood. Now, there is no gland whatever, in the human, or any other body, but will discharge the fluid it is appointed to secrete, in very considerable quantity, if its excretory is cut. Upon the cutting of a nerve, therefore, the fluid secreted by the brain ought to be discharged; but no such discharge is visible. A small quantity of glairy matter is indeed discharged from the large nerves; but this can be no other than the nutritious juice necessary for their support. This makes it plain, even to demonstration, that the fluid secreted in the brain is *invisible* in its nature; and as we know the nervous fluid hath its residence in the brain, it is very probable, to use no stronger expression, that it is the peculiar province of the brain to secrete this fluid from the blood, and consequently that the blood originally contains the vital principle.

After it is allowed that the blood contains the vital principle, it becomes another question not very easily solved, Whence is this vital principle derived?—For this we can only discover two sources; namely, the chyle or aliment from which the blood is prepared, and respiration. The latter hath been commonly held as the principal source of the vital principle; and, for a long time, it was generally thought that there was a kind of vivifying spirit in the air, which being absorbed by the blood at each inspiration, communicated to that fluid the quality necessary for preserving animal life. As a proof of this it was urged, that life cannot be supported without respiration, and that air which hath been often breathed ceases to be capable of supporting life; because when once it has been totally deprived of its vivifying spirit, it can communicate none to the blood in any subsequent respirations.—This doctrine, however, hath been denied, and generally thought to be exploded by modern discoveries. Dr Hales brings several experiments against it; of which the following may serve for a specimen, and which we shall give in his own words.

“ I tied a middle-sized dog alive on a table, and, having laid bare his wind pipe, I cut it asunder just below the larynx, and fixed fast to it the small end of a common fossét: the other end of the fossét had a large bladder tied to it, which contained 162 cubic inches; and to the other end of the bladder was tied the great end of another fossét whose orifice was covered with a valve which opened inwards, so as to admit any air that was blown into the bladder, but none could return that way; yet, for further security, that passage was also stopped by a spigot.

“ As soon as the first fossét was tied fast to the wind-pipe, the bladder was blown full of air through the other fossét: when the dog had breathed the air in the bladder to and fro for a minute or to, he then breathed

21.
Decisive arguments in favour of Mr. Horner's opinion.

Blood.
• See Electricity.

22.
Vivifying spirit supposed to be derived from the air.

23.
This doctrine for some time generally denied.

24.
Dr Hales' experiment agrees it a vivifying spirit. *Statistical Essays*, Vol. P. 255.

Blood. very fast, and showed great uneasiness, as being almost suffocated.

"Then with my hand I pressed the bladder hard, so as to drive the air into his lungs with some force; and thereby make his abdomen rise by the pressure of the diaphragm, as in natural breathings; then taking alternately my hand off the bladder, the lungs with the abdomen subsided: I continued in this manner to make the dog breathe for an hour; during which time, I was obliged to blow fresh air into the bladder every five minutes, three parts in four of that air being either absorbed by the vapours in the lungs, or escaping through the ligatures upon my pressing hard on the bladder.

"During this hour, the dog was frequently near expiring, whenever I pressed the air but weakly into his lungs; as I found by his pulse, which was very plain to be felt in the great crural artery near the groin, which place an assistant held his finger on most part of the time: but the languid pulse was accelerated so as to beat fast, soon after I dilated the lungs much by pressing hard upon the bladder; especially when the motion of the lungs was promoted by pressing alternately the abdomen and the bladder, whereby both the contraction and dilatation of the lungs was increased.

"And I could by this means rouse the languid pulse whenever I pleased, not only at the end of every five minutes, when more air was blown into the bladder from a man's lungs, but also towards the end of the five minutes, when the air was fullest of fumes.

"At the end of the hour, I intended to try whether I could have by the same means kept the dog alive some time longer, when the bladder was filled with the fumes of burning brimstone; but being obliged to cease for a little time from pressing the air into his lungs, while matters were preparing for this additional experiment, in the mean time the dog died, which might otherwise have lived longer if I had continued to force the air into the lungs.

"Now, though this experiment was so frequently disturbed, by being obliged to blow more air into the bladder 12 times during the hour; yet since he was almost suffocated in less than two minutes, by breathing of himself to and fro the first air in the bladder, he would have died in less than two minutes when one fourth of the old air remained in the bladder, immediately to taint the new air admitted from a man's lungs; so that his continuing to live through the whole hour, must be owing to the forcible dilatation of the lungs by compressing the bladder, and not to the vivifying spirit of the air."

25. Dr Priestley's opinion. Dr Priestley at first concluded from his own observations, and no doubt very justly, that air which hath been often breathed becomes pernicious by its accumulated phlogiston, stimulating the lungs, and making the animal fall into convulsions. Respiration therefore, he supposed to be a phlogistic process, in which the blood parts with its superfluous phlogiston. He did not say, that the blood receives nothing in exchange; but rather that it may receive some nitrous principle, which gives it the red colour: but as to a vivifying-spirit, he doth not appear to have the least idea of any such thing being received at that time. Nay, in his first volume, p. 277. he expressly adopts the other hypothesis, namely, that the vital principle is received from the chyle. "My conjecture (says he)

is, that animals have a power of converting phlogiston, from the state in which they receive it in their nutriment, into that state in which it is called the *electrical fluid*; that the brain, besides its other proper uses, is the great laboratory and repository for this purpose; that by means of the nerves this great principle, thus exalted, is directed into the muscles, and forces them to act in the same manner as they are forced into action when the electric fluid is thrown into them *ab extra*."

These theories were opposed in the former edition of this work. With regard to Dr Hales's opinion, that the want of elasticity, or pressure, is the reason why phlogisticated air cannot support animal life, we apprehended it to be totally inconclusive, because it doth not at all appear that phlogisticated air wants elasticity; on the contrary, from Dr Priestley's experiments it appears to be more elastic than common air. Besides, we know that the elasticity of every fluid must always be in proportion to the pressure upon it, as reaction is always equal to action. Supposing therefore the elasticity of any portion of air to be destroyed, the pressure of the superincumbent atmosphere will reduce it into a proportionably less bulk, and then it is equally elastic with the rest; for if it was not, it would behave it still to yield under the pressure. Hence we may see, that as the bladder made use of in Dr Hales's experiment was by no means sufficient to keep off the pressure of the external atmosphere, the death of the dog could not be fairly ascribed to want of elasticity in the tainted air. When he applied more force than the natural elasticity of the air, he kept the dog *alive*, as he calls it, for an hour; but we can by no means allow a mechanical circulation of the blood to be life, any more than we can allow a dead body to be alive on account of the motion of its arm or any other member by mechanical means. The experiment, however, is valuable, because it shows that respiration is one of the immediate mechanical agents by which the circulation of the blood is carried on; but in order to prove that the dog was really kept alive by this means, he ought to have recovered from the effects of the experiment. Had Dr Hales tried a similar experiment on himself, by taking the socket in his mouth, closing his nostrils, and causing another person compress the bladder, we have not the least doubt that he would then have felt such a method of breathing not to be a way of preserving life, but of destroying it.

As to Dr Priestley's conclusions, it was argued, that **27.** "though he found air diminished by admitting phlogiston to it, Dr Priestley finds the mere accession of any material substance can never diminish, but must increase, its bulk. The diminution, therefore, on the accession of phlogiston, is an evident proof that some part of the air is actually taken away. That the phlogiston received is not incorporated with the air is likewise evident, as well as that it takes up space in the tainted air, because, by agitation in water, the phlogistic matter separates from the air, and enters into the water. The consequence of this is, that the air is still farther diminished in bulk; and what remains is pure air, fit for supporting animal-life, and of being farther diminished by phlogiston as before. It appears also certain, that phlogiston is not endowed with any inherent power by which it can expand itself; otherwise it would fly off *in vacuo*, which it never is known to do. Another circumstance

Blood.
26. Dr Hales's experiment inconclusive

27. Cause of the diminution of air by phlogiston, &c.

Blood.

we must also attend to is, that the action of phlogiston seems to be entirely confined to a particular part of the atmosphere; namely, that which is now so well known by the name of *fixed air*. This it entirely deprives of its elastic principle, so that it is actually no longer air, but becomes a solid substance, making a part, and that no inconsiderable one, of innumerable terrestrial substances, as chalk, lime-stone, &c."

That the justness of the conclusion about to be drawn from Dr Priestley's experiments may be more apparent, the phenomena were summed up in the two following propositions. "1. Phlogiston cannot act by itself without the assistance of air. 2. The emission of phlogiston is attended with the total destruction of the elasticity of a certain quantity of fixed air, which then ceases to be fluid. Hence we affirm, that it is not the phlogistic substance which acts upon the air, but the elastic principle in the fixed air contained in the common atmosphere that acts on the phlogistic substance. This elastic principle, entering the phlogistic body, displaces a quantity of phlogiston equivalent to its own quantity; and takes its place; and hence proceeds the first diminution of the air, not from an accession of phlogiston, but from an escape of the elastic principle belonging to fixed air. The phlogiston and fixed particles of the air now hang loose like smoke or vapour, and are ready to be attracted by any thing capable of imbibing them; and hence proceeds the second diminution by agitation in water.

28. Why a phlogistic substance parts with its phlogiston.

29. Proof of a reception of the vivifying principle from the air.

"Now to apply this reasoning to the point in question: The blood is found to emit phlogiston from the lungs at every expiration; therefore we affirm it hath received a proportional quantity of elastic vapour which it had not before. Again: The air expelled from the lungs is found to contain much of the fixable part floating loose, and capable of being attracted by lime-water, &c.; therefore we say, this elastic principle hath come from that part of the atmosphere. But, to put the matter beyond doubt, the very inspection of arterial and venous blood will show, that the first hath a quantity of elastic matter in it which the last wants: and as the brain as well as all other parts of the body are supplied with arterial blood, we think it abundantly evident, that this elastic principle is absolutely and essentially necessary to life; that it is continually expended thereon; and that it may be said with the utmost propriety, that every time we draw the air into our lungs, we receive a portion of vivifying or vital spirit from it into our blood. Add to all this, that many substances which are commonly observed to phlogisticate air, appear to receive an elastic spirit by so doing. Putrefying bodies swell: they would not do so *in vacuo*; and therefore we must conclude, that they receive this elastic principle which swells them from the external air, and experience shows that it is communicated by this fixable part of the atmosphere.

"The foregoing reasoning, which to us appeared sufficiently conclusive, leads to a very important discovery in natural philosophy, *viz.* That it is to the atmosphere, and to that particular part of it which goes by the name of *fixed air*, that we are every moment indebted for that vital spirit which animates our bodies, and is the immediate bond of union betwixt our immaterial spirit and this visible world. It may be asked indeed, If fixed air is capable of supplying this spirit in

30. Objection answered.

such plenty, how comes it to be so instantaneously fatal when breathed? The reply to this, however, is obvious: it communicates too great a degree of elasticity to the blood; whence the circulation is stopped, and instant death ensues. That this is really the case, appears from the following account of the symptoms observed on the dissection of persons who have been suffocated by this kind of air.

"1. The vessels of the brain are gorged with blood, and the ventricles of that viscus are filled sometimes with a frothy, sometimes with a bloody serosity. 2. The trunk of the pulmonary artery is much distended, and the lungs appear nearly in a natural state. 3. The right ventricle and auricle of the heart, the venæ cavæ, and jugular veins, are full of frothy blood. 4. Bloody serosity is often found in the bronchiæ. 5. The trunk of the pulmonary veins, and the left auricle, are either empty, or almost empty, of blood. 6. The blood found in the places that have been mentioned, is generally fluid, and as it were in a dissolved state. It is easily extravasated into the cellular texture, of the head particularly, because it is in this part that it abounds most. 7. The epiglottis in suffocated persons is raised, and the glottis open and free. 8. The tongue is much swelled, and can hardly be contained within the mouth. 9. The eyes protrude, and preserve their lustre to the second or third day. They are often even brighter than natural. 10. The body preserves its heat for a long time. Nay the heat is sometimes greater than it is during life, or at least consistently with health. 11. The limbs are flexible for a long time after death. 12. The face is more swelled, and often more red than usual. 13. The neck and upper extremities are sometimes so much swelled, that they appear to be inflamed. These swellings, however, do not, like œdematous ones, preserve the impressions of the finger.

Blood.

Elinburg's Medical Comment. Vol. III. p. 256.

31. Appearance of the blood in those suffocated by fixed air.

"This account seemed so much in favour of what we had already advanced concerning the action of fixed air, that no observation was made upon it farther than that this elastic principle would seem also to be the cause of animal-heat; for as the blood evidently received a vast quantity of elastic fluid, it also received a much greater proportion of heat than usual."

32. Fixed air supposed the cause of animal heat.

Such was the mode of reasoning adopted at that time, derived from the discoveries which had been made in *Aerology*. Succeeding discoveries, however, have made it evident, that fixed air is not one of the natural component parts of our atmosphere, but that it consists of two different fluids; one of which is commonly called *phlogisticated*, the other *dephlogisticated*, air. It is the latter which supplies the vital principle; and the above reasoning still holds good, only substituting the words *dephlogisticated air* for *fixed air*. The poisonous quality of the latter seems also still to depend on its too easy decomposition; by which means the elastic principle is discharged into the blood in such quantity as to burst the small vessels, as has already been observed. This is shown indeed by the remedies most proper for the recovery of those who have suffered from the noxious qualities of fixed air. These consist in evacuation, and especially sprinkling the body with cold water, in order to take off the superfluous heat, and produce an universal contraction of the vessels.

33. This theory corrected.

It now remains only to give some account of the means by which the circulation of the blood is carried

on in the living body. From the time of Harvey till very lately, this was supposed to be chiefly the muscular power of the heart and arteries, which by some physiologists have been thought to be prodigiously great; and accordingly many calculations, requiring no small degree of mathematical knowledge to understand them, have been made of the forces requisite to perform this circulation. Other physiologists, however, have thought proper to take in several auxiliary helps, as the motion of the muscles, respiration, &c. and from Dr Hales's experiment abovementioned it appears that respiration hath a considerable influence in this matter. It cannot, however, be the sole cause, seeing the circulation is carried on in animals which do not respire.—In 1773, Dr Wilson, in the lecture already quoted, suggested a new principle of motion, which we believe was never used before to account for the circulation of animal fluids. It is shortly this: "As the fluids of the human body do all of them suffer a continual waste, and consequently require a constant supply in proportion, we must look upon their going out of the body to be the end of their motion, and on their entering into the body to be the beginning of it; and hence we are to look for the origin of all the motion of the fluids in that part of the system where the new supplies are taken in. This is the *primæ viæ*, where the lacteals absorb a fluid from the digested aliment, and convey it into the blood. The power by which this is accomplished, is necessarily independent of the heart, as having not the least connection with it. It has been said to be the same with that which causes fluids rise in capillary tubes; but though very probably the powers in both cases may be the same, there is this remarkable difference between them, that in the capillary tubes the fluids only rise to a certain height, and will not rise at all unless the tubes are empty. In the lacteals they rise in vessels already full, and continue to do so. Neither is the force whereby this absorption is performed to be accounted little; seeing the supply by the chyle must constantly be equal to the waste which is continually taking place in the fluids already contained in the vessels. We see also, with what force an absorption of this kind sometimes takes place in other cases; thus ropes will absorb water with such strength as to raise immense weights fastened to them, and which no mechanical injection of water into small tubes could possibly accomplish. What is already said of the lacteals applies also to the lymphatics; and from thence we are almost tempted to conclude, that the case is the same with the sanguiferous veins also; that though there may be a continuation of some arteries into the veins corresponding with them, yet that for the most part these vessels extravasate the blood into small cavities, which is then taken up by the absorbent power of the veins, and returned to the heart.

"If, however, the vessels continued absolutely full, it would be impossible that any motion could be carried on in them; and to continue and regulate the circulation, the heart with its cavities is provided. Let us suppose, that by the abovementioned power the veins are all full, and the auricles or chambers into which the veins empty themselves are full also: where is the collected stream in the veins to go next? There is no room for more in the auricle. What must be done? The auricle contracts and empties itself. The conse-

quence is a sudden vacuum equal to what the auricle could contain; the turgid veins, urged by the absorbing power abovementioned, rush their contents into the auricle to fill up the vacuum again, and all behind moving in the venous direction advances forward with so much force, that the veins near the heart sustain a pulsation from the regurgitation of this impetuous stream, when the auricle shuts upon it to empty itself. In short, the full auricle occupies a determinate quantity of space in the breast: when it is emptied, there is a nonresisting vacuum of so much space as was full before, and thither there is a mechanical nifus from the remotest filament of a vein over the whole body, which becomes conspicuous in the torrent that rushes every other moment from the mouth of the vena cava into this vacuum."

This is a short abstract of Dr Wilson's new theory of the circulation. According to him, this absorbing power of the veins is the principle agent, while the heart and arteries do no more than empty themselves of the blood with which they are filled by the veins. Even this cause, however, he says, would not be sufficient to carry on the circulation for a single moment, without the presence of another which he calls *lyfe*, and does not consider as absolutely unmechanical, tho' we cannot reduce it either to mechanical rules or ideas. But as we apprehend all speculations concerning such causes must be arbitrary and without foundation, we forbear to give any account of the Doctor's opinions on this subject.

It hath been a general opinion, that blood, as it exists in the bodies of animals, contains a considerable quantity of common air; and indeed it is certain, that blood, after it has been drawn from the veins of any animal, and afterwards placed under the receiver of an air-pump, yields a very considerable quantity of air upon exhausting the receiver: but if a portion of any blood-vessel is tied up so as to prevent the escape of its contents, and then cut out of the body and placed under a receiver, it will not swell, or show the least sign of its containing any quantity of air whatever.

Blood was formerly held in great esteem as a medicine for some particular diseases. Baths of the blood of infants have been recommended as an infallible remedy for the elephantiasis, &c.; and the blood of goats and some other animals was used by the Galenists, and is recommended even by Dr Mead in pleuritis; but the first abominable medicine, as well as the other, is now deservedly exploded. The principal use of blood in the arts is for making Prussian blue, or sometimes for clarifying certain liquors; it is also recommended in agriculture as an excellent manure for fruit-trees. A mixture of blood with lime makes an exceedingly strong cement; and hence it is of use in the preparation of some chemical lutes, the making floors, &c.—As a food, it hath been disputed whether blood really affords any nourishment or not. The best judges now, however, are generally agreed that it is very nutritious; and tho' out of the body, like the white of an egg, it is very insoluble, yet, like that too, *in* the body it is commonly of easy digestion. It is, however, highly alkaline in hot climates; on which account the prohibition of it to the Israelites was very proper. Even in this country, when blood was used as food in great quantity, the scurvy was more frequent than at other times;

Blood. but to a moderate use of it here no such objection takes place.

In some countries we are told, that the barbarians were accustomed to intoxicate themselves by drinking the warm blood of animals; and as it has been shown that this fluid is the immediate reservoir of the vital principle, it seems by no means improbable that it may be possessed of an inebriating quality. Some expressions in Scripture seem to countenance this hypothesis.

Religious uses of BLOOD. Among the ancients blood was used for the sealing and ratifying covenants and alliances, which was done by the contracting parties drinking a little of each others blood; and for appeasing the manes of the dead, in order to which blood was offered on their tombs as part of the funeral ceremony.

The blood of victims was anciently the portion of the gods; and accordingly was poured or sprinkled on the altars in oblation to them.

The priests made another use of blood, *viz.* for divination: the streaming of blood from the earth, fire, and the like, was held a prodigy or omen of evil.

The Roman priests were not unacquainted with the use of blood in miracles: they had their fluxes of blood from images, ready to serve a turn; witness that said to have streamed from the statue of Minerva at Modena, before the battle at that place. But we know not whether in this their successors have not gone beyond them. How many relations in ecclesiastical writers of Madonas, crucifixes, and wafers, bleeding? At least the liquefaction of the blood of St Januarius at Naples, repeated annually for so many ages, seems to transcend by far all the frauds of the Grecian or Roman priesthood. But the chemists at last got into the secret; and we find M. Neumann at Berlin to have performed the miracle of the liquefaction of dried blood, with all the circumstances of the Neapolitan experiment.

Among the schoolmen we find a famous dispute, under Pope Pius II. whether the blood of Christ, which fell from him in the three days passion, retained or lost the hypostatic union; and consequently whether it was the proper object of adoration. The Dominicans maintained the former, the Franciscans the latter. It seems the dominican doctrine gained the ascendant, as being fitted to favour the profits of the monks; who becoming possessed some way or other of a few drops of this precious liquor, were secured of ample offerings from the deluded laity, who flocked to pay their homage to the sacred relic. Joseph of Arimathea is said to have first brought into Britain two silver vessels filled with the blood of Christ, which by his order was buried in his tomb. King Henry III. had a crystal, containing a portion of the same blood, sent him by the master of the temple at Jerusalem, attested with the seals of the patriarch; which treasure the king committed to the church of St Peter's Westminster, and obtained from the bishops an indulgence of six years and 116 days to all that should visit it. Mat. Paris even assures us, that the king summoning his nobles and prelates to celebrate the feast of St Edward in St Peter's church, was chiefly *pro veneratione sancti sanguinis Christi nuper adepti*, "in veneration of the holy blood of Christ lately acquired." Divers others of our monasteries were possessed of this profitable relic; as the college of Bon Hom-

mes at Ashridge, and the abbey of Hales, to whom it was given by Henry, son of Richard duke of Cornwall, and king of the Romans. To it resorted a great concourse of people for devotion and adoration; till in 1538, as the reformation took place, it was perceived to be only honey clarified and coloured with saffron, as was shown at Paul's cross by the bishop of Rochester. The like discovery was made of the blood of Christ, found among the relics in the abbey of Fescamp in Normandy, pretended to have been preserved by Nicodemus, when he took the body from the cross, and given to that abbey by William duke of Normandy: it was buried by his son Richard, and again discovered in 1171, and attended with different miracles; but the cheat, which had been long winked at, was at length exposed, the relation of which is given by Speed.

Avenger of BLOOD, among the Jews, was the next of kin to the person murdered, who was to pursue the murderer.

Ecclesiastical judges retire, when judgment is to be given in *cases of blood*, by reason the church is supposed to abhor blood: it condemns no person to death; and its members become irregular, or disabled from their functions, by the effusion of blood.

Field of BLOOD, in Syriac *aceldama*, was a field purchased by the Jews with the thirty pieces of silver which had been given to Judas for betraying his Master, and which he had reitored. It still serves for a burial-ground, in which all pilgrims who die in their pilgrimage at Jerusalem are interred.

BLOOD-HOUND, in zoology, the *canis sagax* of Linnæus*, *le chien courant* of Buffon, the *scouthounde* of the Scots: The hound or dog, with long, smooth, and pendulous ears.—It was a dog of great use, and in high esteem with our ancestors: its employ was to recover any game that had escaped wounded from the hunter, or been killed and stole out of the forest. It was remarkable for the acuteness of its smell, tracing the lost beast by the blood it had spilt; from whence the name is derived. This species could, with the utmost certainty, discover the thief by following his footsteps, let the distance of his flight be ever so great, and through the most secret and thickest coverts: nor would it cease its pursuit till it had taken the felon. They were likewise used by Wallace and Bruce during the civil wars. The poetical historians of the two heroes frequently relate very curious passages on this subject; of the service these dogs were of to their masters, and the escapes they had from those of the enemy. The blood-hound was in great request on the confines of England and Scotland; where the borders were continually preying on the herds and flocks of their neighbours. The true blood-hound was large, strong, muscular, broad breasted, of a stern countenance, of a deep tan-colour, and generally marked with a black spot above each eye.

BLOOD-Shotten. See OPHTHALMIA.

BLOOD Spavin. See FARRIERY, § xxxii. 2.

Spitting of BLOOD, or *Hæmoptœe.* See MEDICINE-Index.

Whole and Half BLOOD; a kinsman of the *whole blood* is he that is derived from the same couple of ancestors; whereas a person of *half blood* descends from either of them singly by a second marriage.

Blood of Christ, the name of a military order instituted at Mantua in 1608. The number of knights was restricted to 20, besides the grand master. Their device was, *Domine, probasti me*; or, *Nihil hoc, triste, recepto*: "Lord, thou hast proved me;" or, "Fortified by this, no evil can prevail."

Precious Blood, a denomination given to a reformed congregation of Bernardine nuns at Paris, first established under that name in 1661.

Dragon's Blood. See DRAGON.

Blood-Stone. See HÆMATITES.

Blood-Vessels. See ANATOMY, n^o 123, &c. and Plate XXXIII.

Blood-Wite, in ancient law writers, signifies *blood*, and a customary amercement paid as a composition for the shedding or drawing of blood. The word is also written *blodwite*, *blodwita*, *blodwyta*, *blodwit*, *blodwit*, *bloutwit*, and *bludweit*. It is formed from the ancient Saxon *blud*, "blood," and *wite* or *wite*, "a fine or penalty." The word also denotes an exemption from this penalty granted by the king to certain persons and communities as a special favour. King Henry II. granted to all tenants within the honour of Wallingford—*Ut quieti sint de hidigio et blodwite et bredwite*.

Blood-Wort, in botany. See RUMEX.

BLOOD (Thomas), generally known by the appellation of *Colonel Blood*, was a disbanded officer of Oliver Cromwell's, famous for his daring crimes and his good fortune. He was first distinguished by engaging in a conspiracy to surprize the castle of Dublin; which was defeated by the vigilance of the Duke of Ormond, and some of his accomplices were executed. Escaping to England, he meditated revenge against Ormond; and actually seized him one night in his coach at St James's-street, where he might have finished his purpose if he had not studied refinements in his vengeance. He bound him on horseback behind one of his associates, resolving to hang him at Tyburn, with a paper pinned to his breast: but when they got into the fields, the duke, in his efforts for liberty, threw himself and the assassin, to whom he was fastened, to the ground; and while they were struggling in the mire, he was rescued by his servants; but the authors of this attempt were not then discovered. A little after, in 1671, Blood formed a design of carrying off the crown and regalia from the tower; a design, to which he was prompted, as well by the surprizing boldness of the enterprize, as by the views of profit. He was very near succeeding. He had bound and wounded Edwards the keeper of the jewel-office, and had got out of the tower with his prey; but was overtaken and seized, with some of his associates. One of them was known to have been concerned in the attempt upon Ormond; and Blood was immediately concluded to be the ringleader. When questioned, he frankly avowed the enterprize; but refused to discover his accomplices. "The fear of death (he said) should never engage him either to deny a guilt or betray a friend." All these extraordinary circumstances made him the general subject of conversation; and the king was moved with an idle curiosity to see and speak with a person so noted for his courage and his crimes. Blood might now esteem himself secure of pardon; and he wanted not address to improve the opportunity. He told Charles, that he had been engaged, with others, in a design to kill him

with a carabine above Battersea, where his majesty often went to bathe: that the cause of this resolution was the severity exercised over the consciences of the godly, in restraining the liberty of their religious assemblies: that when he had taken his stand among the reeds, full of these bloody resolutions, he found his heart checked with an awe of majesty; and he not only relented himself, but diverted his associates from their purpose: that he had long ago brought himself to an entire indifference about life, which he now gave for lost; yet could he not forbear warning the king of the danger which might attend his execution: that his associates had bound themselves by the strictest oaths to revenge the death of any of their confederacy; and that no precaution nor power could secure any one from the effects of their desperate resolutions. Whether these considerations excited fear or admiration in the king, they confirmed his resolution of granting a pardon to Blood; but he thought it a requisite point of decency first to obtain the Duke of Ormond's consent. Arlington came to Ormond in the king's name, and desired that he would not prosecute Blood, for reasons which he was commanded to give him. The duke replied, that his majesty's commands were the only reason that could be given; and being sufficient, he might therefore spare the rest. Charles carried his kindness to Blood still farther: he granted him an estate of L. 500 a-year in Ireland; he encouraged his attendance about his person; he showed him great countenance; and many applied to him for promoting their pretensions at court. And while old Edwards, who had bravely ventured his life, and had been wounded, in defending the crown and regalia, was forgotten and neglected, this man, who deserved only to be stared at and detested as a monster, became a kind of favourite.—Blood enjoyed his pension about 10 years, till being charged with fixing an imputation of a scandalous nature on the Duke of Buckingham, he was thrown into prison, where he died August 24. 1680.

BLOODY, something belonging to or abounding with blood.

Bloody-Flux. See MEDICINE-Index.

Bloody-Hand, is when a trespasser is apprehended in a forest with his hands or other parts bloody; which is a circumstance of his having killed the deer, though he be not found chasing or hunting them.

Bloody-Rain. See RAIN.

Bloody-Sweat. Many instances of this are recorded, in which it has been owing to bodily disorder, or extreme mental agitation and agony. See particularly Aristotle's Hist. Animal. lib. iii. cap. 19. apud Oper. tom. i. Thuanus Hist. Temp. &c. lib. ii. apud Oper. tom. i. Melanges d'Histoire et de Littérature, &c. par M. V. Marville, tom. iii. p. 149. Acta Physico-Med. Norimbergæ, vol. i. p. 84. and vol. viii. p. 428.

Bloody Urine. See MEDICINE-Index.

BLOOM, a mass of iron after having undergone the first hammering called *Nomary*. It has yet to undergo many hammerings before it become iron fit for the smith's use, and be first made what they call the *ancony*. See ANCONY.

BLOOT (Peter), a Flemish painter, whose works are not frequently seen in these kingdoms; nor are they easily purchased in Holland, being carefully preserved in private collections, and are highly esteemed.

Blossom
||
Blount.

The subjects he chose to paint were always taken from the lowest life; such as boors drinking, feasting, dancing, or quarrelling; shepherds piping, and sometimes the marriages of villagers. He was a faithful, and indeed too servile an imitator of nature; never departing from the actions, attitudes, or draperies of his models. He showed a good knowledge of the chiaro-scuro, and perspective; he had a delicate manner of penciling, and his colouring was mellow; but he had no idea of elegance: yet his pictures have in many respects great merit, and his defects seem rather imputable to the taste of his country than to his own genius; some of his works being, for the lightness of the touch, the neatness of handling, and transparency of colour, equal to the best of his time. He died in 1667.

BLOSSOM, in a general sense, denotes the flower of any plant. See the article FLOWER.

BLOSSOM, in a more proper sense, is restrained to the flowers of trees, which they put forth in the spring as the forerunners of their fruit, otherwise called their *blom*. The office of the Blossom is partly to protect, and partly to draw nourishment to, the embryo, fruit, or seed.

BLOSSOM, or *Peach-coloured*, in the manege, a term applied to a horse that has his hair white, but intermixed all over with sorrel and bay hairs. Such horses are so insensible and hard both in the mouth and the flanks, that they are scarce valued; besides they are apt to turn blind.

BLOSSOMING OF PLANTS, the act of blowing, or putting forth flowers or blossoms, called also *flowering*. The blossoming of the Glastenbury thorn piously on Christmas-day-morning, is a vulgar error; owing to this, that the plant, besides its usual blossoming in the spring, sometimes puts forth a few white transient blossoms in the middle of winter. For the blossoming of the rose of Jericho on the same day as it is commonly held in England, or in the time of midnight mass, as it is held in France, is somewhat more than an error, being really a fraud on one side, and a superstition on the other. This rose, whose leaves are only closed and shrivelled up in winter, will, at any time, upon setting its pedicle in water, expand and blossom a-new; because the pedicle being spongy imbibes the fluid space, and thus fills and swells out the shrivelled leaves; which property some monks have turned to good account.

BLOTELING or BLOOTELING (Abraham), an engraver who flourished about the year 1672. He was a native of Amsterdam, and designed as well as engraved. From the style of his etchings, which have great merit, he is supposed to have frequented the school of the Visschers. He came into England about the year 1672, or 1673, at the time the French invaded Holland; but he did not reside here long. He not only etched, but also seraped, several mezzotintos, which were much esteemed. Vertue informs us, that whilst he was in England, he received 30 guineas for an etching of the duke of Norfolk. From hence he returned to Amsterdam, where, in all probability, he died. In the year 1685, he published at Amsterdam the *gems* of Leonardo Anguttino, and etched the plates himself.

BLOUNT (Thomas), a learned English writer of N^o 48.

the 17th century, born at Bordesley in Worcestershire. He had not the advantage of an university education; but, by strength of genius and great application, made a considerable progress in literature. Upon the breaking out of the popish plot in the reign of king Charles II. being much alarmed on account of his being a zealous Roman-catholic, he contracted a palsy; and died in December 1679, aged 61. He wrote, 1. The academy of eloquence, containing a complete English rhetoric. 2. Glossographica, or a dictionary interpreting such hard words, whether Hebrew, Greek, Latin, Italian, &c. that are now used in our refined English tongue, &c. 3. Bosobol; or the history of his majesty's escape after the battle of Worcester. 4. A law dictionary. 5. Animadversions upon Sir Richard Baker's chronicle. 6. *Fragmenta Antiquitatis*; and other works.

BLOUNT (Sir Henry), an English writer, born at his father's seat in Hertfordshire in 1602. After a regular education, he set out on his travels in 1634; and getting acquainted with a janizary at Venice, he accompanied him into the Turkish dominions: having been abroad two years, he returned, and published a relation of his travels in the Levant, which went thro' several editions. He was knighted by Charles I. and was at the battle of Edge-hill, at which time he is supposed to have had the charge of the young princes; but, after the king's death, was employed by the parliament, and by Cromwell. Yet after the restoration of the royal family he was appointed high sheriff of the county of Hertford, and from that time lived as a private gentleman above 20 years. He published, 1. An account of his travels. 2. Six comedies written by John Lilly, under the title of *Court Comedies*. 3. The exchange walk, a satire; and 4. An epistle in praise of tobacco. He died October 9th, 1682.

BLOUNT (Sir Thomas Pope), baronet, an eminent writer, and the eldest son of the former, was born at Upper Holloway, in the county of Middlesex, September 12th, 1649. He was educated under the eye of his father; and always distinguished himself as a lover of liberty, a sincere friend to his country, and a true patron of learning. He was advanced to the degree of baronet by king Charles II. in whose reign he was elected burgess for St Alban's in two parliaments, and was knight of the shire in three parliaments after the Revolution. He wrote in Latin, 1. A critique on the most celebrated writers. 2. Essays on several subjects. 3. A natural history, extracted out of the best modern writers; and, 4. Remarks upon poetry, with characters and censures of the most considerable poets, whether ancient or modern. He died June 30th, 1697.

BLOUNT (Charles), younger brother of Sir Thomas Pope Blount, had also an excellent capacity, and was an eminent writer. His *Anima Mundi*, or *An historical narration of the opinions of the ancients, concerning man's soul after this life, according to unenlightened nature*, gave great offence, and was complained of to the bishop of London. But the work which rendered him most known, was his translation of Philostratus's *Life of Apollonius Tyanæus*, published in 1680; which was soon suppressed, as an attack on revealed religion. Another work of the same complexion he published the same year, called *Great is Diana of the*

Fig. 1.

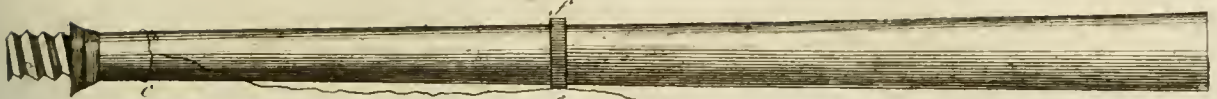


Fig. 2.

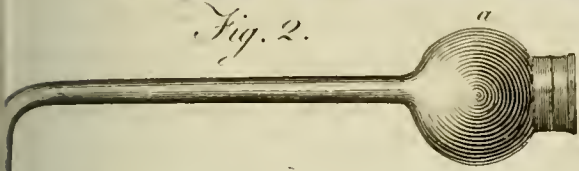


Fig. 3.



Fig. 4.



Fig. 5.

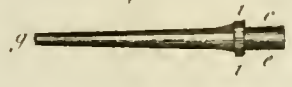


Fig. 6.

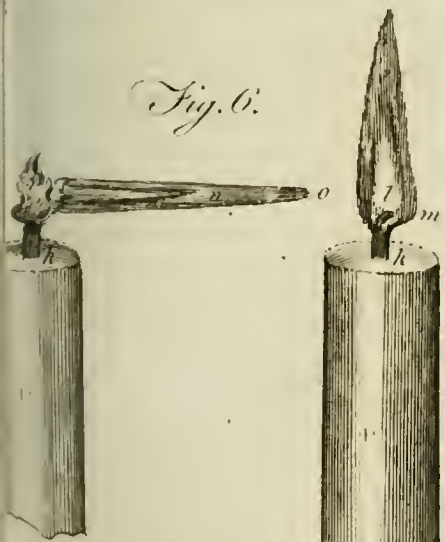


Fig. 10.

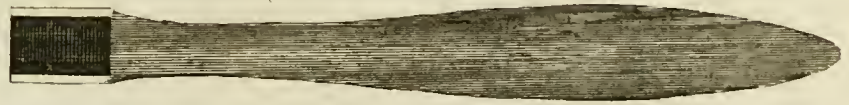


Fig. 9.

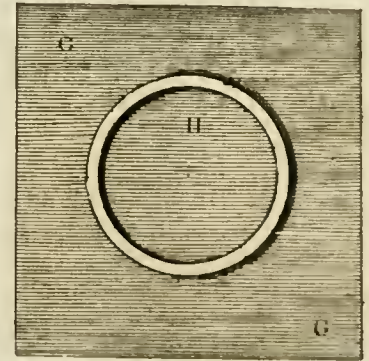


Fig. 7.



Fig. 8.



low. the *Ephesians*, &c. in which, under colour of expoling superstition, he struck at revelation. In 1684, he printed a kind of *Introduction to Polite Literature*. In the warmth of his zeal for the Revolution, he wrote a pamphlet to prove king William and queen Mary conquerors; which was condemned to be burnt by both houses of parliament. The close of his life was very unhappy. For, after the death of his wife, he became enamoured of her sister, who was only scrupulous against their union on account of their prior connection by the marriage; on which he writ a letter on the subject, as the case of a third person, with great learning and address. But the archbishop of Canterbury and other divines deciding against him, and the lady on this growing inflexible, it threw him into a frenzy in which he shot himself, in 1693. After his death, his miscellaneous pieces were collected and published.

BLOW (Dr John), a famous musician and composer, was a native of North Collingham in the county of Nottingham; and was one of the first set of children after the restoration, being bred up under Captain Henry Cook. He was also a pupil of Hingeston, and after that of Dr Christopher Gibbons. On the 16th day of March, 1673, he was sworn one of the gentlemen of the chapel in the room of Roger Hill; and in July, 1674, upon the decease of Mr Pelham Humphrey, was appointed master of the children of the chapel. In 1685, he was made one of his majesty's private music; and in 1687, was appointed almoner and master of the choristers of the cathedral church of St Paul. Blow was not a graduate of either university; but archbishop Sancroft, in virtue of his own authority in that respect, conferred on him the degree of doctor in music. Upon the decease of Purcell in 1695, he became organist of Westminster-abbey. In the year 1699, he was appointed composer to his majesty, with a salary. Blow was a composer of anthems while a chapel-boy, and on the score of his merit was distinguished by Charles II. The king admired very much a little duet of Carissimi to the words 'Dite o Cielii,' and asked of Blow if he could imitate it. Blow modestly answered he would try; and composed in the same measure, and the same key of D with a minor third, that fine song, 'Go, peijured man.' The *Orpheus Britannicus* of Purcell had been published by his widow soon after his decease; and contained in it some of that author's finest songs: the favourable reception it met with was a motive with Blow to the publication in the year 1700, of a work of the same kind, entitled *Amphion Anglicus*, containing compositions for one, two, three, and four voices, with accompaniments of instrumental music, and a thorough-bass figured for the organ, harpsichord, or theoribolute. To this book are prefixed commendatory verses by sundry persons; and among them an ode, in the second stanza of which are the following lines:

- ' His *Gloria Patri* long ago reach'd Rome,
- ' Sung and rever'd too in St Peter's dome;
- ' A canon will outlive her jubilees to come.'

The canon here meant is that fine one to which the *Gloria Patri* in Dr Blow's gamut service is set. Dr Blow set to music an ode for St Cecilia's day, in 1684, the words by Mr Oldham, published together with one

of Purcell on the same occasion performed the preceding year. He also composed and published a collection of lessons for the harpsichord or spinnet, and an ode on the death of Purcell, written by Mr Dryden. There are also extant of his composition sundry hymns printed in the *Harmonia Sacra*, and a great number of catches in the latter editions of the musical companion.—This great musician died in the year 1708, and lies buried in the north aisle of Westminster-abbey. On his monument is the canon above mentioned, engraven on a book with an inscription above it.

Blow, in a general sense, denotes a stroke given either with the hand, a weapon, or instrument. In fencing, blows differ from thrusts, as the former are given by striking, the latter by pushing.

Military Blow, *alapa militaris*, that given with a sword on the neck or shoulder of a candidate for knighthood, in the ceremony of dubbing him. The custom seems to have taken its rise from the ancient ceremony of manumission. In giving the blow, the prince used the formula *Esse bonus miles*, "Be a valiant soldier;" upon which the party rose a complete knight, and qualified to bear arms in his own right.

Blow, in law. See BATTERY.

Fly-Blows, the ova of flies deposited on flesh, or other substances proper for hatching them.

Blow-Pipe, in chemistry and mineralogy, an instrument by which the blast of the breath may be directed upon the flame of a lamp or candle, in such a manner as to vitrify any small portion of mineral substance; and thus the process of assaying in the dry way may be performed in a very short time, where either want of instruments or opportunity prevent other methods from being used.

Mr Bergman observes that this instrument is extremely useful to chemists, as many experiments are daily neglected, either because they require furnaces and a large apparatus of vessels; from the want of time to examine them in the ordinary way; or from the quantity required in the common way for examination, when the matter may be too scarce or too dear. In all these cases the blow-pipe may be advantageously used; as, 1. Most of the experiments which can be performed in the large way may also be done with the blow-pipe. 2. The experiments which in the large way require many hours, may in this method be finished in a few minutes; and, 3. The smallest particle is sufficient. The only defect is, that the proportions cannot be determined with any precision; and therefore where the experiments can be tried on a large scale, it is always to be preferred. "But the first inquiry to be made," says our author, "is, *what* a substance contains, not *how much*; and I have learned by the experience of many years, that these trials in small suggest the proper methods of instituting experiments in large. These experiments besides have some advantage over those conducted in crucibles, *viz.* we can see all the phenomena from beginning to end, which wonderfully illustrates the series of operations and their causes. Experiments made in crucibles are often fallacious, as the substance of the vessel itself is corroded. We suppose that lime or magnesia melted with fixed alkali are united with it in the way of so-

Blow,
Blow-pipe.

The blow-pipe useful to chemists.

In what respects it may be advantageously employed.

Blow-pipe. lution; but the globule, when well fused in the spoon, by its transparency permits us plainly to see that, except the siliceous part, it is only mechanically mixed. The most intense degree of heat may in this way be obtained in a few minutes, which can scarcely be done in a crucible in many hours."

3
When the instrument was first introduced.

4
Bergman's description of the blow-pipe.

Plate XCIX.

The blow-pipe was first introduced into the chemical apparatus about 50 years ago by the celebrated Swedish metallurgist Dr Andreas Swab, and the instrument was afterwards greatly improved by Messrs Cronstedt, Rinman, &c. and Dr Engstrom has an express treatise upon the subject. Mr Bergman proposes that the tube should be made of pure silver, to prevent it from being injured by rust; with the addition of a small quantity of platina, to give a necessary hardness. It consists of three parts, which may be occasionally joined: An handle (fig. 3.) terminating in a truncated conical apex *a a*, which may be twisted so as to adapt to the aperture *b* (fig. 4.) as to shut it more closely than can be done by a screw. It was an improvement of former chemists to have a hollow ball on the tube to collect the moisture of the breath, which if suffered to accumulate would greatly diminish the intensity of the flame. Instead of this Mr Bergman made use of the little box (fig. 4.) formed of an elliptical plate, so bended through the centre that the opposite sides become parallel, and are joined round by a plate equal in breadth to *c c*. Such a box collects the moisture of the breath as well as the sphere, and is besides attended with the advantage of a compressed figure and smaller circumference. The aperture *b* is somewhat conical, and hollowed out of the solid piece; and has no margin turned inward, lest the efflux of the fluid collected after long blowing, or the cleansing of the internal parts, should in any degree be prevented. The tube (fig. 5.) is very small, and its shorter conical end *e e* exactly fitted to the aperture *f*, so that no air can escape except through the orifice *g*. Many of those tubes should be provided with orifices of different diameters, to be applied on different occasions; the orifice *g* itself ought to be smooth and circular, otherwise the cone of flame hereafter to be mentioned will be divided. The bands (*bb ii*) prevent the conical apices (*aa, ee*) from being thrust in too far, and also serve another purpose; for when these apices are, by repeated attrition, at last so much diminished as to fall out spontaneously, by filing away a little of the bands they may again be made tight. The figures represent the whole apparatus of the proper size.

Fig. 3, 5.

5
How to supply it with a constant stream of air.

The greatest difficulty attending the use of the blow-pipe is the supplying it with a constant stream of air by means of the breath; for to such as are unaccustomed to it, it appears a contradiction to think of blowing a stream of air out by the mouth, at the same time that we are drawing it in by the nostrils to supply the necessary functions of respiration. An uninterrupted stream of air, however, is absolutely necessary; and, "to succeed in this operation (says Mr Bergman) without inconvenience, some labour and practice are necessary. The whole artifice, however, consists in this, that while the air is inspired through the nostrils, that which is contained in the mouth be forced out through the tube by the compression of the cheeks. To some persons this is extremely difficult; but fre-

quent trials will establish the habit; so that a continual stream of air can be supplied for a quarter of an hour or more, without any other inconvenience than the lassitude of the lips compressing the tube. A very great and obvious improvement, however, is still suggested by Dr Berkenhout, viz. to apply the tube to the wind-bag of a bagpipe; which being first blown full, may easily be kept so; and being compressed by the arm, will produce a blast either strong or weak as we have a mind. It will be a still farther improvement to supply this bag by means of a small bellows instead of blowing into it with the mouth: for thus the air will be more free from moisture, and also fitter for the support of flame, in other respects; as there is always a considerable quantity of fixed air produced at every respiration, which, according to that quantity, must unfit the air for keeping up the flame, and consequently render the heat less intense.

Blow-pipe
6
Dr Berkenhout's improvement

With regard to the flame proper to be chosen, Mr Bergman directs a slender candle, either of wax or tallow (fig. 6.), with a cotton wick (*k l*). The burned top must be cut at such a length, that the remainder may be bent a little (*lm*). The orifice (*g*) is to be held above and near to this arch, perpendicular to (*lm*), and the air equably expressed. The flame being forced to one side by the violence of the blast, exhibits two distinct figures; the internal figure (*ln*), conical, blue, and well defined; at the apex of this, *n*, the most violent heat is excited; the external flame (*lo*), brownish, vague, and indetermined; which is spoiled of its phlogiston by the surrounding atmosphere, and occasions much less heat at its extremity (*o*) than the interior flame does.

7
A candle proper for producing the flame

Fig. 5, 6.

8
Two kinds of flame produced by the blow-pipe

Dr Black, as well as all other eminent chemists, greatly recommend the use of the blow-pipe for chemical experiments on minerals. The construction recommended by him differs not from that already described; only he says, that it may be made of tin, a cheaper material than silver; though formerly they were made of glass. The small stream of air issuing from the extremity of the tube, being more intimately mixed with the flame, and agitated with it, occasions a more complete consumption of the vapour arising from the candle, and makes it produce much more heat; so that any small body exposed to the extremity of the flame is heated to a surprising degree. Several artists who work in metals, as the goldsmiths, &c. find this instrument useful in soldering small pieces of metal together; and it is also used by the chemists in examining the effects of violent heat upon small bodies. Some of the artists who use it much, supply the stream of air with a pair of bellows placed under the table, with a pipe rising up through it, and to which the blow-pipe is fixed. In the examination of ores, the more simple instrument is preferred; and by a little practice it is easy to blow a continued stream of air with the mouth, by keeping it always full, and drawing in the air by the nostrils, which answers the same purpose as the upper part of a double bellows. Mr Cronstedt used the blow-pipe much in making the experiments on which his system of mineralogy is founded, blowing air through a bit of charcoal: and though the specimens are small, we can see the changes they undergo as well as if they were larger; and the eye can be assisted by a magnifying glass.

9
Dr Black's directions concerning this instrument

10
Blow-pipe useful in soldering &c.

1 The reason of the intense heat produced by the blow-pipe is, that in the ordinary way of burning, the air acts only upon the external surface of the fuel, so that it is not so completely inflamed.

The blow-pipe used by Mr Cronstedt is composed of two parts; and this for the facility both of making, carrying it along, and cleansing it in the inside when necessary. The two parts are represented separate †, and of the true size; the figure of the instrument, when these are put together, may be easily conceived. The globe *a* (fig. 2.) is hollow, and made on purpose to condense the vapours, which always happen to be in the blow-pipe when it has been used some time: if this globe was not there, the vapours would go directly with the wind out into the flame, and thereby cool the assay. The hole in the small end *b*, through which the wind comes out, ought not to be larger than the size of the finest wire. This hole may now and then happen to be stopped up by something coming into it, so as to hinder the force of the wind: one ought therefore to have a piece of the finest wire, to clear it with when required; and, in order to have this wire the better at hand, it may be fastened round the blow-pipe, in such a manner as is represented in fig. 1: *c* is the wire fastened round the blow-pipe, and afterwards drawn through a small hole at *e*, made in the ring *f*, to keep it more steady. In order to determine the most convenient proportions of this instrument, several blow-pipes of different sizes, both bigger and smaller, have been tried: the former have required too much wind; and the latter, being too soon filled with the wind, have returned it back again upon the lungs: both these circumstances hindered greatly the experiments, and are perhaps even prejudicial to the health. The size here given is found to answer best; and though the hole must be as small as abovementioned, yet the sides of the pipe at the point must not be thinner, nor the point narrower, than here represented, else it will be too weak, and not give so good a flame. It is also to be observed, that the canal throughout the pipe, but particularly the hole at the small end, must be made very smooth, so that there be no inequalities in it; the wind would else be divided, and consequently the flame made double. That blow-pipe is to be reckoned the best, through which can be formed the longest and most pointed flame from off a common-sized candle. These blow-pipes are commonly made of brass or silver.

13 the Sup-
the pro-
for the
ter sub-
ted to
flame of
blow-
c.
There are two different kinds of matter made use of for the support of those substances usually examined by the blow-pipe: the one is charcoal of fir, or beech, cut into the form of a parallelopiped; the other a silver spoon, which is better, a golden spoon, fitted with a wooden handle. The former is generally used, excepting where pilogilston is to be avoided, or the subject of examination is apt to be absorbed by the charcoal. The golden spoon should be much less than the figure (7.) as the bulk of the support prevents the heat from being raised to a proper degree. To prevent the fine light particles from being carried off by the blast, a small cavity should be hollowed out in the charcoal; in which, being partly protected by another smaller piece of charcoal, they may be exposed to the apex of the flame.

Were it possible to procure a sufficient quantity of

dephlogisticated air, experiments with the blow-pipe Blow-pipe
could be rendered still more important than they are, as we might by this means be able to fuse and vitrify substances *per se*, which we are now scarce able to do with the most powerful fluxes. The difficulty of procuring this kind of air, however, has as yet, in a great measure, excluded the use of it from chemistry, though M. le Blond, *Medecin Naturalist du Roi*, in a letter to the editor of the *Journal de Physique* for February 1787, proposes, instead of blowing through the tube, to adapt to the wide end of it a leathern bag, the size of an ox's bladder, filled with pure air. Were this bag made to communicate, by means of a pair of small bellows, with a reservoir containing a considerable quantity of this dephlogisticated air, there is no doubt that many chemical operations might by its means be very advantageously performed; and we are already assured, that, by the use of this kind of air, platina itself may be melted. As dephlogisticated air, however, has not yet come into use, we can only expect such effects as may be produced by a violent blast of common atmospheric air; and for this purpose we must accommodate ourselves with proper fluxes. The following are recommended by Mr Bergman.

1. The phosphoric acid, or rather the microcosmic salt, as it is called, which contains that acid partly saturated with mineral, partly with volatile alkali, and loaded besides with much water and a gelatinous fat. This salt, when exposed to the flame, boils and foams violently, with a continual crackling noise, until the water and volatile alkali have flown off; afterwards it is less agitated, sending forth something like black scoriae arising from the burned gelatinous part: these, however, are soon dispelled, and exhibit a pellucid sphericle encompassed by a beautiful green cloud, which is occasioned by the deflagration of the phosphorus arising from the extrication of the acid by means of the inflammable matter. The clear globule which remains, upon the removal of the flame, continues longer soft than that formed by borax; and therefore is more fit for the addition of the matter to be dissolved. The volatile alkali is expelled by the fire; therefore an excess of acid remains in what is left behind, which readily attracts moisture in a cool place.

2. The mineral alkali, or sal sodæ, when put upon charcoal, melts superficially, penetrates the charcoal with a crackling noise, and then disappears. In the spoon it yields a permanent and pellucid sphericle as long as it is kept fluid by the blue apex of the flame; but when the heat is diminished, it becomes opaque, and assumes a milky colour. It attacks several earthy matters, particularly those of the siliceous kind, but cannot be employed on charcoal for the reasons assigned above.

3. Crystallized borax, exposed to the flame urged by the blow-pipe or charcoal, first becomes opaque, white, and excessively swelled, with various protuberances, or branches proceeding out from it. When the water is expelled, it easily collects itself into a mass, which, when well fused, yields a transparent sphericle, retaining its transparency even after cooling. If calcined borax be employed, the clear sphericle is obtained the sooner.

Having thus provided every thing necessary, the following directions are next to be attended to.

Blow-pipe.
18
Directions
with regard
to the can-
dle.

1. A common tallow candle, not too thick, is generally preferable to a wax candle, or to a lamp. The snuff must not be cut too short, as the wick should bend towards the object.

19
With re-
gard to the
matter ex-
posed to the
flame.

2. The weaker exterior flame must first be directed upon the object, until its effects be discovered; after which the interior flame must be applied.

3. We must observe with attention whether the matter decrepitates, splits, swells, vegetates, boils, &c.

4. The piece exposed to the flame should scarce ever exceed the size of a pepper-corn; but ought always to be large enough to be taken up by the forceps (fig. 10.) When the particle is too large, part of it must necessarily be without the focus; and thus cool both the support and the part immersed in the blue apex (fig. 6.). It may, however, be broken into pieces sufficiently small by means of the hammer (fig. 8.), upon the steel plate (fig. 9.); any of the small parts being prevented from flying off by the ring H.

5. A small piece should be added separately to each of the fluxes: concerning which it must be observed, whether it dissolves wholly, or only in part; whether this be effected with or without effervescence, quickly or slowly; whether the mass be divided into a powder, or gradually and externally corroded; with what colour the glass is tinged; and whether it becomes opaque, or remains pellucid.

Having given these directions, our author (Mr Bergman) proceeds next to consider the subjects proper to be examined by the blow-pipe. These he divides into four classes: 1. Saline; 2. Earthy; 3. Inflammable; and, 4. Metallic.

20
Properties
of salts
when expo-
sed to the
action of
the blow-
pipe.

1. The *Salts*, though distinguished by their taste and solubility in water, differ so much in degree, that it is impossible to distinguish them absolutely from the earths by any natural boundaries. Many of them, when exposed to the flame, easily melt by the water of crystallization they contain. After this is dissipated, they split; and by a more intense heat are readily fused: others are deprived of their water without any fusion; and then melt once by a heat more or less intense, according to their nature; and some fly off with the heat.

21
Of the acid
of arsenic.

Acids in general cannot bear the action of the blow-pipe, such at least as are easily kept in a fluid state. It is otherwise, however, with some of those which appear solids.

The acid of arsenic upon charcoal attracts the inflammable matter, generates white arsenic, and flies off in vapours. In the spoon it melts without emitting smoke, unless it can acquire phlogiston either from the support on which it is placed, or the flame of the candle.

22
Of molyb-
dæna.

The acid of molybdæna, according to our author, seems to be the basis of some metal, as it has a specific gravity of 3,461, possesses the property of tinging fluxes, and decomposing the phlogisticated alkali; he adds, "Is this the acid of tin?" This acid is absorbed by charcoal; and in the spoon emits a white smoke, which on touching the apex of the interior flame, assumes a beautiful blue colour, and again grows white upon exposure to the exterior flame. It tinges microcosmic salt of a fine green; borax assumes an ash-colour by reflection, but has a dark violet when we look through it. The acid of borax, commonly called *salsedulous*, easily liquefies, in the same manner with borax itself, but does not swell so much as that salt does. It leaves a fixed pellucid glo-

23
Of borax.

bule. Acid of tartar liquefies on the first contact of the exterior flame, swells, foams, grows black, and sends forth a smoke and blue flame, leaving a spongy coal, the greatest part of which is soon converted into ashes of a calcareous nature. The combustion, however, must be slow, and the weakest part of the flame only employed, in order to observe these changes distinctly. By the contact of the exterior flame, crystallized acid of sugar is first made of an opaque white, then melts, and, lastly, flies off without leaving any residuum. Acid of phosphorus easily melts into a pellucid globule, which afterwards deliquesces in the air. Crystallized vegetable alkali first becomes opaque, and decrepitates long and violently; then melts into a globule, which remains in the spoon; but expands on charcoal, and is absorbed with a crackling noise. The volatile alkali liquefies a little, and is then dissipated.

Several of the neutral salts flow twice, according to the quantity of water they contain in their crystals. The decrepitating salts are broken and dispersed by a sudden heat. Of this kind are vitriolated tartar, vitriolic sal ammoniac, common salt, and sal digestivus. Those which have a volatile alkali for their basis, fly off in a very short time.—By the application of the external flame, salt of amber laid on charcoal liquefies and smokes, the contact of the internal flame sets it on fire, and it continues to burn with a blue flame till it totally disappears. The same thing takes place when it is put in the spoon, excepting when it contains too great a quantity of oil, which indeed very frequently happens. In this case some traces of coal are to be met with. The spurious salt of amber presents different phenomena according to the substances made use of in adulterating it.

The detonating salts, into which the nitrous acid always enters as a component part, liquefy in the spoon, and are not decomposed on the charcoal until it takes fire: they are then decomposed with violent flame and noise, but which is different in degree according to the basis with which the nitrous acid is united. Thus the nitrous acid combined with vegetable alkali burns with a blue flame, but with the mineral and volatile alkali has a yellow one.

The carbonaceous salts yield spongy coals by the combustion of their acid, which by ignition becomes white, leaving their alkaline basis pure behind them. These are the acid of tartar, crude tartar, salt of sorrel, and tartarized mineral and vegetable alkali.

The hepatic salts, when put on charcoal, melt into a red or yellow mass, which diffuses an hepatic smell, especially when moistened by an acid. To this class belong all those fixed in the fire which contain the vitriolic acid, and which when saturated with phlogiston produces sulphur; such as vitriolated tartar and Glauber's salt.

Few of the earthy salts flow sufficiently thin to be reduced into a perfect globule; nor do they all actually enter into fusion, though the water of crystallization excites a great foam by its going off. Those which contain the vitriolic acid effervesce violently with borax and microcosmic salt, but are dissolved with difficulty by the salt of soda.

The intumescant salts. 1. Vitriolated magnesia, commonly called *effson salt*, swells, foams, and may be melted by being repeatedly exposed to the flame. 2. Alum

24
Of tartar.
25
Of the acid
of sugar.
26
Of the acid
of phospho-
rus.
27
Volatile al-
kali.
28
Of the de-
crepitating
salts.
29
Of salt of
amber.
30
Detonating
salts.
31
Carbonace-
ous salts.
32
Hepatic
salts.
33
Earthy sal-
ts.
34
Intumesc-
cent salts.

Blow-pipe. Alum is somewhat different; for finally all ebullition ceases, and the mass remains incapable of further change by fire than to split. When hot, it is variegated with blue spots. 3. A combination of lime with acetous acid swells much like alum, but scarcely adheres to the charcoal. 4. Nitrated magnesia swells with a crackling noise, but without any detonation. 5. To this class also belongs the combination of marine acid with magnesia.

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salt.
Gypsum eluded the utmost force of Mr Pott's furnace, but may be fused in a moment by exposing a section of the lamella to the blue flame. Though naturally pellucid, it instantly becomes opaque; and the water it contains flies off without any ebullition.

The following substances are soluble in borax and microcosmic salt with effervescence.

1. Lime, magnesia, alum, and combination of lime with acetous acid.

2. The metallic salts which do not decrepitate. Some of these containing either a large quantity of water in their crystals, or obstinately retaining their acid, flow in the fire, while others only foam. Most of them recover, in part at least, their metallic appearance, especially when they touch the coal, leaving at the same time a shapeless scoria. By the addition of borax, the scoriae are dissolved, and the regulus better collected; the fluxes are tinged in the same manner as by the metallic calces.

3. The decrepitating metallic salts; lead combined with nitrous acid, and antimony with that of tartar.

4. Volatile metallic salts which have mercury for their basis. Those which contain marine acid in general fly off more quickly than those in which the metal is combined with any other menstruum.

5. Detonating metallic salts, as silver, mercury, lead, and bismuth united with nitrous acid.

6. The intumescent metallic salts, vitriolated and nitrated copper, iron and cobalt vitriolated, and nitrated zinc. These swell with noise and a certain degree of ebullition on the first contact of the flame, but afterwards remain unchanged.

7. The fusible metallic salts, as silver and lead combined with vitriolic acid, and zinc combined with marine acid.

8. Antimony combined with acid of tartar, a carbonate metallic salt.

37
autiful
een flame
m cop-
r com-
ed with
rine acid
9. Metallic salts communicating a certain colour to the flame. Blue vitriol, and solution of copper in nitrous acid, produce a greenness; but solution of copper in spirit of salt acts with much more efficacy. The green crystals of this first grow red by the contact of the external flame; afterwards they liquefy and grow black, making the flame at first of a deep blue, which afterwards verges to a green. The flame thus tinged expands much, and remains in that state until the whole of the salt be dissipated. This green salt, added to microcosmic salt in fusion, immediately shows a beautiful flame: the clear globule is tinged green, and does not grow opaque or brown, unless a large quantity of the microcosmic salt be added; a circumstance which takes place much sooner on adding a small quantity of borax.

38
calcareous
th.
11. Earthy Substances.—1. Crude calcareous earth effervesces a little with mineral alkali, and is divided in-

to small particles, but sparingly dissolved. When over-burned, it seems not to be divided or diminished. The former dissolves in borax with effervescence; but the latter scarcely produces any bubbles. The same phenomena takes place with microcosmic acid, only the effervescence is somewhat greater. A very small piece of calcareous earth is easily dissolved in borax and microcosmic salt, yielding quite pellucid sphericles: but if more earth be gradually added, the flux, saturated at length, retains the dissolved matter indeed while in perfect fusion, but on removing it from the flame, the part which was taken up by the heat alone soon separates. Hence clouds first begin to appear, and at length the whole globule becomes opaque, but recovers its transparency again by fusion. If the melted pellucid globule, however, which would grow opaque by cooling, be plunged while hot into melting tallow, water, or other substances likewise hot (for cold generally cracks it), so as to grow suddenly hard, it retains its transparency; the particles being as it were fixed in that state which is necessary to transparency.

2. Terra ponderosa, exposed alone to the flame, becomes caustic, soluble in water, and loses its property of effervescing with acids. It effervesces a little, and is sensibly diminished by salt of soda; dissolves with a slight effervescence in borax, as well as in microcosmic salt, but effervesces somewhat more violently in the latter.

3. Magnesia by itself loses its aerial acid, and with it the property of effervescing with acids. In salt of soda, it is scarcely diminished, but effervesces a little. It dissolves in borax also, with a slight effervescence; and likewise in microcosmic salt, but with a greater effervescence.

4. Common clay contains a number of heterogeneous particles, particularly siliceous earth, of which the quantity is generally one half of the whole. When pure clay therefore is required, the earth of alum digested in an alkaline lixivium, and well washed, must be employed. This earth, on exposure to the flame, grows hard, contracts in bulk, but does not melt. It effervesces a little in sal soda, but is sparingly dissolved. In borax it dissolves with a very considerable effervescence, and with a still greater in microcosmic acid.

5. Siliceous earth, by itself, is not fused. In sal soda it dissolves with remarkable effervescence; and if the siliceous earth dissolved exceeds the weight of the flux, it yields a pellucid glass. This, and all the other operations with sal soda, must be performed in a spoon. In borax it dissolves slowly, without any effervescence; and in a similar manner, only still more slowly, in microcosmic acid.

Mr Bergman next enumerates the various earths of all different kinds which he had subjected to the blow-pipe; and of these he found that the following did not without the utmost difficulty show any signs of fusion: viz. Pure abellos, refractory clay, pure mica, sapphire, flint, and steatite. The four last are indurated by fire. Of the same kind are the chrysolite and emerald, chalcidony, cornelian, hydrophanus, siliceous, jasper, onyx, opal, and quartz. The rest are fusible either by themselves or with the addition of proper fluxes. On these, he observes, in general, that when the effervescence is to be examined, only a very little piece of the matter is

Blow-pipe.

39
Terra pon-
derosa.40
Magnesia.41
Clays.42
Siliceous
earth.43
Of various
other earths
and fluxes.

Blow-pipe. is to be added to the flux; as the most subtle powder contains air, which being expelled by the heat, forms an appearance of effervescence. 2. The solution is often accelerated by lime, spathum ponderosum, gypsum, and other additions. 3. Gypsum alone is often an excellent flux. With an equal quantity of mineral fluor it is easily reduced to a pellucid globule, which grows white and opaque on cooling. The spathum ponderosum also unites with mineral fluor; but the mass does not become pellucid.

44
Of inflammable substances. III. Most *Inflammable Substances*, when exposed to the apex of the flame, begin to liquefy, unless they have a great quantity of earth in their composition; which, however, does not generally prevent their inflammation. When they are once inflamed, the blast ought to be stopped until they have burned away either alone or with a flux; after which the residuum is to be examined by the flame. The most remarkable appearances exhibited by inflammable substances, when examined by the blow-pipe, are the following:

45
Ambergris. 1. Ambergris burns with a white, smoky, and odoriferous flame, until it be totally consumed; but when impure, it is extinguished, leaving behind a black mass which soon grows white by ignition, and consists partly of calcareous powder. 2. Transparent amber exhibits almost the same appearance, but vanishes totally by heat in the spoon: so that in this way we can scarcely form any judgment of the residuum; which, however, is easily obtained from opaque amber.

47
Asphaltum, &c. 3. Pure asphaltum burns with smoke, and is totally consumed without any residuum. 4. Mountain pitch leaves black scoriae, shining, and of a brittle nature.

48
Sulphur. 5. Bituminous schist and lithanthrax, besides their matrix, leave an oily coal, or even spongy scoriae, if the residuum liquefies at all. 6. Common sulphur readily melts alone, and grows red; after which it takes fire, and is consumed with a blue flame and a most penetrating and suffocating odour. 7. Molybdæna contains a portion of common sulphur united to a peculiar acid. It does not take fire, and suffers but little change on the charcoal; but on being exposed to the flame in the spoon, it deposits a white smoke in direction of the blast. This smoke grows blue by the contact of the interior flame, but loses its colour by the exterior one. It undergoes little change by borax or the microcosmic salt, but dissolves in salt of soda with violent effervescence. It grows red and transparent by fusion; and when cold, assumes a dilute red colour and opaque, with an hepatic smell. 8. Plumbago emits smoke on burning, but which is only perceptible the instant the flame ceases. It differs from molybdæna in not depositing any white powder, and particularly in not being taken up by salt of soda. It is not changed by borax or microcosmic salt.

50
Plumbago. 9. Inflammable ores take fire with difficulty; some are scarcely changed, while others are consumed or fly off, leaving the metallic calx behind.

51
Inflammable ores. The fluxes in general are tinged by phlogiston; but unless this be fixed by some metallic calx, it is easily destroyed by burning.

52
Of the fluxes. IV. The perfect *Metals* lose no part of their phlogiston even in the most intense heat; and when calcined in the most way, recover their former nature by simple fusion. The imperfect metals are calcined by fire, especially by the exterior flame; and then, in order to

their being reduced, indispensably require the contact of a phlogistic substance. With respect to fusibility, the two extremes are mercury and platina; the former being scarce ever seen in a solid form, and the latter almost as difficult of fusion. The metals therefore may be ranked in this order, according to their degrees of fusibility. 1. Mercury. 2. Tin. 3. Bismuth. 4. Lead. 5. Zinc. 6. Antimony. 7. Silver. 8. Gold. 9. Arsenic. 10. Cobalt. 11. Nickel. 12. Iron. 13. Manganese. 14. Platina. The two last do not yield to the blow-pipe, and indeed forged iron does not melt without difficulty; but cast iron perfectly.

Metals in fusion affect a globular form, and easily roll off the charcoal, especially when of the size of a grain of pepper. Smaller pieces therefore ought either to be used, or they should be placed in hollows made in the charcoal. On their first melting they assume a polished surface, an appearance always retained by the perfect metals; but the imperfect are soon obscured by a pellicle formed of the calx of the metal. The colours communicated by the calces vary according to the nature of the metal from which the calx is produced. Some of the calces easily recover their metallic form by simple exposure to flame upon the charcoal; others are reduced in this way with more difficulty; and some not at all. The reduced calces of the volatile metals immediately fly off from the charcoal. In the spoon they exhibit nitrous globules; but it is very difficult to prevent them from being first dissipated by the blast.

The metals are taken up by the fluxes: but as mineral alkali yields an opaque spherule, it is not to be made use of. Globules of borax dissolve and melt any metallic calx; and unless too much loaded with it, appear pellucid and coloured. A piece of metal calcined in the flux produces the same effect, but more slowly. A portion of the calx generally recovers its metallic form, and floats on the melted matter like one or more excrescences. In proportion as the globule is more loaded it extends itself more on the charcoal, and at length cannot assume a globular form; for the metallic addition augments the attraction for phlogiston.

The calces of the perfect metals are reduced by borax in the spoon, and adhere to it at the point of contact, and there only. The microcosmic salt acts like borax, but does not reduce the metals. It attacks them more powerfully on account of its acid nature; at the same time it preserves the spherical form, and therefore is adapted in a peculiar manner to the investigation of metals.

The tinge communicated to the flux frequently varies, being different in the fused and in the cooled globule; for some of the dissolved calces, while fused, show no colour, but acquire one while cooling; but others, on the contrary, have a much more intense colour while in the state of fluidity. Should the transparency be injured by too great a concentration of colour, the globule, on compressing it with the forceps, or drawing it out into a thread, will exhibit a thin and transparent mass: but if the opacity arises from supersaturation, more flux must be added; and as the fluxes attract the metals with unequal forces, the latter precipitate one another.

Metals when mineralized by acids have the properties

Blow-pipe.
⁵⁴ Of the different degrees of fusibility of the metals.

⁵⁵ Manganese and platina do not yield to the blow-pipe.

⁵⁶ General appearance of metals before the blow-pipe.

⁵⁷ Fluxes, produced by the use of metals.

⁵⁸ Reduction of the calces of perfect metals.

⁵⁹ Colours acquired by the fluxes.

Blow pipe. tics of metallic salts; when mineralized by fixed air, they possess the properties of calces, that volatile substance being easily expelled without any effervescence; but when combined with sulphur, they possess properties of a peculiar kind. They may then be melted, or even calcined upon the charcoal, as also in a golden or silver spoon. The volatile parts are distinguished by the smell or smoke; the fixed residua by the particles reduced or precipitated upon iron, or from the tinge of the fluxes.

gold. Gold in its metallic state fuses on the charcoal, and is the only metal which remains unchanged. It may be deprived of its phlogiston in the moist way by solution in aqua regia; but to calcine it also by fire, we must pursue the following method: To a globule of microcosmic salt let there be added a small piece of solid gold, of gold leaf, purple mineral, or, which is best of all, of the crystalline salt formed by a solution of gold in aqua regia containing sea-salt. Let this again be melted, and added while yet soft to turbith mineral, which will immediately grow red on the contact. The fusion being afterwards repeated, a vehement effervescence arises; and when this is considerably diminished, let the blast be stopped for a few moments, again begun, and so continued until almost all the bubbles disappear. After this the spherule, on cooling, assumes a ruby colour; but if this does not happen, let it be just made soft by the exterior flame, and upon hardening this tinge generally appears. Should the process fail at first, owing to some minute circumstances which cannot be described, it will succeed on the second or third trial. The ruby-coloured globule, when compressed by the forceps while hot, frequently becomes blue; by sudden fusion it generally assumes an opal colour, which by refraction appears blue, and by reflection of a brown red; if further urged by the fire, it loses all colour, and appears like water; but the redness may be reproduced several times by the addition of turbith mineral. The flux is reddened in the same manner by the addition of tin instead of turbith; but it has a yellowish hue, and more easily becomes opaque; while the redness communicated by turbith mineral has a purple tinge, and quite resembles a ruby. Borax produces the same phenomena, but more rarely; and in all cases the slightest variation in the management of the fire will make the experiment fail entirely.

52 y con- from cr. The ruby colour may also be produced by copper; whence a doubt may arise, whether it be the gold or the remains of the copper that produces this effect. Mr Bergman thinks it probable that both may contribute towards it, especially as copper is often found to contain gold.

53 golden es. This precious metal cannot directly be mineralized by sulphur; but by the medium of iron is sometimes formed into a golden pyrites. Here, however, the quantity of gold is so small, that a globule can scarcely be extracted from it by the blow-pipe.

54 latina. Grains of native platina are not affected by the blow-pipe either alone or mixed with fluxes; which, however, are frequently tinged green by it: but platina, precipitated from aqua regia by vegetable or volatile alkali, is reduced by microcosmic salt to a small malleable globule. Our author has been able to unite

seven or eight of these into a malleable mass; but more of them produced only a brittle one. Platina scarcely loses all its iron unless reduced to very thin fusion.

Silver in its metallic state easily melts, and resists calcination. Silver leaf fastened by means of the breath, or a solution of borax, may easily be fixed on it by the flame, and through the glass it appears of a gold colour; but care must be taken not to crack the glass. Calcined silver precipitated from nitrous acid by fixed alkali is easily reduced. The microcosmic acid dissolves it speedily and copiously; but, on cooling, it becomes opaque and of a whitish yellow, which is also sometimes the case with leaf-silver. Copper is discovered by a green colour, and sometimes by that of a ruby, unless we choose rather to impute that to gold. The globules can scarcely be obtained pellucid, unless the quantity of calx be very small; but a longer fusion is necessary to produce an opacity with borax. The globule, loaded with dissolved silver during the time of its fusion in the spoon, covers a piece of copper with silver, and becomes itself of a pellucid green: antimony quickly takes away the milky opacity of dissolved luna cornea, and separates the silver in distinct grains. Cobalt and most of the other metals likewise precipitate silver on the same principles as in the moist way, viz. by a double elective attraction. The metal to be dissolved remains untouched as long as it retains its phlogiston; but is taken up when a sufficient quantity of that principle has shifted to the precipitate and reduced it. This metal, when mineralized by marine and vitriolic acids, yields a natural luna cornea, which produces a number of small metallic globules on the charcoal: it dissolves in microcosmic salt, and renders it opaque; and is reduced, partially at least, by borax. Sulphurated silver, called also the glassy ore of that metal, fused upon charcoal, easily parts with the sulphur it contains; so that a polished globule is often produced, which, if necessary, may be depurated by borax. The silver may also be precipitated by the addition of copper, iron, or manganese. When arsenic makes part of the compound, as in the red ore of arsenic, it must first be freed from the sulphur by gentle roasting, and finally entirely depurated by borax. It decrepitates in the fire at first.

Copper, together with sulphur and arsenic mixed with silver, called the white ore of silver, yields a regulus having the same alloy.

Galena, which is an ore of lead containing sulphur and silver, is to be freed in the same manner from the sulphur; after which the lead is gradually dissipated by alternately melting and cooling, or is separated in a cupel from the galena by means of the flame. Our author has not been able to precipitate the silver distinct from the lead, but the whole mass becomes malleable; and the same is true of tin, but the mass becomes more brittle.

Pure mercury flies off from the charcoal with a moderate heat, the fixed heterogeneous matters remaining behind. When calcined it is easily reduced and dissolved, and the fluxes take it up with effervescence; but it is soon totally driven off. When mineralized by sulphur it liquefies upon the charcoal, burns with a blue flame, smokes, and gradually disappears; but on exposing

Blow pipe.

65
Of silver in its metallic state.

66
Mineralized by various substances.

67

Blow-pipe. exposing cinnabar to the fire on a polished piece of copper, the mercurial globules are fixed upon it all round.

68
Lead in its metallic state.

Lead, in its metallic state, readily melts, and continues to retain a metallic splendor for some time. By a more intense heat it boils and smokes, forming a yellow circle upon the charcoal. It communicates a yellow colour, scarce visible, to the fluxes; and when the quantity is large, the globule, on cooling, contracts more or less of a white opacity. It is not precipitated by copper when dissolved; nor do the metals precipitate it from sulphur in the same order as from the acids. When united to aerial acid, it grows red on the first touch of the flame: when the heat is increased, it melts, and is reduced to a multitude of small globules. When united with phosphoric acid, it melts and yields an opaque globule, but is not reduced. With fluxes it shows the same appearances as calx of lead. When mineralized by sulphur, lead easily liquefies, and, being gradually deprived of the volatile part, yields a distinct regulus, unless too much loaded with iron. It may be precipitated by iron and copper.

69
Mineralized by different substances.

70
Of copper.

A small piece of copper, either solid or foliated, sometimes communicates a ruby colour to fluxes, especially when assiled by tin or turbith mineral. If the copper be a little more or further calcined, it produces a green pellucid globule, the tinge of which grows weaker by cooling, and even verges towards a blue. By long fusion with borax, the colour is totally destroyed upon charcoal, but scarcely in the spoon. When once destroyed, this colour can scarcely be reproduced by nitre; but it remains fixed with microcosmic salt. If the calx or metal to be calcined be added in considerable quantity during fusion, it acquires an opaque red on cooling, though it appears green while pellucid and fused; but by a still larger quantity it contracts an opacity even while in fusion, and, upon cooling, a metallic splendor. Even when the quantity of copper is so small as scarcely to tinge the flux, a visible pellicle is precipitated upon a piece of polished iron added to it during strong fusion, and the globule in its turn takes the colour of polished iron; and in this way the smallest portions of copper may be discovered. The globule made green by copper, when fused in the spoon with a small portion of tin, yields a spherule of the latter mixed with copper, very hard and brittle: in this case the precipitated metal pervades the whole of the mass, and does not adhere to the surface. Cobalt precipitates the calx of copper dissolved in the spoon by a flux, in a metallic form, and imparts its own colour to glass, which nickel cannot do. Zinc also precipitates it separately, and rarely upon its own surface, as we can scarcely avoid melting it. When mineralized by the aerial acid, copper grows black on the first contact of the flame, and melts in the spoon; on the charcoal, the lower part, which touches the support, is reduced. With a superabundance of marine acid, it tinges the flame of a beautiful colour; but with a small quantity shows no appearance of the metal in that way. Thus the beautiful crystals of Saxony, which are cubic, and of a deep green, do not tinge the flame, though they impart a pellucid greenness to microcosmic salt. An opaque redness is easily obtained with borax; but Mr Bergman could not produce this colour with microcosmic salt. Copper

N^o 49.

simply sulphurated, when cautiously and gently roasted by the exterior flame, yields at last, by fusion, a regulus surrounded with a sulphurated crust. The mass roasted with borax separates the regulus more quickly.

If a small quantity of iron happens to be present, the piece to be examined must first be roasted; after which it must be dissolved in borax, and tin added to precipitate the copper. The regulus may also be obtained by sufficient calcination and fusion, even without any precipitant, unless the ore be very poor. When the pyrites contain copper, even in the quantity of the one-hundredth part of their weight, its presence may be detected by these experiments: Let a grain of pyrites, of the size of a flax-seed, be roasted, but not so much as to expel all the sulphur; let it then be dissolved by borax, a polished rod of iron added, and the fusion continued until the surface when cooled loses all splendor. As much borax is required as will make the whole of the size of a grain of hemp-seed. Slow fusion is injurious, and the precipitation is also retarded by too great tenuity; but this may be corrected by the addition of a little lime. Too much calcination is also inconvenient; for by this the globule forms slowly, is somewhat spread, becomes knotty when warm, corrodes the charcoal, destroys the iron, and the copper does not precipitate distinctly. This defect is corrected by a small portion of crude ore. When the globule is properly melted, according to the directions already given, it ought to be thrown into cold water immediately on stopping the blast, in order to break it suddenly. If the copper contained in it be less than one-hundredth part, one end of the wire only has a cupreous appearance, but otherwise the whole.

Dr Gahn has another method of examining the ores of copper; namely, by exposing a grain of the ore, well freed from sulphur by calcination, to the action of the flame driven suddenly upon it by intervals. At those instants a cupreous splendor appears on the surface, which otherwise is black; and this splendor is more quickly produced in proportion as the ore is poorer. The flame is tinged green by cupreous pyrites on roasting.

Forged iron is calcined, but can scarcely be melted; and liquefies on being fused. It cannot be melted by borax, though it may by microcosmic salt; and then it becomes brittle. Calcined iron becomes magnetic by being heated on the charcoal, but melts in the spoon. The fluxes become green by this metal; but in proportion as the phlogiston is more deficient they grow more of a brownish yellow. On cooling, the tinge is much weakened; and, when originally weak, vanishes entirely. By too much saturation the globule becomes black and opaque. The sulphureous pyrites may be collected into a globule by fusion, and is first surrounded by a blue flame; but as the metal is easily calcined, and changes into black scoriae, neither by itself nor with fluxes does it exhibit a regulus. It grows red on roasting.

Tin easily melts before the blow-pipe, and is calcined. The fluxes dissolve the calx sparingly; and, when saturated, contract a milky opacity. Some small particles of this metal dissolved in any flux may be distinctly precipitated upon iron. Crystallized ore of tin, urged by fire upon the charcoal, yields its metal in a reguline state.

Bismuth

⁷⁵ Blow-pipe. Bismuth presents nearly the same appearances as lead; the calx is reduced on the coal, and fused in the spoon. The calx, dissolved in microcosmic salt, yields a brownish yellow globule, which grows more pale upon cooling, at the same time losing some of its transparency. Too much calx renders the matter perfectly opaque. Borax produces a similar mass in the spoon; but on the coal a grey one, which can scarcely be freed from bubbles. On fusion the glass smokes and forms a cloud about it. Bismuth is easily precipitated by copper and iron.

⁷⁶ Sulphurated bismuth is easily fused, exhibiting a blue flame and sulphurous smell. Cobalt, when added, by means of the sulphur, enters the globule; but the scoria soon swells into distinct partitions; which when further urged by fire, throws out globules of bismuth. Sulphurated bismuth, by the addition of borax, may be distinctly precipitated by iron or manganese.

⁷⁷ Regulus of nickel when melted is calcined, but more slowly than other metals. The calx imports an hyacinthine colour to fluxes, which grows yellow on cooling, and by long continued fire may be destroyed. If the calx of nickel be contaminated by ochre of iron, the latter is first dissolved. Nickel dissolved is precipitated on iron, or even on copper; an evident proof that it does not originate from either of these metals. Sulphurated nickel is nowhere found without iron and arsenic: the regulus is obtained by roasting, and fusing with borax, though it still remains mixed with some other metals.

⁷⁸ Arsenic. Regulus of arsenic takes fire by a sudden heat, and not only deposits a white smoke on charcoal, but diffuses the same all around. The calx smokes with a smell of garlic, but does not burn. The fluxes grow yellow, without growing opaque, on adding a proper quantity of calx, which is dispelled by a long continuance of the heat. This semimetal is precipitated in a metallic form by iron and copper, but not by gold. Yellow arsenic liquefies, smokes, and totally evaporates: when heated by the external flame, so as neither to liquefy nor smoke, it grows red and yellow again upon cooling. When it only begins to melt it acquires a red colour, which remains after cooling. Realgar liquefies more easily, and is besides totally dissipated.

⁷⁹ Cobalt. Regulus of cobalt melts, and may partly be depurated by borax, as the iron is first calcined and taken up. The smallest portion of the calx tinges the flux of a deep blue colour, which appears of a violet by refraction, and this colour is very fixed in the fire. Cobalt is precipitated upon iron from the blue globule, but not upon copper. When calx of iron is mixed with that of cobalt in a flux, the former is dissolved. This semimetal takes up about one third of its weight of sulphur in fusion, after which it can hardly be melted again. It is precipitated by iron, copper, and several other metals. The common ore yields an impure regulus by roasting. The green cobalt, examined by our author, tinges the microcosmic salt blue; but at the same time shows red spots indicating copper.

⁸⁰ Zinc. Zinc exposed to the blow-pipe melts, takes fire, sending forth a beautiful bluish green flame, which however is soon extinguished by a lanuginous calx; but if the reguline nucleus included in this lanuginous matter (commonly called flowers of zinc) be urged by the flame, it will be now and then inflamed, and as it were

explodes and flies about. With borax it froths, and at first tinges the flame. It continually diminishes, and the flux spreads upon the charcoal; but in fused microcosmic salt it not only froths, but sends forth flashes with a crackling noise. Too great heat makes it explode with the emission of ignited particles. The white calx, or flowers, exposed to the flame on charcoal, becomes yellowish, and has a kind of splendor, which vanishes when the flame ceases. It remains fixed, and cannot be melted. The fluxes are scarcely tinged; but when saturated by fusion, grow opaque and white on cooling. Clouds are formed round the globules of a nature similar to that of the metallic calx. Dissolved zinc is not precipitated by any other metal. When mineralized by aerial acid, it has the same properties as calcined zinc. In the pseudo-galena sulphur and iron are present. These generally, on the charcoal, smell of sulphur, melt, and tinge the flame more or less, depositing a cloud all around. Those which have no matrix are tinged by those which contain iron, and acquire by saturation a white opaque colour, verging to brown or black, according to the variety of composition.

Regulus of antimony fused and ignited on the charcoal, affords a beautiful object; for if the blast of air be suddenly stopped, a thick white smoke rises perpendicularly, while the lower part round the globule is condensed into crystalline spiculae, similar to those called *Argentine flowers*. The calx tinges fluxes of an hyacinthine colour; but on fusion smokes, and is easily dissipated, especially on the charcoal, though it also deposits a cloud on it. The dissolved metal may be precipitated by iron and copper, but not by gold. Crude antimony liquefies on the charcoal, spreads, smokes, penetrates it, and at last disappears entirely except a ring which it leaves behind.

Regulus of manganese scarcely yields to the flame. The black calx tinges the fluxes of a bluish colour; borax, unless saturated, communicates more of a yellow colour. The colour may be gradually dissolved altogether by the interior flame, and again reproduced by a small particle of nitre, or the exterior flame alone. Combined with aerial acid, it is of a white colour, which changes by ignition to black. In other respects it shows the same experiments as the black calx.

BLOWING, in a general sense, denotes an agitation of the air, whether performed with a pair of bellows, the mouth, a tube, or the like. Butchers have a practice of blowing up veal, especially the loins, as soon as killed, with a pipe made of a sheep's flank, to make it look larger and fairer.

Blowing of Glass, one of the methods of forming the various kinds of works in the glass manufacture. It is performed by dipping the point of an iron blowing pipe in the melted glass, and blowing through it with the mouth, according to the circumstances of the glass to be blown. See **GLASS**.

Blowing of Tin, denotes the melting its ore, after being first burnt to destroy the mundic.

Machines for Blowing the Air into Furnaces. See the article **FURNACE**.

BLOWING, among gardeners, denotes the action of flowers, whereby they open and display their leaves. In which sense, blowing amounts to much the same with flowering or blossoming.

Blow-pipe.
Bowin c.

81
Antimony.

82
Manganese.

Blubber,
Blue.

The regular blowing season is in the spring; though some plants have other extraordinary times and manners of blowing, as the Glaftenbury thorn. Divers flowers also, as the tulip, close every evening, and blow again in the morning. Annual plants blow sooner or later as their seeds are put in the ground; whence the curious in gardening sow some every month in summer, to have a constant succession of flowers. The blowing of roses may be retarded by shearing off the buds as they put forth.

BLUBBER, denotes the fat of whales and other large sea-animals, whereof is made train-oil. It is properly the *aeeps* of the animal: it lies immediately under the skin, and over the muscular flesh. In the porpoise it is firm and full of fibres, and invells the body about an inch thick. In the whale, its thickness is ordinarily six inches; but about the under lip, it is found two or three feet thick. The whole quantity yielded by one of these animals ordinarily amounts to 40 or 50, sometimes to 80 or more, hundred weight. The use of blubber to the animal seems to be partly to poise the body, and render it equiponderant to the water; partly to keep off the water at some distance from the blood, the immediate contact whereof would be apt to chill it; and partly also for the same use that clothes serve us, to keep the fish warm, by reflecting or reverberating the hot streams of the body; and so redoubling the heat; since all fat bodies are, by experience, found less sensible of the impressions of cold than lean ones. Its use in trade and manufactures is to furnish train-oil, which it does by boiling down. Formerly this was performed ashore, in the country where the whales were caught: but of late the fishers do not go ashore; they bring the blubber home stowed in casks, and boil it down here.

Sea-BLUBBER. See MEDUSA.

BLUE, one of the seven colours into which the rays of light divide themselves when refracted through a glass prism.—For an account of the particular structure of bodies by which they appear of a blue colour, see the article CHROMATICS.—The principal blues used in painting are Prussian blue, bice, Saunders blue, azure, or smalt, verditer, &c.; for the preparation of which, see COLOUR-Making.—In dyeing, the principal ingredients for giving a blue colour, are indigo and woad. See DYEING.

BLUE Colour of the Sky. See SKY.

BLUE Bird. See MOTACILLA.

BLUE Fish. See CORYPHENA.

BLUE Japan. Take gum-water, what quantity you please, and white-lead a sufficient quantity; grind them well upon a porphyry: then take isinglass size what quantity you please, of the finest and best smalt a sufficient quantity; mix them well: to which add, of your white-lead, before ground, so much as may give it a sufficient body. Mix all these together to the consistence of a paint.

BLUE-John, among miners, a kind of mineral which has lately been fabricated into vases and other ornamental figures. It is of the same quality with the cubical spar, with respect to its fusibility in the fire. It loses its colour, and becomes white in a moderate heat: the weight of a cubic foot of the bluest kind is 3180 ounces, and that of the least blue is 3140 ounces. This substance began first to be applied to use about 18

years ago at one of the oldest mines in Derbyshire, called *Odin mine*, probably from its being dedicated to Odin the great god of the northern nations, at the foot of a high mountain called *Mam-Tor* in Cattleton. Here the greatest quantities are still found; the largest pieces are sold for 9l. a ton, the middle-sized for 6l. and the least for 50s.

Prussian BLUE. See CHEMISTRY-Index.

BLUING, the act or art of communicating a blue colour to bodies otherwise destitute thereof. Landresses blue their linen with smalt; dyers their stuffs and wools with woad or indigo.

BLUING of Metals is performed by heating them in the fire, till they assume a blue colour; particularly practised by gilders, who blue their metals before they apply the gold and silver leaf.

BLUING of Iron, a method of beautifying that metal sometimes practised; as for mourning buckles, swords, and the like. The manner is thus: Take a piece of grind-stone or whet-stone, and rub hard on the work, to take off the black scurf from it: then heat it in the fire; and as it grows hot, the colour changes by degrees, coming first to light, then to a darker gold colour, and lastly to a blue. Sometimes also they grind indigo and salad-oil together; and rub the mixture on the work with a woollen rag, while it is heating, leaving it to cool of itself. Among sculptors we also find mention of bluing a figure of bronze, by which it is meant the heating of it, to prepare it for the application of gold-leaf, because of the bluish cast it acquires in the operation.

BLUFF-HEAD, among sailors. A ship is said to be bluff-headed that has an upright stern.

BLUNDERBUSS, a short fire-arm with a wide bore, capable of holding a number of bullets at once.

BLUSHING, a suffusion or redness of the cheeks, excited by a sense of shame, on account of consciousness of some failing or imperfection.

Blushing is supposed to be produced from a kind of consent or sympathy between several parts of the body, occasioned by the same nerve being extended to them all. Thus the fifth pair of nerves being branched from the brain to the eye, ear, muscles of the lips, cheeks, palate, tongue, and nose; a thing seen or heard that is shameful, affects the cheeks with blushes, driving the blood into the minute vessels thereof, at the same time that it affects the eye and ear. For the same reason it is, as Mr Derham observes, that a favourable thing seen or smelt affects the glands and parts of the mouth: if a thing heard be pleasing, it affects the muscles of the face with laughter; if melancholy, it exerts itself on the glands of the eyes, and occasions weeping, &c. And to the same cause Dr Willis ascribes the pleasure of kissing.

BOA, or *BOAE-arum*, (anc. geog.), an island on the coast of Illyricum, over against Tragurium. A place of banishment for condemned persons; now called *Bua*, an island in the Adriatic, joined to the continent and to Tragurium, now *Tran*, by a bridge.

BOA, in zoology, a genus of serpents, belonging to the order of amphibia. The characters of this genus are, that the belly and tail are both furnished with scuta. The species are ten, viz. 1. The contortrix, has 150 scuta on the belly, and 40 on the tail: the head is broad, very convex, and has poison-bags in the

Bluing
||
Boa.

the mouth, but no fang, for which reason its bite is not reckoned poisonous: the body is ash-coloured, interspersed with large dusky spots; and the tail is about a third of the length of the body. This serpent is found in Carolina. 2. The canina, has 203 scuta on the belly, and 77 on the tail; it is greenish, and variegated with white belts. It is a native of America, and lodges in the hollow trunks of trees, and is about two feet long. The bite of the canina is not poisonous. 3. The hippale is of a dull yellow colour, and is found in Asia. It has 179 scuta on the belly, and 120 on the tail. 4. The constrictor, has 240 scuta on the belly, and 60 on the tail. This is an immense animal: it often exceeds 36 feet in length; the body is very thick, of a dusky white colour, and its back is interspersed with 24 large pale irregular spots; the tail is of a darker colour; and the sides are beautifully variegated with pale spots. Besides, the whole body is interspersed with small brown spots. The head is covered with small scales, and has no broad laminae betwixt the eyes, but has a black belt behind the eyes. It wants the large dog-fangs, and of course its bite is not poisonous. The tongue is fleshy, and very little forked. Above the eyes, on each side, the head rises high. The scales of this serpent are all very small, roundish, and smooth. The tail does not exceed one eighth of the whole length of the animal. The Indians, who adore this monstrous animal, use the skin for cloaths, on account of its smoothness and beauty. There are several of these skins of the above dimensions preserved, and to be seen in the different museums of Europe, particularly in the library and botanic garden of Upsal in Sweden, which has of late been greatly enriched by count Grillinborg. The flesh of this serpent is eat by the Indians and the negroes of Africa. Piso, Margraave, and Kempfer, give the following account of its method of living and catching its prey. It frequents caves and thick forests, where it conceals itself, and suddenly darts out upon strangers, wild beasts, &c. When it chooses a tree for its watching place, it supports itself by twirling its tail round the trunk or a branch, and darts down upon sheep, goats, tigers, or any animal that comes within its reach. When it lays hold of animals, especially any of the larger kinds, it twists itself several times round their body, and by the vast force of its circular muscles bruises and breaks all their bones. After the bones are broke, it licks the skin of the animal all over, besmearing it with a glutinous kind of saliva. This operation is intended to facilitate deglutition, and is a preparation for swallowing the whole animal. If it be a stag, or any horned animal, it begins to swallow the feet first, and gradually sucks in the body, and last of all the head. When the horns happen to be large, this serpent has been observed to go about for a long time with the horns of a stag sticking out from its mouth. As the animal digests, the horns putrify and fall off. After this serpent has swallowed a stag or a tiger, it is unable for some days to move; the hunters, who are well acquainted with this circumstance, always take this opportunity of destroying it. When irritated, it makes a loud hissing noise. This serpent is said to cover itself over with leaves in such places as stags or other animals frequent, in order to conceal itself from their sight, and that it may the more easily lay hold of them. 5. The murina, has 254

scuta on the belly, and 65 on the tail. The colour of it is a light blue, with round spots on the back. It is a native of America, and its bite is not poisonous. 6. The scytale, has 250 scuta on the belly, and 70 on the tail. The body is ash-coloured and bluish, with round black spots on the back, and black lateral rings edged with white. This serpent is a native of America; and, like the constrictor, though not so long, twits itself about sheep, goats, &c. and swallows them whole. 7. The cencliria, has 265 scuta on the belly, and 57 on the tail. It is of a yellow colour, with white eye-like spots. It is a native of Surinam, and its bite is not poisonous. 8. The ophias, has 281 scuta on the belly, and 64 on the tail; the colour is nearly the same with that of the constrictor, but browner. The place where this serpent is to be found is not known; but its bite is not venomous. 9. The enydris, has 270 scuta on the belly, and 105 on the tail. The colour is a dusky white, and the teeth of the lower jaw are very long; but its bite is not poisonous. It is a native of America, 10. The hortulana, has 290 scuta on the belly, and 128 on the tail. It is of a pale colour, interspersed with livid wedge-like spots. It is a native of America, and its bite is not poisonous. See SERPENT.

BOADADA BASHEF, in the Turkish military orders, an officer of the janizaries, whose business it is to walk every day about the principal parts of the city, with a number of janizaries to attend him, to keep order, and see that all things are regular, even to the dress. This office is for three months, and from this the person is usually advanced to be a serach.

BOADICEA, a valiant British queen in the time of Nero the emperor, wife to Prasutagus king of the Iceni in Britain, who by his will left the emperor and his own daughters co-heirs to his great treasures, in expectation of procuring by that means Nero's protection for his family and people: but he was no sooner dead, than the emperor's officers seized all. Boadicea opposed these unjust proceedings; which was resented to such a pitch of brutality, that they ordered the lady to be publicly whipped, and her daughters to be ravished by the soldiers. The Britons took arms, with Boadicea at their head, to shake off the Roman yoke; and made a general and bloody massacre of the Romans in all parts. The whole province of Britain would have been lost, if Suetonius Paulinus had not hastened from the isle of Mona to London, and with 10,000 men engaged the Britons. The battle was fought for a long time with great vigour and doubtful success, till at last victory inclined to the Romans. Boadicea, who had behaved with all bravery imaginable, dispatched herself by poison.

BOAR, in the manege. A horse is said to boar when he shoots out his nose as high as his ears, and tosses his nose in the wind.

BOAR, a male swine. See SUS.

The wild boar, among huntsmen, has several names, according to its different ages: the first year, it is called a *pig of the faunder*; the second it is called a *hog*; the third, a *log-fluer*; and the fourth, a *boar*; when leaving the faunder, he is called a *single* or *jangler*. The boar generally lives to 25 or 30 years, if he escape accidents. The time of going to rut is in December, and lasts about three weeks. They feed on all sorts of

Boar.

fruits, and on the roots of many plants; the root of fern in particular seems a great favourite with them: and when they frequent places near the sea-coasts, they will descend to the shores and demolish the tenderer shell-fish in very great numbers. Their general places of rest are among the thickest bushes that can be found: and they are not easily put up out of them, but will stand the bay a long time. In April and May they sleep more found than at any other time of the year, and this is therefore the successful time for the taking them in the toils. When a boar is roused out of the thicket, he always goes from it, if possible, the same way by which he came to it; and when he is once up, he will never stop till he comes to some place of more security. If it happens that a saunder of them are found together, when any one breaks away, the rest all follow the same way. When the boar is hunted in the wood where he was bred, he will scarce ever be brought to quit it; he will sometimes make towards the sides to listen to the noise of the dogs, but retires into the middle again, and usually dies or escapes there. When it happens that a boar runs a-head, he will not be stopped or put out of his way, by man or beast, so long as he has any strength left. He makes no doubles nor crossings when chased; and when killed makes no noise, if an old boar; the fows and pigs will squeak when wounded.

The season for hunting the wild boar begins in September, and ends in December, when they go to rut. If it be a large boar, and one that has lain long at rest, he must be hunted with a great number of dogs, and those such as will keep close to him; and the huntsman, with his spear, should always be riding in among them, and charging the boar as often as he can, to discourage him: such a boar as this, with five or six couple of dogs, will run to the first convenient place of shelter, and there stand at bay and make at them as they attempt to come up with him. There ought always to be relays also set of the best and staunchest hounds in the kennel; for if they are of young eager dogs, they will be apt to seize him, and be killed or spoiled before the rest come up. The putting collars with bells about the dogs necks is a great security for them; for the boar will not so soon strike at them when they have these, but will rather run before them. The huntsmen generally kill the boar with their swords or spears: but great caution is necessary in making the blows; for he is very apt to catch them upon his snout or tusks; and if wounded and not killed, he will attack the huntsman in the most furious manner. The places to give the wound with the spear is either between the eyes in the middle of the forehead, or in the shoulder; both these places make the wound mortal.

When this creature makes at the hunter, there is nothing for it but courage and address; if he flies for it, he is surely overtaken and killed. If the boar comes straight up, he is to be received at the point of the spear: but if he makes doubles and windings, he is to be watched very cautiously, for he will attempt getting hold of the spear in his mouth; and if he does so, nothing can save the huntsman but another person attacking him behind: he will on this attack the second person, and the first must then attack him again: two people will thus have enough to do with him; and were

it not for the forks of the boar-spears that make it impossible to press forward upon them, the huntsman who gives the creature his death's wound would seldom escape falling a sacrifice to his revenge for it. The modern way of boar-hunting is generally to dispatch the creature by all the huntsmen striking him at once: but the ancient Roman way was, for a person on foot, armed with a spear, to keep the creature at bay; and in this case the boar would run of himself upon the spear to come at the huntsman, and push forward till the spear pierced him through.

The hinder claws of a boar are called *guards*. In the corn, he is said to *feed*; in the meadows or fallow-fields, to *root*, *worm*, or *sew*; in a close, to *graze*. The boar is sarrowed with as many teeth as he will ever have; his teeth increasing only in bigness, not in number: among these there are four called *tusks*, or *tusks*; the two biggest of which do not hurt when he strikes, but serve only to whet the other two lowest, with which the beast defends himself, and frequently kills, as being greater and longer than the rest.

It is very remarkable, that these creatures in the West Indies are subject to the stone: few of them are absolutely free from it, yet scarce any have the stones of any considerable size. It is common to find a great number in the same bladder; and they are usually of about a scruple weight, and are angular, and that with great regularity, each having five angles.

Among the ancient Romans, boar's flesh was a delicacy; a boar served up whole was a dish of state.

The boar was sometimes also the military ensign borne by the Roman armies, in lieu of the eagle.

Among physicians, a boar's bladder has been reputed a specific for the epilepsy. The tusk of the wild boar still passes with some as of great efficacy in quinzies and pleurifies.

BOARD, a long piece of timber, sawed thin for building and several other purposes. See TIMBER.

Deal-boards are generally imported into England ready sawed, because done cheaper abroad, in regard we want saw-mills. Cap boards are imported from Sweden and Dantzic. Oak-boards chiefly from Sweden and Holland; some from Dantzic. We also import white boards for shoemakers; mill and scale-boards, &c. for divers artificers. Scale-board is a thinner sort, used for the covers of primers, thin boxes, and the like. It is made with large planes; but might probably be sawed with mills to advantage.

BOARD is also used for a kind of table or bench, whereon several artificers perform their work. In this sense, we say a work-board, shop-board, taylor's-board, &c.

BOARD is also used for a flat machine, or *frame*, used in certain games, and the like. In this sense, we say a draught-board, a chess-board, a shovel-board, and the like.

BOARD, *Bureau*, is also used for an office where accounts are taken, payments ordered, and the like. In this sense, we say the board of works, board of ordinance, board of treasury, and the like.

BOARD, among seamen. *To go aboard*, signifies to go into the ship. *To slip by the board*, is to slip down by the ship's side. *Board and board*, is when two ships come so near as to touch one another, or when they lie side by side. *To make a board*, is to turn to windward;

Boar,
Board.

Fig. 2. Bos sp. 4 a.

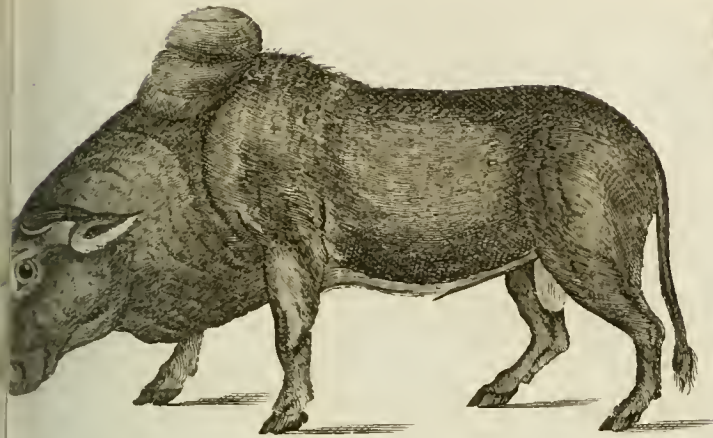


Fig. 3 Bos sp. 3.

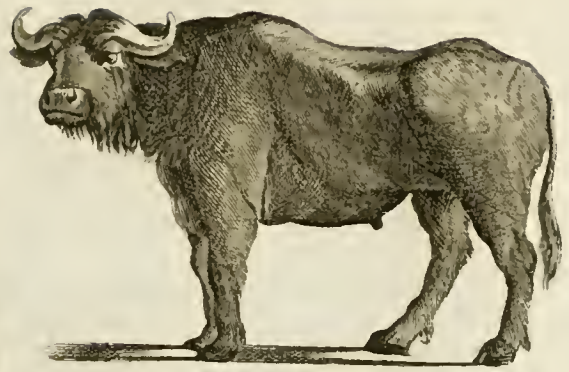


Fig. 1. Boa Constrictor.



J. Bell Sculp.

a ding, ward; and the longer your boards are, the more you work into the wind. *To board it up.* is to beat it up, sometimes upon one tack and sometimes upon another. *She makes a good board,* that is, the ship advances much at one tack. *The weather-board,* is that side of the ship which is to windward.

BOARDING, in a naval engagement, a desperate and furious assault made by one ship on another, after having found every other method to reduce her ineffectual: it may be performed in different places of the ship, according to their circumstances and situation, by the assailant detaching a number of men armed with pistols and cutlasses on the decks of his antagonist, who stands in the same predicament with a city stormed by the besiegers. This expedient, however, is rarely attempted by king's ships, which generally decide the combat without grappling each other; but chiefly practised by privateers, which, bearing down on the enemy's quarter or broadside, drop from the bowsprit, which projects over the defendant's deck, an earthen shell, called a *sink-pot*, charged with fiery and suffocating combustibles, which immediately bursts, catches fire, and fills the deck with insufferable stench and smoke: in the middle of the confusion thus occasioned, the privateer's crew rush aboard, under cover of the smoke, and easily overpower the astonished enemy, unless they have close quarters to which they can retreat and beat them off the deck.

BOAT, a small open vessel, conducted on the water by rowing or sailing. The construction, machinery, and even the names of boats, are very different, according to the various purposes for which they are calculated, and the services on which they are to be employed. Thus they are occasionally slight or strong, sharp or flat bottomed, open or decked, plain or ornamented; as they may be designed for swiftness or burden, for deep or shallow water, for sailing in a harbour or at sea, and for convenience or pleasure.

The largest boat that usually accompanies a ship is the *long-boat*, which is generally furnished with a mast and sails: those which are fitted for men of war, may be occasionally decked, armed, and equipped, for cruising short distances against merchant-ships of the enemy, or smugglers, or for impressing seamen, &c. The *barques* are next in order, which are longer, slighter, and narrower: they are employed to carry the principal sea-officers, as admirals, and captains of ships of war, and are very unfit for sea. *Pinnaces* exactly resemble barques, only that they are somewhat smaller, and never row more than eight oars; whereas a barque properly never rows less than ten. There are for the accommodation of the lieutenants, &c. *Cutters* of a ship, are broader, deeper, and shorter, than the barques and pinnaces; they are fitter for sailing, and are commonly employed in carrying stores, provisions, passengers, &c. to and from the ship. In the structure of this sort of boats; the lower edge of every plank in the side overlays the upper edge of the plank below, which is called by ship-wrights *clinch-work*. *Yaws* are something less than cutters, nearly of the same form, and used for similar services; they are generally rowed with six oars.

The above boats more particularly belong to men of war; as merchant-ships seldom have more than two, viz. a long-boat and yawl: when they have a third, it

is generally calculated for the countries to which they trade, and varies in its construction accordingly. Merchant-ships employed in the Mediterranean find it more convenient to use a *lanch*, which is longer, more flat-bottomed, and better adapted every way to the harbours of that sea, than a long-boat.

A *wherry* is a light sharp boat, used in a river or harbour for carrying passengers from place to place. *Punts* are a sort of oblong flat-bottomed boats, nearly resembling floating stages; they are used by shipwrights and caulkers, for breaming, caulking, or repairing a ship's bottom. A *meses* is a very flat broad boat, used by merchant-ships amongst the Caribbee-islands, to bring hogheads of sugar off from the sea-beach to the shipping which are anchored in the roads. A *felucca* is a strong passage-boat used in the Mediterranean, from 10 to 16 banks of oars. The natives of Barbary often employ boats of this sort as cruisers.

For the larger sort of boats, see the articles CRAFT, CUTTER, PERIAGUA, and SHALLOP.

Of all the small boats, a *Norway yawl* seems to be the best calculated for a high sea, as it will often venture out to a great distance from the coast of that country, when a stout ship can hardly carry any sail.

An account of several trials made on a BOAT, or Sloop, fit for inland navigation, coasting voyages, and short passages by sea, which is not, like ordinary vessels, liable to be overjet or sunk by winds, waves, water-spouts, or too heavy a load; contrived and constructed by Monsieur Bernieres, director of the bridges and causeways in France, &c. &c. Some of these trials were made on the first of August 1777, at the gate of the invalids in Paris, in the presence of the provost of the merchants, of the body of the town, and a numerous concourse of spectators of all conditions.

The experiments were made in the way of comparison with another common boat of the same place, and of equal size. Both boats had been built ten years, and their exterior forms appeared to be exactly similar. The common boat contained only eight men, who rocked it and made it incline so much to one side, that it presently filled with water, and sunk; so that the men were obliged to save themselves by swimming; a thing common in all vessels of the same kind, either from the imprudence of those who are in them, the strength of the waves or wind, a violent or unexpected shock, their being overloaded, or overpowered in any other way.

The same men who had just escaped from the boat which sunk, got into the boat of M. Bernieres; rocked it, and filled it, as they had done the other, with water. But, instead of sinking to the bottom, though brim full, it bore being rowed about the river, loaded as it was with men and water, without any danger to the people in it.

M. Bernieres carried the trial still farther. He ordered a mast to be erected in this same boat, when filled with water; and to the top of the mast had a rope fastened, and drawn till the end of the mast touched the surface of the river, so that the boat was entirely on one side, a position into which neither winds nor waves could bring her: yet, as soon as the men who had hauled her into this situation let go the rope, the boat and mast recovered themselves perfectly in less than the quarter of a second; a convincing proof that the boat

could

Boating
||
Bobbing.

could neither be sunk nor overturned, and that it afforded the greatest possible security in every way. These experiments appeared to give the greater pleasure to the public, as the advantages of the discovery are not only so sensible, but of the first importance to mankind.

Boat-Bill. See CANCROMA.

Boat-Insect. See NOTONECTA.

BOATING, a kind of punishment in use among the ancient Persians for capital offenders. The manner of boating was thus: the person condemned to it being laid on his back in a boat, and having his hands stretched out, and tied fast on each side of it, had another boat put over him, his head being left out thro' a place fit for it. In this posture they fed him, till the worms, which were bred in the excrements he voided as he thus lay, eat out his bowels, and so caused his death, which was usually twenty days in effecting, the criminal lying all this while in most exquisite torments.

BOATSWAIN, the officer who has the boats, sails, rigging, colours, anchors, and cables, committed to his charge.

It is the duty of the boatswain particularly to direct whatever relates to the rigging of a ship, after she is equipped from a royal dock-yard. Thus he is to observe that the masts are properly supported by their shrouds, stays, and back-stays, so that each of those ropes may sustain a proportional effort when the mast is strained by the violence of the wind, or the agitation of the ship. He ought also to take care that the blocks and running-ropes are regularly placed, so as to answer the purposes for which they are intended; and that the sails are properly fitted to their yards and stays, and well furled or reefed when occasion requires.

It is likewise his office to summon the crew to their duty; to assist with his mates in the necessary business of the ship; and to relieve the watch when it expires. He ought frequently to examine the condition of the masts, sails, and rigging; and remove whatever may be judged unfit for service, or supply what is deficient; and he is ordered by his instructions to perform this duty with as little noise as possible.

Boatswain's-Mate has the peculiar command of the long-boat, for the setting forth of anchors, weighing or fetching home an anchor, warping, towing, or mooring; and is to give an account of his store.

BOB, a term used for the ball of a short pendulum.

BOBARTIA, in botany, a genus of the digynia order, belonging to the triandria class of plants; and in the natural method ranking under the 4th order, *Gramina*. The calyx is imbricated; and the corolla is a bivalve glume, above the receptacle of the fruit. Of this genus there is only one species known, which is a native of the Indies, and hath no remarkable property.

BOBBIN, a small piece of wood turned in the form of a cylinder, with a little border jutting out at each end, bored through to receive a small iron pivot. It serves to spin with the spinning-wheel, or to wind thread, worsted, hair, cotton, silk, gold, and silver.

BOBBING, among fishermen, a particular manner of catching eels, different from snigging. Bobbing for eels is thus performed: They scour well some large lobs, and with a needle run a twisted silk through them from end to end, taking so many as that they may wrap them about a board a dozen times at least: then they

tie them fast with the two ends of the silk, that they may hang in so many lanks; which done, they fasten all to a strong cord, and, about an handful and an half above the worms, fix a plummet three-quarters of a pound weight, and make the cord fast to a strong pole. With this apparatus fishing in muddy water, they feel the eels tug lustily at the bait; when they think they have swallowed it sufficiently, they gently draw up the rope to the top, and bring them ashore.

BOBIO, an episcopal town of Italy, in the Milanese and territory of Pavia, seated on the river Treba, in E. Long. 9. 30. N. Lat. 44. 48.

BOCA-CHICA, the strait or entrance into the harbour of Carthage in South America. It is defended by several forts belonging to the Spaniards, all which were taken by the English in 1741; they were nevertheless obliged to raise the siege of Carthage in a short time after.

Boca-del-Drago, a strait so called, between the island of Trinidad and Andalusia, in the province of Terra Firma in South America.

BOCANUM, (anc. geog.), a town of Mauritania Tingetana, to the south of mount Atlas; said to be that of Morocco in Africa. W. Long. 9. 0. N. Lat. 31. 0.

BOCCA, in glass-making, the round hole in the working furnace, by which the metal is taken out of the great pots, and by which the pots are put into the furnace. This is to be stopped with a cover made of earth and brick, and removable at pleasure, to preserve the eyes of the workmen from the violence of the heat.

BOCCACE (John), one of the most polite and learned writers of his age, was born in Tuscany in 1313. His father first placed him with a merchant; but as he gave signs of genius, he was put afterward to study the canon law: he lost almost as much time at this as at the last occupation; and thought of nothing but poetry. He came under the instruction of Petrarch; but did not so entirely devote himself to poetry, as to forget other studies. In the prosecution of these, however, as he sought every where for the best masters, and had not an income sufficient for his expences, he was reduced to such circumstances as to stand in need of the bounty of others: he was particularly obliged to Petrarch, who furnished him with money as well as books, and assisted him in many other respects. Boccace was a great admirer of the Greek language: he found means to get Homer translated into Latin for his own use; and procured a professor's chair at Florence for Leontius Pylatus, in order to explain this poet. The republic of Florence honoured Boccace with the freedom of that city; and employed him in public affairs, particularly to negotiate the return of Petrarch: but this poet not only refused to return to Florence, but persuaded Boccace also to retire from thence, on account of the factions which prevailed in that republic. Having quitted Florence, he went to several places in Italy, and stopped at last at the court of Naples, where King Robert gave him a very kind reception. He conceived a violent affection for the natural daughter of that prince, which made him remain a considerable time at Naples. He also made a long stay in Sicily, where he was in high favour with Queen Joan. He returned to Florence when the

Bobbio
||
Boccace

troubles were a little appeas'd: but not liking the course of life he must have followed there, he retired to Certaldo; and, far from the noise of business, he spent his time in study agreeably to his own humour. His great application brought on him an indisposition, of which he died in 1376. He wrote several books, some learned and serious, others of gallantry and full of stories. It is by his *Decameron* chiefly that he has immortalized himself. Petrarch found so many charms in this composition, that he was at the pains to translate it into Latin for his own satisfaction.

BOCCALE, or **BOCAL**, a liquid measure used at Rome, answering to what among us is called a bottle, being equivalent to about an English quart. Seven boccales and an half make the rubbia.

BOCCALINI (Trajan), a celebrated satirical writer, born at Rome, who, in the beginning of the 17th century, obtained the admiration of all Italy by his refined and delicate criticisms. Sovereign princes themselves did not escape the lash of his satire. The cardinals Borghese and Gastan having declared themselves his protectors, he published his *Ragguaglio di Parnasso*, and *La Secretaria di Apollo*, which is the continuation of the former. These two works were received by the public with uncommon applause. He there feigns, that Apollo, holding his court at Parnassus, heard the complaints of the whole world, and did justice according as the cases required. He at length printed his *Pietra di Parangone*; wherein he attacks the court of Spain, setting forth their designs against the liberty of Italy, and inveighing particularly against them for the tyranny they exercised in the kingdom of Naples. The Spaniards complained of him in form, and were determined at any rate to be revenged. Boccacini was frightened, and retired to Venice; but was there assassinated in a very strange manner. He lodged with one of his friends, who having got up early one morning, left Boccacini in bed: a minute after, some armed men entered his chamber, and gave him so many blows with bags full of sand, that they left him for dead; so that his friend returning some time after, found him speechless. Great search was made at Venice for the authors of this murder; and though they were never discovered, it was universally believed that they were employed by the court of Spain.

BOCCARELLA, in the glass-manufacture, a small hole or aperture of the furnace, one of which is placed on each side the bocca, almost horizontally with it. Out of them the servitors take coloured or finer metal from the piling pot.

BOCCIARDI (Clemente), called *Clementino*, history and portrait painter, was born at Genoa in 1620, and was the disciple of Bernardo Strozzi, an artist of good reputation; but he found in himself so strong an ambition to arrive at excellence in his profession, that he left Genoa, and went to Rome; there, to explore that true sublimity of style, which can only be obtained by a judicious observation of the ancient sculptures and the works of the celebrated modern artists. By the guidance of an excellent genius, and also by a most industrious application to design, he discovered the art of uniting and blending the antique and modern gusto in a style that at once exhibited both gracefulness and strength. Most of the works of this master (except his portraits, which were lively, natural, and grace-

ful) are in the chapels of Genoa, Pisa, and other cities of Italy; of which places they are, at this day, accounted the greatest ornaments, and are most exceedingly esteemed.

BOCCONI (Sylvio), a celebrated natural historian, born at Palermo in Sicily. After he had gone through the usual course of studies, he applied himself chiefly to natural history, in which he made a most surprising progress. He was afterwards ordained priest, and entered into the Cistercian order, at which time he changed his christian name *Paul* into that of *Sylvio*. This new way of life did not in the least divert him from his favourite study: for he pursued it with greater vigour than ever, and travelled not only over Sicily, but likewise visited the isle of Malta, Italy, the Low Countries, England, France, Germany, Poland, and several other nations; and, in 1696, was admitted a member of the academy of the virtuosi in Germany. Upon his return to Sicily, he retired to a convent of his own order near Palermo; where he died in 1704, being 71 years of age. He left many curious works.

BOCCONIA, GREATER TREE CELANDINE: A genus of the monogynia order, belonging to the dodecandria class of plants, and in the natural method ranking under the 27th order, *Rhæadææ*. The calyx is diphyllous; there is no corolla; the stylus is bifid; the berry is dry, and monospermous. Of this genus there is but one known species, viz. the frutescens, which is esteemed for the beauty of its large foliage. It is very common in Jamaica and other warm parts of America, where it grows to the height of 10 or 12 feet, having a straight trunk as large as a man's arm, and covered with a white smooth bark. At the top it divides into several branches, on which the leaves are placed alternately. These leaves are eight or nine inches long, and five or six broad; are deeply sinuated, sometimes almost to the midrib; and are of a fine glaucous colour. The whole plant abounds with a yellow juice of an acrid nature; so that it is used by the inhabitants of America to take off warts and spots from the eyes. The singular beauty of this plant renders it worthy of a place in every curious collection: and it seems the Indians are very fond of it; for Hernandez tells us, their kings used to plant it in their gardens. It is propagated by seeds from America, sowing them in spring, in pots of light earth, which must be plunged in a hot-bed. When the plants come up, they are to be kept in separate pots, which must always be kept in a stove.

BOCHART (Samuel), one of the most learned men in the 17th century, was born at Roan in Normandy. He made a very early progress in learning, and became a great proficient in the oriental languages. He was many years pastor of a protestant church at Caen; where he was tutor to Wentworth Dillon earl of Roscommon, author of the *Essay on Translated Verse*. Here he particularly distinguished himself by his public disputations with father Veron, a very famous controversialist. The dispute was held in the castle of Caen, in the presence of a great number of Catholics and Protestants. Bochart came off with great honour and reputation; which were not a little increased in the year 1646, upon the publication of his *Phaleg* and *Canaan*, which are the titles of the two parts of his *Geographica Sacra*. He acquired also great fame by his *Heroicæ n.*, printed in London in 1675. This treats *de animalibus sacris*

Boconi
Bochart.

Bochius
Bodin.

sacra scriptura. The great learning he displayed in his works rendered him esteemed not only amongst those of his own profession, but amongst all lovers of knowledge of whatever denomination. In 1652, the queen of Sweden invited him to Stockholm, where she gave him many proofs of her regard and esteem. At his return to Caen, he resumed the functions of the ministry, and was received into the academy of that city. His learning was not his principal qualification, he had a modestly equal to it; and hence enjoyed his great reputation in tranquillity, sheltered from those unhappy quarrels which so many other learned men draw upon themselves. He died suddenly while he was speaking in the above academy, on the 16th of May, 1667, aged 78. A complete edition of his works was published in Holland, in two volumes folio, 1712.

BOCHIIUS, or BOCCOPI (John), a Latin poet, born at Brussels in 1555. He travelled into Italy, Germany, Poland, and Muscovy, and at his return became secretary to the Duke of Parma. He died on the 13th of January, 1609. The critics in the Netherlands set so great a value on his poetry, that they gave him the name of the *Belgic Virgil*. He wrote, 1. *De Belgii Principatu*. 2. *Parodia Heroica Psalmorum Davidicorum*. 3. *Observationes Physicæ, Ethicæ, Politicæ, et Historicæ, in Psalmis*. 4. *Vita Davidis*. 5. *Orationes*. 6. *Poemata*.

BOCHETTA, a place of Italy, famous in the war of 1746 and 1747. It is a chain of mountains over which the great road lies from Lombardy to Genoa; and on the very peak of the highest mountain is a narrow pass, which will hardly admit three men to go abreast. This pass is properly called the *Bochetta*; for the defence of which there are three forts. It is the key of the city of Genoa; and was taken in 1746 by the Imperialists. By which means they opened a way to that city.

BOCKHOLT, a town of Germany in the circle of Westphalia and diocese of Munster, capital of a small district, and subject to the bishop of Munster. E. Long. 6. 20. N. Lat. 51. 40.

BOCKING, a very large village of Essex in England, adjoining to Brain-tree, from which it is separated only by a small stream. Its church is a deanery, and very large; and there are here two or three meeting houses; but the market is kept at Brain-tree. In both parishes there are about 1500 houses, which in general are but indifferent, and the streets narrow and badly paved. There is a large manufactory of bays, chiefly for exportation. It is 42 miles north-east of London.

BOCK-LAND, in the Saxons time, is what we now call *freehold lands*, held by the better sort of persons by charter or deed in writing; by which name it was distinguished from *skilund*, or copy-hold land, holden by the common people without writing.

BODERIA, or BODOTRIA, the ancient name for the Frith of Forth in Scotland.

BODIN (John), native of Angers, one of the ablest men in France in the 16th century, famous for his *Method of History*, his *Republic*, and other works. He was in great favour with Henry III. who imprisoned John de Serre for writing an injurious piece against Bodin, and forbid him upon pain of death to publish it. But his favour was not of long continuance. The

duke of Alençon, however, gave him several employments; and carried him to England with him as one of his counsellors, where he had the pleasure and glory to see his books *de Republica* read publicly in the university of Cambridge, having been translated into Latin by the English. He had written them in French. In the Ragguagli of Bocecalini he is condemned as an atheist to the fire, for having said in his books that liberty of conscience ought to be granted to sectaries. He declared himself pretty freely against those who asserted that the authority of monarchs is unlimited; but yet he displeased the republicans. Upon the death of the duke of Alençon, Bodin retired to Laon, where he married. He had an office in the presidial of this city; and in Charles IX.'s time he was the king's solicitor with a commission for the forests of Normandy. He died of the plague at Laon, in 1596.

BODKIN, a small instrument made of steel, bone, ivory, &c. used for making holes.

BODLEY (Sir Thomas), founder of the Bodleian library at Oxford, was born at Exeter in Devonshire, in 1544. When he was about 12 years of age, his father, Mr John Bodley, being a protestant, was obliged to leave the kingdom. He settled at Geneva with his family, and continued there till the death of Queen Mary. In that university, then in its infancy, young Bodley studied the learned languages, &c. under several eminent professors. On the accession of Queen Elizabeth, he returned with his father to England; and was soon after entered of Magdalen college in Oxford. In 1563, he took the degree of bachelor of arts, and the year following was admitted fellow of Merton college. In 1565, he read a Greek lecture in the hall of that college. He took a master of arts degree the year after, and read natural philosophy in the public schools. In 1569, he was one of the proctors of the university, and, for some time after, officiated as public orator. In the year 1576, he quitted Oxford, and made the tour of Europe; but returned to his college after four years absence. He became gentleman-usher to Queen Elizabeth, in the year 1583; and in 1585 he married the widow of Mr Ball, daughter of Mr Carew of Bristol, a lady of considerable fortune. Mr Bodley was soon after sent ambassador to the king of Denmark, and other German princes. He was next charged with an important commission to Henry III. of France; and in 1588, went ambassador to the United Provinces, where he continued till the year 1597. On his return to England, finding his preferment obstructed by the jarring interests of Burleigh and Essex, he retired from court, and could never afterwards be prevailed on to accept of any employment. He now began the foundation of the Bodleian library, which was completed in 1599. Soon after the accession of King James I. he received the honour of knighthood, and died in the year 1612. He was buried in the choir of Merton college. His monument is of black and white marble, on which stands his effigy in a scholar's gown, surrounded with books. At the four corners are the emblematical figures of Grammar, Rhetoric, Music, and Arithmetic; two angels, &c.; with a short inscription, signifying his age and time of his death. Sir Thomas Bodley was a polite scholar, an able statesman, and a worthy man. Mr Granger observes, that he merited much as a man of letters;

Bodkin,
Bodley.

ters; but incomparably more in the ample provision he made for literature, in which he stands unrivalled; and that his library is a mausoleum which will perpetuate his memory as long as books themselves endure. Sir Thomas wrote his own Life to the year 1609; which, together with the first draught of the Statutes, and his Letters, have been published from the originals in the Bodleian library, by Mr Thomas Hearne, in 1703.

BODMIN, a town of Cornwall in England, seated in a bottom between two high hills, which renders the air very unwholesome. It consists chiefly of one street, and the many decayed houses show that it has once been a place of greater note. It is a mayor-town, sends two members to parliament, and had formerly the privilege of the coinage of tin. W. Long. 4. 5. N. Lat. 50. 32.

BODON, a fortified town of Bulgaria in Turkey in Europe, with an archbishop's see. It is seated on the Danube, in E. Long. 45. 24. N. Lat. 45. 10.

BODROCH, a town of Hungary, seated on the north-east shore of the river Danube, in E. Long. 20. 20. N. Lat. 46. 15.

BODRUN. See **TEOS**.

BODY, in physics, an extended solid substance, of itself utterly passive and inactive, indifferent either to motion or rest.

Colour of BODIES. See **CHROMATICS**.

BODY, with regard to animals, is used in opposition to soul, in which sense it makes the subject of anatomy. The height of the human body is said to be different in different parts of the day; ordinarily it is an inch more in the morning than at night †. The body ceases to grow in height when the bones are arrived at a degree of firmness and rigidity which will not allow of farther extension by the effort of the heart and motion of the blood.

BODY, among painters, as to *bear a body*, a term signifying that the colours are of such a nature, as to be capable of being ground so fine, and mixing with the oil so entirely, as to seem only a very thick oil of the same colour.

BODY, in the manege. A horse is chiefly said to have a *good body*, when he is full in the flank. If the last of the short ribs be at a considerable distance from the haunch-bone, although such horses may for a time have pretty good bodies, yet, if they are much laboured, they will lose them; and these are properly the horses that have no flank. It is also a general rule, that a man should not buy a light-bodied horse, and one that is fiery, because he will soon destroy himself.

BODY, in the art of war, a number of forces, horse and foot, united and marching under one commander.

Main Body of an army, the troops encamped in the centre between the two wings, and generally infantry; the other two bodies are the vanguard and the rear-guard; these being the three into which an army, ranged in order of battle, is divided.

BODY, in matters of literature, denotes much the same with system, being a collection of every thing belonging to a particular science or art, disposed in proper order: thus we say, a body of divinity, law, physic, &c.

Body-Corporate. See **CORPORATION**.

BOECE, or **BOETHIUS** (Hector), the historian, was

born at Dundee about the year 1470, and studied with applause in the university of Paris. It was there he became acquainted with Erasmus, and laid the foundation of a friendship which was so honourable to him. In 1500 he was recalled to Aberdeen by Bishop Elphingston, who made him principal of that university. Gratitude for this promotion engaged him to write with particular attention the Life of that prelate. It appeared in his history of the diocese of Aberdeen; and may be considered, perhaps, as the most valuable portion of that work. His History of Scotland, a more useful undertaking, was first published in the 1526. In 1574 it underwent a second impression, and was enriched with the 18th book and a part of the 19th. A farther continuation of it was executed by Joannes Ferrerius Pedemontanus. Boece died about the year 1550. He has been compared, and not without reason, to Geoffroy of Monmouth. He had a propensity to fable and exaggeration; a fault which the elegance of his expression does not compensate. His judgment was not equal to his genius; and his fictions as an historian are a contrast to his probity as a man. John Ballenden, archdeacon of Murray, translated his history into the Scottish language at the desire of James V. This translation William Harrison converted, though with imperfections, into English; and his associate Hollingshed published his work in his chronicle, with additions and improvements by the ingenious Francis Thynne.

BOEDROMIA, in antiquity, solemn feasts held at Athens in memory of the success brought by Ion to the Athenians, when invaded by Eumolpus son of Neptune, in the reign of Erechtheus. Plutarch gives another account of the boedromia; which, according to him, were celebrated in memory of the victory obtained by Theseus over the Amazons, in the month Boedromion.

BOEDROMION, in chronology, the third month of the Athenian year, answering to the latter part of our August and beginning of September.

BOEHMEN (Jacob), called the *Teutonic philosopher*, was a noted visionary of the 17th century, born in a village of Germany near Gorlitz, in 1575. He was bred a shoemaker; and marrying, supported a large family by this occupation; until, after amusing himself with chemistry, a visionary turn of mind, heated by sermons and German divinity, got the upper hand of his common sense, and produced raptures and notions of divine illumination. These he first gave vent to in 1612, by a treatise intitled *Aurora, or the rising of the Sun*; being a mixture of astrology, philosophy, chemistry, and divinity, written in a quaint obscure style. This being censured by the magistrates of Gorlitz, he remained silent for seven years; but improving that interval by pursuing the flights of his imagination, he resumed his pen; and resolving to redeem the time he had lost, he, in the remaining five years of his life, published above 20 books, which greatly needed what he concluded with, *A table of his principles, or a key to his writings*; though this has not proved sufficient to render them intelligible to common apprehensions. The key above mentioned appeared in 1624, and he did not long survive it. For early in the morning of the 18th of November that year, he called one of his sons, and asked him "if he also heard that excellent music?"

Bœotia,
Boerhaave.

music?" to which being answered in the negative, he ordered the door to be set open, that the music might be the better heard. He asked afterwards what o'clock it was? and being told it had struck two, he said "It is not yet my time; my time is three hours hence." In the interim he was heard to speak these words: "O thou strong God of hosts, deliver me according to thy will! O thou crucified Lord Jesus, have mercy upon me, and receive me into thy kingdom!" When it was near six o'clock, he took his leave of his wife and sons, and blessed them, and said, "Now I go hence into paradise;" then bidding his son turn him, he immediately expired his last breath in a deep sigh. A great number of persons have been inveigled by the visions of this fanatic, notwithstanding his talents in involving the plainest things in mystery and ænigmatical jargon. Among others, the famous Quirinus Kahlman may be reckoned the principal of his followers in Germany; who says, he had learned more being alone in his study, from Boehmen, than he could have learned from all the wise men of that age together; and, that we may not be in the dark as to what sort of knowledge this was, he acquaints us, that amidst an infinite number of visions it happened, that, being snatched out of his study, he saw thousands of thousands of lights rising round about him. Nor has he been without admirers, and those in no small number, in England; among the foremost of whom stands the famous Mr William Law, author of *Christian Perfection*, &c. who has favoured his countrymen with an English edition of Jacob Boehme's works in 2 vols 4to.

BEOTIA, the name of two ancient kingdoms, one of which was founded or rather restored by Cadmus, and named by him *Bœtia*, from the ox which is said to have directed him to the place where he built the capital of his new kingdom, better known afterwards by the name of *Thebes*. But as the inhabitants were scarce ever distinguished as a nation by the name of *Bœotians*, but of *Thebans*, we refer to the article THEBES for their history, &c.

The other Bœotia was in Thessaly, and is said to have been founded by Bœotus the son of Neptune and brother of Æolus, by Arne the daughter of Æolus king of Æolis. This last, having sent his daughter to Metapontium a city of Italy, she was there delivered of those two sons, the eldest of whom she called after her father's name *Æolus*; and he possessed himself of the islands in the Tyrrhenian, now the Tuscan sea, and built the city of Lipara. Bœotus the younger son went to his grandfather and succeeded him in his kingdom, called it after his own name, and the capital city *Arne*, from his mother. All that we know of these Bœotians is, that they held this settlement upwards of 200 years; and that the Thessalians expelled them from it; upon which they came and took possession of that country, which till then had been called *Cadmeis*, and gave it the name of *Bœotia*. Diodorus and Homer tell us, that these Bœotians signalized themselves at the Trojan war; and the latter adds, that five of Bœotus's grandsons, viz. Peneus, Leitus, Prothœnor, Arcefilaus, and Clonius, were the chiefs who led the Bœotian troops thither.

BOERHAAVE (Herman), one of the greatest physicians, as well as the best men, that this or per-

haps any age has ever produced, was born in 1668 at Boerhaave Vorhout, a village near Leyden. At the age of 16 he found himself without parents, protection, advice, or fortune. He had already studied theology and the other ecclesiastical sciences, with the design of devoting himself to a clerical life; but the science of nature, which equally engaged his attention, soon engrossed his whole time. This illustrious person, whose name afterwards spread throughout the world, and who left at his death above L. 200,000, could at that time barely live by his labours, and was compelled to teach the mathematics to obtain necessaries. But in 1693, being received doctor in the science of physic, he began practice; and his merit being at length discovered, many powerful friends patronized him, and procured him three valuable employments: the first was that of professor of medicine in the university of Leyden; the second, that of professor of chemistry; and, thirdly, that of professor of botany. The Academy of Sciences at Paris, and the Royal Society at London, invited him to become one of their members. He communicated to each his discoveries in chemistry. The city of Leyden became in his time the school of Europe for this science, as well as medicine and botany. All the princes of Europe sent him disciples, who found in this skilful professor, not only an indefatigable teacher, but even a tender father, who encouraged them to pursue their labours, consoled them in their afflictions, and solaced them in their wants. When Peter the Great went to Holland in 1715, to instruct himself in maritime affairs, he also attended Boerhaave to receive his lessons. His reputation was spread as far as China: a Mandarin wrote to him with this inscription, "To the illustrious Boerhaave, physician in Europe;" and the letter came regularly to him. The city of Leyden has raised a monument in the church of St Peter, to the salutary genius of Boerhaave, *Salutifero Boerhaavii genio sacrum*. It consists of an urn upon a pedestal of black marble: six heads, four of which represent the four ages of life, and two the sciences in which Boerhaave excelled, form a group issuing between the urn and its supporters. The capital of this basis is decorated with a drapery of white marble, in which the artist has shown the different emblems of disorders and their remedies. Above, upon the surface of the pedestal, is the medallion of Boerhaave: at the extremity of the frame, a ribband displays the favourite motto of this learned man; *Simplex vigilum veri*, "Truth unarrayed."

From the time of the learned Hippocrates, no physician has more justly merited the esteem of his contemporaries, and the thanks of posterity, than Boerhaave. He united to an uncommon genius, and extraordinary talents, the qualities of the heart, which gave them so great a value to society. He made a decent, simple, and venerable appearance, particularly when age had changed the colour of his hair. He was an eloquent orator, and declaimed with dignity and grace. He taught very methodically, and with great precision; he never tired his auditors, but they always regretted that his discourses were finished. He would sometimes give them a lively turn with raillery; but his raillery was refined and ingenious, and it enlivened the subject he treated of, without carrying with it any thing severe or satirical. A declared foe to all excess, he considered

dered decent mirth as the salt of life. It was the daily practice of this eminent person, through his whole life, as soon as he rose in the morning, which was generally very early, to retire for an hour to private prayer, and meditation on some part of the Scriptures. He often told his friends, when they asked him how it was possible for him to go through so much fatigue? that it was *this* which gave him spirit and vigour in the business of the day. *This* he therefore recommended as *the best rule* he could give: for nothing, he said, could tend more to the health of the body than the tranquillity of the mind; and that he knew nothing which could support himself, or his fellow-creatures, amidst the various distresses of life, but a well-grounded confidence in the supreme Being upon the principles of Christianity. This was strongly exemplified in his own illness in 1722, which can hardly be told without horror; and by which the course of his lectures as well as his practice was long interrupted. He was for five months confined to his bed by the gout, where he lay upon his back without daring to attempt the least motion; because any effort renewed his torments, which were so exquisite, that he was at length not only deprived of motion but of sense. Here his medical art was at a stand; nothing could be attempted, because nothing could be proposed with the least prospect of success. But, having (in the sixth month of his illness) obtained some remission, he determined to try whether the juice of fumitory, endive, or succory, taken thrice a-day in a large quantity, (*viz.* above half a pint each dose), might not contribute to his relief; and by a perseverance in this method he was wonderfully recovered. This patience of Boerhaave's was founded not on vain reasonings, like that of which the Stoics boasted; but on a religious composure of mind, and Christian resignation to the will of God.

Of his sagacity and the wonderful penetration with which he often discovered and described, at the first sight of a patient, such distempers as betray themselves by no symptoms to common eyes, such surprising accounts have been given, as scarcely can be credited, though attested beyond all doubt. Yet this great master of medical knowledge was so far from a presumptuous confidence in his abilities, or from being puffed up by his riches, that he was condescending to all, and remarkably diligent in his profession; and he often used to say, that the life of a patient (if trifled with or neglected) would one day be required at the hand of the physician. He always called the poor his *best patients*; for God (said he) is their paymaster. The activity of his mind sparkled visibly in his eyes. He was always cheerful, and desirous of promoting every valuable end of conversation; and the excellency of the Christian religion was frequently the subject of it: for he asserted, on all proper occasions, the divine authority and sacred efficacy of the Scriptures; and maintained, that they only could give peace of mind, that sweet and sacred peace which passeth all understanding; since none can conceive it but he who has it; and none can have it but by divine communication. He never regarded calumny nor detraction (for Boerhaave himself had enemies), nor ever thought it necessary to confute them. "They are sparks (said he) which, if you do not blow, will go out of themselves. The

surest remedy against scandal, is to *live it down* by a perseverance in well-doing; and by praying to God that he would cure the distempered minds of those who traduce and injure us." Being once asked by a friend, who had often admired his patience under great provocations, whether he knew what it was to be angry, and by what means he had so entirely suppressed that impetuous and ungovernable passion? he answered, with the utmost frankness and sincerity, that he was naturally quick of resentment; but that he had, by daily prayer and meditation, at length attained to this mastery over himself.

About the middle of the year 1737, he felt the first approaches of that fatal illness which brought him to the grave, *viz.* a disorder in his breast, which was at times very painful, often threatened him with immediate suffocation, and terminated in an universal dropsy: but during this afflictive and lingering illness, his constancy and firmness did not forsake him; he neither intermitted the necessary cares of life, nor forgot the proper preparations of death. About three weeks before his dissolution, when the Rev. Mr. Schultens, one of the most learned and exemplary divines of the age, attended him at his country-house, the Doctor desired his prayers, and afterwards entered into a most remarkable judicious discourse with him on the spiritual and immaterial nature of the soul; and this he illustrated to Mr. Schultens with wonderful perspicuity, by a description of the effects which the infirmities of his body had upon his faculties; which yet they did not so oppress or vanquish, but his soul was always master of itself, and always resigned to the pleasure of its maker—and then he added, "He who loves God ought to think nothing desirable but what is most pleasing to the supreme goodness." These were his sentiments, and such was his conduct in this state of weakness and pain. As death approached nearer, he was so far from terror or confusion, that he seemed less sensible of pain, and more cheerful under his torments, which continued till the 23d day of September, 1738, on which he died (much honoured and lamented) between four and five in the morning, in the 70th year of his age—often recommending to the bye-standers a careful observation of St. John's precepts concerning the love of God, and the love of man, as frequently inculcated in his first epistle, particularly in the fifth chapter. His funeral oration was spoken in Latin before the university of Leyden, to a very numerous audience, by Mr. Schultens, and afterwards published at their particular desire. He wrote, 1. *Institutiones Medicæ.* 2. *Aphorismi de cognoscendis & curandis Morbis.* 3. *Institutiones & Experimenta Chemicæ.* 4. *Libellus de Materia Medica, et remedio rumformis quæ serviunt aphorismis.* Swieten published, *Commentaries upon his Aphorisms*, in 5 vols 4to; and several other works, all greatly esteemed.

BOERHAAVIA; a genus of the monogynia order, belonging to the monandria class of plants. There is no calyx; the corolla is monopetalous, campanulated, and plaited; and the seed is one, naked, and below. There are six species, all natives of the Indies. Some of these plants rise five or six feet high, but most of them only 18 inches or two feet. They carry flowers of a yellow or red colour, but are by no means so remarkable as to merit any particular description.

Boef.hot,
Boethius.

BOESCHOT, a town of the Austrian Netherlands, in the province of Brabant, seated on the river Nethe, in E. Long. 4. 45. N. Lat. 51. 5.

BOETHIUS, or **BOETIUS** (Flavius Anicius Manlius Torquatus Severinus), a prose as well as poetical writer of the 6th century, born of one of the noblest families of the city of Rome. The time of his birth is related to have been about that period in the Roman history when Augustulus, whose fears had induced him to a resignation of the empire, was banished, and Odoacer king of the Herulians began to reign in Italy, viz. in the year of Christ 476, or somewhat after. The father of Boetius dying while he was yet an infant, his relations undertook the care of his education and the direction of his studies. His excellent parts were soon discovered; and, as well to enrich his mind with the study of philosophy as to perfect himself in the Greek language, he was sent to Athens. Returning young to Rome, he was soon distinguished for his learning and virtue, and promoted to the principal dignities in the state, and at length to the consulate. Living in great affluence and splendor, he addicted himself to the study of theology, mathematics, ethics, and logic; and how great a master he became in each of these branches of learning, appears from those works of his now extant. The great offices which he bore in the state, and his consummate wisdom and inflexible integrity, procured him such a share in the public councils, as proved in the end his destruction; for as he employed his interest with the king for the protection and encouragement of deserving men, so he exerted his utmost efforts in the detection of fraud, the repressing of violence, and the defence of the state against invaders. At this time Theodoric the Goth had attempted to ravage Campania; and it was owing to the vigilance and resolution of Boetius that that country was preserved from destruction. At length, having murdered Odoacer, Theodoric became king of Italy, where he governed 33 years with prudence and moderation, during which time Boetius possessed a large share of his esteem and confidence. It happened about this time that Justin, the emperor of the east, upon his succeeding to Anastasius, made an edict condemning all the Arians, except the Goths, to perpetual banishment from the eastern empire: in this edict Hormisdas bishop of Rome, and also the senate, concurred. But Theodoric, who, as being a Goth, was an Arian, was extremely troubled at it; and conceived an aversion against the senate for the share they had borne in this proscription. Of this disposition in the king, three men of profligate lives and desperate fortunes, Gaudentius, Opilic, and Basilus, took advantage. Having entertained a secret desire of revenge against Boetius, for having been instrumental in the dismissal of the latter from a lucrative employment under the king, they accused him of several crimes; such as the stifling a charge, the end whereof was to involve the whole senate in the guilt of treason; and an attempt, by dethroning the king, to restore the liberty of Italy; and, lastly, they suggested, that, to acquire the honours he was in possession of, Boetius had had recourse to magical art. Boetius was at this time at a great distance from Rome; however, Theodoric transmitted the complaint to the senate, enforcing it with a suggestion that the safety, as well of the

people as the prince, was rendered very precarious by this supposed design to exterminate the Goths. The senate, perhaps fearing the resentment of the king, and having nothing to hope from the success of an enterprise which, supposing ever it to have been meditated, was now rendered abortive, without summoning him to his defence, condemned Boetius to death. The king, however, apprehending some bad consequence from the execution of a sentence so flagrantly unjust, mitigated it to banishment. The place of his exile was Ticinum, now the city of Pavia, in Italy: being in that place separated from his relations, who had not been permitted to follow him into his retirement, he endeavoured to derive from philosophy those comforts which that alone was capable of affording to one in his forlorn situation, sequestered from his friends, in the power of his enemies, and at the mercy of a capricious tyrant; and accordingly he there composed that valuable discourse, intitled, *De Consolatione Philosophiæ*. About two years after his banishment, Boetius was beheaded in prison by the command of Theodoric. His tomb is to be seen in the church of St Augustine, at Pavia, near the steps of the chancel.

The extensive learning and eloquence of this great man are conspicuous in his works, which seem to have been collected with great care; an edition of them was printed at Venice, in one volume folio, in 1499. In 1570, Glareanus, of Basil, collated that with several manuscripts, and published it, with a few various readings in the margin. His chief performance is that abovementioned, *De Consolatione Philosophiæ*; a work well known in the learned world, and to which the assisted have often applied. In particular, our Saxon king Alfred, whose reign, though happy upon the whole, was attended with great vicissitudes of fortune, had recourse to it at a time when his distresses compelled him to seek retirement; and that he might the better impress upon his mind the noble sentiments inculcated in it, he made a complete translation of it into the Saxon language, which, within these few years, has been given to the world in its proper character. And Camden relates, that queen Elizabeth, during the time of her confinement by her sister Mary, to mitigate her grief, read and afterwards translated it into very elegant English. But it deserves also particular notice, that he is the most considerable of all the Latin writers on music; and that his treatise *De Musica* supplied for some centuries the want of those Greek manuscripts which were supposed to have been lost.

BOG properly signifies a quagmire, covered with grass, but not solid enough to support the weight of the body; in which sense it differs only from marshes or fens, as a part from the whole: some even restrain the term *bog* to quagmires pent up between two hills; whereas fens lie in champaign and low countries, where the descent is very small.—To drain boggy lands, a good method is, to make trenches of a sufficient depth to carry off the moisture; and if these are partly filled up with rough stones, and then covered with thorn-bushes and straw, to keep the earth from filling up the interstices, a stratum of good earth and turf may be laid over all; the cavities among the stones will give passage to the water, and the turf will grow at top as if nothing had been done.

Boethius
Bog.

BOG, or *Bog of Gight*, a small town of Scotland, seated near the mouth of the river Spey, in W. Long. 2. 23. N. Lat. 57. 48.

Bog-Spavin. See FARRIERY, § xxxii. 3.

BOGARMITÆ. See BOGOMILI.

BOGHO, or **BUEIL**, a town in the county of Nice in Piedmont, situated on the frontiers of France, in E. Long. 6 45. N. Lat. 44. 12.

BOGLIO, a district in the territories of the duke of Savoy, lying on the river Tinca on the frontiers of Provence; the capital is of the same name.

BOGLIO, a town of Piedmont, and county of Nice, being the capital of a territory of the same name. E. Long. 4. 50. N. Lat. 44. 12.

BOGOMILI, or **BOGARMITÆ**, in church history, a sect of heretics, which sprung up about the year 1179. They held, that the use of churches, of the sacrament of the Lord's supper, and all prayer, except the Lord's prayer, ought to be abolished; that the baptism of Catholics is imperfect; that the Persons of the Trinity are unequal; and that they oftentimes made themselves visible to those of their sect. They said, that devils dwelt in the churches, and that Satan had resided in the temple of Solomon from the destruction of Jerusalem to their own time.

BOGOTO, the capital of New Granada in Terra Firma in South America, near which are gold mines. It is subject to Spain. W. Long. 73. 55. N. Lat. 4. 0.

BOGUDIANA (Pliny), a part of the Mauritania Tingitana in Africa. According to Cluverius, it is the *Tiretana*, anciently so called from King Bogud.

BOHEA, in commerce, one of the coarsest kinds of tea that come from China. See **THEA**.

BOHEMIA, a kingdom of Europe, subject to the house of Austria, and surrounded on every side with woods and mountains as with a natural rampart. It is bounded on the east by Moravia and part of Silesia, on the north by Lusace and Upper Saxony, on the west by Franconia, and on the south by Bavaria. Although this kingdom is situated in the middle of Germany, and its king is an elector of the empire, it has nevertheless its particular assemblies, customs, and language, different from the Germans. It is one of the most elevated countries of Europe: for no river enters into it, though many have their source there; the chief of which are the Elbe, the Oder, the Vistula, and the Morava. The air is cold and unwholesome; for they have more epidemical diseases than in the neighbouring countries. There are mines of silver, copper, lead, and even some veins of gold. The capital city is Prague; the others are Cutenburg, Konigengretz, Pilsen, Czastaw, Budweys, Egra, Glatz, Tabor, and a great number of others: for they reckon more than 100 cities, among which almost 40 have the title of *Royal*. The name *Bohemia*, in the German language, signifies the *home*, or *abode*, of the *Boii*, a people of ancient Gaul, who under their leader Sergovefus settled in that country about 590 years before the Christian æra. These Boii were soon after expelled by the Marcomanni, a nation of the Suevi, who were afterwards subdued by the Selavi, a people of Scythia, whose language is still spoken in Bohemia and Moravia. Notwithstanding this expulsion of the Boii, the present inhabitants are still called *Bohemians* by foreigners, but the natives call themselves *Zechs*. At first they were governed by

dukes; but the emperor Otho I. conquered the duke of Bohemia, and reduced the province under the empire. Afterwards Henry V. gave the title of *king* to Ladislaus duke of Bohemia; and since that time these kings have been electors and chief cup-bearers of the empire, and the kingdom has been elective; which privileges have been confirmed by the golden bull. Formerly the kings of Bohemia received the kingdom as a fief of the empire, which ceremony was practised upon the frontiers; after which, the standards of the principalities of which it is composed were given to them, without being torn and given to the people, as is done with the ensigns of the other fiefs of the empire. Ferdinand I. of Austria, having married Anne, sister of Lewis, last king of Bohemia, who died without issue, and being elected king, that kingdom has remained in his family ever since. But the crown is conferred with some appearance of election; which right the states of Bohemia still pretend to claim, notwithstanding that, by the treaty of Westphalia, Bohemia is declared hereditary in the house of Austria.

The king of Bohemia is the first secular elector, and gives his opinion after the elector of Cologne; though he does not assist at the assembly of electors, except at the election of an emperor. For these 200 years past they have not appeared at the collegiate assemblies, nor even at the imperial diets. However, in 1708, the emperor caused one of his deputies, in quality of king of Bohemia, to enter into the college of electors at the diet of Ratisbon, by the form of re-admission, together with the deputy of the elector of Brunswick. The states of Bohemia have never been comprehended in the government, or in the circles of the empire; they are not subject to any of its jurisdictions, nor to the Roman months, taxes, or public contributions; and they owe nothing to the empire but what the emperor Leopold voluntarily imposed upon himself, which amounts to 6000 livres a-year for the imperial chamber. The king pays homage to the emperor and the empire for his states as first secular elector; otherwise he has a right to exercise, through the whole extent of his dominions, all authority that the royalty can give, provided he do not violate the laws of the kingdom; according to which he cannot raise contributions or taxes but at the time when the states are assembled, the appointing of which is entirely in their own power. The government of Bohemia is different from that of all other states, the affairs of the kingdom being managed by six different courts. First, the council of the regency, or the great royal council, in which presides the great judge or burgrave of Bohemia, and who has under him 18 lieutenants of the king and other assessors. Secondly, the council or superior chamber of justice, at which the great master of the kingdom is president. Thirdly, the chamber of fiefs. Fourthly, the new tribunal to judge the appeals of the German vassals in their differences on the account of fiefs; which court has also its president, vice-president, and assessors. Fifthly, the royal chamber of finances, which has a president and vice-president. Sixthly, the chancery, which always follows the court. Besides, every circle of Bohemia is governed by two bailiffs, who administer justice in their prefecture. The states are composed of the clergy, lords, nobles, and burghers. As to Moravia, there is a grand bailiff who governs it in the name of the king

Bohemian
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Boiano.

king of Bohemia, as Margrave of Moravia. He is at the head of the royal council, which is composed of three assessors, and in which all is transacted in the name of the king. This province is divided into five circles, each of which has its bailiff. There are, besides, other officers of justice, who have a right of judging only at certain times, and in particular cases, where an appeal is allowed.

Bohemia was divided by the emperor Charles IV. into 12 provinces, in each of which he ordered two captains to be appointed every year for the administration of the government. The same emperor caused the church of Prague to be erected into an archbishopric, with this advantage, that the archbishop of Prague should have the prerogative that the archbishop of Mentz formerly enjoyed, *viz.* of crowning the king of Bohemia. The duchy of Silesia, the marquisate of Moravia, and that of Luface, formerly held of this crown, but now only that of Moravia, which is incorporated with the kingdom of Bohemia, and is in the possession of the house of Austria,

The only remarkable occurrence in the Bohemian history is the rebellion of the disciples of John Huss, and Jerome of Prague, on account of their leaders having been burnt as heretics. This occasioned a bloody war of 16 years continuance. For a particular account of which, see the article HUSSITES.

BOHEMIAN BOLE. See BOLE.

BOHEMIAN Brethren, a sect of Christian reformers which sprung up in Bohemia in the year 1467. They treated the pope and cardinals as antichrist, and the church of Rome as the whore spoken of in the Revelation. They rejected the sacraments of the Romish church, and chose laymen for their ministers. They held the Scriptures to be the only rule of faith, and rejected the Popish ceremonies in the celebration of the mass, nor did they make use of any other prayer than the Lord's Prayer. They consecrated leavened bread. They allowed no adoration but of Jesus Christ, in the communion. They rebaptized all such as joined themselves to their congregation. They abhorred the worship of saints and images, prayers for the dead, celibacy, vows, and fasts; and kept none of the festivals but Christmas, Easter, and Whitsuntide.

In 1504, they were accused by the Catholics to King Ladislaus II. who published an edict against them, forbidding them to hold any meetings either privately or publicly. When Luther declared himself against the church of Rome, the Bohemian brethren endeavoured to join his party. At first that reformer showed a great aversion to them; but the Bohemians sending their deputies to him in 1523 with a full account of their doctrines, he acknowledged that they were a society of Christians whose doctrine came nearest to the purity of the gospel. This sect published another confession of faith in 1535, in which they renounced anabaptism, which they at first practised: upon which a union was concluded with the Lutherans, and afterwards with the Zuinglians, whose opinions from thenceforth they continued to follow.

BOHOL, one of the Philippine islands in Asia, lying to the northward of Mindanao, in E. Long. 122.5. N. Lat. 10.0.

BOIANO, a town of Italy, in the kingdom of Naples, and county of Molise, with a bishop's see. It

is seated at the foot of the Apennines, near the river Tilerno, in E. Long. 14.38. N. Lat. 41.30.

BOIARDO (MATTEO MARIA of Ferrara), count of Scandiano, celebrated for his Italian poems, lived in the 15th century. His principal work is his *Orlando innamorato*. His Latin eclogues and sonnets are also much admired.

BOJARS denote Russian noblemen. See RUSSIA.

BOIEMUM, (anc. geog.) a part of Germany, surrounded with the Montes Sudeti, Ptolemy; now called Bohemia. It took its name from the Boii, a people of Gaul, who removed thither before Cæsar's expedition into that country, (Cæsar); though he seems to err in the name. The Boii were afterwards driven out by the Marcomanni, and settled in the west of Vindelicia, which was afterwards called Bayern, and hence the name Bavaria.

BOII, (Cæsar); a people of Celtica, extending from the Ligeris to the Elaver, whence came the Boii of Gallia Cisalpina, whose migration is related by Livy.

BOII. See BOHEMIA.

BOIGUACU, in zoology, a synonyme of the boa constrictor. See BOA.

BOIL, or FURUNCLE. See the *Index* subjoined to MEDICINE, and SURGERY.

BOILEAU SIEUR DESPEREAUX (Nicholas), the celebrated French poet, was born at Paris in 1636. After he had gone through his course of polite literature and philosophy, his relations engaged him to the study of the law, and he was admitted advocate. But tho' he had all the talents necessary for the bar, yet he could not adapt himself to a science which turns upon continual equivocations, and often obliges those who follow it to clothe falsehood in the garb of truth. He therefore determined to study theology; but he could not long endure the thorns of school divinity. He imagined, that, to allure him more cunningly, chicanery, which he thought to avoid, had only changed her habit; and so he renounced the Sorbonne, betook himself entirely to the belles lettres, and took possession of one of the foremost places in Parnassus. The public gave his works the encomium they deserved; and Lewis XIV. who always loved to encourage the sciences and polite literature, was not only pleased to have Mr Boileau's works read to him constantly as he composed them, but settled a yearly pension of 2000 livres upon him, and gave him the privilege of printing all his works. He was afterwards chosen a member of the French academy and also of the academy of medals and inscriptions. This great man, who was as remarkable for his integrity, his innocence, and diffusive benevolence, as for the keenness of his satires, died of a dropsy on the 2d of March 1711, in the 75th year of his age. The *Lutrin* of Boileau, still considered by some French critics of the present time as the best poem to which France has given birth, was first published in 1647. It is with great reason and justice that Voltaire confesses the *Lutrin* inferior to the *Rape of the Lock*. Few poets can be so properly compared as Pope and Boileau; and, wherever their writings will admit of comparison, we may, without any national partiality, adjudge the superiority to the English bard. These two great authors resembled each other as much in the integrity of their lives, as in the subjects and execution of their several compositions. There are two ac-

Boiardo
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Boileau.

Boiling. tions recorded of Boileau, which sufficiently prove that the inexorable fatirist had a most generous and friendly heart; when Patru, the celebrated advocate, who was ruined by his passion for literature, found himself under the painful necessity of selling his expensive library, and had almost agreed to part with it for a moderate sum, Boileau gave him a much superior price; and, after paying the money, added this condition to the purchase, that Patru should retain, during his life, the possession of the books. The succeeding instance of the poet's generosity is yet nobler:—when it was rumoured at court that the king intended to retrench the pension of Corneille, Boileau hastened to Madam de Montespan, and said, that his sovereign, equitable as he was, could not, without injustice, grant a pension to an author like himself, just ascending Parnassus, and take it from Corneille, who had so long been seated on the summit; that he entreated her, for the honour of the king, to prevail on his majesty rather to strike off his pension, than to withdraw that reward from a man whose title to it was incomparably greater; and that he should more easily console himself under the loss of that distinction, than under the affliction of seeing it taken away from such a poet as Corneille. This magnanimous application had the success which it deserved, and it appears the more noble, when we recollect that the rival of Corneille was the intimate friend of Boileau. The long unreserved intercourse which subsisted between our poet and Racine was highly beneficial and honourable to both. The dying farewell of the latter is the most expressive eulogy on the private character of Boileau: “Je regarde comme un bonheur pour moi de mourir avant vous,” said the tender Racine, in taking a final leave of his faithful and generous friend.

BOILING, or EBULLITION, the bubbling up of any fluid. The term is most commonly applied to that bubbling which happens by the application of fire, though that which ensues on the mixture of an acid and alkali is sometimes also distinguished by the same name. Boiling, in general, is occasioned by the discharge of an elastic fluid through that which is said to boil; and the appearance is the same, whether it is common air, fixed air, or steam, that makes its way through the fluid. The boiling of water is proved by Dr Hamilton of Dublin, in his essay on the ascent of vapour, to be occasioned by the lowermost particles of the water being heated and rarified into vapour by reason of the vicinity of the bottom of the containing vessel; in consequence of which, being greatly inferior in specific gravity to the surrounding fluid, they ascend with great velocity, and lacerating and pushing up the body of water in their ascent, give it the tumultuous motion called *boiling*. That this is occasioned by steam, and not by particles of air or fire, as some have imagined, may be very easily proved in the following manner: Let a common drinking glass be filled with hot water, and then inverted into a vessel of the same: as soon as the water in the vessel begins to boil, large bubbles will be observed to ascend in the glass, which will displace the water in it, and in a short time there will be a continual bubbling from under its edge; but if the glass is then drawn up, so that its mouth may only touch the water, and a cloth dipt in cold water be applied to the outside, the steam within it will be instantly condensed,

and the water will ascend so as to fill it entirely, or very nearly so. See the article EVAPORATION.

BOILING, in trade and manufactures, is a preparation given to divers sorts of bodies by making them pass over the fire, chiefly in water, tho' sometimes in other liquors. In this sense we speak of the boiling of salt, boiling of sugar, copperas, &c.

BOILING of Silk with Soap is the first preparation in order to dyeing it. Thread is also boiled in a strong lixivium of ashes to prepare it for dyeing.

BOILING, in the culinary art, is a method of dressing meats by coction in hot water, intended to soften them, and dispose them for easier digestion. The effects of boiling are different according to the kinds and qualities of the water. Pulse boiled in sea-water grow harder; mutton boiled in the same becomes softer and tenderer than in fresh water, but tastes saltish and bitter.

BOILING to Death (caldariis decoquere), in the middle age; a kind of punishment inflicted on thieves, false coiners, and some other criminals.

BOILING, is also a method of trying or essaying the goodness or falseness of a colour or dye. The stuff is to be boiled in water with certain drugs, different according to the kind or quality of the colour, to try whether or no it will discharge, and give a tincture to the water. With this view crimson silks are boiled with alum, and scarlets with soap, in quantity equal to the weight of the silk.

BOILING Wells, in natural history. See BURNING-Springs, and ICELAND.

BOINITZ, a town of Upper Hungary, in the county of Zell, remarkable for its baths and the quantity of saffron that grows about it. E. Long. 19. 10. N. Lat. 48. 42.

BOIOBI, in zoology, the name of a species of serpent found in America, and called by the Portuguese *cobra de verb*. It is about an ell in length, of the thickness of a man's thumb, and is all over of a very beautiful and shining green. Its mouth is very large, and its tongue black. It loves to be about houses, and never injures any creature unless provoked or hurt; but it will then bite, and its poison is very fatal. The natives take as a remedy against its poison, the root *caa apia* bruised, and mixed with water. See *CAA Apia*.

BOIORUM DESERTA, (anc. geog.) a district of Pannonia, so called from the excision of the Boii by the Getae. Now the Weinerwald, of Lower Austria, towards Stiria, to the east of mount Cetius, or the Halbenberg, and south of Viudobona or Vienna.

BOQUIRA, the American name for the rattlesnake.

BOIS-LE-DUC, called by the Dutch *Hertogenbosch*, a large, strong, and handsome town of the Netherlands, in Dutch Brabant, seated between the rivers Donmel and Aa among morasses, in E. Long. 6. 16. N. Lat. 31. 45.

Bois de Soignies, the forest of Soignies, in the Austrian Netherlands and province of Brabant, about three miles south-east of Brussels.

Bois de Coiffi, the name given to a South American tree growing about Surinam, held in the highest estimation by the Indians in that part of the world, and now recommended to the physicians in Europe by Dr

Boissard
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Bokhara.

Fermin in a treatise lately published at Amsterdam. The root is esteemed an excellent stomachic, restoring the appetite, and assisting digestion; but it is chiefly celebrated as an infallible remedy against even the most inveterate intermittents. It is said also to be used with great safety and advantage in every species of remittent and continued fever, with patients of all ages, sexes, and conditions, even during pregnancy, and in the puerperal state. Before employing it, however, it is absolutely necessary to administer either a purgative or emetic. The best method of exhibiting it is in decoction: half an ounce of the bark of the root must be boiled in a close vessel with six pints of water till one half be consumed; the decoction is then strained off, and a cupful taken every two hours till the fever is entirely extinguished. Six or seven days after a cure is thus performed, it is generally necessary to repeat the purgative.

BOISSARD (John James), a famous antiquarian, born at Besançon the capital of Franche Compté in France. He published several collections which are of great use to such as are desirous to understand the Roman antiquities. He had a great passion for this study; and drew with his own hand plans of all the ancient monuments of Italy. He died at Metz, October 30th 1602. His principal works are, 1. Four volumes in folio of Roman antiquities, adorned with plates engraved by Theodore de Bey and his two sons. 2. *Theatrum vite humane*; which contains the lives of 198 famous persons, with their portraits. 3. A treatise *de divinatione & magicis praeiigiis*. These works are scarce, and esteemed by the antiquarians.

BOIT, an excellent painter in enamel. He was born in Stockholm, and bred a jeweller; which profession he intended to follow in England; but changed his design, and went into the country, where he taught children to draw. He there engaged a gentleman's daughter, who was one of his scholars, to promise him marriage; but the affair being discovered, he was thrown into prison. In that confinement, which lasted two years, he studied enamelling; an art to which he fixed, on his return to London, and practised with the greatest success. The prices he is said to have obtained for his work are almost incredible: but being engaged in a very large design for the court, and Queen Anne dying before it was completed, he ran in debt, his goods were seized by execution, and he fled to France; where he changed his religion, was countenanced by the regent, and obtained a pension of L. 250 *per annum*, but died suddenly at Paris in 1726. There is a large piece done by him at Kensington, representing Queen Anne sitting, and Prince George standing by her; and at Bedford-house is another very large plate of the duke's father and mother.

BOITJAPO, in zoology, the name of a species of serpent found in America; and called by the Portuguese there, *cobra di apo*. It grows to seven or eight feet long, is about the thickness of a man's arm, and very small and taper towards the tail. Its back is of an olive colour; its belly yellow, and covered with very regular and elegant triangular scales. It feeds on frogs, &c. but is very poisonous, and its bite extremely fatal.

BOKHARA, a city of Tartary in Asia, and capital of Great Bukharia, situated one days journey to the N^o 49.

north of the river Jehun, or Amu; in E. Long. 65. 50. N. Lat. 39. 15. In 1219 it was besieged by Jenghiz Khan, as being part of Sultan Mohammed's dominions a descendant of the famous Mahmud Gazari. At that time, besides the city-walls, which were very strong, Bokhara had an outward inclosure 12 leagues in compass; which shut in not only the suburbs, but also many pleasant seats and farms watered by the river Soghd, from whence the ancient Sogdiana took its name. The Mogul army arrived before the place in July, and continued the siege during the following winter. In March 1220, they forced the outer wall, and began to besiege the city in form. Sultan Mohammed had left in the city a very numerous garrison under the command of three generals, who made a sally at the head of 20,000 men; but being repulsed with great loss, their courage failed them; and, instead of staying to defend the inhabitants, as soon as they had got into the city by one gate, passed out by another with their families, and almost all their soldiers, hoping to escape by the darkness of the night; but their design being discovered, they were pursued by a detachment of 30,000 Moguls; and being overtaken at the river Amu, they were, after a bloody dispute, almost all cut to pieces. Mean time, Jenghiz Khan, being informed of the confusion into which the city had been thrown by the desertion of the garrison, ordered an attack to be made on all sides at once; but while he was preparing for this, the magistrates and clergy went out and presented him with the keys of the city. Jenghiz Khan granted them their lives, on condition that they gave no shelter to any of the sultan's soldiers, and put out all who should be suspected of being in that prince's interest; which they promised to do upon oath. All the young people, however, who were displeased with the surrender, retired with the governor to the castle, which was very strong, and resolved to defend themselves to the last extremity. Jenghiz Khan, having taken possession of Bokhara, entered on horseback into the great mosque, and asked merrily if that was the sultan's palace? On being answered that it was the house of God, he alighted; and giving the principal magistrate his horse to hold, mounted the gallery where the ecclesiastics usually sat, and then taking up the Koran, threw it under the feet of his horses. Having staid there for some time, he retired to his camp; where, some days after, having assembled the principal people of Bokhara, and ascended a pulpit erected for that purpose in the midst of them, he began his speech by praising God, and recounted all the favours he had received from the Almighty: he then mentioned the perfidious behaviour of their sultan towards himself, telling them that God had sent him to rid the world of such wicked men. As to them, he testified his satisfaction for their having freely furnished his army with necessaries; and promised that his soldiers should not meddle with any goods which they made use of in their houses; but commanded them to deliver up what they had hidden, under pain of being tortured. This speech had such an effect, that the poor inhabitants delivered up every thing, as well what they had concealed as what they had present use for; notwithstanding which, the tyrant soon after caused the city to be burnt, on pretence that some of the sultan's soldiers were concealed in it. As all the houses were made

Bol
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Boles.Boles
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Boletus.

made of wood, except the sultan's palace which was built of stone, and some few private houses of brick, the whole was utterly confounded; and Jenghiz Khan having found some few soldiers that had actually concealed themselves, put them all to death without mercy. The cattle surrendered at discretion soon after; and though it was demolished, the governor and garrison, out of a very extraordinary piece of clemency from so bloody a tyrant, had their lives spared. Bokhara continued in ruins for some years, but at length Jenghez Khan ordered it to be rebuilt. It is now large and populous; and is the residence of a khan who is altogether despotic, though his power reaches but a little way without the city. The town is seated on a rising ground, with a slender wall of earth and a dry ditch. The houses are low, built mostly of mud; but the caravanseras and mosques, which are numerous, are all of brick. The bazars or market-places, which have been stately buildings, are now mostly in ruins. The inhabitants are more civilized and polite than some of their neighbours; and yet are cowardly, cruel, effeminate, and very perfidious. Great numbers of Jews and Arabians frequent this place, though they are much oppressed, and frequently deprived of all their properties by the khan or his attendants at pleasure. At best they pay heavy taxes, and it is almost criminal to be rich.

BOL (Hans or John), a painter, born at Mechlin in 1534. He received his first instructions from a master of no great repute, whom he soon left; and going to Heidelberg, employed himself in copying several pictures of the eminent artists. His subjects are chiefly landscapes with animals; but he also sometimes painted history, with no small success. We have by him a set of landscapes, views in Holland, slightly etched, but in a style that indicates the hand of the matter. He died in 1593.

BOL (Ferdinand), a celebrated painter both of history and portraits, was born at Dort in 1611, and educated at Amsterdam. In the school of the celebrated Rembrandt Gerretz, he received his instructions as a painter; and imitated the style of his master with no little success, not only in his pictures but in his engravings. Bol's etchings are bold and free. The lights and shadows in them are broad and powerful, which renders the effect very striking; but they want that lightness of touch and admirable taste which those of Rembrandt possess in so great a degree. Bol died at Dort, the place of his birth, in 1681, aged 70.

BOKHARIA. See **BUKHARIA**.

BOLANDUS (John), a famous Jesuit, born at Tillemont in the Netherlands, in 1596. He distinguished himself by writing the lives of the saints, under the title of *Acta Sanctorum*, of which he published five volumes in folio; but died while he was labouring at the sixth, in the 70th year of his age. The continuators of that work are called *Bollandists*.

BOLBITINUM, (anc. geog.), the second mouth of the Nile reckoning from west to east; now very small, choked up with sand, and called *le Bras de Bolbitin*.

BOLENTIUM, (anc. geog.), a town of Pannonia Superior; now *Rackorsburg* in Stiria. See **RACKERSBURG**.

BOLES, are viscid earths, less coherent and more friable than clay; more readily uniting with water,

and more freely subsiding from it. They are soft and unctuous to the touch; adhere to the tongue; and by degrees melt in the mouth, impressing a light sense of astringency. There are a great variety of these earths; the principal of which are the following.

1. Armenian bole, when pure, is of a bright red colour with a tinge of yellow: It is one of the hardest and most compact bodies of this class, and not smooth and glossy like the others, but generally of a rough and dully surface. It does not effervesce with acids, though some part of it is dissolved by all of them. Neumann observes, that four ounces of Armenian bole distilled in a glass retort in an open fire, yielded three drachms of a saline phlegm, which smelt a little urinous, and changed syrup of violets green. In the neck of the retort was found a little powdery saline matter which had an ammoniacal taste, but it was in too small quantity to be collected or further examined. Like most other coloured earths, this kind of bole contains a portion of ferruginous matter, to which the colour is owing; and which may be separated by the magnet, after the bole has been calcined with oil or other inflammable matters. It is likewise impregnated with vitriolic acid; and hence, when mixed with nitre or sea-salt, it extricates the acids of these salts in the fire.

2. French bole is of a pale red colour, variegated with irregular specks of white and yellow. It is much softer than the Armenian, and slightly effervesces with acids.

3. Bole of Blois is yellow, remarkably lighter than most of the other yellow earths, and effervesces strongly with acids.

4. Bohemian bole is of a yellow colour, with a cast of red, and generally of a slaky texture. It is not acted on by acids.

5. Lemnian earth is of a pale red colour, and slightly effervesces with acids.

6. Silesian bole is of a pale yellow colour, and acids have no sensible effect upon it.

These and other earths, made into little masses, and stamped with certain impressions, are called *terre sigillata*. They have been recommended as astringent, sudorific, and alexipharmic; but these and many other virtues that have been ascribed to them appear to have no foundation. They are still, however, prescribed in fluxes and complaints of the primæ viæ.

BOLESLAFF, or **BURZLAV**, a town of Silesia, seated on the river Bobar, in E. Long. 16. 0. N. Lat. 51. 12.

BOLESLAUS I. and II. kings of Poland. See **POLAND**.

BOLETUS, **SPUNK**: A genus of the order of fungi, belonging to the cryptogamia class of plants; of which botanists enumerate 17 species. The following are the most remarkable. 1. The suberosus, or white cork spunk, grows commonly on the trunks of birch and willow trees in England and Scotland. It grows sessile and horizontal; its figure is semicircular; the upper side convex, the under nearly plain; of various sizes, from that of an ass's hoof to a peck-measure. The upper surface is quite white, generally covered with a short strong down, but sometimes smooth. The flesh or internal substance is thick, white, tough, light, and spongy, like cork; and is sometimes cut and shaped by the country people, and used as corks in their bottles:

Boletus,
Boleyn.

Boleyn.

but such corks must not be suffered to touch the liquid, for moisture soon renders them soft and useless.

2. The igniarius, or touchwood spunk, is frequent on the trunks of old trees of all kinds, especially ash. It consists of a very hard woody substance, in shape like a horse's hoof, and grows of various sizes, from a man's fist to that of his head and larger. The upper side is smooth, but uneven, distinguished near the rim by elevated zones of different colours, brown, grey, tawny, &c. The flesh is of a tawny brown colour, extremely hard and tough. This fungus is made use of in Germany and some parts of England for tinder. The Germans boil it in strong lye, dry it and hoil it again in solution of saltpetre. The Laplanders burn it about their habitations, in order to keep off a species of the gadfly which is fatal to the young reindeer. It has been used to stop the bleeding of the vessels after amputations †. For this purpose the hard outer part is cut off, and the soft inner substance is beat with a hammer to make it still softer. It is best when gathered in August or September.

3. The bovinus, or cow spunk, is frequent in woods and pastures. It is generally of a brown colour, though sometimes it is tawny, yellowish brown, reddish brown, deep red, purple, or greenish brown. The flesh is yellow, white, or reddish. The young plants are eaten in Italy, and esteemed a great delicacy. The Germans also account them a dainty, calling them *gombas*, and *brat-bulz*. Cows, deer, sheep, and swine, will feed upon this and other boleti, and are sometimes greatly disordered by them. In cows and other cattle they have been known to create bloody urine, nauseous milk, swellings of the abdomen, inflammations of the bowels, stoppages, diarrhœas, and death. In sheep they bring on a scirrhus liver, a cough, a general wasting, and dropsy. *Scarabs*, *dermesties*, and many other insects, feed upon and breed in them in abundance.

4. The pini larices, or agaric of the shops, grows on old larch trees. This fungus is an irregular spongy substance, extremely light, and of an uniform snowy whiteness, (except the cortical part, which is usually taken off before the agaric is brought into the shops). It cuts freely with a knife, without discovering any hardness or grittiness, and readily crumbles betwixt the fingers into a powder. It has no remarkable smell; its taste is at first sweetish; but on chewing for a short time, it proves acrid, bitter, and nauseous. Agaric was formerly in great esteem as a cathartic, but the present practice has almost entirely rejected its use. It is now rejected both by the London and Edinburgh Colleges, but it still retains a place in most of the new foreign Pharmacopœias. It operates exceeding slowly, inasmuch that some have denied it to have any purgative virtue at all. Given in substance, it almost always occasions a nausea, not unfrequently vomiting, and sometimes excessive tormina of the bowels: these effects are attributed to its light farinaceous matter adhering to the coats of the intestines, and producing a constant irritation. The best preparation of agaric seems to be an extract made with water, in which fixt alkaline salt has been dissolved; or with vinegar or wine: the first is said by Boulduc, and the two latter by Neumann, to prove an effectual and safe purgative. Nevertheless, this is at best a precarious medicine, of which we stand in no manner of need.

BOLEYN (Ann), queen of Henry VIII. of Eng-

land; memorable in the English history, as the first cause of the reformation, as the mother of queen Elizabeth under whom it was completely established, and also on account of her own sufferings. She was the daughter of Sir Thomas Boleyn, and born in 1507. She was carried into France at seven years of age by Henry VIII's sister, who was wife of Lewis XII: nor did she return into England when that queen retired thither after the death of her husband; but staid in the service of queen Claudia the wife of Francis I. and after the death of that prince went to the ditches of Alençon. The year of her return is not well known: some will have it to have been in 1527, others in 1525. This much is certain, that she was mid of honour to queen Catharine of Spain, Henry VIII's first wife; and that the king fell extremely in love with her. She behaved herself with so much art and address, that by refusing to satisfy his passion, she brought him to think of marrying her: and the king, deceived by her into a persuasion that he should never enjoy her unless he made her his wife, was induced to set on foot the affair of his divorce with Catharine, which at last was executed with great solemnity and form. A celebrated author observes, that "That which would have been very praise-worthy on another occasion, was Ann Boleyn's chief crime: since her refusing to comply with an amorous king, unless he would divorce his wife, was a much more enormous crime than to have been his concubine. A concubine (says he) would not have dethroned a queen, nor taken her crown or her husband from her; whereas the crafty Ann Boleyn, by pretending to be chaste and scrupulous, aimed only at the usurpation of the throne, and the exclusion of Catharine of Arragon and her daughter from all the honours due to them." In the mean time, Henry could not procure a divorce from the Pope; which, we know, made him resolve at length to disown his authority, and to sling off his yoke. Nevertheless he married Anne Boleyn privately upon the 14th of November 1532, without waiting any longer for a release from Rome; and as soon as he perceived that his new wife was with child, he made his marriage public. He caused Anne Boleyn to be declared queen of England on Easter-eve 1533, and to be crowned the first of June following. She was brought to bed upon the 7th of September of a daughter, who was afterwards queen Elizabeth; and continued to be much beloved by the king, till the charms of Jane Seymour had fired that prince's heart in 1536. Then his love for his wife was changed into violent hatred: he believed her to be unchaste, and caused her to be imprisoned and tried. "She was indicted of high treason, for that she had procured her brother and other four to lie with her, which they had done often: that she had said to them, that the king never had her heart; and had said to every one of them by themselves, that she loved him better than any person whatever; which was to the slander of the issue that was begotten between the king and her. And this was treason according to the statute made in the 26th year of this reign; so that the law which was made for her and the issue of her marriage, is now made use of to destroy her." She was condemned to be either burnt or beheaded; and she underwent the latter on the 19th of May 1536. The right reverend author of the *History of the Reformation*, relates

† *Phil.*
Transf.
vol. xlviii.
p. 2. and
lix. p. 1.

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relates some very remarkable things of her behaviour during the time of her imprisonment, and a little before her execution. When she was imprisoned, she is said to have acted very different parts; sometimes seeming devout and shedding abundance of tears, then all of a sudden breaking out into a loud laughter. A few hours before her death, she said, that the executioner was very hardy: and besides, that she had a very small neck; at the same time feeling it with her hands, and laughing heartily. However, it is agreed that she died with great resolution; taking care to spread her gown about her feet, that she might fall with decency; as the poets have related of Polyxena, and the historians of Julius Cæsar. Roman-catholic writers have taken all occasions to rail at this unhappy woman, as well through vexation at the schism which she occasioned, as for the sake of defaming and dishonouring queen Elizabeth by this means; and they have triumphed vehemently, that in the long reign of that queen, no endeavours were used to justify her mother. But either queen Elizabeth or her ministers are greatly to be admired for prudence in this respect; since it is certain, that Anne Boleyn's justification could never have been carried on without discovering many things which must have been extremely prejudicial to the queen, and have weakened her right instead of establishing it. For though the representations of the papists are in no wise to be regarded, yet many things might have been said to the disadvantage of her mother, without transgressing the laws of true history; as that she was a woman gay even to immodesty, indiscreet in the liberties she took, and of an irregular and licentious behaviour.

BOLINGBROKE, or BULLINGBROKE, a town of Lincolnshire in England, and of great antiquity, but now in a mean condition. It gives title of Viscount to the St Johns of Battersea. E. Long. o. 40. N. Lat. 53. 15.

BOLINGBROKE (Henry St John), lord viscount, a great statesman and philosopher, descended from an ancient and noble family, was born about the year 1672. He had a regular and liberal education; and by the time he left the university, was considered as a person of uncommon qualifications: but with great parts, he had, as it usually happens, great passions, and these hurried him into many indiscretions and follies. Contrary to the inclinations of his family, he cultivated Tory connections; and gained such an influence in the House of Commons, that in 1704 he was appointed secretary of war and of the marines. He was closely united in all political measures with Mr Harley: when, therefore, that gentleman was removed from the seals in 1707, Mr St John resigned his employment; and in 1710, when Mr Harley was made chancellor of the exchequer, the post of secretary of state was given to Mr St John. In 1712 he was created Baron St John of Lediard-Trigrove in Wiltshire, and Viscount Bullingbroke. But being overlooked in the bestowal of vacant ribbons of the order of the garter, he resented the affront, renounced the friendship of Harley then earl of Oxford, and made his court to the Whigs. Nevertheless, on the accession of George I. the seals were taken from him; and being informed that a resolution was taken to pursue him to the scaffold, for his conduct regarding the treaty of Utrecht, he withdrew to France. Here he accepted an invitation to enter into

the Pretender's service, and accepted the seals as his secretary: but he was as unfortunate in his new connections as in those he had renounced; for the year 1715 was scarcely expired, when at the same time that he was attainted of high treason at home, the seals and papers of his foreign secretary's office were taken from him; followed by an accusation from the Pretender and his party, of neglect, incapacity, and treachery. Such a complication of distressful events threw him into a state of reflection, that produced by way of relief a *consolatio philosophica*, which he wrote the same year under the title of *Reflections upon exile*; and the following year drew up a vindication of his conduct with respect to the Tories, in the form of *A Letter to Sir William Wyndham*. His first lady being dead, he about this time espoused a niece of the famous Madam Maintenon, and widow of the marquis de Villette, with whom he had a very large fortune. In 1723 the king was prevailed on to grant him a free pardon, and he returned in consequence to England; but was by no means satisfied within, while he was yet no more than a mere titular lord, and remained excluded from the house of peers. This stigma operated to fix him in enmity to Sir Robert Walpole, to whose secret enmity he attributed his not receiving the full extent of the king's clemency: hence he distinguished himself by a multitude of political writings, till the year 1735; when being thoroughly convinced that the door was finally shut against him, he returned once more to France. In this foreign retreat he began his course of Letters on the study and use of History, for the use of Lord Combury, to whom they are addressed. Upon the death of his father, who lived to be extremely old, he settled at Battersea, the ancient seat of his family, where he passed the remainder of his life in philosophical dignity. Pope and Swift, one the greatest poet, the other the greatest wit, of the time, perfectly adored him; and it is well known that the former received from him the materials for his incomparable poem the "Essay on Man."—He died in 1751, and left the care and benefit of his MSS. to Mr Mallet, who published them together with his former printed works, in 5 vols 4to: they are also printed in 8vo.

BOLISAW, a town of the kingdom of Bohemia in Germany, situated in E. Long. 14. 35. N. Lat. 50. 25.

BOLKOWITZ, a town of Silesia, in the duchy of Glogaw. E. Long. 15. 20. N. Lat. 51. 27.

BOLLARDS, large posts set into the ground on each side of a dock. On docking or undocking ships, large blocks are lashed to them; and through these blocks are received the transporting hawfers to be brought to the capstons.

BOLLITO, a name by which the Italians call a *sea green colour* in artificial crystal. To prepare this colour, you must have in the furnace a pot filled with 40 lb. of good crystal, first carefully skimmed, boiled, and purified, without any manganese: then you must have twelve ounces of the powder of small leaves of copper thrice calcined, and half an ounce of zaffre in powder: mix them together; and put them at four times into the pot, that they may the better mix with the glass; stirring them well each time of putting in the powder, lest the mixture should swell and run over.

BOLOGNA, an ancient, large, and very handsome town of Italy, in the territory of the church, and capital

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capital of the Bolognese; an archbishop's see, and an university. The public buildings are magnificent, as well with regard to the architecture as the ornaments, especially the paintings, which are done by the greatest masters. There are a vast number of palaces, in one of which the pope's nuncio resides; the private houses are also well built. Here are 169 churches, and the town is said to contain about 80,000 inhabitants. All the gates and windows are open during the summer; inasmuch that one may see into their apartments and gardens, where there are vast numbers of orange-trees that perfume the air. It is a place of great trade, which is in some measure owing to a canal that runs from this city to the river Po. The Reno, which runs near Bologna, turns 400 mills that are employed in the silk-works; besides, they deal in wax, soap, hams, sausages, and even lap-dogs, which are greatly esteemed. It is seated at the foot of the Apennine mountains, in E. Long. 11. 30. N. Lat. 44. 27.

BOLOGNE, by the English commonly called *Bullon*, a city of Picardy in France, and capital of the Bolonnois, seated near the sea. It is divided into two towns, the Upper and Lower; the first is strongly fortified, the other is inclosed by walls only. The port is at the mouth of the river Liane, but the water is so shallow that no ships of burden can enter it. It is defended on the side of the river by a mole, which shelters it from the winds, and at the same time prevents the river from filling it with silt. E. Long. 9. 17. N. Lat. 50. 42.

BOLOGNESE, a small province of Italy, in the territory of the church, bounded on the north by the Ferrarese, on the west by the duchy of Modena, on the south by Tuscany, and on the east by Romania. It is watered by a great number of small rivers, which render its soil the most fertile of any in Italy. Bologna is the capital, and from the great produce of the land about it is called *Bologna the fat*. It produces abundance of all sorts of grain and fruits; particularly macedoine grapes, which are in high esteem. Here are mines of alum and iron; and the inhabitants fabricate large quantities of linen, silk stockings, and cloth.

BOLOGNESE. See GRIMALDI.

BOLOGNIAN or **BONONIAN STONE**, a phosphoric substance first discovered near Bologna in Italy, whence it received its name. It has been supposed to contain some metallic matter, on account of its great specific gravity; but it is now found to be only a compound of ponderous earth and vitriolic acid. It differs, however, from the artificial barofelenite in the proportion of its ingredients, the latter containing 33 parts of vitriolic acid and 67 of earth; the former 84 of earth, 13 of the most concentrated vitriolic acid, and three of water. Mr Scheffer, in the Memoirs of the Academy at Stockholm, for the year 1753, has communicated some experiments on a stone of this kind from China, which prove, that it perfectly agrees with the descriptions given in several books of a stone called *petuntse* by the Chinese, and which is said to be used in their porcelain manufactures.

BOLSANE, a town of Germany, in the territory of Tyrol, and circle of Aultria. It is very agreeably situated in the middle of a fine large valley, full of villages, and abounding in vineyards. The wines in this valley are the best in all Tyrol; but they must be drank

the year after that of their growth, otherwise they become unfit for use. E. Long. 11. 11. N. Lat. 46. 42.

BOLSENNNA, a town of Italy, in the territories of the pope, seated on a lake of the same name. E. Long. 11. 3. N. Lat. 42. 37.

BOLSTER, among surgeons, a soft yielding substance, either laid under the head or a broken limb. In this sense, bolsters are contrived for crooked, bunched, and otherwise distorted backs, shoulders, &c.

By a constitution made under archbishop Burchier, the clergy are forbidden to wear bolsters about their shoulders, in their gowns, coats, or doublets. The occasion of the prohibition is variously construed. Some say that bolsters came in fashion in the reign of King Richard III. who being necessitated, by his natural deformity, to pad, the courtiers, and even the clergy, did the same, out of complaisance to their prince, so that every body who had the misfortune to be born straight, was obliged to wear a bolster on his shoulders to be in the fashion. Others, however, controvert this; alleging that the constitution above mentioned was made 20 years before the usurpation of Richard.

BOLSTERS of a Saddle, those parts of a great saddle which are raised upon the bows, both before and behind, to hold the rider's thigh, and keep him in a right posture.

BOLSWAERT, a town of the united Provinces, in West Friesland, and in the county of Westergee. E. Long. 5. 35. N. Lat. 53. 6.

BOLSWERT, or **BOLSWERD**, (*Boetius Adam à*), an engraver and printseller established at Antwerp, was the descendant of a family who resided at the city of Bolswert in Friesland, from whence he derived his name. He flourished about 1620; but by what master he was instructed in the art of engraving, does not appear. He worked with the graver only; the free open style of the Bloemarts he imitated with great success; and perhaps perfected himself in their school. When he worked from Rubens, he altered that style; and his plates are neater, fuller of colour, and more highly finished. The two following from this master may be here mentioned. 1. The Resurrection of Lazarus, a large upright plate. 2. The Last Supper, its companion. Basan, speaking of this print, says, that it proves by its beauty, and the knowledge with which it is engraved, that Boetius could sometimes equal his brother Scheltius.

BOLSWERT or *Bolswerd*, (*Scheltius à*), an admirable engraver, was the brother of Boetius Adam à Bolswert, mentioned in the preceding article. We have no other account of his family than what is there given; nor unfortunately any of himself of the least consequence. The time of his birth and of his death, and the name of the master he studied under, are equally unknown. Bolswert worked entirely with the graver, and never called in the assistance of the point. His general character as an artist is well drawn by Basan, in the following words: "We have a large number of prints, which are held in great esteem, by this artist, from various masters; but especially from Rubens, whose pictures he has copied with all possible knowledge, taste, and great effect. The freedom with which this excellent artist handled the graver, the picturesque roughness of etching, which he could imitate without any other assisting instrument, and the ability he possessed

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Bovert. fessed of distinguishing the different masses of colours, have always been admired by the connoisseurs, and give him a place in the number of those celebrated engravers, whose prints ought to be considered as models by all historical engravers, who are desirous of rendering their works as useful as they are agreeable, and of acquiring a reputation as lasting as it is justly merited." He drew excellently, and without any manner of his own; for his prints are the exact transcripts of the pictures he engraved from. His best works, though not always equally neat or finished, are always beautiful, and manifest the hand of the master. Sometimes we find his engravings are in a bold, free, open style: as the Brazen Serpent, the Marriage of the Virgin, &c. from Rubens. At other times they are very neat, and sweetly finished: as, the Crowning with Thorns, and the Crucifixion, &c. from Vandyck. Mr Strutt observes, that his boldest engravings are from Rubens, and his neatest from Vandyck and Jordans.—How greatly Bolfwert varied his manner of engraving appears from some prints, which, like the greater part of those of his brother Boetius, bear great resemblance to the free engravings of the Bloemarts, and to those of Frederic Bloemart especially; and form a part of the plates for a large folio volume, entitled, *Academie de L'effee*, by Girard Thibault of Antwerp, where it was published, A. D. 1628: and to these he signs his name, "Scheltius," and sometimes "Schelderic Bolfwert," adding the word Bruxell. His name is usually affixed to his plates in this manner, "S. A. Bolfwert." It is very necessary to caution the collectors of this master's works (those especially who are not very conversant with them), that many of them have been copied in a very careful manner, so as easily to deceive the unskilful. Some of these copies, as the Marriage of the Virgin from Rubens, &c. are by Lauwers. But those which are most likely to miscel, are by Ragot, a French engraver, employed by Mariette the print-seller, who frequently meeting with the reverses or counterproofs from the prints of Bolfwert, gave them to the engraver; and he imitated them with the utmost precision. By this means the impressions from the plate copied come upon the paper the same way with the original. It is true, his name is usually affixed at the bottom; but it is often cut off, and then the copy is not easily distinguished from the original. Among other prints thus imitated by Ragot from Bolfwert, is Christ crucified between the two Thieves, where the soldier is represented piercing his side, from Rubens.

Among the variety of estimable engravings by this great artist, the few following may be here mentioned. 1. The Brazen Serpent, a large plate, lengthwise, from Rubens. Those impressions are the most estimable which have only the word *Antuerpie* at the right-hand corner, without the name of Giles Hendrix, which was afterwards inserted above it, and part of the small circle over the arms is left white. 2. Abraham offering his son Isaac, a large plate nearly square, from Theodore Rombout. 3. The education of the Virgin by Saint Anne, a middling-sized upright plate, from Rubens. Those impressions without the name of

Hendrix are the most esteemed. 4. The marriage of the Virgin, a middling-sized upright plate, from the same painter. Those impressions are best in which the word *Antuerpie* is not added to the name of Hendrix. 5. The adoration of the wise men, a middling-sized upright plate, from the same. The good impressions of this plate have the name of *Vanden Enden*. 6. The feast of Herod, in which is represented the daughter of Herodias, presenting the head of John the Baptist to her mother, a large plate, lengthwise, from the same. 7. The miraculous draught of fishes; a large print, lengthwise, on three plates, from the same. 8. Christ crowned with thorns; a large upright plate from Vandyck: An admirable print; with the name of *Vanden Enden*. 9. A crucifixion, where a figure appears presenting the sponge to Christ, St John and the Virgin are standing at the foot of the cross, and Mary Magdalene is reclining towards it: A large upright plate, from Vandyck. Of this admirable engraving there appear to have been four different impressions; though Basan mentions only three, and says that in the first the left hand of St John is hid. The chief marks of those impressions are: In the 1st, St John's left hand appears on the shoulder of the Virgin (A). In the 2d impression, the hand is erased: This Basan calls the first impression; and it sells at a very high price. In the 3d impression, the hand is restored: In the 4th, it is again erased: And in both, the short strokes upon the ground near the great toe of the figure who holds the sponge are crossed with second strokes; which cross-hatchings are not in the two first impressions. There are several other crucifixions by the same master after different designs. 10. The god Pan playing upon his flute, from Jordans. 11. Mercury and Argus, a large plate, lengthwise, from the same. 12. A drunken Silenus, supported by a satyr, and another figure; a middling-sized upright plate from Rubens. Of these three last, the impressions without the address of Bloteling are the best. 13. A chase of lions; a large plate, lengthwise, from the same. 14. A variety of landscapes.

BOLT, among builders, an iron-fastening fixed to doors and windows. They are generally distinguished into three kinds, viz. plate, round, and spring bolts.

BOLTS, in gunnery, are of several sorts; as, 1. Transum-bolts, that go between the cheeks of a gun carriage, to strengthen the transums. 2. Prise bolts; the large knobs of iron on the cheeks of a carriage, which keep the hand-spike from sliding, when it is poizing up the breech of a piece. 3. Traverse bolts; the two short bolts, that, being put one in each end of a mortar carriage, serve to traverse her. 4. Bracket-bolts; the bolts that go through the cheeks of a mortar, and by the help of quoins keep her fixed at the given elevation. And, 5. Bed-bolts; the four bolts that fasten the brackets of a mortar to the bed.

BOLTS, in a ship, are iron pins, of which there are several sorts, according to their different makes and uses. Such are drive-bolts, used to drive out others. Ray-bolts, with jugs or bars on each side, to keep them from flying out of their holes. Clench-bolts, which are clenched with rivetting hammers. Forelock-bolts,

Bolfwert,
Bolt.

(A) Prints of this impression are very rare, and at sales have been known to fetch from L. 25 to L. 30.

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Bolton.

bolts, which have at the end a forelock of iron driven in to keep them from starting back. Set-bolts, used for forcing the planks, and bringing them close together. Fend or fender bolts, made with long and thick heads, and struck into the innermost bends of the ship, to save her sides from bruises. And ring-bolts, used for bringing to of the planks, and those parts whereto are fastened the breeches and tackle of the guns.

BOLT of Canvas, in commerce, the quantity of 28 ells.

BOLT-Rope, in naval affairs, a rope passing round the sail, to which the edges of it are sewed, to prevent the sail from tearing: the bottom part of it is called the *foot-rope*; the sides, *leeches*; and if the sail be oblong or square, the upper part is called the *head-rope*.

BOLTED FLOUR, that which has passed thro' the bolters. See the following article.

BOLTER, or **BOULTER**, a kind of sieves for meal, having the bottoms made of woollen, hair, or even wire. The bakers use bolters which are worked by the hand; millers have a larger sort, wrought by the motion of the mill.

BOLTING, a term of art used in our inns of court, whereby is intended a private arguing of cases. The manner of it at Gray's inn is thus: An ancient and two barristers sit as judges; three students bring each a case, out of which the judges choose one to be argued; which done, the students first argue it, and after them the barristers. It is inferior to *mooting*; and may be derived from the Saxon word *bolt*, "a house," because done privately in the house for instruction. In Lincoln's inn, Mondays and Wednesdays are the bolting days in vacation time; and Tuesdays and Thursdays the moot days.

BOLTING, or *Boulting*, the act of separating the flour from the bran, by means of a sieve or bolter. See **BOLTER**.

BOLTING-Cloth, or *Bolster-cloth*, sometimes also called *bolting-cloth*, denotes a linen or hair cloth for sifting meal or flour.

BOLTING Mill, a versatile engine for sifting with more ease and expedition. The cloth round this is called the *bolter*.

BOLTING, or *Boulting*, among sportsmen, signifies rousing or dislodging a coney from its resting place. They say, to *bolt* a coney, *start* a hare, *rouse* a buck, &c.

BOLTON or **BOULTON** (Edmund), an ingenious English antiquarian, who lived in the beginning of the 17th century. His most considerable work is that intitled *Nero Cæsar, or Monarchie depraved*, dedicated to the Duke of Buckingham, lord-admiral, printed at London 1624, folio, and adorned with several curious and valuable medals. It is divided into 55 chapters, in some of which are introduced curious remarks and observations. In the 24th and 25th chapters he gives an account of the revolt in Britain, against the Romans, under the conduct of Boadicea, which he introduces with a recapitulation of the affairs in Britain from the first entrance of the Romans into this island under Julius Cæsar, till the revolt in the reign of Nero. In chapter 36th he treats of the East-India trade in Nero's time, which was then carried on by the river Nile, and from thence by caravans over land to the Red Sea, and thence to the Indian ocean; the ready coin carried

yearly from Rome upon this account amounting, according to Pliny's computation, to above L. 300,000 Sterling; and the usual returns in December and January yielding in clear gain an hundred for one. Besides this he wrote, 1. An English translation of Lucius Florus's Roman history. 2. Hypereritica, or a rule of judgment for reading or writing our histories. 3. The elements of armories, &c.; and some other works.

BOLTON, a town of Lancashire in England, seated on the river Croell, and pretty well built. It has a manufacture for fustians, and the market is considerable for cloth and provisions. W. Long. 2. 15. N. Lat. 53. 55.

BOLUS, in pharmacy, an extemporaneous form of a medicine, soft, coherent, a little thicker than honey, and the quantity of which is a little morsel or mouthful; for which reason it is by some called *bucella*.

BOMAL, a town of Luxemburg in the Austrian Netherlands, situated on the river Ourt, in E. Long. 5. 30. N. Lat. 50. 20.

BOMB, in military affairs, a large shell of cast iron, having a great vent to receive the fusee, which is made of wood. The shell being filled with gunpowder, the fusee is driven into the vent or aperture, within an inch of the head, and fastened with a cement made of quicklime, ashes, brick-dust, and steel-silings, worked together in a glutinous water; or of four parts of pitch, two of colophony, one of turpentine, and one of wax. This tube is filled with a combustible matter, made of two ounces of nitre, one of sulphur, and three of gunpowder-dust, well rammed. To preserve the fusee, they pitch it over, but uncase it when they put the bomb into the mortar, and cover it with gunpowder-dust; which having taken fire by the flash of the powder in the chamber of the mortar, burns all the time the bomb is in the air; and the composition in the fusee being spent, it fires the powder in the bomb, which bursts with great force, blowing up whatever is about it. The great height a bomb goes in the air, and the force with which it falls, makes it go deep into the earth.

Bombs may be used without mortar-pieces, as was done by the Venetians at Candia, when the Turks had possessed themselves of the ditch, rolling down bombs upon them along a plank set sloping towards their works, with ledges on the sides, to keep the bomb right forward. They are sometimes also buried under ground to blow up. See **CAISSON**.—Bombs came not into common use before the year 1634, and then only in the Dutch and Spanish armies. One Malthus an English engineer is said to have first carried them into France, where they were put in use at the siege of Collioufe. The French have lately invented a new sort of bombs of vast weight called *comminges*.—The art of throwing bombs makes a branch of gunnery, founded on the theory of projectiles, and the laws and qualities of gunpowder. See **GUNNERY**, **PROJECTILES**, **GUNPOWDER**, &c.

BOMB-Chest, is a kind of chest filled usually with bombs, sometimes only with gunpowder, placed under ground, to tear and blow it up in the air with those who stand on it. Bomb-chests were formerly much used to drive enemies from a post they had seized or

were about to take possession of: they were set on fire by means of a fanciflee fastened at one end, but they are now much disused.

BOMB-VEGHS, which are small ships formed for throwing bombs into a fortress, are said to be the invention of M. Reyneau, and to have been first used at the bombardment of Algiers. Till then it had been judged impracticable to bombard a place from the sea. See *KETCH*.

BOMBARD, a piece of ordnance anciently in use, exceedingly short and thick, and with a very large mouth. There have been bombards which have thrown a ball of 300 pound weight. They made use of cranes to load them. The bombard is by some called *bassisk*, and by the Dutch *donderbass*.

BOMBARDIER, a person employed about a mortar. His business is to drive the fusee, fix the shell, and lead and fire the mortar.

BOMBARDIER, in zoology. See *CARABUS*.

BOMBARDMENT, the havoc committed in throwing bombs into a town or fortress.

BOMBARDO, a musical instrument of the wind kind, much the same as the bassoon, and used as a bass to the hautboy.

BOMBASINE, a name given to two sorts of stuffs, the one of silk, and the other crossed of cotton.

BOMBAST, in composition, is a serious endeavour, by strained description, to raise a low or familiar subject beyond its rank; which, instead of being sublime, never fails to be ridiculous. The mind in some animating passions is indeed apt to magnify its objects beyond natural bounds: but such hyperbolical description has its limits; and, when carried beyond these, it degenerates into burlesque, as in the following example.

Sejanus. ——— Great and high,
The world knows only two, that's Rome and I.
My roof receives me not; 'tis air I tread,
And at each step I feel my advanc'd head
Knock out a star in heaven.

SEJANUS, of *Ben. Johnson*, act 5.

A writer who has no natural elevation of genius is extremely apt to deviate into bombast. He strains above his genius, and the violent effort he makes carries him generally beyond the bounds of propriety.

BOMBAX, or **SILK-COTTON TREE**: A genus of the polyandria order, belonging to the monodelphia class of plants; and in the natural method ranking under the 37th order, *Columniferae*. The calyx is quinquefid: the stamina are five or many: the capsule is ligneous, quinquelocular, and quinquevalved: the seeds are woolly, and the receptacle pentagonalous.

Species. 1. The ceiba, with a prickly stalk. 2. The pentandrum, with a smooth stalk. 3. The heptaphyllum, with leaves cut into seven parts. The first and second sorts grow naturally in both the Indies, where they arrive at a great magnitude, being some of the largest trees in these parts; insomuch that Bolman says he has seen in Guinea, trees of this kind to widely dispersed that 20,000 armed men might stand under the branches of one. They generally grow with very straight stems. Those of the first sort are armed with short strong spines; but the second hath very smooth stems, which in the young plant are of a bright green; but after a few years they are covered with a grey

or ash-coloured bark, which turn brown as they grow older. The branches toward the top are garnished with leaves composed of five, seven, or nine oblong smooth little leaves, which are spear-shaped, and join to one common centre at their base, where they adhere to the long footstalk. The flower buds appear at the end of the branches; and soon after the flowers expand, which are composed of five oblong purple petals, with a great number of stamina in the centre: when these fall off, they are succeeded by oval fruit as large as a swan's egg, having a thick ligneous cover, which when ripe opens in five parts, and is full of a dark short cotton, inclosing many roundish seeds as large as small peas. The cotton of the third sort is of a fine purple colour, but the size of the tree is not particularly mentioned by botanical writers. Besides these species, Mr Miller mentions another which he saw in the gardens of the late duke of Richmond at Goodwood, and was raised from seeds which came from the East Indies. The stem was very straight and smooth, the leaves were produced round the top upon very long footstalks, each being composed of seven or nine narrow silky small lobes, joined at their base to the footstalk in the same manner as the first and second; but they were much longer and reflected backward, so that at first sight it appeared very different from either of them.

Culture. These plants, being natives of warm climates, must always be kept in a stove. They are raised from seeds procured in the capsules from the places where they grow naturally. These are to be sown in the spring, in pots of light earth, plunged in a substantial hot-bed of dung or tan, where the plants will appear in three or four weeks. They must then be placed separately in small pots, plunging them in the bark-bed, giving them shade and water, and shifting them occasionally into larger pots with fresh earth. They must be watered plentifully in summer, but moderately in winter.

Uses. The dark short cotton of the first two species is used by the poorer inhabitants of those places where such trees grow to stuff pillows or chairs, but is generally deemed unwholesome to lie upon. The beautiful purple down of the third is spun, wrought into clothes, and wore, without being dyed any other colour, by the inhabitants of the Spanish West Indies, where the tree naturally grows. Large pirogues, or canoes fit to carry a sail, are made both at Senegal, and in America, of the trunk of the silk-cotton tree, the wood of which is very light, and found unfit for any other purpose. In Columbus's first voyage, says Miller, it was reported that a canoe was seen at Cuba made of the hollowed trunk of one of these trees, which was 95 palms long, of a proportional width, and capable of containing 150 men.

BOMBAX, in zoology, a synonyme of a species of *COXUS*.—*Bombax* is also used sometimes for silk or cotton; but the true botanic name of cotton is *Gossypium*. It is likewise applied by Linnaeus to signify such insects as have incumbent wings, and feelers resembling a comb.

BOMBAY, an island in the East Indies near the coast of Decan, situated in N. Lat. 19. 0. and E. Long. 73. 0. It has its present name from the Portuguese *Bom-bahia*, on account of the excellent bay formed

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Bombay. formed by it together with the winding of other islands adjacent. The harbour is spacious enough to contain any number of ships, and has likewise excellent anchoring ground, affording also, by its land-locked situation, a shelter from any winds to which the mouth may be exposed.

I This island more healthy now than formerly, and why. This island was formerly reckoned exceedingly unhealthy, inasmuch that it had the name of the burying ground of the English, though it is now so far improved in this respect as to be no worse than any other place in the East Indies under the same parallel of latitude. The reasons of this unhealthiness and the subsequent improvements are enumerated by Mr Grose.

1. The nature of the climate, and the precautions required by it, being less understood than they are at present. 2. Formerly there obtained a very pernicious practice of employing a small fry of fish as manure for the cocoa-trees which grow in plenty on the island; though this has been denied by others, and perhaps with justice, as the putrid effluvia of animal bodies seems to be very effectually absorbed by the earth*, when buried in it. All agree, however, that the habitations in the woods or cocoa-nut groves are unwholesome by reason of the moisture and want of a free circulation of air.

3. Another cause has been assigned for the superior healthiness of this island, viz. the lessening of the waters by the banking off a breach of the sea, though this does not appear satisfactory to our author. There is still, says he, a great body of salt water on the inside of the breach, the communication of which with the ocean being less free than before the breach was built, must be proportionably more apt to stagnate, and to produce noxious vapours.

Whatever may be the cause, however, it is certain, that the island of Bombay no longer deserves its former character, provided a due degree of temperance be observed; without which health cannot be expected in any warm climate.

2 Climate, &c. The climate of Bombay seems to be drier than many other parts under the same parallel. The rains last only four months of the year, but with short intermissions. The setting in of the rains is commonly ushered in by a violent-thunder storm called there the *Elephanta* from its extraordinary violence. The air, however, is then agreeably cooled, and the excessive heat, then nearly at its height, much moderated. The rains begin about the end of May, and go off in the beginning of September; after which there never falls any except a short transient shower, and that but very rarely.

3 Fish in all the stagnant pools formed by the rains. A very extraordinary circumstance is related by Mr Ives concerning the island of Bombay during the rainy season, viz. that, ten days after the rains set in, every pool and puddle swarms with a species of fish about six inches long and somewhat resembling a mullet. Such a phenomenon has occasioned various speculations. Some have imagined that the exhaling power of the sun is so strong in the dry seasons as to be able to raise the spawn of these fishes into the atmosphere, and there suspend and nourish it till the rains come on, when it drops down again in the state of living and perfectly formed fish. A less extravagant supposition is, that after the ponds become dry, the spawn may possibly fall into deep fissures below the apparent bottom, re-

maining there during the dry season, and being supplied with a sufficient quantity of moisture to prevent it from corruption.

The quantity of rain that falls at Bombay in one season has been accurately measured by Mr Thomas, Mr Ives's predecessor as hospital surgeon. His apparatus consisted of a lead cylinder about nine inches diameter, and as many deep, marked on the inside with inches and tenths. To prevent the water from splashing over, he cut a hole two inches from the bottom, and placed the cylinder in a glazed earthen vessel; after which a wax-cloth was securely tied round it, so as to cover the vessel, and prevent any water from getting in, excepting what passed through the cylinder. When more than two inches fell, the hole in the side was stopp'd with wax, and the water pour'd from the vessel into the cylinder to ascertain its quantity. It was kept in an open place free from houses, and measured at six in the morning, noon, and six in the evening. The following table shows the quantity of rain that fell from the 25th of May, when it first began, though the sky looked cloudy over land from the beginning of the month.

MAY 1756.		JULY.	
Days of the month.	Quantity of rain in In. Tenths.	Days of the month.	Quantity of rain in In. Tenths.
25	0 3	7	0 4
31	0 7	8	0 9
JUNE.		9	1 3
3	0 1	10	3 1
4	0 1	11	3 7
5	0 6	12	0 7
6	0 8	13	5 5
7	0 9	14	4 9
8	1 0	15	2 2
9	0 3	16	0 1
11	3 0	18	0 5
12	0 3	19	1 1
13	0 5	20	0 5
14	4 5	21	0 7
15	1 3	22	0 2
16	2 5	23	0 2
17	5 6	25	0 1
18	0 8	26	0 3
19	0 2	27	0 3
20	0 4	28	0 8
21	0 3	29	0 6
22	1 2	AUGUST.	
23	0 3	3	0 4
24	0 7	5	1 4
25	0 7	6	7 0
26	0 8	7	0 8
27	4 0	8	0 6
28	6 7	9	1 3
29	5 3	10	0 4
30	1 8	11	0 1
JULY.		12	0 2
1	1 3	13	1 1
2	2 0	14	0 8
3	0 9	15	0 3
4	1 9	16	0 2
5	0 5	17	0 2
6	0 2	18	0 2

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AUGUST.		SEPTEMBER.	
Days of the month.	Quantity of rain in In. Tenths.	Days of the month.	Quantity of rain in In. Tenths.
19	0 2	22	0 6
20	0 2	23	0 3
21	0 1	24	0 3
22	0 4	25	0 2
25	0 4	26	0 2
26	0 7	27-30	1 0
27	0 5	OCTOBER.	
28	0 2	2-7	2 1
30	0 1	9	2 0
31	0 2	15	0 3
SEPTEMBER.		16, 17	0 1
1	0 2	22	The air fine and clear, without a cloud, the land and sea-breezes regular.
3	0 3	Whole quantity of rain in In. Tenths.	
8	0 1	May	1 0
9	0 4	June	44 7
10	0 5	July	29 9
11	0 9	August	19 0
12	0 2	September	11 2
13	0 5	October	4 5
16	0 4	Total 110 3	
17	0 4		
18	0 5		
19	0 6		
20	3 2		
21	0 4		

In this journal our author makes no mention of the elephants above mentioned from Mr Grose as the forerunner of the rainy season, though he mentions a storm under that name on the 9th of October. It was an excessive hard gale, with violent thunder, lightning, and rain; of which last there fell two inches in no more than four hours. Neither is the quantity of thunder and lightning at all comparable to what people unacquainted with hot climates might be apt to expect. The only thunder-storms mentioned in the journal were on May 31st, June 3d, 5th, 12th, 14th; September 7th, October 9th, an elephanta; and some thunder on the 15th of the same month.

The vegetable productions of Bombay are very insignificant. Mr Ives says, that its "soil is so barren as not to produce any one thing worth mentioning;" but afterwards informs us, that its "natural produce is the cocoa-nut tree, from which they extract a liquor called *toddy*. This is soft and mild when drunk immediately; but if it stands long, it gathers strength, and becomes very intoxicating; whence probably arose the term *boldy-headed*. For each tree a tax of 20s. a-year is paid to the company, which is appropriated towards maintaining the garrison and ships of war."

Mr Grose gives an account somewhat different.— "The *oarts*, or cocoa-nut groves, make the most considerable part of the landed property, being planted wherever the situation and soil is favourable to them. When a number of these groves lie contiguous to each other, they form what is called the *woods*; through which there is a due space left for roads and path ways, where one is pleasantly defended from the sun at all hours in the day. They are also thick set with houses belonging to the respective proprietors as well as with the huts of the poorer sort of people; but are very unwholesome for the reasons already given. As to the

cocoa-nut tree itself, not all the minute descriptions I have met with in many authors seem to me to come up to the reality of its wonderful properties and use. The cultivation of it is extremely easy, by means of channels conveying water to the roots, and by the manure already mentioned laid round them. An owner of 200 cocoa-nut trees is supposed to have a competency to live on.

"As to the rice fields, they differ in value, according to the fineness and quantity of rice they produce. The growth of this grain has a particularity not unworthy of notice, viz. that as it loves a watery soil, so to whatever height the water rises, wherever it is planted, the growth of the rice keeps measure with it, even to that of 12 and 14 feet; the summit always appearing above the surface of the water. It is also remarked, that the eating of new rice affects the eyes. The fact is certain, though the physical reason of it is unknown.

"Here and there are interspersed some few *brab* trees, or rather wild palm trees (the word *brab* being derived from *brabe*, which in the Portuguese signifies wild.) They bear an insipid kind of fruit, about the bigness of a common pear; but the chief profit from them is the toddy, or liquor drawn from them by incisions at the top, of which the arrack is reckoned better than that produced by the cocoa-nut trees. They are generally near the sea-side, as they delight most in a sandy soil. It is on this tree that the *toddy birds*, so called from their attachment to it, make their exquisitely curious nests, wrought out of the thinnest reeds and filaments of branches, with an inimitable mechanism. The birds themselves are about the size of a partridge, but are of no value either for plumage, song, or the table.

"This island is a strong instance of the benefits of a good government, and a numerous population, by not a spot of it remaining uncultivated: so that tho' it is far from producing sufficient for the consumption of its inhabitants, and notwithstanding its many disadvantages of situation and soil, it yields incomparably more than the adjacent island of Salfette."

Among the curiosities of Bombay Mr Ives mentions a large *terapin* or land tortoise kept at the governor's house, the age of which was upwards of 200 years. Frogs, which abound every where through the East Indies, are very large at Bombay. Our author saw one that measured 22 inches from the extremities of the fore and hind feet when extended; and he supposes that its weight would not have been less than four or five pounds. On the sea-shore round the island are a great variety of beautiful shells, particularly the sort called *ventle-traps* or *wendle-traps*, held in great esteem among the ladies some time ago. Several pounds Sterling are said to have been given by a *virtuoso* for one of these shells when the Commodore Lellie's collection of shells was sold by auction.

Mr Ives enumerates the following kinds of snakes found on this island and other parts of the British empire in the East Indies. 1. The *cobra de capella*, growing from four to eight or nine feet long. They kill by their bite in 15 minutes. 2. The *cobra manila* is a small bluish snake, of the size of a man's little finger, and about a foot long, frequently seen about old walls. A species of these found at Bombay kill much sooner

5. Vegetable productions of Bombay.

6. Curiosities in this island.

7. Different kinds of serpents found here.

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than even the former. 3. The *palмира*, a very thin beautiful snake, of different colours: its head is like that of the common viper, but much thicker than the body. Our author saw one that was four feet long, and the body not much thicker than a swan's quill. 4. The green snake is of a very bright green colour, with a sharp head: towards the tail it is smaller than in the middle. The largest part of it is no bigger than a tobacco-pipe. 5. The sand snake is small and short, but not less deadly than the others. 6. The *cobra de aurelia* resembles an earth-worm, is about six inches long, and no bigger than a small crow-quill. It kills by getting into the ear, causing madness, &c. 7. The *manila bomba* is a very beautiful snake, of almost the same size throughout the whole length, except at the two ends, where it comes to a point. It is white on the belly, but finely variegated on the back. It lives in the sand, and is said to sting with its tail, which occasions contractions in the joints.

Bombay is the most considerable English settlement on the Malabar coast; and by reason of its situation, may be styled the grand storehouse of all the Arabian and Persian commerce. It is also the most convenient place in all the East Indies for careening or heaving down large ships; and for small ones they have a very good dock. They have also a very good rope-yard; and indeed, says Mr Ives, "this is the only place, in this distant part of the world, for shattered ships to refit at, having always a good quantity of naval stores, and its very name conveying an idea of a safe retreat in foul weather."

8.
Different
forts, &c.

On this island are many little forts and batteries, which carry some guns; but the principal fort, which defends the place, has above an hundred. Mr Grose finds fault with the situation of this last fort, which he says, not only does not command the harbour sufficiently, but is itself overlooked by an eminence called Dungharee point. The castle itself is a regular quadrangle, well built of strong hard stone. In one of the bastions facing Dungharee point is a large tank or cistern which contains a great quantity of water constantly replenished by the stationary rains. There is also a well within the fort, but the water is not very good, and liable to be dried up by the heats. The water of Bombay in general indeed is not good, which has been given as a reason why the Gentoo merchants were not fond of settling upon it; for as they drink no wine nor spirituous liquors, they are very nice judges of the taste and qualities of waters.

When the town of Bombay began to increase considerably, it was judged proper to add the security of a wall round it to the strength of the fort it had before. Even then, however, it was neglected to take in the dangerous post of Dungharee, which now evidently commands both the town and fort. There has since that time been added, at a great expence, a ditch that encompasses the wall, and can be flooded at pleasure, by letting in the sea, which terminates the ditch on two sides, so that the town is now entirely surrounded with water, and is one of the strongest places in India.

Next to Bombay, the most considerable fort on the island is that of *Mahim*. It is situated at the opposite extremity of the island, and commands the pass of Baudurah, a fort directly opposite to it on the coast of

Salfette. From this island Bombay is separated by an arm of the sea, capable of receiving only small craft. The other forts are capable of making but a slight defence.

About two miles out of town, towards the middle of the island, the sea had gained so far as almost to divide it in two, and rendered the roads impassable. A great quantity of this water, however, was drained off at a very considerable expence, and a causeway raised which kept it from overflowing again. This causeway is above a quarter of a mile in length, and considerably broad; "but (says Mr Grose,) there is one gross fault remarked in it; that, being bending near the middle, the architect has opposed to the sea a re-entering angle instead of a salient one." Within the beach, however, there is still a considerable body of water, that has a free communication with the sea, as appears by its ebbing and flowing; so that it is probable the causeway itself, erected at the expence of at least L. 100,000, may in no long time be totally undermined and thrown down.

When the island of Bombay was ceded to the English by the Portuguese, it was divided, and still continues to be so, into three Roman-Catholic parishes, Bombay, Mahim, and Salvacam. The churches of these are governed by priests of that religion, and of any nation excepting Portugal, who were expressly objected to at the time of cession. The bulk of the land-proprietors at that time were Mestizos and Canarins. The former are a mixed breed of the natives and Portuguese; the latter purely aborigines of the country converted to the popish religion. The other land-owners were Moors, Gentoos, and Parsees; but these last are of more modern date, having purchased estates on the island. The company has also a very considerable landed estate either by purchases, confiscations for crimes, and seizures for debt. The land is laid out in cocoa-nut groves, rice-fields, and onion grounds, which last are reckoned of an excellent quality.

There is only one English church at Bombay, a very neat commodious building seated on a spacious area called the Green; which continues from the church to the fort, and is pleasantly laid out in walks planted with trees, round which the houses of the English inhabitants are mostly situated. These are generally only ground-floored, with a court-yard before and behind, in which are the offices and out-houses. They are substantially built of stone and lime, and smooth plastered on the outside. They are often kept white-washed, which, however neat, is in some respects very disagreeable, by reason of the excessive glare it occasions in reflecting the light of the sun. Few of them have glass windows to any apartment; the sashes being generally paned with a kind of transparent oyster-shells, square cut; which have the singular property of transmitting sufficient light, at the same time that they exclude the violent glare of the sun, and have besides a cool look. The flooring is generally composed of a kind of loam or stucco called *chunam*, being a lime made of burnt shells, which if well tempered in a peculiar manner known to the natives, is extremely hard and lasting, and takes such a smooth polish, that one may see his own face in it. But where terraces are made of this substance, unless it be duly prepared,

and

Bombay. and which is very expensive, it is apt to crack by the sun's heat. Some attempts have been made to paint the stucco walls in apartments; but these have proved abortive through the ignorance of the artists, who have not chosen colours capable of resisting the alkaline power of the lime*. Our author remarks, that in the gardens of Surat he saw this kind of stucco made use of instead of gravel for the walks. They were a little raised above the garden beds, so that they must be instantly dry after the most violent rain; though their whiteness and polish must not only produce a disagreeable reflection in sunshine, but be extremely slippery to walk on. The houses of the black merchants are for the most part extremely ill built and inconvenient; the window-lights small, and the apartments ill distributed. Some, however, make a better appearance if only one story high; but even the best of them have a certain meanness in the manner, and clumsiness in their execution, which renders the architecture contemptible in comparison of the European. There is one convenience, however, in all the houses of Bombay, viz. small ranges of pillars that support a penthouse or shed, forming what are called in the Portuguese language *verandas*, either all round the house, or on particular sides of it, which afford a pleasing shelter from the sun, and keep the inner apartments cool and refreshed by the draught of air under them. The pagodas, or temples of the Gentoos, are low mean buildings, having usually no light but what is admitted by the door; facing which is the principal idol. They imagine that a dark gloomy place inspires a kind of religious horror and reverence; and are very fond of having these pagodas among trees, and near the side of a tank or pond, for the sake of their frequent ablutions. These tanks are often very expensive; being generally square and surrounded with stone steps that are very convenient for the bathers.

10. The natives of Bombay, though composed of almost every Asiatic nation, are shorter of stature and stronger than the inhabitants of the Coromandel coast. Here a palanquin which requires six men to carry it at Madras, or Fort St David, is carried by four. Here are some Perfes, who, like their forefathers the ancient Persians, are followers of Zoroaster, who is said to have reduced into order the religion of the Persian magi; the fundamental maxim of which was the worshipping of one God under the symbol of light. They adore the sun, particularly when rising, with the most profound reverence and veneration; and likewise pay a kind of adoration to common fire. Mr Ives had once the opportunity of observing the manner in which they perform this devotion. A large brass pan was placed in the middle of the house with fire in it: before this fire, or rather on each side of it, two men were kneeling at their devotions, pronouncing their prayers with great rapidity. He was afterwards informed, that one of them was a priest, at that time on a visit to another priest in a fit of sickness. He was likewise informed, that the Perfes have such a veneration for the fire, that they never put it out, or even breathe upon it; and he observed, that while the two priests were at their prayers over the pan of coals, they had a little white hib over their mouths, as he supposed to prevent their breath from approaching their favourite element. The prayers, however, from the simi-

larity of the sounds, appeared to him only to be a repetition of the same set of words. The visiting priest used many gestures with his hands over the fire, and afterwards stroaked down the face of the sick priest, which our author looked upon to be the final benediction, as the ceremony ended immediately.

As the Gentoos burn their dead, one would imagine that the Perfes, who have such a veneration for fire, would be desirous of having their bodies consumed by that element; but instead of this, they expose their dead bodies to be devoured by birds of prey; because, say they, a living man is composed of all the element; so that it is but reasonable, after he is dead, that every particular element should receive its own again. On the top of Malabar hill, about two miles from the town of Bombay, there are two round buildings for receiving the dead bodies of the Perfes, which remain there till the bones are clean picked by the birds. This is certainly an abominable custom, and affords very shocking spectacles; however, a guard is always placed at a little distance to prevent people from prying too narrowly into these matters, or, as Mr Ives says, to ensure the vultures of their repast without any disturbance. Mr Grose tells us, that on his going to look into one of these repositories, a Persee advised him in a friendly manner to let it alone, as no person, who was not a party concerned, would long survive such curiosity. He tells us also, that the person appointed to look after the dead, carefully observes which eye is first picked out by the birds, and from thence judge of the situation of the soul of the deceased; a state of happiness being indicated by the right eye being first picked out. Mr Ives observes, that by reason of the heat of the sun, much less noxious vapour is emitted by these bodies than might be expected; the flesh being soon shrivelled up, and the bones turning quite black.

At the extreme point of Malabar-hill there is a rock, on the descent to the sea, flat on the top, in which there is a natural crevice, which communicates with a hollow terminating at an exterior opening to the sea. This place is used by the Gentoos as a purifier from their sins. This purification is effected by their going in at the opening, and coming through the crevice, though it seems too small for people of any corpulence to pass.

In Bombay, and indeed in many other places of the East Indies, oxen are generally used instead of horses, not only for drawing carriages but for riding; and, however ridiculous such a practice may seem to us, it appears that they are not in this respect inferior to ordinary horses, being capable of going at the rate of seven or eight miles an hour. They are commonly of a white colour, with large perpendicular horns, and black noses. The only inconvenience that attends them, is, that, by being naturally subject to a lax habit of body, they sometimes incommode the rider with filth thrown upon him by the continual motion of their tails. In other respects they are far preferable to Indian horses, and will trot and gallop as naturally as the horses of this country. Admiral Watson, while at Bombay, was allowed a chaise drawn by two of these oxen by the East India Company. At the end of every stage the driver always put the near bullock in the place of the other; he then put his hand into both

Bomb
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Bona.

their mouths, to take out the froth, without which precaution they would be in danger of suffocation.

For the History, Government, &c. of Bombay, see the articles *INDOSTAN*, and *East India COMPANY*.

BOMB KETCH, a small vessel built and strengthened with large beams for the use of mortars at sea.

BOMBUS, in music, an artificial motion with the hands, imitating in cadence and harmony the buzzing of bees. The word is originally Greek, and signifies the buz or noise of bees, gnats, and the like. In this sense, *bombus* made one of the species of applause used by the ancient auditories.

BOMBUS, in medicine, denotes a murmuring noise, as of wind breaking out of a narrow into a larger cavity, frequently heard in the thick intestines. The *bombus* heard in the ears, in acute diseases, is laid down by Hippocrates as a sign of death.

BOMBYLIUS, in zoology, a genus of insects belonging to the order of diptera. The rostrum is long, bristly, and bivalved; the bristles being fixed between the horizontal valves. There are five species, *viz.* 1. The major, with black wings. 2. The medius, with a yellowish body, white behind, and the wings spotted with yellow. 3. The minor, with unspotted wings. 4. The ater, has red wings, but a little blackish at the base; and green feet. The above four are natives of Europe. 5. The *capensis*, with the wings spotted with black, an ash-coloured body, and white behind. It is a native of the Cape of Good Hope.

BOMENE, a sea-port town of the United Provinces in Zealand, seated on the northern shore of the island of Schonen, opposite to the island of Goree, in E. Long. 4. 0. N. Lat. 51. 50.

BOMMEL, a town of Dutch Guelderland, situated on the northern shore of the river Waal, in E. Long. 5. 50. N. Lat. 52. 0.

BOMONICI, in Grecian antiquity, young men of Lacedæmon, who contended at the sacrifices of Diana which of them was able to endure most lashes; being scourged before the altar of this goddess.

BONA, by the Moors called *Balederna*, a sea-port town of the kingdom of Algiers in Africa, situated in E. Long. 7. 57. N. Lat. 36. 5. It was formerly rich, populous, capital of the province of the same name under the kingdom of Constantina, and is supposed by some to be the ancient Hippo, once the seat of the great St Austin, and a sea-port built by the Romans. The inhabitants, however, deny it to be the ancient Hippo, which had been so often taken, retaken, and destroyed by the wars; and pretend it to be since rebuilt at the distance of two or three miles from the ancient Hippo, out of its ruins, and called *Baleed-el-Ugued*, from a sort of trees of that name that grow in the neighbourhood. It is now a very mean place, poorly built, and thinly inhabited, with scarce any traces of its former grandeur, except the ruins of a cathedral, or as others guess, of a monastery built by St Austin about three miles distance from the city. Near these ruins is a famed spring called by his name, much resorted to by the French and Italian sailors, who come to drink of its waters, and pay their devotions to a maimed statue said also to belong to the saint, but so mutilated that no traces either of face or dress are remaining; and as each of them strives to break off some splinter, or to scrape off some part of it on account of

its supposed sanctity, it will probably be soon reduced to a state of non-existence. Bona was taken by the pirate Barbarossa, and joined to his new kingdom of Algiers; but as quickly lost, and recovered by its old masters the Tuniseens, who soon after lost it again. It is commanded by a little fort, in which is a garrison of about 300 Turks, under the command of an aga, who is also governor of the town. The road for the ships is good for nothing before the town, but a little farther west is very deep and safe. Dr Shaw tells us, that the continual discharging of ball into the road, and the neglect of cleansing the port which came to the very walls, is the cause of both becoming so unsafe and inconvenient; though this might be easily remedied so as to make the town one of the most flourishing in all Barbary.

Bona Dea, the good goddess, in Pagan mythology, one of the names of Cybele. Others say, she was a Roman lady, the wife of one Faunus, and was famous for her chastity, and that after her death she was deified. Her sacrifices were performed only by matrons; and in so secret a manner, that it was no less than death for any man to be present at the assembly (see *CYBELE*). Cicero reproaches Clodius with having entered into this temple disguised as a singing woman, and having by his presence polluted the mysteries of the good goddess. What kind of mysteries these were, we may learn from Juvenal, Sat. VI. 313. The poet then mentions the adventure of Clodius.

*Atque utinam ritas viteros, et publica saltem
His intacta malis agerentur sacra: sed omnes
Noxerunt Mauri, atque Indi, que psalteria penem
Majorem, quam sint duo Cæsaris Anticatones,
Illuc testiculi sibi conscius, unde fugit mus,
Intulerit.*

I wish—at least our sacred rites were free
From these pollutions of obscenity:
But 'tis well known what finger, how disguis'd,
A lewd audacious action enterpris'd:
Into the aue, with women mix'd, he went,
Arm'd with a huge two-handed instrument;
A grateful present to these holy choirs,
Where the mouse, conscious of his sex, retires.

DRYDEN.

Bona Fides, in law. When a person performs any action which he believes at the time to be just and lawful, he is said to have acted *bona fide*.

Bona Mobilia, the same with moveable effects or goods.

Bona Notabilia, are such goods as a person dying has in another diocese than that wherein he dies, amounting to the value of 5 l. at least; in which case the will of the deceased must be proved, or administration granted in the court of the archbishop of the province, unless by composition or custom, any dioceses are authorized to do it, when rated at a greater sum.

Bona Patria, an assize of countrymen or good neighbours, where 12 or more are chosen out of the country to pass upon an assize, being sworn judicially in the presence of the party.

Bona Peritura, perishable goods. By stat. 13. Ed. I. cap. 4. the cargo of a ship that has been cast away shall be kept for a year and a day, and restored to the rightful owner; but if the goods be such as will not endure

Bona.

Bonaire
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Bond.

so long, they are *bona peritura*, which the sheriff is allowed to sell, and to account in money for the value.

Bona Vacantia, goods; such as royal-fish, shipwrecks, treasure-trove, waifs, and estrays, in which no one can claim a property. These goods by the law of nature, and by the imperial law, belonged to the first occupant or finder; but in the modern constitutions of European governments, they are annexed to the supreme power by the positive laws of the state.

BONAIRE, an island of South America, near the north coast of Terra Firma. It belongs to the Dutch; and abounds in kabritoes and salt. W. Long. 66. 18. N. Lat. 20. 16.

BONAI, very high mountains of Italy, in the duchy of Savoy, not far from Lafforeburg: in some seasons they cannot be ascended without great danger.

BONARELLI (Gui Ubaldo), an Italian count. He was intrusted with several important negotiations, and was esteemed an able politician and learned philosopher. He was the author of a fine Italian pastoral, intitled, *Filli di Sciro*. He died at Fano, in 1608, aged 45.

BONAVENTURA (the bay of), in America, on the coast next the South Sea, in the Popayan. It has a port and harbour for ships; but the air is very unwholesome. W. Long. 75. 18. N. Lat. 3. 20.

BONAVENTURE, a celebrated cardinal, called, from his works, the *seraphic doctor*. He was born at Bagnarea, a small town of Tuscany, in 1221; and his original name was *John Fidauze*. He took the habit of a monk of the order of St Francis in 1243, became doctor of Paris in 1255, and the next year general of his order. After the death of Clement IV. the cardinals disagreeing about the election of a new pope, engaged themselves by a solemn promise to elect him who should be named by Bonaventure, even though it should be himself; but he chose Theobald archdeacon of Liege, who was then in the Holy Land, and took the name of *Gregory X*. This pope, in return, in 1272, made him cardinal and bishop of Alba, and ordered him to assist at the second general council of Lyons, where he died in 1274. His works were printed at Rome in 8 vols folio.

BONAVISTA, an island in the Atlantic ocean, the most easterly and first discovered of the Cape de Verd islands. It is 20 miles long, and 13 broad; has plenty of goats and cotton, and some indigo. The inhabitants are remarkable for slothfulness; they have a town and two roads where ships come to an anchor. W. Long. 23. 6. N. Lat. 16. 5.

BOND (John), a commentator on Horace and Persius, was born in Somersetshire in the year 1550, and educated at Winchester school. In 1569 he was entered a student of the university of Oxford, probably in the New college, of which he became either one of the clerks or one of the chaplains. He took his bachelor of arts degree in 1573, and that of master in 1579; soon after which he was appointed by his college, master of the free school in Taunton in Somersetshire. In this employment he continued many years with great reputation; but being at length weary of his laborious employment, he commenced physician, and we are told became eminent in that capacity. He died in the year 1612, possessed of several lands and

tenements in his neighbourhood; but whether acquired by the practice of physic, does not appear. He wrote, 1. *Commentarii in poemata Q. Horatii*, 8vo. 2. *Commentarii in sex satyras Persii*, Lond. 1614, 8vo.

BOND, in law, is a deed whereby the obligor obliges himself, his heirs, executors, and administrators, to pay a certain sum of money to another at a day appointed. If this be all, the bond is called a simple one, *simplex obligatio*. But there is generally a condition added, that if the obligor does some particular act, the obligation shall be void, or else shall remain in full force: as payment of rent; performance of covenants in a deed; or repayment of a principal sum of money borrowed of the obligee, with interest; which principal sum is usually one half of the penal sum specified in the bond. In case this condition is not performed, the bond becomes forfeited, or absolute at law, and charges the obligor while living; and after his death the obligation descends upon his heir, who (on defect of personal assets) is bound to discharge it, provided he has real assets by descent as a recompense.

If the condition of a bond be impossible at the time of making it, or be to do a thing contrary to some rule of law that is merely positive, or be uncertain, or insensible, the condition alone is void, and the bond shall stand single and unconditional: for it is the folly of the obligor to enter into such an obligation from which he can never be released. If it be to do a thing that is *malum in se*, the obligation itself is void: for the whole is an unlawful contract, and the obligee shall take no advantage from such a transaction. And if the condition be possible at the time of making it, and afterwards becomes impossible by the act of God, the act of law, or the act of the obligee himself, there the penalty of the obligation is saved: for no prudence or foresight of the obligor could guard against such a contingency. On the forfeiture of a bond, or its becoming single, the whole penalty was recoverable at law: but here the courts of equity interposed, and would not permit a man to take more than in conscience he ought, *viz.* his principal, interest, and expences, in case the forfeiture accrued by non-payment of money borrowed; the damages sustained upon non-performance of covenants; and the like. And the statute 4 and 5 Ann. c. 16. hath also enacted, in the same spirit of equity, that in case of a bond, conditioned for the payment of money, the payment or tender of the principal sum due, with interest and costs, even though the bond be forfeited and a suit commenced thereon, shall be a full satisfaction and discharge.

BOND, in masonry and brick-laying, is when bricks or stones are as it were knit and interwoven; and when they say, make *good bond*, they mean that the joints are not made over, or upon other joints; but reach at least six inches, both within the wall and on the surface, as the art of building requires.

BONDAGE, properly signifies the same with slavery, but in old law books is used for villenage (see *VILLENAGE*). Tenants in bondage paid kenots, and did fealty; they were not to fell trees in their own garden, without licence of the lord. The widow of a tenant in bondage held her husband's estate *quum dia vixerit sine marito*, "as long as she lived single."

BONDAGE by the Forelock, or *Bondagium per anteriores crines capiti*, was when a freeman renounced his liberty,

Bond,
Bondage.

Bondman
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Bones.

liberty, and became slave to some great man: which was done by the ceremony of cutting off a lock of hair from the forehead, and delivering it to his lord; denoting that he was to be maintained by him for the future. Such a bondman, if he reclaimed his liberty, or were fugitive from his master, might be drawn again to his servitude by the nose; whence the origin of the popular menace to pull a man by the nose.

BONDMAN, in the English law, is used for a villain, or tenant in villenage*.—The Romans had two kinds of bond men; one called *servi*, who were those either bought for money, taken in war, left by succession, or purchased by some other lawful acquisition; or else born of their *bondwomen*, and called *vernae*. We may add a third kind of bondmen mentioned by Justinian, called *adscriptii glæbe*, or *agricensiti*; who were not bound to the person, but to the ground or place, and followed by him who had the land. These in our law are called *villains regardants*, as belonging to the manor or place.

* See Villain and Villenage.

BONE-ACE, a game at cards played thus: The dealer deals out two cards to the first hand, and turns up the third, and so on through all the players, who may be seven, eight, or as many as the cards will permit: he that has the highest card turned up to him carries the bone; that is, one half of the stake; the other half remaining to be played for. Again, if there be three kings, three queens, three tens, &c. turned up, the eldest hand wins the bone. But it is to be observed, that the ace of diamonds is bone-ace, and wins all other cards whatever. Thus much for the bone: and as for the other half of the stake, the nearest to 31 wins it; and he that turns up or draws 31 wins it immediately.

BONES, their origin, formation, composition, texture, variety, offices, &c. See ANATOMY, Part I.

From a discovery made by Mr Scheele, of a method of producing the phosphoric acid in large quantity from bones, it has been asserted, that this acid is naturally contained in the bones, united with a calcareous earth. From many experiments, however, it appears that no acid is naturally contained in calcined bones; nor can the acid of phosphorus be extracted from them but by means of the vitriolic acid: whence it seems probable, that the phosphoric acid in this case is produced by the combination of a certain quantity of earth with the vitriolic acid.—With regard to the earth of bones itself, it appears to be very different from the calcareous kind: it is much more soluble in the vitriolic acid, and may be precipitated from that or any other by means of the caustic volatile alkali, which cannot be done with the calcareous earth.

Bones Whitened for Skeletons. Two processes are described in the *Acta Hoffniensia* for whitening bones. Professor Rau had a method of giving them a great degree of whiteness. By bare exposure to the air, sun, and rain, for a length of time, they become notably white; but the whitest bones, kept in rooms tainted with smoke or fuliginous vapours, grow in a little time yellowish, brownish, and unsightly. It is customary for the purification of bones, to boil them in alkaline liquors; which, by dissolving and extracting the superfluous fat, improve their whiteness.

Bones Hardened and Softened. Boerhaave observes,

that alkaline salts render bones harder and firmer, and that acids make them softer and more flexible. These effects succeed in certain circumstances, but not universally; for bones may be hardened and softened both by acids and by alkalis, according to the quantity of saline matter employed, and the manner in which it is applied. Newmann made bones harder and more compact by treating them with the strongest of the mineral acids; though, when the acid is in sufficient proportion, it destroys or dissolves them. In Papin's digester (a strong close vessel, in which the steam of boiling liquors is confined, and the fluid by this means made to undergo a greater degree of heat than it could otherwise sustain), the hardest bones are reduced in a short time, by the action of simple water, into a soft pap or jelly; and alkaline liquors produce this effect still sooner.

In the history of the French Academy for the years 1742 and 1743, there is an account that Mr Geoffroy produced before the academy a small ivory spoon, which, by long lying in mustard, was become flexible and transparent like horn; that Mr Fouchy saw an ivory spoon, which, by lying for a considerable time in milk, was become supple like leather; and that Mr Hunauld produced bones, which had been softened by steeping in vinegar, afterwards hardened to their natural state by steeping in water, and softened a second time by steeping in vinegar. Dr Lewis observed that the nitrous and marine acids diluted, and the acetous acid, make bones flexible and tough like leather; but that the diluted vitriolic acid, though it renders them notably soft, makes them at the same time brittle. It seems as if a great part of the earthy matter, which is the basis of the bone, and on which its hardness depends, was dissolved and extracted by the three first; whilst the latter, incapable of dissolving this kind of earth into a liquid form, only corrodes it into a kind of selenitic concrete, which remains intermixed in minute particles among the gelatinous matter. Dr Lewis did not find that the softened bones, whatever acid they were softened by, recovered their hardness by steeping in water. Slips of softened ivory, after lying above a month in water, continued nearly as soft as when they were taken out of the acid liquor.

There is a singular induration of bones produced by fire; the effects of which agent are here remarkably different according to its degree and the circumstances of its application. Bones exposed to a moderate fire, either in open vessels, or in contact with the burning fuel, become opaque, white, and friable throughout; and an increase of fire, after they have once suffered this change, renders them only more and more friable. But if they are urged at first with a strong fire, such as that in which copper or iron melts, they become hard, semitransparent, and sonorous, like the hard mineral stones. This curious experiment deserves to be further prosecuted.

Colouring of BONES. Bones may be stained of a variety of colours by the common dyeing infusions and decoctions of animal and vegetable substances. They are stained also, without heat, by metallic solutions; and by means of these may be spotted or variegated at pleasure. Thus, solution of silver in aquafortis gives a brown or black according to its quantity; solution of gold in aqua regia, or in spirit of salt, a fine purple;

Bones. ple; solution of copper in the acetic acid, a fine green; and solutions of the same metal in volatile alkalis, a blue, which at first is deep and beautiful, but changes, upon exposure to the air, into a green or bluish-green. If the bone is but touched with the two first solutions, and exposed to the air, it does not fail to acquire the colour in a few hours: In the two latter, it requires to be steeped for a day or longer in order to its imbibing the colour. In these and other cases where immersion for some time is necessary, the bone may be variegated, by covering such parts as are to remain white, with wax or any other matter that the liquor will not dissolve or penetrate.

Occonomical Uses of BONES. Bones are a very useful article, not only for making different kinds of toys, but likewise in several of the chemical arts; as, For making cast iron malleable, for absorbing the sulphur of sulphureous ores; for forming tests and cupels, or vessels for refining gold and silver with lead (burnt bones composing a mass of a porous texture, which absorbs the vitrified lead and other matters, while the unvitrescible gold and silver remain entire behind); for the preparation of milky glasses and porcelains; for the rectification of volatile salts and empyreumatic oils; and for making glue. The bones of different animals are not equally fit for these uses: even the glue, or gelatinous part of the bones of one animal is notably different both in quantity and cohesiveness from that of another.

The human skull-bone, or cranium, the natural defence of the seat of sensation and perception in the noblest animal, has been recommended medicinally as a cure for epilepsies, deliria, and all disorders of the senses, from the same philosophy which ascribed anti-athmatic virtues to the lungs of the long-winded fox; and expected, because fowls are said to digest even small stones, that the skin of the gizzard, dried and powdered, would produce a similar effect in the human stomach. To such lengths of extravagance have the sons of phycic been carried by the blind superstition of former ages!

BONES in the Funeral Solemnities of the Ancients.—Divers usages and ceremonies relating to the bones of the dead have obtained in different ages; as gathering them from the funeral pile, washing, anointing, and depositing them in urns, and thence in tombs; translating them, which was not to be done without the authority of the pontiffs; not to say worshipping of them, still practised to the bones of the saints in the Romish church. Among the ancients, the bones of travellers and soldiers dying in foreign countries were brought home to be buried; till, by an express S. C. made during the Italic war, it was forbid, and the soldiers bodies ordered to be buried where they died.

The Romans had a peculiar deity under the denomination of *Osifago*, to whom the care of the induration and knitting of the human bones was committed; and who, on that account, was the object of the adoration of all breeding women.

Fossil or Petrified BONES, are those found in the earth, frequently at great depths, in all the strata, even in the bodies of stones and rocks; some of them of a huge size, usually supposed to be the bones of giants, but more truly of elephants or hippopotami. It is supposed they were repositied in those strata when

all things were in a state of solution; and that they incorporated and petrified with the bodies where they happened to be lodged.

In the museum of the Russian Academy of Sciences, there is a vast collection of fossil bones, teeth, and horns, of the elephant, rhinoceros, and buffalo, which have been found in different parts of this empire, but more particularly in the southern regions of Siberia. Naturalists have been puzzled to account for so great a variety being found in a country where the animals of which they formerly made a part were never known to exist. It was the opinion of Peter, who, though he deserves to be esteemed a great monarch, was certainly no great naturalist, that the teeth found near Voronetz were the remains of elephants belonging to the army of Alexander the great, who, according to some historians, crossed the Don, and advanced as far as Kostinka. The celebrated Bayer, whose authority carries greater weight in the literary world, conjectures, that the bones and teeth found in Siberia belonged to elephants common in that country during the wars which the Mongul monarchs carried on with the Persians and Indians; and this plausible supposition seems in some measure to be corroborated by the discovery of the entire skeleton of an elephant in one of the Siberian tombs. But this opinion, as Mr Pal-las† very justly observes, is sufficiently refuted by the consideration, that the elephants employed in the armies of all India could never have afforded the vast quantities of teeth which have been discovered, not to mention those which it is justly to be presumed may still be buried. They have been already dug up in such plenty as to make a considerable article of trade. The same ingenious naturalist has given an ample description of these fossil bones, and has endeavoured to account for their origin. Upon examining those in the museum, he was led to conclude, that as these bones are equally dispersed in all the northern regions of Europe, the climate probably was in the earlier ages less severe than at present, and then possibly sufficiently warm to be the native countries of the elephant, rhinoceros, and other quadrupeds, now found only in the southern climates. But when he visited, during his travels, the spots where the fossil bodies were dug up, and could form a judgment from his own observations, and not from the accounts of others, he renounced his former hypothesis; and, in conformity with the opinions of many modern philosophers, asserted, that they must have been brought by the waters; and that nothing but a sudden and general inundation, such as the deluge, could have transported them from their native countries in the south, to the regions of the north. In proof of this assertion, he adds, that the bones are generally found separate, as if they had been scattered by the waves, covered with a stratum of mud evidently formed by the waters, and commonly intermixed with the remains of marine plants, and similar substances; instances of which he himself observed during his progress through Siberia, and which sufficiently prove that these regions of Asia were once overwhelmed with the sea.

We often find in the earth petrified bones, the greatest part of their gelatinous matter being extracted by the moisture, and a stony one introduced in its room. In some parts of France petrified bones are met with

Bones.

† *Nov. Cent. De Ossibus Sibericis fossilibus*, p. 440.

Bones
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Bonfadio.

which have an impregnation of copper. Hence, on being calcined in an open fire, a volatile salt is produced from the remains of their gelatinous principle, and the bone is tinged throughout of a fine greenish-blue colour, copper always striking a blue with volatile alkalis. The French turcoise stones are no other than these bones prepared by calcination: they are very durable, and bear to be worked and polished nearly in the same manner as glass; without the imperfection, inseparable from glassy bodies, of being brittle. See the article **TURCOISE**.

There have been lately discovered several enormous skeletons, five or six feet beneath the surface, on the banks of the Ohio, not far from the river Miami in America, 700 miles from the sea-coast. Some of the tusks are near seven feet long; one foot nine inches at the base, and one foot near the point; the cavity at the root or base, 19 inches deep. Besides their size, there are several other differences which will not allow the supposition of their having been elephants: the tusks of the true elephant have sometimes a very slight lateral bend; these have a larger twist, or spiral curve, towards the smaller end; but the great and specific difference consists in the shape of the grinding teeth; which, in these newly found, are fashioned like the teeth of a carnivorous animal; not flat and ribbed transversely on their surface like those of the modern elephant, but furnished with a double row of high and conic processes, as if intended to masticate, not to grind, their food. A third difference is in the thigh-bone, which is of great disproportionable thickness to that of the elephant; and has also some other anatomical variations. These fossil bones have been also found in Peru and the Brazils; and when cut and polished by the workers in ivory, appear in every respect similar. It is the opinion of Dr Hunter, that they must have belonged to a larger animal than the elephant; and differing from it, in being carnivorous. But as yet this formidable creature has evaded our search; and if, indeed, such an animal exists, it is happy for man that it keeps at a distance; since what ravage might not be expected from a creature, endowed with more than the strength of the elephant, and all the rapacity of the tiger? See **MAMMOTH**.

BONE-Spavin. See **FARRIERY**, § xxvi.

BON-ESPERANCE, the same with the Cape of Good Hope. See **GOOD HOPE**.

BONET (Theophilus), an eminent physician born at Geneva, March 15th 1620. He took his degree in physic in 1643, after he had gone through most of the famous universities, and was for some time physician to the duke of Longueville. Mean while his skill in his profession got him considerable practice; but being seized with deafness, it obliged him to retire from business, which gave him leisure to collect all the observations he had made during a practice of 40 years. He wrote, 1. *Polyalthes, sive Thesaurus Medico-practico*, 3 vols folio. 2. *Labyrinthe Medici extricati*. 3. *Medicini Septentrionalis Collatitia*; and other works.

BONFADIO (James), one of the most polite writers of the 16th century, was born in Italy, near the lake Garda. He was secretary to the cardinal de Bari, and after his death to the cardinal Ghinucci. He afterwards read public lectures on Aristotle's politics, and on rhetoric; and was made historiographer to the re-

public of Genoa. He applied himself to compose the annals of that state, in which he wrote too satirically on some families. This creating him enemies who were resolved to ruin him, they accused him of the unnatural sin; and, as witnesses were found to convict him of it, he was condemned to be burnt. Some say that this sentence was executed; and others, that his punishment was changed, and that he was beheaded. This was in the year 1560. Upon the day of his execution he wrote a note to John Baptist Grimaldi, to testify his gratitude to the persons who had endeavoured to serve him; and promised to inform them how he found himself in the other world, if it could be done without frightening them. But it does not appear that he performed his promise, any more than the many who had promised the like before him.—His history of Genoa is esteemed. We have also some letters, some orations, and Latin and Italian poems, of his, which were printed at Bologna in the year 1744, octavo.

BONFINIUS (Anthony), flourished in the 15th century. He was a native of Ascoli in Italy, and attached himself to the study of the belles lettres. Matthias Cowin king of Hungary, having heard of his learning, sent for him, retained him, and settled upon him a pension. He wrote, 1. A history of Ascoli; 2. A treatise of virginity and conjugal chastity; 3. An history of Hungary; and other works.

BONFRERIUS (James), a learned Jesuit, born at Dinant, in 1573. He wrote a commentary on the Pentateuch, and learned notes on the Onomasticon of the places and towns mentioned in the Scripture. He died at Tournay in 1643, aged 70.

BONGARS (James), in Latin *Bongarsias*, a native of Orleans, was one of the most learned men of the 16th century. He applied himself to the study of critical learning, and was for near 30 years employed in the most important negotiations of Henry IV. whose resident he was several times at the courts of the princes of Germany, and at length his ambassador. He was of the Protestant religion; and, when very young, had the courage to write and post up in Rome a very spirited answer to a bull of Pope Sixtus V. The public is obliged to him for the edition of several authors who have written the History of the expeditions to the Holy Land; he also published, among other works, an edition of Justin, in which he restored several passages that had been corrupted, by consulting valuable manuscripts, and added notes which explained many difficulties. He died in 1612, aged 58.

BONIFACE, the name of several eminent men, particularly of nine popes. To the first of these, who was chosen pope in 418, St Augustine dedicated his four books against the two epistles of the Pelagians. The third of that name prevailed upon the emperor Phocas to consent that the title of *Universal Bishop* should be conferred on no other than the bishop of Rome. Boniface IV. obtained from the same emperor, the pantheon, a famous heathen temple built by Agrippa, and converted it into a church which is now called "Our Lady della Rotunda." Several works are also attributed to him, but they appear to be spurious. Boniface VII. hath the title of *antipope*; because in 974 he caused Benedict VI. to be strangled in prison, and after the election of Benedict VII. removed the treasures of the church to Constantinople. He, however,

Bonfini
||
Boniface

Boniface
||
Bonner.

however, at length returned after the death of Benedict, and caused his successor John XIV. to be murdered; but died himself soon after, and was dragged naked by the feet about the streets. Boniface VIII. canonized St Lewis in 1297, and in 1300 appointed the jubilee to be solemnized every 100 years after.

BONIFACE is also the name of a faint, who before he took that name was called *Winifred*, and was born at Kirton in Devonshire. He chose to go and preach the gospel among the barbarous nations; and though created archbishop of Mentz, soon after resigned his office, to go and preach in East Friesland, where he was killed by the Pagans on the 5th of June 754. His letters were published by Senarius.

BONIFACIO, a town in the island of Corsica, beyond the mountains, near the strait called *Bocca di Bonifacio*. It is well fortified, and pretty populous. E. Long. 9. 20. N. Lat. 41. 25.

BONIS NON AMOVENDIS, in law, is a writ directed to the sheriffs of London, &c. charging them, that a person against whom judgment is obtained, and prosecuting a writ of error, be not suffered to remove his goods until the error is determined.

BONITO, in ornithology. See SCOMBER.

BONN, an ancient and strong city of Germany, in the Electorate of Cologne, and the usual residence of the elector. It is of great consequence in the time of war; because it is situated on the Rhine, in a place where it can stop every thing that comes down that river. It is well fortified by the elector, who has a fine palace and beautiful gardens in the city. E. Long. 7. 5. N. Lat. 50. 44.

BONNA, (anc. geog.), one of the 50 citadels built by Drusus on the Rhine; supposed by some to be the same with the *Ara Ubiorum*: now *Bonn*.

BONNEFONS (John), a Latin poet born at Clermont in Auvergne, and lieutenant-general of Bar sur Seine, acquired great reputation by his *Puncharis*, and other poems. He died under the reign of Lewis XIII. He ought not to be confounded with John Bonnefons his son, another Latin poet.

BONNER (Edmund), bishop of London, of infamous memory, was born at Hanley in Worcestershire, and generally supposed to be the natural son of one Savage a priest; and that priest was the natural son of Sir John Savage of Clifton in the same county. Strype, however, says, he was positively assured that Bonner was the legitimate offspring of a poor man, who lived in a cottage known to this day by the name of *Bonner's place*. About the year 1512, he entered student of Broadgate Hall in Oxford. In 1519, he was admitted bachelor of the canon and civil law. About the same time he took orders, and obtained some preferment in the diocese of Worcester. In 1525, he was created doctor of canon law. Having now acquired the reputation of a shrewd politician and civilian, he was soon distinguished by cardinal Wolsey, who made him his commissary for the faculties, and heaped upon him a variety of church-preferments. He possessed at the same time the livings of Blaydon and Cherry-Burton in Yorkshire, Ripple in Worcestershire, cast Derham in Norfolk, prebend of St Paul's, and the arch-deaconry of Leicester. Bonner was with the cardinal at Caw-wood, when he was arrested for high treason. After the death of that minister, he soon found means

to insinuate himself into the favour of Henry VIII. who made him one of his chaplains, and employed him in several embassies abroad, particularly to the pope. In 1532, he was sent to Rome, with Sir Edward Kame, to answer for the king, whom his Holiness had cited to appear in person or by proxy. In 1533, he was again dispatched to pope Clement VII. at Marseilles, upon the excommunication of king Henry on account of his divorce. On this occasion he threatened the pope with so much resolution, that his Holiness talked of burning him alive, or throwing him into a caldron of melted lead; upon which Bonner thought fit to decamp. His infallibility did not foresee that the man whom he thus threatened was predestined to burn heretics in England. In 1538, being then ambassador at the court of France, he was nominated bishop of Hereford; but, before consecration, was translated to the see of London, and enthroned in April 1540.—Henry VIII. died in 1547. at which time Bonner was ambassador with the emperor Charles V. During this reign he was constantly zealous in his opposition to the pope; and, in compliance with the king, favoured the reformation. Henry VIII. was not to be trifled with; but, on the accession of young Edward, Bonner refused the oath of supremacy, and was committed to the fleet; however, he soon thought fit to promise obedience to the laws, and was accordingly released. He continued to comply with reformation; but with such manifest neglect and reluctance, that he was twice reprimanded by the privy council, and in 1549, after a long trial, was committed to the Marshalsea, and deprived of his bishopric. The succeeding reign gave him ample opportunity of revenge. Mary was scarce seated on the throne before Bonner was restored to his bishopric; and soon after appointed vicegerent and president of the convocation. From this time he became the chief instrument of papal cruelty: he is said to have condemned no less than 200 Protestants to the flames in the space of three years. Nor was this monster of a priest more remarkable for his cruelty than his impudence. When Queen Elizabeth came to the crown, he had the instance to meet her, with the rest of the bishops, at Highgate. In the second year of her reign, refusing to take the oath of allegiance and supremacy, he was again deprived, and committed to the Marshalsea; where he died in 1569, after ten years confinement. There cannot be a stronger instance of the comparative lenity of the Protestant church, than its suffering this miserable to die a natural death. Several pieces were published under his name.

BONNESTABLE, a town of Le Maine in France, which carries on a great trade in corn. E. Long. 0. 30. N. Lat. 48. 11.

BONNET, in a general sense, denotes a cover for the head, in common use before the introduction of hats. Bonnets are still used in many parts of Scotland.

BONNET, in fortification, a small work consisting of two faces, having only a parapet with two rows of palisadoes, of about 10 or 12 feet distance; it is generally raised before the salient angle of the counterescarp, and has a communication with the covered way, by a trench cut through the glacis, and palisadoes on each side.

Bonnet à Pretre, or *Priest's Bonnet*, in fortification, is an out-work, having at the head three salient angles,

Bonner
||
Bonnet.

Bonnet
||
Bononcini

angles, and two inwards. It differs from the double tenail, only in this, that its sides, instead of being parallel, are like the *queue d'aronde*, or swallow's tail, that is, narrowing, or drawing close at the gorge, and opening at the head.

BONNET, in the sea-language, denotes an addition to a sail; thus we say, lace on the bonnet, or shake off the bonnet.

BONNEVAL (Claudius Alexander count de), known in the latter part of his life by the name of *Osman Bashaw*, descended from a family related to the blood-royal of France, entered himself at the age of 16 in the service of that crown, and married the daughter of marshal de Biron. He made the campaign in Flanders in 1690; but soon after left the French army, and entered into the imperial service under prince Eugene, who honoured him with an intimate friendship. The intrigues of the marquis de Prié, his inveterate enemy, ruined his credit, however, at the court of Vienna, and caused him to be banished the empire. He then offered his service to the republic of Venice and to Russia; which being declined, his next tender was to the Grand Signor, who gladly received him: it was stipulated, that he should have a body of 30,000 men at his disposal; that a government should be conferred on him, with the rank of Bashaw of three tails, and a salary of 10,000 aspers a-day; and that, in case of a war, he should be commander in chief. The first expedition he engaged in after his arrival at Constantinople, was to quell an insurrection in Arabia Petraea, which he happily effected; and at his return had large offers made him by Kouli Khan, but he did not choose to accept them. Some time after, he commanded the Turkish army against the emperor, over whose forces he gained a victory on the banks of the Danube. But success does not always protect a person against disgrace; for Bonneval, notwithstanding his service, was first imprisoned, and then banished to the island of Chio. The sultan, however, continued his friend; and the evening before his departure made him Bashaw-general of the Archipelago, which, with his former appointment of beglerbeg of Arabia, rendered him one of the most powerful persons in the Ottoman empire. In this island he found a retirement quite agreeable to his wishes; but did not long enjoy it, being sent for back, and made *topigi* or master of the ordnance, a post of great honour and profit. He died in this employment, aged 75, in 1747; and wrote the memoirs of his own life.

BONNEVAL, a town of France, in Beauce, with a fine Benedictine abbey. It is seated on the river Loire, in E. Long. 1. 30. N. Lat. 48. 10.

BONNEVILLE, a town of Savoy, situated on the north side of the river Arve, and subject to the king of Sardinia. E. Long 6. 10. N. Lat. 46. 18.

BONNY, among miners, a bed of ore, differing only from a squat as being round, whereas the squat is flat. See SQUAT.

BONNY, a town of France, in the Gatinois, seated at the confluence of a river of the same name with the Loire. E. Long. 2. 54. N. Lat. 47. 36.

BONONCINI (Giovanni), an eminent composer of music, for some time divided the opinions of the *conoscanti* of this kingdom with respect to the comparative merits of himself and the great Handel, which gave

occasion for the following epigram, said to have been written by Dr Swift:

Bononia
||
Bontia.

Some say that Signior Bononcini
Compar'd to Handel's a meer ninny;
Others aver, that to him Handel
Is scarcely fit to hold the candle.
Strange! that such high disputes should be
'Twixt *Tweedle Dum* and *Tweedle Dee*.

There is one opera (Italian) published with his name prefixed to it, intitled *Pharnaces*; but whether the words, or only the music, are his composition, is uncertain; and indeed, in the general, the language of those pieces written merely for musical representation, is so extremely paltry, and so opposite to every thing that can be deemed poetry, that the greatest compliment that can be paid to the authors of them is, to suffer their names to lie buried in the shades of obscurity.

BONONIA, (anc. geog.), a town of Gallia Belgica, supposed to be the *Portus Iccius* of Cæsar, and the *Gessoriacum* of Mela, and to have had three different names, (Cluverius). Pentinger's map expressly calls Gessoriacum *Bononia*. Now *Boulogne*. E. Long. 1. 30. Lat. 50. 40.

BONONIA, a town of Italy, in the Gallia Cispadana; a name probably given by the Gauls, there being a *Bononia* in Gallia Belgica. Its ancient name, when in the hands of the Tuscan, who were expelled by the Gauls, was *Falsina*. In the 563d year of the city the Romans led a colony thither; which, about the beginning of the Asiatic war, was increased by Augustus, and is the *Colonia Bononiensis* of Tacitus. Now *Bologna*; which see.

BONONIA, a town of Pannonia Inferior, between Murfa to the north-west, and Taurinum to the east.—Another Bononia, a town of Mœsia Superior, on the Danube; now *Bodon* in Bulgaria. See BODON.

BONONIAN. See BOLONIAN.

BONOSIANI, or BONOSIACI, an ancient branch of *Adoptiani*, in the fourth century, denominated from their leader Bonosus, a bishop of Macedonia. The Bonosiani were prior to the Feliciani, and even to Nestorius; whence some rather consider them as a branch of Arians. They allowed Christ to be no otherwise the Son of God than by adoption.

BONPOURNICKEL, a coarse kind of bread used in Westphalia. See BREAD.

BONS-HOMMES, or *Bon-hommes*, a sort of hermits of St Augustin, founded by F. de Paula. They were brought over into England in 1283, by Edmund earl of Cornwall, and settled at Ashover in Bucks, besides which they had only one house more at Edingdon in Wiltshire. They followed the rule of St Austin, and wore a blue habit.—The name is said to have arisen from Lewis XI. of France, who used to call F. de Paula, prior of the order, *Le bon homme*. Till then they had been called the *Minimi*, or the order of Grammont. See ALBIGENSES.

BONTIA, WILD OLIVE OF BARBADOES: A genus of the angiosperma order, belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Personatae*. The calyx is quinquepartite; the corolla is bilabiate, the inferior lip tripartite and revolute; the plum is ovate and monospermous, with the apex turned to one side.

Bonvincino Of this genus there are two species, the daphnoides and the germinans. The first hath a woody stem and branches; rising to the height of ten feet, with narrow, smooth, thickish leaves, crenated at the edges; and flowers from the sides of the branches, succeeded by large oval fruit that sometimes ripen in England. This species is greatly cultivated in the gardens at Barbadoes for making of hedges; for which purpose it is exceedingly proper, it being an evergreen of very quick growth. It is said, that from cuttings planted there in the rainy season, when they have immediately taken root, there has been a complete hedge, four or five feet high, in 18 months. The second sort has been reckoned by many botanic writers to be a species of the mangrove tree, as it grows in swamps, which they also do. It rises 14 or 16 feet high, sending out several small branches which incline downward toward the water, and as soon as they reach that, put out roots into the mud, whereby they propagate very fast; these branches are garnished with leaves placed opposite; they are of a thick substance like those of the bay tree about two inches long and one broad, very smooth on their surface: the flowers are white, and come out in spikes from the upper branches. This hath been also by some supposed to be the plant which produces the *Malacca-BEAN* formerly kept in the shops. These plants are easily propagated, either by seeds or cuttings, sown or planted on a hot-bed; but they must be kept constantly in the stove.

BONVINCINO, called **Le MORETTO**, (Alessandro), history and portrait painter, was born at Rovate in 1514. He was first the disciple of Titian, under whose direction he studied diligently for some years. But, having accidentally seen the designs of Raphael, he felt an elevation of mind that he never had before experienced. He therefore gave himself up entirely to study those master-pieces of art and genius; and his observations were guided with such judgment, as well as attention, that his improvement was truly surprising, and he became an exceeding good painter. His works were eagerly bought up, as being extremely admired for the tenderness of the penciling; for the correctness, and spirited expression of the figures; for the neatness of the finishing; and for the rich variety of his draperies, which usually consisted of velvets, damasks, or satins, all copied after nature, and being wonderfully imitated. He was also equally excellent in portrait, and by many was placed in competition even with Titian. He died in 1564.

BONUS HENRICUS. See **CHENOPEDIUM**.

BONZES, Indian priests. The Tonquinese have a pagod or temple in each town; and each pagod has at least two bonzes belonging to it: some have 30 or 40. These bonzes, in order to distinguish themselves from the laity, wear a chaplet about their necks consisting of 100 beads; and carry a staff, at the end of which is a wooden bird. They live upon the alms of the people; yet are very charitably disposed, and maintain several orphans and widows out of their own collections.

The bonzes of China are the priests of the Fohists, or sect of Fohi. It is one of their established tenets, that there are rewards allotted for the righteous, and punishments for the wicked, in the next world; and that there are various mansions in which the souls of

men will reside, according to their different degrees of merit. But, in order to deserve the favour of heaven, the bonzes instruct the people to treat the priests with respect and reverence, to support and maintain them, and to erect temples and monasteries for them. They tell them, that, unless they comply with these injunctions, they will be cruelly tormented after death, and pass through a disagreeable variety of transmigrations: in short, that they will be changed into mules, asses, rats, and mice.

The Chinese bonzes, according to F. le Comte, are no better than a gang of dissolute idle fellows. All their aim is to incite people to commiserate their abject condition: to which end they have recourse to several tricks and impostures. When the common arts of address fail them, they try what public acts of penance will do. Some of them drag heavy chains 30 feet long after them; some sit in the highway knocking their heads against flint stones; others set particular drugs on fire upon their heads: all these are several ways of drawing the attention and exciting the compassion of the people, and they seldom fail of success.

The bonzes of Japan are, for the generality, gentlemen of the highest extraction; for when a gentleman of quality finds his family grow too numerous, nay, when he has only two sons, he generally makes the youngest a bonze, to prevent all domestic broils and confusions. These priests are dressed in various colours; their apartments are very commodious, and situated in the healthiest parts of the country.

F. Navarette tells us, that the bonzes are obliged to chastity; and that, on the 2d of April 1667, a petty king of Canton had condemned 11 of them to be burnt alive for incontinence. He adds, that it was reported of an empress of the last reigning family, who had a particular kindness for the bonzes, that she granted them a dispensation for the use of women during three days. The bonzes of China, according to the same author, are computed at 50,000.

BOOBY, in ornithology. See **PELICANUS**.

BOOK, the general name of almost every literary composition; but, in a more limited sense, is applied only to such compositions as are large enough to make a volume. As to the origin of books or writing, those of Moses are undoubtedly the most ancient that are extant: But Moses himself cites many books which it believed to be written before his time.

Of profane books, the oldest extant are Homer's poems, which were so even in the time of Sextus Empiricus; though we find mention in Greek writers of seventy others prior to Homer; as Hermes, Orpheus, Daphne, Horus, Linus, Musæus, Palamedes, Zoroaster, &c.: but of the greater part of these there is not the least fragment remaining; and of others, the pieces which go under their names are generally held, by the learned, to be supposititious.

Several sorts of materials were used formerly in making books: Plates of lead and copper, the barks of trees, bricks, stone, and wood, were the first materials employed to engrave such things upon as men were willing to have transmitted to posterity. Josephus speaks of two columns, the one of stone, the other of brick, on which the children of Seth wrote their inventions and astronomical discoveries: Porphyry makes

Book.

mention of some pillars, preserved in Crete, on which the ceremonies preserved by the Corybantes in their sacrifices were recorded. Hesiod's works were originally written upon tables of lead, and deposited in the temple of the Muses, in Bœotia: The ten commandments, delivered to Moses, were written upon stone; and Solon's laws upon wooden planks. Tables of wood, box, and ivory, were common among the ancients: When of wood, they were frequently covered with wax, that people might write upon them with more ease, or blot out what they had written. The leaves of the palm-tree were afterwards used instead of wooden planks, and the finest and thinnest part of the bark of such trees, as the lime, the ash, the maple, and the elm; from hence comes the word *liber*, which signifies the inner bark of the trees: and as these barks are rolled up, in order to be removed with greater ease, these rolls were called *volumen*, a volume; a name afterwards given to the like rolls of paper or parchment.

Thus we find books were first written on stones, witness the Decalogue given to Moses: Then on the parts of plants; as leaves, chiefly of the palm-tree; the rind and barks, especially of the tilia, or phillyrea, and the Egyptian papyrus. By degrees wax, then leather, were introduced, especially the skins of goats and sheep, of which at length parchment was prepared: then lead came into use; also linen, silk, horn, and lastly paper itself.

The first books were in the form of blocks and tables; but as flexible matter came to be wrote on, they found it more convenient to make their books in the form of rolls: These were composed of several sheets fastened to each other, and rolled upon a stick, or *umbilicus*; the whole making a kind of column, or cylinder, which was to be managed by the umbilicus as a handle, it being reputed a crime to take hold of the roll itself: The outside of the volume was called *frons*; the ends of the umbilicus, *cornua*, which were usually carved, and adorned with silver, ivory, or even gold and precious stones: The title *συλλαβος*, was struck on the outside; the whole volume, when extended, might make a yard and a half wide, and fifty long. The form which obtains among us is the square, composed of separate leaves; which was also known, tho' little used, by the ancients.

To the form of books belongs also the internal œconomy, as the order and arrangement of points and letters into lines and pages, with margins and other appurtenants. This has undergone many varieties. At first the letters were only divided into lines; then into separate words; which by degrees were noted with accents, and distributed, by points and stops, into periods, paragraphs, chapters, and other divisions. In some countries, as among the orientals, the lines began from the right and ran leftward; in others, as the northern and western nations, from left to right; others, as the Greeks, followed both directions, alternately going in the one, and returning in the other, called *boustrophædon*: In most countries, the lines run from one side to the other; in some, particularly the Chinese, from top to bottom.

Multitude of Books has been long complained of: the complaint is as old as Solomon, who lived three thousand years ago: they are grown too numerous not only to procure and read, but to see, to learn the

names of, or even to number. England has more to fear on this score than other countries; since, besides our own produce, we have for some years past drained our neighbours. However, as bishop Caramuel's scheme miscarried, which was to write about an hundred volumes in folio, and then prevail on the civil and military powers to oblige all their subjects to read them, we need not much regret the multitude of books.

As knowledge, however, is naturally advantageous, and as every man ought to be in the way of information, even a superfluity of books is not without its use, since hereby they are brought to obtrude themselves on us, and engage us when we had least design. This advantage, an ancient father observes, we owe to the multiplicity of books on the same subject, that one falls in the way of one man, and another best suits the level or the apprehension of another. "Every thing that is written (says he) does not come into the hands of all persons: perhaps some may meet with my books, who may hear nothing of others which have treated better of the same subject. It is of service, therefore, that the same questions be handled by several persons, and after different methods, though all on the same principles, that the explications of difficulties and arguments for the truth, may come to the knowledge of every one by one way or other." Add, that the multitude is the only security against the total loss or destruction of books: it is this that has preserved them against the injuries of time, the rage of tyrants, the zeal of profecutors, and the ravages of barbarians; and handed them down, through long intervals of darkness and ignorance, safe to our days. *Solaque non norunt hæc monumenta mori.*

Scarcity of Books. Of the scarcity and value of books during the seventh and many subsequent centuries, the following curious account is given by Mr War-ton in his history of English Poetry, Vol. I.

"Towards the close of the seventh century (says he), even in the papal library at Rome, the number of books was so inconsiderable, that pope Saint Martin requested Sanctamand bishop of Maestricht, if possible, to supply this defect from the remotest parts of Germany. In the year 855, Lupus, abbot of Ferrieres in France, sent two of his monks to Pope Benedict III. to beg a copy of *Cicero de Oratore*, and Quintilian's Institutes, and some other books: 'for (says the abbot) although we have part of these books, yet there is no whole or complete copy of them in all France.' Albert, abbot of Gemblours, who with incredible labour and immense expence had collected an hundred volumes on theological, and fifty on profane, subjects, imagined he had formed a splendid library. About the year 790, Charlemagne granted an unlimited right of hunting to the abbot and monks of Sithiu, for making their gloves and girdles of the skins of the deer they killed, and covers for their books. We may imagine that these religious were more fond of hunting than reading. It is certain that they were obliged to hunt before they could read: and at least it is probable, that under these circumstances, and of such materials, they did not manufacture many volumes. At the beginning of the tenth century books were so scarce in Spain, that one and the same copy of the bible, Saint Jerom's epistles, and some volumes of ecclesiastical offices and martyrologies, often served several different

Book.

ook. monasteries. Among the constitutions given to the monks of England by archbishop Lanfranc, in the year 1072, the following injunction occurs. At the beginning of Lent, the librarian is ordered to deliver a book to each of the religious: a whole year was allowed for the perusal of this book; and at the returning Lent, those monks who had neglected to read the books they had respectively received, are commanded to prostrate themselves before the abbot, and to supplicate his indulgence. This regulation was partly occasioned by the low state of literature which Lanfranc found in the English monasteries. But at the same time it was a matter of necessity, and is in great measure to be referred to the scarcity of copies of useful and suitable authors. In an inventory of the goods of John de Pontiffara, bishop of Winchester, contained in his capital palace of Wulvesey, all the books which appear are nothing more than *Septendecem pecie librorum de diversis scientiis*. This was in the year 1294. The same prelate, in the year 1299, borrows of his cathedral convent of St Swithin at Winchester, *Bibham bene glossatam*; that is, the Bible with marginal Annotations, in two large folio volumes; but gives a bond for due return of the loan, drawn up with great solemnity. This Bible had been bequeathed to the convent the same year by Pontiffara's predecessor, bishop Nicholas de Ely; and in consideration of so important a bequest, that is *pro bona Biblia dicti episcopi bene glossata*, and one hundred marks in money, the monks founded a daily mass for the soul of the donor. When a single book was bequeathed to a friend or relation, it was seldom without many restrictions and stipulations. If any person gave a book to a religious house, he believed that so valuable a donation merited eternal salvation; and he offered it on the altar with great ceremony. The most formidable anathemas were peremptorily denounced against those who should dare to alienate a book presented to the cloister or library of a religious house. The prior and convent of Rochester declare, that they will every year pronounce the irrevocable sentence of damnation on him who shall purloin or conceal a Latin translation of Aristotle's *Physics*, or even obliterate the title. Sometimes a book was given to a monastery on condition that the donor should have the use of it during his life; and sometimes to a private person, with the reservation that he who receives it should pray for the soul of his benefactor. The gift of a book to Lincoln cathedral, by bishop Repyndon, in the year 1422, occurs in this form, and under these curious circumstances. The memorial is written in Latin, with the bishop's own hand, which I will give in English, at the beginning of Peter's Breviary of the Bible. 'I Philip of Repyndon, late bishop of Lincoln, give this book, called *Peter de Aureolis*, to the new library to be built within the church of Lincoln: reserving the use and possession of it to Richard Tryfely, clerk, canon, and prebendary, of Milton, in fee, and to the term of his life; and afterwards to be given up and restored to the said library, or the keepers of the same, for the time being, faithfully, and without delay. Written with my own hand, A. D. 1422.' When a book was bought, the affair was of so much importance, that it was customary to assemble persons of consequence and character, and to make a formal record that they were present on this occasion.

Among the royal manuscripts, in the book of the Sentences of Peter Lombard, an archdeacon of Lincoln has left this entry. 'This book of the Sentences belongs to master Robert archdeacon of Lincoln, which he bought of Geoffrey the chaplain, brother of Henry vicar of Northelkington, in the presence of master Robert de Lee, master John of Lirling, Richard of Luda clerk, Richard the almoner, the said Henry the vicar, and his clerk, and others: and the said archdeacon gave the said book to God and saint Oswald, and to Peter abbot of Barton, and the convent of Barden.' The disputed property of a book often occasioned the most violent altercations. Many claims appear to have been made to a manuscript of Matthew Paris, belonging to the last-mentioned library; in which John Russell, bishop of Lincoln, thus conditionally defends or explains his right of possession. 'If this book can be proved to be or to have been the property of the exempt monastery of saint Alban in the diocese of Lincoln, I declare this to be my mind, that in that case I use it at present as a loan under favour of those monks who belong to the said monastery. Otherwise, according to the condition under which this book came into my possession, I will that it shall belong to the college of the blessed Winchester Mary at Oxford, of the foundation of William Wykham. Written with my own hand at Buckdane, 1st Jan. A. D. 1488. Jo. Lincoln. Whoever shall obliterate or destroy this writing, let him be anathema.' About the year 1225, Roger de Insula, dean of York, gave several Latin bibles to the university of Oxford, with a condition that the students who perused them should deposit a cautionary pledge. The library of that university, before the year 1300, consisted only of a few tracts, chained or kept in chests in the choir of St Mary's church. In the year 1327, the scholars and citizens of Oxford assaulted and entirely pillaged the opulent Benedictine abbey of the neighbouring town of Abingdon. Among the books they found there, were one hundred psalters, as many grayles, and 40 missals, which undoubtedly belonged to the choir of the church: but besides these, there were only twenty-two codices, which I interpret books on common subjects. And although the invention of paper, at the close of the eleventh century, contributed to multiply manuscripts, and consequently to facilitate knowledge, yet, even so late as the reign of our Henry VI. I have discovered the following remarkable instance of the inconveniences and impediments to study, which must have been produced by a scarcity of books. It is in the statutes of St Mary's college at Oxford, founded as a seminary to Osney abbey in the year 1446: 'Let no scholar occupy a book in the library above one hour, or two hours at most; so that others shall be hindered from the use of the same.' The famous library established in the university of Oxford by that munificent patron of literature Humphrey Duke of Gloucester contained only 600 volumes. About the commencement of the 14th century there were only four classics in the royal library at Paris. There were one copy of Cicero, Ovid, Lucretius, and Boethius. The rest were chiefly books of devotion, which included but few of the fathers: many treatises of astrology, geomancy, chiromancy, and medicine, originally written in Arabic, and translated into Latin or French: paucetés, chronicles, and romances. This

Book.

collection was principally made by Charles V. who began his reign in 1365. This monarch was passionately fond of reading; and it was the fashion to send him presents of books from every part of the kingdom of France. These he ordered to be elegantly transcribed and richly illuminated; and he placed them in a tower of the Louvre, from thence called *La Tour de la Libraire*. The whole consisted of 900 volumes. They were deposited in three chambers; which on this occasion were wainscoted with Irish oak, and ciled with cypress curiously carved. The windows were of painted glass, fenced with iron bars and copper wire. The English became masters of Paris in the year 1425; on which event the Duke of Bedford, regent of France, sent the whole library, then consisting of only 853 volumes, and valued at 2223 livres, into England; where perhaps they became the ground-work of Duke Humphrey's library just mentioned. Even so late as the year 1471, when Louis XI. of France borrowed the works of the Arabian physician Rhasis from the faculty of medicine at Paris, he not only deposited by way of pledge a quantity of valuable plate, but was obliged to procure a nobleman to join with him as surety in a deed, by which he bound himself to return it under a considerable forfeiture. The excessive prices of books in the middle ages afford numerous and curious proofs. I will mention a few only. In the year 1174, Walter, prior of St Swithin's at Winchester, afterwards elected abbot of Westminster, a writer in Latin of the lives of the bishops who were his patrons, purchased of the monks of Dorchester in Oxfordshire, Bede's Homilies and St Austin's Pfalter, for twelve measures of barley, and a pall on which was embroidered in silver the history of St Birinus converting a Saxon king. Among the royal manuscripts in the British museum there is Comeisor's Scholastic History in French; which, as it is recorded in a blank page at the beginning, was taken from the king of France at the battle of Poitiers; and being purchased by William Montague Earl of Salisbury for 100 mares, was ordered to be sold by the last will of his countess Elizabeth for 40 livres. About the year 1400, a copy of John of Meun's *Roman de la Roze* was sold before the palace-gate at Paris for 40 crowns, or L. 33 : 6 : 6."

Books, burning of, was a kind of punishment much in use among the Romans, by legal sentence: sometimes the care of the execution was committed to *triumviri* appointed on purpose; sometimes to the prætors, and sometimes to the ædiles. Labienus, whom from his satirical spirit some have called *Rabienus*, is said to have been the first who underwent the severity of it. His enemies procured a *senatusconsultum*, whereby all his books published during seven years were ordered to be collected and burnt. "The thing (says Seneca) then appeared new and strange, to take revenge on learning!" *Res nova & inusitata! supplicium de studiis sumi*. Cassius Seivius, a friend of Labienus, hearing the sentence pronounced, cried aloud, "That they must burn him too, since he had got all the books by heart?" *Nunc me vicium uris oportet, quia illos didici*. Labienus could not survive his books, but shutting himself up in the tomb of his ancestors, pined away, and was buried alive. Divers other ancient testimonies concerning the burning of books are given in Reimm. Idea Syst. Antiq. Liter. p. 389.

Book is also used for a part or division of a volume or large work. In this sense we say, the *book of Genesis*, the *first book of Kings*, the *five books of Moses*, &c. The Digest is contained in fifty books, the Code in twelve books.

Books are usually subdivided into chapters, sometimes into sections or paragraphs: accurate writers quote chapter and book.

Everlasting Book.—We find in Signior Castaquo's account of the albestus, a scheme for the making of a book, which, from its imperishable nature, he is for calling the *book of eternity*. The leaves of this book were to be of the albestus paper, the covers of a thicker sort of work of the same matter, and the whole sewed with thread spun from the same substance. The things to be commemorated in this book were to be written in letters of gold; so that the whole matter of the book being incombusible, and everlastingly permanent against the force of all the elements, and subject to no changes from fire, water, or air, must remain for ever, and always preserve the writing committed to it. He carried this project so far towards execution, as to find a way of making a sort of paper from the albestus, which was so tractable and soft, that it very well resembled a thin parchment; this, by the same process, was capable of being thickened or thinned at pleasure, and in either state equally resisted the fire. The covering of the thinnest kind of this paper with fire, only makes it red hot and very clear, the fire seeming to pass through it without wasting or altering any part of it. Copper, iron, or any other metal except gold or silver, exposed to the same degree of fire in the same thin plates, would be found not to bear it in this manner, but to scald, and burn it into scorix at the surface, which this stone does not.

Book-Binding. The art of gathering together and sewing the sheets of a book, and covering it with a back, &c. It is performed thus: The leaves are first folded with a folding-stick, and laid over each other in the order of the signature; then beaten on a stone with an hammer, to make them smooth and open well; and afterwards pressed. They are sewed upon bands, which are pieces of cord or packthread; six bands to a folio book; five to a quarto, octavo, &c.; which is done by drawing a thread through the middle of each facet, and giving it a turn round each band, beginning with the first and proceeding to the last. After this the books are glued, and the bands opened and scraped, for the better fixing the pasteboards; the back is turned with a hammer, and the book fixed in a press between two boards, in order to make a groove for fixing the pasteboards; these being applied, holes are made for fixing them to the book, which is pressed a third time. Then the book is at last put to the cutting press, betwixt two boards; the one lying even with the press, for the knife to run upon; the other above it, for the knife to run against: after which the pasteboards are squared.

The next operation is the sprinkling the leaves of the book; which is done by dipping a brush into vermilion and sap-green, holding the brush in one hand, and spreading the hair with the other; by which motion the edges of the leaves are sprinkled in a regular manner, without any spots being bigger than the other.

Then

Then remains the covers, which are either of calf-skin or of sheep-skin: these being moistened in water, are cut out to the size of the book; then smeared over with paste made of wheat-flour; and afterwards stretched over the pasteboard on the outside, and doubled over the edges withinside; after having first taken off the four angles, and indented and plated the cover at the head-band: which done, the book is covered, and

bound firmly between two bands, and then set to dry. Afterwards it is washed over with a little paste and water, and then sprinkled with a fine brush, unless it should be marbled; when the spots are to be made larger by mixing the ink with vitriol. After this the book is glazed twice with the white of an egg beaten, and at last polished with a polishing iron passed hot over the glazed cover.

Book; Book-keeping.

B O O K - K E E P I N G,

IS the art of recording mercantile transactions in a regular and systematic manner.

1. A merchant's books should contain every particular which relates to the affairs of the owner. They should exhibit the state of all the branches of his business, the connection of the different parts, the amount and success of the whole. They should be so full and so well arranged, as to afford a ready information in every point for which they may be consulted.

The matter which the books should contain is comprehended under the three following heads: First, The debts which are owing to the owner, and the debts which he owes to others. Secondly, The goods and other articles of property which belonged to him; the quantity and value sold, or otherwise disposed of; and the quantity and value which still remain in his possession. Thirdly, The amount of his stock when the books were opened; the profits he has obtained, and the losses he has suffered, since; and the amount of his stock at present.

That method of book-keeping which answers these purposes most clearly and concisely, is the best. The Italian method, by *double entry*, is generally preferred; at least, it is founded upon the most universal principles, and is the most convenient in extensive and complicated business: and the accountant who understands it, will find little difficulty in following, or even in inventing other methods that are better accommodated to any particular purpose.

The Italian method requires three principal books; the Waste-Book, Journal, and Leger.

SECT. I. *Of the WASTE-BOOK.*

2. The waste-book, or day-book, contains an exact register of all occurrences in business in the same order as they take place. It begins with an inventory of every thing belonging to the owner, a list of the debts due to him, and of the debts he owes to others: It is carried on with a full relation of all the money he receives or pays; of all the goods he buys or sells; and of every other occurrence in his business. Each article should be entered as soon as the transaction takes place, and should be clearly expressed in the plainest language. It should require no supply from the accountant's memory, but should be fully intelligible to any person, however unacquainted with the business: at the same time, it should be written with all convenient brevity; and, therefore, sometimes refers to invoices and other accounts, for particulars. The accountant's first care should be to have nothing defect-

ive or ambiguous; his second, to have nothing superfluous.

3. The date is written in text on the top of each page. The articles are separated from each other by a line; and the transactions of one day are separated from those of another by a double line, in the middle of which there is left a blank space for inserting the day of the month. This book must be kept with the greater care, as it contains the materials from which the other books are composed; and any error or defect will occasion a like one in the others. Besides, it is the book whose authority is trusted to, and which must be exhibited to judges, or arbiters, when an account is disputed. As the journal is filled up from the waste-book, the authority of the former is esteemed more authentic, unless there be an obvious mistake through hurry; and either of these books is depended on rather than the leger, which, from its form, is more liable to error, and may be more easily vitiated by a fraudulent design.

4. As the waste-book contains the whole substance of the business, it may be applied so as to afford any information that can be wanted: but the labour of consulting it would be very great. For instance, if it were required to know how much any person owes us, we must look over the book from the beginning, and mark down every article in which we have dealt with him: or, if it were required to know what quantity of goods we should have on hand, we must look over the whole book, and mark down every article bought or sold. This operation would not only be found very tedious, but much exposed to the risk of omissions. To prevent these inconveniences, another book is used, in which the articles are arranged in a methodical order. This book is called the *Leger*, and we shall consider it next; because the journal, though it comes before it in the order of writing, cannot be well understood, till the nature of the leger be explained.

SECT. II. *Of the LEGER.*

5. In the leger, articles of the same kind are collected together; and, for that purpose, it is divided into many accounts, under which the different branches of business are arranged. Each account is introduced by a proper title, to explain the nature of the articles it contains; and articles of opposite kinds, which belong to the same account, are placed on the opposite pages of the same folio: for instance, money received on the one side, and money paid on the other; or goods bought on the one side, and goods sold on the other. The left-

hand.

hand page is called the *Debtor* or *Dr.* side of the account, and the right-hand page the *Creditor* or *Cr.* side. The difference between the sums of the *Dr.* and *Cr.* sides is called the *Balance*.

Accounts in the ledger are of three kinds, which answer to the three purposes of book-keeping mentioned § 1.

6. First, Personal Accounts. It is necessary to open an account for every person or company with whom there are any dealings on credit. At opening the books, if they be indebted to the owner, the debt is entered on the *Dr.*; but, if he be indebted to them, it is entered on the *Cr.* During the course of the business, goods sold on trust, money paid, and every thing for which they are accountable to him, is entered on the *Dr.*; but goods bought on trust, money received, and every thing for which he is accountable to them, is entered on the *Cr.* The balance shows how much they owe him, when the *Dr.* side is greatest; and how much he owes them, when the *Cr.* side is greater.

7. Secondly, Real accounts. By this we understand accounts of property of whatever kind, such as ready money, goods, houses, lands, ships, shares in public companies, and the like.

The account of ready money is intitled *Cash*. On the *Dr.* side, the money on hand at opening the books is entered, and afterwards every article of money received. On the *Cr.* side, there is entered every article of money paid out; and the balance shows how much ought to be on hand. The sum of the *Dr.* side of this account is always greater than that of the *Cr.* side.

8. Accounts of goods are generally ruled with inner columns for entering the quantities. When the books are opened, the goods on hand are entered on the *Dr.* side of the respective accounts; the quantities being placed in the inner, and the values in the outer column. Goods bought are entered in the same manner, and goods sold are entered on the *Cr.* side; the quantities and values being placed in the proper columns. Charges laid out on goods are entered on the *Dr.* side; and, when an incidental advantage arises from them, such as public bounty, it is entered on the *Cr.*

If the sums of the inner columns on the opposite sides be equal, it shows that the goods are all sold, and then the balance of the money column shows the gain or loss. If the *Cr.* side be greater, it is gain; if the *Dr.* side be greater, it is loss. If the sum of the inner column be greater on the *Dr.* side, it shows that part of the goods are on hand; and their value must be added to the sum of the *Cr.* side, in order to determine the gain or loss.

9. If there be two or more kinds of the same sort of goods, they may be entered in the same account, allowing as many inner columns as there are kinds, and entering the quantities of each kind in the inner column reserved for it. This method exhibits the gain or loss on the whole goods; but does not show how much of it arises from each kind.

Or, a separate account may be opened for each kind, distinguishing the titles by the qualities, or by some other mark. Thus, one account may be kept for fine linen, another for coarse linen; one for port-wine crop 1787, another for port-wine crop 1788; one for rum from Jamaica, another for rum from Barbadoes. This method shows the gain or loss on each kind.

N^o 50.

When there are more kinds than can be conveniently introduced in the same account, they may be divided into several classes, each class being placed in a separate account; and the particular kinds distinguished in inner columns. Thus the account of fine linen may be divided into several columns, for different kinds, distinguished by the number of threads in the breadth, or by any other convenient character.

10. Accounts of ships contain on the *Dr.* the value of the ship when the books are opened, and all expences laid out thereon; on the *Cr.* all freights received. In like manner, accounts of houses or lands have the value of the subject, and all repairs, or other charges, entered on the *Dr.* and all rents or other profits received on the *Cr.* If the subject be sold in whole or in part, the sale is entered on the *Cr.* And the balance, after valuing the subject (if any) on hand, shows the gain or loss.

Accounts of property in the public funds, or shares in companies, public or private, contain the value, or money paid in, on the *Dr.* and the dividends received on the *Cr.* and are balanced as other real accounts.

Some persons open accounts for household furniture, plate, jewels, books, or the like. The entries on these accounts are made in the same manner.

In general, real accounts contain the value of the property, and all charges, on the *Dr.* and the sales and other returns on the *Cr.* When the account is to be balanced, if any property remains, the value thereof is placed on the *Cr.*; and then the balance shows the loss or gain, according as the *Dr.* or *Cr.* side is greatest.

11. Thirdly, Accounts of STOCK, PROFIT and LOSS, and its subsidiary accounts, which are sometimes called *fictitious accounts*.

The *Stock* account contains on the *Dr.* the amount of the debts which the owner owes when the books are opened; and on the *Cr.* the amount of ready money, goods, debts, and property of every kind belonging to him: therefore the balance shows what his net stock is; or, in case of bankruptcy, how much his debts exceed his effects. There is nothing further entered on this account till the books are balanced: and then, if the business has yielded profit, the net gain is entered on the *Cr.*; if it has been unsuccessful, the net loss is entered on the *Dr.*: after which, the balance shows the net stock at the time the books are closed.

12. The *Profit and Loss* account contains every article of gain on the *Cr.* and every article of loss on the *Dr.* The balance shows the net gain or loss, and is transferred to the proper side of the stock-account, as mentioned above. This account is partly composed of articles that occur while the books are running. For example, legacies received are entered on the *Cr.* goods destroyed on the *Dr.* The rest of the articles are those of gain and loss, arising from the real accounts, which are collected when the books are balanced.

13. It has been found convenient to open several subsidiary accounts, in order to shorten and methodise that of profit and loss. These contain certain articles of gain or loss, which may be reduced under distinct heads. They are in effect so many parts of the profit and loss account, and their balances are entered on the proper side of that account when the books are closed. The chief of these accounts are the following.

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is to point out the accounts in the ledger, to which it will require to be posted, and thereby enable the accountant to write the ledger with more ease than he could do if it were filled up immediately from the waste-book.

The learner will be able, from this example, to enter any simple article in the journal, providing he knows the accounts to which it should be posted on the Dr. and Cr. of the ledger. This must be collected from the description of the ledger accounts already given § 6—13. and the nature and tendency of the article.

16. GENERAL RULES for the JOURNAL-ENTRIES.

I. Every thing received, or person accountable to us, is Dr.

II. Every thing delivered, or person to whom we are accountable, is Cr.

17. As the whole art of writing the journal depends on a proper choice of the Drs. and Crs. we shall give some particular rules for the most common cases, and a few examples for the illustration and practice of each.

Rule I. *The person to whom any thing is delivered is Dr. to the thing delivered, when nothing is received in return.*

Therefore when money is paid, the receiver is Dr. to cash.

When goods or other property is sold on credit, the purchaser is Dr. to the thing sold. Thus,

Waste-book.) Paid John Bell in full	L. 52 — —
Journal.) <i>John Bell Dr. to Cash</i> , paid him in full	52 — —
Waste-book.) Sold 50 yards cloth to J. Hill, at 12s	30 — —
Journal.) <i>J. Hill Dr. to Cloth</i> , sold him 50 yards, at 12s	30 — —

18. Rule II. *A thing received is Dr. to the person from whom it is received, when nothing is delivered in return.*

Therefore, when money is received, Cash is Dr. to the payer: when goods are bought, the goods are Dr. to the seller. Thus,

Waste-book.) Received from Thomas Gay in full	L. 72 — —
Journal.) <i>Cash Dr. to Thomas Gay</i> , received in full	72 — —
Waste-book.) Bought from J. Hawley 60 lb. wool, at 9d	2 5 —
Journal.) <i>Wool Dr. to J. Hawley</i> , bought 60 lb. at 9d	2 5 —

19. Rule III. *A thing received is Dr. to the thing given for it.*

Therefore goods bought for ready money are Dr. to cash.

When goods are sold for ready money, Cash is Dr. to the goods.

When goods are bartered, the goods received are Dr. to the goods delivered. Thus,

Waste-book.) Bought for ready money 10 hds. wine, at L. 15	L. 150 — —
Journal.) <i>Wine Dr. to Cash</i> , bought 10 hds. at L. 15	150 — —

Waste-book.) Sold for ready money 100 gallons rum, at 9s	45 — —
Journal.) <i>Cash Dr. to Rum</i> , sold 100 gallons, at 9s	45 — —
Waste-book.) Bartered 3 hds. wine, at L. 15, for 100 gallons rum, at 9s	45 — —
Journal.) <i>Rum Dr. to Wine</i> , received 100 gallons at 9s in barter for 3 hds. at L. 15	45 — —

20. Rule IV. *Goods and other real accounts are Dr. for all charges laid out on them. If money be laid out, they are Dr. to Cash; if any thing else be delivered, they are Dr. to the thing delivered; if the charge be taken in trust, they are Dr. to the person to whom it is due.* Thus,

Waste-book.) Paid for repairs to ship Traffick	L. 18 — —
Journal.) <i>Ship Traffick Dr. to Cash</i> , paid for repairs	18 — —
Waste-book.) Delivered wood from my timber-yard for repairing the Angel-tavern	15 — —
Journal.) <i>Angel-tavern Dr. to Wood</i> , delivered for repairing the same	15 — —
Waste-book.) Due to William Carpenter for repairs to the Angel-tavern	12 — —
Journal.) <i>Angel-tavern Dr. to William Carpenter</i> , due him for repairs	12 — —

21. Rule V. *When rents of houses or lands, freights of ships, bounties on goods, or any other profits from real accounts are received, Cash is Dr. to the account from which the profit arises: if any thing besides money be received, the article received is Dr.: if they remain unpaid, the person who owes them is Dr.* Thus,

Waste-book.) Received freight of the ship Traffick for a voyage to London	L. 35 — —
Journal.) <i>Ship Traffick Dr. to Cash</i> , received freight to London	35 — —
Waste-book.) Received 100 barrels salmon, being the rent of Inver fishery, at 52s	260 — —
Journal.) <i>Salmon Dr. to Inver fishery</i> , received the rent, being 100 barrels, at 52s	260 — —
Waste-book.) John Public owes me a year's rent of the Angel-tavern	52 — —
Journal.) <i>John Public Dr. to Angel-tavern</i> , for a year's rent due by him	52 — —

22. Rule VI. *When an article of loss occurs, Profit and Loss, or some subsidiary account, is Dr. If the loss be paid in ready money, it is Dr. to Cash; if it be paid in any thing else, it is Dr. to the thing delivered. If it remain unpaid, it is Dr. to the person to whom it is owing.* Thus,

Waste-book.) Given my daughter at her marriage	L. 500 — —
Journal.) <i>Profit and Loss Dr. to Cash</i> , given my daughter at her marriage	500 — —
Waste-book.) Taken for family use from my granary 3 bolls meal, at 13s 4d	2 — —
Journal.)	

Journal.) *Profit and Loss* [or *Proper expenses*] *Dr. to Neal*, taken for family use, 3 bolls, at 13s 4d 2 — —
 Waste-book.) Due James Rich for a year's interest on L. 1000, at 4 percent. 40 — —
 Journal.) *Profit and Loss* [or *Interest account*] *Dr. to James Rich*, due him a year's interest on L. 1000 at 4 percent. 40 — —

23. Rule VII. *When an article of gain occurs, that is not immediately connected with any real account, Cash, the article received, or the person accountable for it, is Dr. to Profit and Loss, or to some subsidiary account.*

Thus,
 Waste-book.) Received in a gift from my father L 100 — —
 Journal.) *Cash Dr. to Profit and Loss*, received from my father 100 — —
 Waste-book.) Received in like manner at opening shop, 100 yards cloth at 12s 60 — —
 Journal.) *Cloth Dr. to Profit and Loss*, received from my father at opening shop 100 yards, at 12s 60 — —
 Waste-book.) James Barbour owes me a year's interest of L. 1000 50 — —
 Journal.) *James Barbour Dr. to Profit and Loss* [or *Interest account*] due by him for a year's interest of L. 1000 50 — —

24. Rule VIII. *When one person pays money, or delivers any thing else to another on our account, the person who receives it is Dr. to the person who pays it. Thus,*

Waste-book.) James Goldsmith has paid the bank of Scotland on my account L 100 — —
 Journal.) *Bank of Scotland Dr. to James Goldsmith*, paid them by him 100 — —
 Waste-book.) Arthur Young has delivered James Baker 100 quarters wheat, for which I am to account to him, at 30s 150 — —
 Journal.) *James Baker Dr. to Arthur Young*, for 100 quarters wheat delivered him on my account, at 30s 150 — —
 Payments of this kind are often transacted by bills of exchange.

25. These examples will make the learner acquainted with the form of the journal, and the rules extend to the greatest part of the simple transactions that occur in domestic trade. We may observe, that the technical sense of the words *Dr.* and *Cr.* has an analogy to their meaning in common language, but is not precisely the same. Thus, in *Ex. 1.* Rule VIII. the journal-entry is, *Bank of Scotland Dr. to James Goldsmith*; by which we are not to understand that the bank is indebted to James Goldsmith; for a debt between them has no connection with our business; and therefore ought not to be entered in our books: the meaning of the entry is, that the bank becomes indebted to us by the transactions narrated; and that we become indebted to James Goldsmith by the same.

26. An article which contains more Drs. or more Crs. than one, is called a *complex post*. The form of these will appear from the following examples.

Ex. 1.] Sold William Drapier,
 25 pieces cloth, at L. 15
 per piece L. 375 — —
 130 stones wool, at 5s 6d
 per stone - - - 35 15 — —
 ----- L. 410 15 — —

If the two articles sold to William Drapier were entered separately in the waste-book, and transferred to the journal by Rule I. they would stand thus:

William Drapier Dr. to Cloth, sold him 25 pieces, at L. 15 - - - L. 375 — —
William Drapier Dr. to Wool, sold him 130 stones, at 5s 6d - - - 35 15 — —

And if these were posted to the ledger, there would be two articles placed to the Dr. of William Drapier, one to the Cr. of Cloth, and one to the Cr. of Wool.

But the sales may be entered in the form of one complex journal post, as follows:

William Drapier Dr. to Sundries,
To Cloth, for 25 pieces,
 at L. 15 - - - L. 375 — —
To Wool, for 130 stones,
 at 5s and 6d - - - 35 15 — —
 ----- L. 410 15 — —

And then there is only one article on the Dr. of William Drapier in the ledger.

Ex. 2.] Sold 10 pieces cloth to W. Drapier,
 at L. 15 L. 150 — —
 12 ditto to J. Mercer, at do 180 — —
 ----- L. 330 — —
 22

This example also falls under Rule I. But whereas there was one Dr. and two Crs. in the former example, there are two Drs. and one Cr. in this: William Drapier and John Mercer, the purchasers, are Drs. for their respective quantities; and cloth, which is the only thing delivered, is Cr. for the whole quantity. The journal post is,

Sundries Drs. to Cloth,
W. Drapier, for 10 pieces, at 15l. L. 150 — —
J. Mercer, for 12 ditto at 15l. 180 — —
 ----- L. 330 — —
 22

Ex. 3.] Bought from H. Hood,
 5 puncheons rum, at L. 42, L. 210 — —
 3 hds. claret, at 33, 99 — —
 2 pipes madeira, at 56, 112 — —
 ----- L. 421 — —

This example falls under Rule II. The articles received, rum, claret, and madeira, are Drs.; and the person from whom they are received is the only Cr.

Sundries Dr. to Henry Hood,
Rum, for 5 puncheons, at 42l. L. 210 — —
Claret, for 3 hds, at 33, 99 — —
Madeira, for 2 pipes, at 56, 112 — —
 ----- L. 421 — —

Ex. 4.] Bt. 50 qrs. wheat from J.
 Tull, at 35s L. 87 10 — —
 12 from S. Ellis, 36s 21 12 — —
 ----- L. 109 2 — —
 62

This example also falls under Rule II. There is only one Dr. wheat being the only thing received; and two Crs. because it is received from different persons.

Wheat Dr. to Sundries.

To <i>J. Tall</i> , for 50 qrs. at 35s	L 87 10 —
To <i>E. Ellis</i> , for 12 qrs. at 36s	21 12 —
	L 109 2 —
62	

In like manner, examples might be given of complex posts under every rule, which contained either several Drs. or several Crs.; but as it is unnecessary to enlarge so far, we shall only add a few examples of cases, in which the different parts of the complex article fall under different rules.

Ex. 5.] Sold 150 qrs. beans to A. Arnot,

at 13s 4d	L. 100 — —
75 ditto to <i>S. Berry</i> ,	
at 13s 4d	50 — —
18 ditto for ready	
money, 13s 2d	11 17 —
	L. 161 17 —
243	

Here beans are delivered, some to different purchasers on trust, and some for ready money. The purchasers are Drs. for the quantities sold to each, by Rule I.; Cash is Cr. for the quantity sold for ready money, by Rule III.; and beans are Cr. for the whole.

Sundries Dr. to beans.

A. Arnot for 150 qrs. at 13s 4d	L 100 — —
S. Berry, for 75	13s 4d 50 — —
Cash, for 18	13s 2d 11 17 —
	L 161 17 —

Ex. 6.] Bought from David Young

8 cwt. 3 qrs. copper, at L. 12 per cwt.	L 105 — —
Paid in part,	L 50 — —
Balance,	55 — —
	L 105 — —

Here the article received, copper, is the only Dr.; but as it is bought partly for ready money, and partly on credit, it is Dr. to Cash for the value of the former, by Rule III. and to the seller for the value of the latter, by Rule II.

Copper Dr. to Sundries,

For 8 cwt. 3 qrs. at L. 12 per cwt	L. 105 — —
	L. 105 — —
To Cash in part,	L. 50 — —
To <i>D. Young</i> , for balance due him,	55 — —
	L 105 — —

Ex. 7.] James Wilson being bankrupt, I have accepted a composition on the debt due by him to me of L. 150, and discharged the same.

The composition received, at 15s per L. is,	L 112 10 —
And the balance lost	37 10 —
	L 150 — —

Here the whole debt of L. 150, due by James Wilson, is cancelled; and he must therefore be stated as Cr. for that sum. Cash is Dr. for the sum received, by

Rule II.; and Profit and Loss, or Loss by bad debts, for the rest, by Rule VI.

Sundries Dr. to James Wilson,

Cash, for compt, on L. 150,	L 112 10 —
at 15s. per L.	37 10 —
Profit and Loss, for balance lost	37 10 —
	L 150 — —

Ex. 8.] Shipped for William Smith, per the Bonadventure, Forbes, from Leith to London,

1000 yds linen, at 1s 2d	L. 58 6 8
600 lb. leather, bought from <i>J. Currier</i> , at 1s	30 — —
Paid charges at shipping	13 4 —
	L. 89 — —

Here William Smith is Dr. for the amount of the cargo; he is debtor to Linen for the quantity delivered, as by Rule I. and to *J. Currier* for the leather delivered by him, by Rule VIII. and to cash for the charges paid by us, by Rule I.

William Smith Dr. to Sundries,

To Linen, for 1000 yards,	L. 58 6 8
at 1s 2d	
To <i>J. Currier</i> , for 600 lb. leather, at 1s	30 — —
To Cash, for charges at shipping	13 4 —
Shipped per the Bonadventure, Forbes, from Leith to London.	L. 89 — —

27. The learner may be assisted in understanding these and other complex posts, by resolving them into simple ones. Most of them might have been stated in that manner; and the complex form is only preferred for abridging the ledger. In some articles the different clauses are so connected, that they cannot be separated with propriety.

The narration is sometimes equally diffused through the post, after the Dr. and Cr. as in the five first examples. Sometimes the chief circumstances are narrated before the Drs. or Crs. be specified, as in *Ex. 6.*; sometimes after the first, as in *Ex. 7.*; and sometimes at the end, as in *Ex. 8.*

28. In some articles, there are both more Drs. and more Crs. than one. These may be entered in one journal-post, *Sundries Dr. to Sundries*, specifying first the Drs. and then the Crs. But, as this method is somewhat confused, we would recommend it as a better way to divide the transaction into two journal-posts; so that the first may contain only one Dr. and the second only one Cr.

Ex. Bartered with James Fortheringal 100 pieces of namburgs, at 12s

100 lb. thread, at 3s 6d	L. 60 — —
	17 10 —
	L. 77 10 —
For 10 hds lintseed, at 50s	L. 25 — —
500 yds linen, at 1s 6d	37 10 —
And received the balance in money	15 — —
	L. 77 10 —

JOURNAL. Sundries to Dr. Sundries.

<i>Lintseed</i> , for 10 hds at 50s	L.25 — —	
<i>Linen</i> , for 500 yds, at 1s 6d	37 10 —	
Received in barter from J. Fotheringal		
<i>Cash</i> , for balance	15 — —	
	<hr/>	
	L.77 10 —	
	<hr/>	
<i>To Ofnaburgs</i> , for 100 pieces, at 12s	L.60 — —	
<i>To Thread</i> , for 100lb. at 3s 6d	17 10 —	
Delivered him in barter	—————	L.77 10 —
Or rather,		
<i>Sundries Dr. to James Fotheringal.</i>		
<i>Lintseed</i> , for 10 hds at 50s	L.25 — —	
<i>Linen</i> , for 500 yds, at 1s 6d	37 10 —	
Received in barter		
<i>Cash</i> , received balance	15 — —	
	<hr/>	
	L.77 10 —	
	<hr/>	
<i>James Fotheringal Dr. to Sundries.</i>		
<i>To Ofnaburgs</i> , for 100 pieces, at 12s	L.60 — —	
<i>To Thread</i> , for 100lb. at 3s 6d	17 10 —	
Delivered in barter	—————	L.77 10 —

29. It is neither practicable nor necessary to enumerate all kinds of complex posts that may occur in business. We shall here only mention the entries which occur at opening the books.

The first journal-post contains the substance of the inventory. The entry is *Sundries Drs. to Stock*; the particular Drs. are *Cash*, the different kinds of goods and other property belonging to us, and the persons indebted to us.

The second journal-post contains the debts due by us. The entry is, *Stock Dr. to Sundries*; the particular Crs. are the persons to whom we are indebted.

The form of these entries is more fully exhibited at the beginning of the following sets.

30. The journal should be written by one person, in a fair hand and at leisure hours. The articles are separated, and the titles and dates marked in the same manner as in the waste-book, § 3. The entries are written in half text, for ornament and distinction. In the inventory, the designation (or the business, station, and place of residence) of every person is mentioned; and the same is done the first time that any name occurs in journal-entry. At other times, it is sufficient to enter the name without the designation, unless we have dealings with two persons of the same name; in which case, it is always necessary to annex the designation, in order to distinguish them. The narration should be complete, without referring to the waste-book; and so clear, that every person, acquainted with the style of the journal, may understand it with ease. When the post is written, we mark a dash / against the article, on the margin of the waste-book, to show how far the writing of the journal is advanced.

SECT. IV. OF POSTING AND BALANCING THE LEGER.

31. The first thing to be done in the ledger, is to allot a proper space for each account. The accounts may be either opened in the same order that they oc-

cur in the journal; or accounts of the same kind may be placed together, the personal accounts on one part of the ledger, and the real accounts in another. The accounts of Stock, and Profit and Loss, are generally placed at the beginning. The room which each will require cannot be exactly known, but must be conjectured from the number of transactions that are likely to follow.

The number of the folio is marked in strong text at each corner of the top-line; and the titles of the accounts are written in fair text through both folios, if necessary. The designations of the personal accounts may be written on half text, or Italian hand; and some write the titles in Saxon hand, for ornament. The word *Dr.* is prefixed to the title on the left-hand page; and *Contra Cr.* annexed to it on the right-hand page.

32. Next, An Index must be provided, for pointing out the folios where the accounts are opened. The titles of the accounts are entered alphabetically in the index, and the number of the folio annexed. Personal accounts are entered by the first letter of the surname; companies, by the first letter of the surname of the first partner; and all other accounts, by the first letter of the first word. The most convenient kind of index is a long narrow book, of 24 leaves, one for each letter of the alphabet. A is marked on the top of the first leaf, and the paper pared away below it; B is marked on the second leaf, under A; and the other letters on the following leaves, in the same manner; by means of which we can turn at once to any letter required.

33. In posting the ledger, proceed by the following directions. First, look for the *Dr.* of the journal-post in the index, under the proper letter, and this directs you to the folio of the ledger where the account is, if it be already opened: if not, you must allot a space for it, write the title, and enter it in the index. Then enter the article on the left-hand page of the account under the title of the former article, by writing the date on the margin, and the name of the creditor on the line, with the word *To* prefixed, and a short narration of the transaction annexed, and inserting the sum in the money column, and the quantity, if it be an account of goods, in the inner column. Then turn to the account of the *Cr.* of the journal-post, and enter the article in the right-hand page, prefixing the word *By* to the name of the *Dr.*

34. This being done, turn to the journal, and mark on the margin the number of the folios to which the article is posted. The figures which point out the reference to the *Dr.* and *Cr.* folios should be separated by a line: for example, If the *Dr.* entry be on the third folio, and the *Cr.* entry on the fifth, the reference is marked $\frac{3}{5}$. These figures show how far the posting is advanced, and are useful in comparing the books.

The figures for dates or references should be written in a lighter hand than the figures in the columns for money or quantity.

35. There is often a reference-column ruled in the ledger, for pointing out the other entry, corresponding to any article. In this column, the folio of the *Cr.* entry is marked against the *Dr.* article, and the folio of the *Dr.* entry against the *Cr.* article.

Sometimes

Sometimes the accounts are numbered according to their order in the ledger; and the references, both in the journal and ledger, point out the number of the account instead of the folio.

36. In complex posts, turn to the several Drs. or Crs. in their order, and enter the articles according to the foregoing directions; placing the sums belonging to each in the money-column, against the respective entries.

37. An article in the ledger is generally comprehended in one line. The narration should be as full as can be contained in that bounds. If it cannot be narrated completely, the journal is referred to for further particulars, by writing *per Journal*, (or *p. J.*), either after an incomplete narration, or immediately after the Dr. or Cr. when there is no room for a proper narration. In complex posts, there can seldom be any narration annexed to the single Dr. or the single Cr. The entry is generally *To Sundries per J.* or, *By Sundries per J.* If the sense of the whole article can be narrated, it should be done; but it is improper to narrate the first or any other part of the article, and omit the others.

38. When the space allotted for an account in the ledger is filled up, the account must be transported to another folio. For this purpose add the columns on both sides, and write against the sum, *Transported to folio*, inserting the number of the folio where the new account is opened, in the reference-column, or on the line, if no reference-column be used. Then, after titling the new account, and entering the number of the folio in the index, write on the Dr. *To amount, brought from folio*, inserting the number of the folio where the old account was; and on the Cr. *By amount, brought from folio*; and place the sums, and quantities, if any, in the proper columns.

When either side of an account is full, both sides should be transported, and diagonal lines drawn, to fill up the vacant space of the side which requires it.

39. The books should be written up as frequently as can be done conveniently; so that the journal may keep pace nearly with the waste-book, and the ledger with the journal. Each book should be carefully revised, and compared with the book from which it is posted. In comparing the ledger, observe the following directions:

Begin with the first journal-post, and turn to the folio of the ledger where the Dr. is entered, which you are directed to by the marginal reference, and compare the date, entry, and sum. If you find them to correspond, it is well; if not, the ledger must be altered till it correspond with the journal. Then place a dot before the reference-figure in the journal, and a mark Δ before the sum in the ledger.

Proceed in the same manner to compare the Cr. of the journal-post, and all the following posts in their order. The dots in the journal show how far the comparison is advanced, and the marks in the ledger show what articles are compared.

The sums of accounts transported should be left blank till the books be compared; as an error in any article will occasion an alteration in the sum.

40. Some accountants correct all errors in the ledger, without erasing any thing, by the following methods: 1st, If the sum be entered too small, they make

a second entry for the deficiency. 2d, If it be entered too large, they make an entry on the opposite side for the excess. 3d, If it be entered on the wrong side of the account, they enter it twice on the other; once, to counterbalance the error, and a second time for the true entry. 4th, If it be entered on a wrong account, they charge the wrong account Dr. to, or Cr. by, the right one.

41. We do not much approve of these methods, as they give the books a confused appearance; and would rather recommend the following rules: 1st, If an article be omitted, do not attempt to interline at the place where it should have been; but insert it under the last article when you discover the omission, and mark a cross \times against it on the margin, and another at the place where it should have been. 2d, If you discover a mistake immediately when committed, correct it without cancelling any thing, as in this example. *To Cash, say, To James Speirs received to account.* 3d, If you have written a line entirely wrong, or in a wrong place, write the word *Error* at the end, prefix a cross, and omit or cancel the sum. 4th, Cancel errors, by drawing a line lightly through them, so that the old writing may still be legible; by which it will be evident, that the book has not been vitiated for a fraudulent purpose. The same method should be followed in correcting errors in the journal.

42. When the comparison of the books is finished, glance over the ledger, to observe if the mark of comparison be affixed to every article. If not, you must turn to the journal, and observe if the articles be right which had not been marked.

43. Because the whole sum of the Dr. side of the ledger should be equal to the whole sum of the Cr. § 14. it is proper to try if they correspond. For this purpose, you may add the Dr. of every account, except such as are already balanced, placing the sums in an inner column, and extending them at the end of one or more folios, as you find most convenient, to the outer column: and, as you go along, add the Cr. in the same manner. If the sum total of both sides be equal, it gives a presumption that the books are right; if they differ, there is certainly some mistake. This is called the *Trial-balance*. The labour bestowed upon it is not lost, as the sums may be referred for affixing us to collect the balances; the method of which will be explained afterwards.

44. If the sums of the trial-balance do not correspond, the books must be examined again. For this purpose, begin with the first article on the Dr. side of the first account, and turn to the account where the corresponding entry is, which you will find by the figure in the reference-column. If the articles agree, mark them with a dot. Proceed in like manner with the other articles on the Dr. of the first account; then with the articles on the Cr. of the same; and then with the following accounts in their order, till the error or errors be discovered. In complex entries, observe if the amount of the sums on one side be equal to the sum on the other. When you come to a dotted article, you may pass it by, because it has been examined already.

If the errors be not discovered at the first revival, you must repeat the same operation again, till you bring the books to balance. Marks different from the former ones,

ones, or differently placed, may be used, to signify that an article has been examined a second or third time. As the detection of errors is the most tedious and disagreeable part of book-keeping, the accountant will be induced to guard against them with all possible care, when he has once experienced the trouble which they occasion.

45. Before we explain the method of balancing the books, it will be proper to direct the learner how to balance particular accounts. When we settle accounts with any person, and ascertain how much is owing at either hand, it is necessary to balance his account in the ledger, and open a new one, beginning with the sum that was due according to the settlement; and when we clear accounts again, we must go back to that article, and no farther.

If any articles be charged on either side, at the time of settling, they must be immediately entered on the waste-book; from which they will pass in course to the journal and ledger; and a remark must be entered in the waste-book, that the account was settled, and the balance transferred to the proper side of the new account. This remark is transcribed in the journal; and the ledger account is balanced, when it occurs, in the course of posting.

If the balance be due to you, write on the Cr. *By balance due to him to Dr. new account*, and insert the sum due you; after which, the amount of both sides will be equal. Add the account, placing the sums opposite to each other; and, if the sides be unequal, draw a diagonal line through the vacant space of the shorter side, and close the old account by drawing lines under the sums. Then open the new account immediately under the old one, or in a new folio if the old one be full, by writing on the Dr. *To balance of former account due by him*. If the balance be due by you to him, the entries are made on the opposite sides, with the necessary alterations. When the new account is opened in the same folio, it is unnecessary to repeat the title; but the year and month, as well as the day, are repeated at the date of the first article.

46. Sometimes when an account is balanced, one or more articles are left out on purpose: For example, goods lately bought on credit may be left out, and the settlement may only relate to articles of longer standing. When this is the case, if the articles omitted be on the Dr. of the ledger, we write on the Cr. thus, *By articles sold him since 1st January replaced*: and when we have balanced the account, and opened a new one, we write on the Dr. *To articles replaced at settling, furnished since 1st January*: or, if the articles were left out for any other reason, we explain the same in the narration. If the omitted articles be on the Cr. the like entries are made on the opposite sides. It should be noticed in the waste-book and journal when this operation is necessary.

47. When we post any common article from the journal, we enter the sum on the Dr. of one account, and on the Cr. of another: when we balance an account, we place the balance sum on the Dr. of the old account, and on the Cr. of the new one, or contrarywise: and when we replace an article, as above directed, to the Dr. or Cr. of the old account, we place it after balancing to the Cr. or Dr. of the new one. Thus, in these entries, as well as in common posts, there are like

furners entered on the Dr. and Cr. of the ledger, and the general equality of the sides is still preserved.

48. Merchants generally balance their books once a year. The design of this operation is, to collect the various branches of their business, diffused through the books, into a concise abstract; to ascertain their gain or loss since the last balance; and exhibit the present state of their funds. If the business be of such a kind, that most of the branches naturally come to an issue at a certain time of year, that time is the proper one for making the balance. Otherwise the end of the year, or the least busy time, may be chosen.

49. It is proper, before balancing, to settle as many personal accounts as possible; to clear all arrears and small charges; to take an exact inventory of the goods on hand, as far as can be done; and affix a moderate value to each article, according to the current prices at the time; such a value as you would be willing at present to buy for. It is more proper to value the goods on hand in conformity to the current prices, than at prime cost: for the design of affixing any value is to point out the gain or loss, and the gain is in reality obtained so soon as the prices rise, or the loss suffered so soon as they fall; therefore it is impossible to make up a just state of the affairs, unless the present prices be attended to.

50. These things being done, proceed to make the balance as follows: Prepare two sheets of paper, ruled with money-columns, in the form of Dr. and Cr.; write *Profit and Loss* as the title of the first, and *Balance* as the title of the second.

Prepare also some paper for computing the balances, and mark down the folios, titles, and sums of each account in the ledger, in a regular order. If a trial-balance was made, the sums may be transcribed from it. Pass by such accounts as are already closed; also the accounts of Stock and Profit and Loss, which are always the last of being balanced. Then subtract the lesser sum from the greater, and enter the difference on either of the sheets that the nature of the article points out, and on the side of that sheet which corresponds to the greater sum of the account. More particularly,

In personal accounts, enter the difference, which is the debt owing to you, or by you, on the proper side of the balance-sheet.

In the cash-account, enter the difference, which is the money in hand, on the Dr. side of the balance-sheet.

In accounts of goods or other property, if there be nothing remaining on hand, enter the difference, which is the gain or loss, on the proper side of the profit and loss sheet.

If the whole be still on hand, enter the present value on the Dr. of the balance-sheet; and, if this be different from the prime cost, charges included, enter the difference in the proper side of the profit and loss sheet.

If part be sold, and part on hand, place the value of the quantity on hand under the sum of the Cr. and add them. The sum is the whole return that will be obtained, if the rest of the goods be sold at the estimated value; and this, being compared with the sum of the Dr. which is the whole expence, shows the gain or loss. Enter the same in the proper side of the profit and loss sheet, and enter the quantity and value on hand on the Dr. of the balance-sheet.

Observe if the quantities in the inner columns be equal

equal on both sides, when the goods are all sold; or, if the difference, when only part is sold, be equal to the quantity on hand. If they correspond, you have a just account of the goods. If the Dr. be greater, there is something amissing, which you must enter on the Dr. of the balance-sheet, and mark the cause of the deficiency, as intake, waste, or the like. If the Cr. be greater, there is an excess, which you must enter on the Cr. of the balance-sheet, together with the occasion of it, as difference of measure, or the like.

In accounts subsidiary to profit and loss, enter the difference on the proper side of the profit and loss sheet.

When there is nothing written on one side of an account, enter the sum of the article or articles on that sheet which the kind of the account points out.

51. When you have collected all the balances, sum up both sheets, and add to the profit and loss sheet the sums of the profit and loss account in the ledger: then subtract the lesser sum of each sheet from the greater.

This being done, mark the sums of the stock-account on your computation-paper, and add thereto the balance of the profit and loss sheet on the side which corresponds with the greater sum of that account: then subtract the lesser sum from the greater. The remainder will be equal to the difference of the sides of the balance-sheet, if the books be right, and the balances exactly collected.

52. We shall prove that this equality must always hold, from the nature of the articles collected. The Dr. of the balance-sheet contains every kind of property belonging to you, and every debt owing to you; and the Cr. contains every debt owing by you: therefore the difference of the sides shows what your nett estate amounts to. The profit and loss sheet, when the articles from the ledger are included, contains every thing you have gained on the Cr. and every thing you have lost on the Dr.; and the difference of the sides is your nett gain or loss. The stock-account contained your effects and debts at the time the books were opened; and therefore, when the gain or loss is added to the proper side, it must show the extent of your nett estate at present. Thus the stock-account and the balance-sheet both point out how much you are worth at present; the one from your former stock, allowance being made for your gains or losses; the other from a view of your present effects and debts; and they will correspond, because both must be agreeable to the truth, if the books be correct.

53. Though the books must balance, if free from error, yet it is sometimes difficult to adjust them exactly, especially when the business is extensive, and the error trilling. If there be still a difference, which we do not think it worth while to make further search for, we may close the books, by making Profit and Loss Dr. or Cr. for the same. This introduces an article on one side of the ledger, which has none corresponding to it on the other, but is balanced by some undiscovered error.

54. The balance being struck, your next work is to close the books. Every article in the ledger should be posted from the journal; therefore, the most regular way of finishing both is by inserting the following articles in the journal, and posting them in the common manner to the ledger.

1st, *Profit and Loss Dr. to Sundries, for loss, on the*
N^o 50.

following accounts. The particulars are taken from the Dr. of the Profit and Loss sheet.

2d, *Sundries Dr. to Profit and Loss, for gain, on the following accounts.* The particulars are taken from the Cr. of the Profit and Loss sheet.

3d, *Balance-account Dr. to Sundries, for debts and property belonging to me.*

4th, *Sundries Dr. to balance-account, for debts due by me.* The particulars of this and the former are taken from the respective sides of the balance-sheet.

5th, *Profit and Loss Dr. to Stock for nett gain; or Stock Dr. to Profit and Loss, for nett loss.*

6th, *Balance-account Dr. to Stock, for nett stock.*

55. When the four first of these articles are posted in the ledger, all the personal, real, and subsidiary accounts will balance, and you may add them as you go along. In accounts of goods, if there be any deficiency, you must enter it on the Cr. in the inner column; and, if there be any outcome, you must enter it on the Dr. before you add the account. Then the sums of every account and every column on the opposite sides will be equal.

The only accounts that remain open are, *Profit and Loss, Stock, and Balance.* The fifth post balances the profit and loss account, and the sixth balances the stock-account. It was noticed, § 14. that the whole sums of Dr. and Cr. of the ledger are equal; and therefore, if the sides of every account, except one, be balanced, that one will balance of its own accord. The balance-account alone remains open, and, upon trial, you will find that the sides are equal. This affords an additional proof, or, at least, a different view, of what was demonstrated, with respect to the balance of the books, in § 52.

The lines above and under the sums, at a general balance, may be drawn with red ink; and, at the balancing of particular accounts, with black ink, for distinction.

56. Some chuse to insert the particulars of the profit and loss and balance sheets in the respective accounts of the ledger. If this be done, it is unnecessary to enumerate them also in the journal. — Some chuse to balance the accounts of goods, whenever the quantity is sold off; and we approve of this method, as it lessens the work at the general balance, which is always sufficiently laborious.

57. Thus is the state of a person's affairs brought together, in a short compass, under his view; and the articles of the balance-sheet supply materials for a new inventory. It is convenient, however, to alter the order, and arrange the real accounts together, and the personal ones together.

58. It is not necessary to begin new books, nor open the accounts anew, unless the old folios be full. The accounts may be continued in the former folios; but it is best to begin a new ledger, if the old one be not likely to hold all the business of the next year. When one comes to have several sets of books, it is common to distinguish them by the letters of the alphabet. The first waste-book, journal, and ledger, are marked A, the second, B; and so on.

In the following specimen, the waste-book and journal are placed on opposite pages, that the learner may easily compare them; and the rules are referred to by their numbers.

(1) WASTE-BOOK.
Edinburgh, JANUARY 1. 1789.

JOURNAL.
Edinburgh, JANUARY 1. 1789. (1)

INVENTORY of ready money, goods, and debts, belonging to James Oswald merchant in Edinburgh.

Ready money	-	-	L75	10	-
200 bulls meal, at 13s	L130	---	---	---	---
6 hds Port wine, at L15	90	---	---	---	---
70 reams paper, at 10s 6d	36	15	---	---	---
120 sp. five hank yarn, at 2s 3d	-	-	13	10	---
			---	---	270 5
A house in Lawn-market Edin. value	300	---	---	---	---
James Boswell merch. Edin. owes per account	L73	4	---	---	---
Thomas Pirie writer Edin. owes per do	12	3	8	---	---
Henry Hardy merch. Glasgow per bill	75	---	---	---	---
David Miller manufacturer Haddington per receipt	18	---	---	---	---
			---	---	178 7 8
§ 29					824 2 8

Sundries Dr. to Stock for articles belonging to James Oswald merchant Edinburgh.

.1 Cash on hand	-	-	L75	10	---
.1 Meal. For 200 bulls at 13s	L130	---	---	---	---
.1 Port-wine. For 6 hds at L15	90	---	---	---	---
.2 Paper. For 70 rms, at 10s 6d	36	15	---	---	---
.2 Yarn. For 120 sp. five hank, at 2s 3d	-	-	13	10	---
			---	---	270 5
.2 House in Lawn-market Edin. value	300	---	---	---	---
.2 Ja. Boswell mer. Ed. per. ac	L73	4	---	---	---
.2 Tho. Pirie writer Ed. per do	12	3	8	---	---
.2 Henry Hardy merchant Glasgow per bill	-	-	75	---	---
.2 David Miller manufacturer Haddington, per receipt	18	---	---	---	---
			---	---	178 7 8
					824 2 8

LIST of debts by the said James Oswald.

To the Royal bank per account	L230	---	---	---	---
To Tho. Smith merchant London per do	54	---	---	---	---
To Will. Nisbet carpenter Leith per do	28	7	3	---	---
§ 29					312 7 3

Stock Dr. to Sundries.

.2 To Royal Bank per account	L230	---	---	---	---
.3 To Tho. Smith merch. London per acc.	54	---	---	---	---
.3 To Will. Nisbet carpenter Leith per do	28	7	5	---	---
					312 7 3

Bought for ready money 105 yards calicoe, at 3s 2d Rule III.

Sold James Cuthbert merchant Leith 50 bolls meal, at 13s 3d Rule I.

Bartered 60 spindles five hank yarn, at 2s 4d, for 80 yards diaper, at 1s 9d Rule III.

Paid William Nisbet in full Rule I.

Bought from Will. Bruce merchant Leith, 200 bushels falt, at 1s 8d L16 13 4
320 stone iron, at 3s 4d 53 6 8

Rule II.

Sold 30 rms paper to Ja. Boswell, at 12s L18 ---
12 to John Henderson Stationer Edinburgh, at 12s 7 4 ---
5 for ready money, at 11s 2 15 ---
47 Rules I. III.

Sold Will. Hunter merchant Dunbar 150 bush. falt, at 1s 9d, L13 2 6
Received in part L10 ---
And he owes the balance 3 2 6

Rules I. III.

Calicoe Dr. to Cash. Bought 105 yards at 3s 2d

James Cuthbert merchant Leith, Dr to Meal, sold 50 bolls, at 13s 3d

Diaper Dr. to Yarn. Delivered 60 sp. five hank in barter for 80 yards, at 1s 9d

William Nisbet Dr. to Cash. Paid him in full

Sundries Drs. to William Bruce merchant Leith.
.3 Salt. For 200 bushels, at 1s 8d L16 13 4
.3 Iron. For 320 stones, at 3s 4d 53 6 8

Sundries Drs. to Paper.
.2 James Boswell, for 30 rms, at 12s L18 ---
.4 John Henderson Stationer Edinburgh, for 12 12s 7 4 ---
.1 Cash. For 5 11s 2 15 ---
47

Sundries Drs to Salt, for 150 bush. at 1s 9d, L13 2 6
.1 Cash. Received in part - L10 ---
.4 William Hunter merchant Dunbar, for balance due by him 3 2 6

(2) WASTE-BOOK.
Edinburgh, JANUARY 22. 1789.

Received from Henry Hardy in pay-
ment of his bill L.75 — —
And for interest on do 2 10 — —

77 10

Rules II. VII.

Paid the Royal Bank - - - 100 — —
Rule I.
26. — —

Bought from Alex. Sharp merch. Dundee 500 sp.
four hank yarn, at 1s 11d L47 18 4
Paid him in part L15 — —
And the balance due him is 32 18 4

47 18 4

Rules II. III.

Received 150 bolls meal, 13s 2d L98 : 15s, in bar-
ter for 6 hds. Port wine, at L16 L96 — —
Paid the balance 2 15 — —

98 15

Rule III.

Edinburgh, 2d FEBRUARY 1789.

Sold James Boswell
48 bush. falt, being the rem. at 1s 8½d L4 2 —
60 sp. five hank yarn, at 2s 3½d 6 17 6
100 stone iron, at 3s 4½d 16 17 6

27 17

Rule I.

Received from James Cuthbert in part
Rule II.

30

Bartered 22 reams paper, at 12s L13 4 —
30 bolls meal, at 13s 6d 20 5 —
L33 9 —

33 9

For 334½ sp. four bank yarn, at 2s
Rule III.

Taken for the use of my shop the remaining ream
paper, value

10 6

Rule VI.

Received from William Hunter in full L3 2 6
from James Boswell in part 70 — —

73 2 6

Rule II.

Paid the Royal Bank - - - 100 — —
Rule I.
19. — —

Bartered 100 yards calicoes, at 3s 6d L17 : 10s
For one hd. Port-wine L14 10 —
Received the balance 3 — —

17 10

Rule III.

JOURNAL.
Edinburgh, JANUARY 22. 1789.

.1 Cash Dr. to Sundries.
.2 To Henry Hardy. Rec. paym. of his bill L75 — —
.1 To Profit and Loss. Rec. interest on do 2 10 — —

77 10

.2 Royal Bank Dr. to Cash. Paid them
.2 26. — —

100

.2 Yarn Dr. to Sundries, for 500 spindles four hank,
at 1s 11d L47 18 4
.1 To Cash. Paid in part L15 — —
.4 To Alex. Sharp merch. Dundee for bal. 32 18 4

47 18 4

.1 Meal Dr. to Sund. for 150 bolls, at 13s 2d L98 : 15s
.1 To Port-Wine. For 6 hds. delivered in
barter, L16 L96 — —
.1 To Cash. Paid balance 2 15 — —

98 15

Edinburgh, 2d FEBRUARY 1789.

.2 James Boswell Dr. to Sundries.
.3 To Salt, for 48 bush. being the rem.
at 1s 8½d L4 2 —
.2 To Yarn, for 60 sp. five hank, at 2s 3½d 6 17 6
.3 To Iron, for 100 stones, at 3s 4½d 16 17 6

27 17

.1 Cash Dr. to James Cuthbert. Received in part
.3 30. — —

30

.2 Yarn Dr. to Sundries. For 334½ sp. four hank yarn,
at 2s L33 : 9s
.2 To Paper. For 22 reams delivered in
barter, at 12s L13 4 —
.1 To Meal. For 30 bolls, at 13s 6d 20 5 —

33 9

.4 Charges Merchandize Dr. to Paper, taken for the use
of shop, 1 ream, value
.2 16. — —

10 6

.1 Cash Dr. to Sundries.
.4 To William Hunter. Received in full L3 2 6
.2 To James Boswell. ——— in part 70 — —

73 2 6

.2 Royal Bank Dr. to Cash. Paid them
.1 19. — —

100

Sundries Drs. to Calicoes. For 100 yards delivered in
barter, at 3s 6d L17 : 10s
.1 Port Wine. Por 1 hd. L14 10 —
.1 Cash. Received balance 3 — —
.3 17 10

17 10

B O O K - K E E P I N G .

(3) **WASTE-BOOK.**
Edinburgh 19th FEBRUARY, 1789.

JOURNAL.

Edinburgh, 19th FEBRUARY, 1789.

(3) 379

Sold 30 bolls meal for ready money, at 13s 8d L 20 10 — 45 to Henry Hardy, at 13s 10d 31 2 6 27 to William Hunter, at 13s 10d 18 13 6 52 to Baillie and Bell, Borrow- fownnefs, at 13s 10d 35 19 4					
154	Rules I. III.		106	5	4
-23-					
Drawn on the Royal Bank	Rule II.		120		
Paid William Bruce in part L. 50 — — Alexander Sharp in full 32 18 4 And Tho. Smith's bill on me at fight 35 — —	Rule I.		117	18	4
Edinburgh, 2d MARCH, 1789.					
Paid charges and cellar-rent of falt L 1 2 6 Charges and loft rent of meal 3 3 —	Rule IV.		4	5	6
4.					
Received from Thomas Pirie in full L. 12 — — Discounted him — 3 8	Rules II. VI.		12	3	8
5.					
Sold James Dalton, Manchester 60 spindles four hank yarn, at 2s 1/4 d L 6 1 3 300 do do at 1s 11 1/4 29 13 9	Rule I.		35	15	
12.					
Received from Jan Jonkheer Rotterdam 6 bags clo- ver feed, qt. 200 lb. each, amount per invoice f. 312, at 22d per f. L. 28 12 — Paid freight and charges 1 5 —	Rules II. IV.		29	17	
17.					
Bartered with James Boswell 2 bags clover seed, at L 6, L 12, for 2 hds. lintf. at 55s L 5 10 — Received in money 5 — — And he owes the balance 1 10 —	Rules III. I.		12		
20					
Paid Tho. Smith in full L 19 — — And for interest 1 10 —	Rules I. IV.		20	10	
-21-					
Sold 140 lb. clover-feed to John Scott farmer at Haugh-head, at 7 1/2 d L 4 7 6 70 to James Cuthbert, at 7 1/2 d 2 3 9 120 for ready money, at 7 1/2 d 3 12 6	Rules I. II.		10	3	9
330					

<i>Sundries Drs. to Meal.</i>					
.1 Cash. For 30 bolls, at 13s 8d L 20 10 — .2 Henry Hardy. For 45 13s 10d 31 2 6 .4 William Hunter. For 27 13s 10d 18 13 6 .4 Baillie and Bell, Bor- .1 rowitownnefs. For 52 13s 10d 35 19 4					
154			106	5	4
-23-					
.1 Cash Dr. to Royal Bank. Drawn on them			120		
<i>Sundries Drs. to Cash.</i>					
.3 William Bruce. Paid him in part L. 50 — — .4 Alex. Sharp. Paid him in full 32 18 4 .3 Tho. Smith. Paid his bill on me at fight 35 — —			117	18	4
Edinburgh, 2d MARCH, 1789.					
<i>Sundries Drs. to Cash.</i>					
.3 Salt. Paid charges and celler-rent L 1 2 6 .1 Meal. Paid charges and loft-rent 3 3 —			4	5	6
4.					
<i>Sundries Drs. to Thomas Pirie.</i>					
.1 Cash. Received in full L 12 — — .1 Profit and Loss. Discounted him — 3 8			12	3	8
5.					
<i>James Dalton, Manchester, Dr. to Yarn.</i>					
.4 For 60 sp. four hank, at 2s 1/4 d L 6 1 3 .2 And 300 do. at 1s 11 1/4 d 29 13 9			35	15	
12.					
<i>Clover seed Dr. to Sundries.</i>					
.4 To Jan Jonkheer, for 6 bags, qt. 200 lb. each, is 1200 lb. amount per invoice, f. 312, at 22d L 28 12 — .1 To Cash. Paid freight and charges 1 5 —			29	17	
17.					
<i>Sundries Drs. to Clover seed.</i> For 2 bags, at L 6, L 12 — —					
.4 Lint-feed, for 2 hds. recd. in bart. 55s 5 10 — .1 Cash. In part 5 — — .4 James Boswell, for balance 1 10 —			12		
12					
<i>Sundries Drs. to Cash.</i>					
.3 Thomas Smith. Paid him in full L 19 — — .1 Profit and Loss. Paid him interest 1 10 —			20	10	
20					
-21-					
<i>Sundries Drs. to Clover-feed.</i>					
.5 John Scott, farmer at Haugh-head, for 140 lb. at 7 1/2 d L 4 7 6 .3 James Cuthbert, for 70 7 1/2 d 2 3 9 .1 Cash for 120 7 1/2 d 3 12 6			10	3	9
330					

330
3 B 2

Edinburgh.

Edinburgh, 24th MARCH, 1789.

Edinburgh, 24th MARCH, 1789.

James Boswell has paid the Royal Bank on my acct. Rule VIII. 40

Royal Bank Dr. to James Boswell. Paid them by him 40

Bought from William Ainslie merchant Alloa $\frac{1}{7}$ share of the ship Hazard, for Rule II. 150

Share of ship Hazard Dr. to William Ainslie merchant Alloa, bought $\frac{1}{7}$ share for 150

Sold Baillie and Bell, 150 stone Iron, at 3 s 7 d L 26 17 6
1 hd. Port-wine 15 5 —
Rule I. 42 2 6

Baillie and Bell Drs. to Sundries. 28.
To Iron. For 150 stone, at 3 s 7 d L 26 17 6
To Port wine. For 1 hd. 15 5 —

Edinburgh, 2d APRIL, 1789.

Edinburgh, 2d APRIL, 1789.

Sold for ready money 50 yards diaper, at 1 s 11 d L 4 15 10
30 bolls meal, at 13 s 7 d 20 7 6
1 hd. lint-feed 3 3 —
160 lb. clover-feed, at 7 $\frac{1}{2}$ d 5 3 4
30 stone iron, at 3 s 6 $\frac{1}{2}$ d 5 6 3
Rule III. 38 15 11

Cash Dr. to Sundries. 6.
To Diaper. For 50 yards, at 1 s 11 d L 4 15 10
To Meal. For 30 bolls, at 13 s 7 d 20 7 6
To Lint-feed. For 1 hd. 3 3 —
To Clover-feed. For 160 lb. at 7 $\frac{1}{2}$ d 5 3 4
To Iron. For 30 stone, at 3 s 6 $\frac{1}{2}$ d 5 6 3

Drawn on the Royal Bank for Rule II. 60

Cash Dr. to Royal Bank. Drawn on them for 60

Bought for ready money 30 casks train oil, at 22 s L 33 — —
30 bolls meal, at 13 s L 19 10 —
40 do. at 13 s 2 d 26 6 8
70 45 16 8
Rule III. 78 16 8

Sundries Drs. to Cash. 6.
Train-oil. For 30 casks, at 22 s L 33 — —
Meal. For 30 bolls, at 13 s L 19 10 —
And 40 at 13 s 2 d 26 6 8
70 45 16 8

Sold Will. Ainslie 30 yds. diaper, at 2 s L 3 — —
And paid him 30 — —
Rule I. 33

William Ainslie Dr. to Sundries. 8.
To Diaper. For 30 yards, at 2 s L 3 — —
To Cash. Paid him 30 — —

Baillie and Bell have paid Will. Ainslie, at my desire, balance of my share of the ship Hazard Rule VIII. 117

William Ainslie Dr. to Baillie and Bell. Paid him by them on my account, being balance of share of ship Hazard 117

Sold James Boswell 20 casks train-oil, at 27 s Rule I. 27

James Boswell Dr. to Train-oil. Sold him 20 casks at 27 s 27

Sold George Gordon merch. Stirling 10 casks train oil, at 28 s L 14 — —
1 hd. lint-feed 3 5 —
35 bolls meal, at 13 s 8 d 23 18 4
L 41 3 4

George Gordon Dr. to Sundries. 14.
To Train-oil. For 10 casks, at 28 s L 14 — —
To Lint-feed. For 1 hd. 3 5 —
To Meal. For 35 bolls, at 13 s 8 d 23 18 4

Received in part And he owes the balance L 55 — —
6 3 4
Rules I. II. 41 3 4

Cash Dr. to George Gordon. Received in part 35

Paid Baillie & Bell's bill on me to C. Cowan, at sight Rule I. 38 18 2

Baillie and Bell Dr. to Cash. Paid their bill on me to C. Cowan, at sight 38 18 2

B O O K - K E E P I N G

(5) WASTE-BOOK.
Edinburgh, 18th APRIL, 1789.

JOURNAL
Edinburgh, 18th APRIL, 1789.

(5)

Taken for the use of my family, the remaining five yards calicoe, at 3s 2d Rule VI.	15 10
22.	
The Royal Bank have paid Jan Jonkheer's bill on me, 1 mdt. at my desire Rule VIII.	28 12
25.	
Received my proportion of profits on a voyage to Rotterdam by the Hazard Rule V.	33
30.	
Paid for small charges on my business since 1st January Personal and family expences	L 5 3 8 32 — —
Rule VI.	
Due Thomas Sharp, my clerk, for wages Rule VI.	8 — —
Due the Royal Bank for interest Rule VI.	2 11 2
Previous to the balancing of my books, I have taken an inventory of the goods in my shop and ware-house,	
124 bolls meal, at 13s 6d	L 83 14 —
474 sp. four hank yarn, at 2s	47 8 —
40 stone iron, at 3s 4d	6 13 4
300 lb. clover-feed, at 6d	7 10 —
	L 145 5 4
I value my house at	300 — —
And my share of ship Hazard	140 — —
	L 585 5 4

.5 Proper expences Dr. to Calicoes. For 5 yards taken for family use, at 3s 2d	15 10
22.	
.4 Jar Jonkheer Dr. to Royal Bank. For his bill on me 1 mdt. paid by them	28 12
25.	
.1 Cash Dr to Share of Ship Hazard. Received my proportion of profits on a voyage to Rotterdam	33
30.	
Sundries Drs. to Cash.	
.4 Charges Merchandize. Paid small charges since Jan. 1.	L 5 3 8
.5 Proper Exp. Paid perf. and family charges	32 — —
Rule VI.	
.4 Charges of Merchandize Dr. to Thomas Sharp, my clerk. Due him for wages	8 — —
1.	
.2 Profit and Loss Dr to Royal Bank. Due them for int.	2 11 2
1.	
Profit and Loss Dr. to Sundries, for articles of loss.	
.3 To Salt	L — 11 4
.4 To Charges Merchandize	13 14 2
.5 To Proper Expences	32 15 10
See § 54.	
Sundries Drs. to Profit and Loss, for articles of gain.	
.1 Meal	L 9 18 —
.1 Port-wine	6 15 —
.2 Paper	4 18 6
.2 Yarn	2 3 2
.3 Calicoes	1 13 4
.3 Diaper	15 10 —
.3 Iron	2 7 11
.4 Clover-feed	5 — 1
.4 Lint-feed	18 — —
.5 Share of ship Hazard	23 — —
.5 Train-oil	8 — —
1.	
65 9 10	
.5 Bal. Account Dr. to Sun. for articles belonging to me.	
.1 To Cash	L 8 3 10
.1 To Meal. For 124 bolls, at 13s 6d	83 14 —
.2 To Yarn. For 474 sp. at 2s	47 8 —
Amiffing 1/2 spindle.	
.2 To House in Laron market	300 — —
.2 To James Boswell	37 11 —
.2 To Henry Hardy	31 2 6
.2 To David Miller	18 — —
.3 To James Cuthbert	5 6 3
.3 To Iron. For 40 stone, at 3s 4d	6 13 4
.4 To John Henderson	7 4 —
.4 To William Hunter	18 13 6
.4 To James Dalton	35 15 —
.4 To Clover-feed. For 300 lb. at 6d	7 10 —
Inlake 10 lb.	
.5 To John Scott	4 7 6
.5 To Share of ship Hazard	140 — —
.5 To George Gordon	6 3 4

(6) JOURNAL.

Edinburgh, 30th APRIL 1789.

Sundries Drs. to Balance-account.				
.1	Meal. Outcome 3 bolls			
.2	Royal Bank	-	L 201	3 2
.3	William Bruce	-	20	—
.5	Thomas Sharp	-	8	—
				229 3 2
.1	Profit and Loss Dr. to Stock, for nett gain		16	13 8
.1	Stock Dr. to Balance-Account, for nett stock		528	9 1

The next JOURNAL would begin thus.

Sundries Drs. to Stock.				
	Cash on hand		L 8	3 10
	Meal. For 124 bolls, at 13s	L 83	14	—
	Yarn. For 474 sp. 4-hank, at 2s 47	8	—	—
	Iron. For 40 stone, at 3s 4d	6	13	4
	Clover-feed. For 300 lb. at 6d	7	10	—
			145	5 4
	House in Lawn-market Edinburgh, value	L 300	—	—
	Share in ship Hazard. For one third	140	—	—
			440	—
	James Boswell Edinburgh.			
	Due by him	L 37	11	—
	Henry Hardy Glasgow. Do	31	2	6
	David Miller Haddington. Do	18	—	—
	James Guthbert Leith. Do	5	6	3
	John Henderson Edin. Do	7	4	—
	William Hunter Dunbar. Do	18	13	6
	James Dalton Manchester. Do	35	15	—
	John Scott Haughhead. Do	4	7	6
	George Gordon Stirling. Do	6	3	4
			164	3 1
				757 12 3
	Stock Dr. to Sundries.			
	To Royal Bank. Due them	L 201	3	2
	To William Bruce Leith. Due him	20	—	—
	Thomas Sharp, my clerk. Do	8	—	—
				229 3 2

B O O K - K E E P I N G .

(1) L E G E R .		F s .	
Dr. Stock,			
1789			
Jan. 1	To Sundries per J.	312	7 3
Apr. 30	To Balance-account, for nett flock	5528	9 1
		840	16 4
<hr/>			
Dr. Profit and Loss,			
1789			
Mar. 4	To Thomas Pirie, discounted him	2	3 8
Apr. 17	To Cash, paid Tho. Smith interest	1	1 10
30	To Royal Bank, for interest due them	2	2 11 2
	To Sundries, per J.		47 1 4
	To Stock, for nett gain	1	16 13 8
		67	19 10
<hr/>			
Dr. Cash,			
1789			
Jan. 1	To Stock on hand	1	75 10
15	To Paper, for 5 reams, at 11 s	2	2 15
19	To Salt, in part, per J.	3	10
22	To Sundries for Hen. Hardy's bill, with int.		77 10
Feb. 3	To James Cuthbert, in part	3	30
16	To Sundries, per J.		73 2 6
19	To Calicoes, for bal. of 100 yards, per J.	3	3
	To Meal, for 30 bolls, at 13 s 8 d	1	20 10
20	To Royal Bank, drawn on them	2	120
Mar. 4	To Thomas Pirie, in full	2	12
17	To Clover-seed, in part, for 2 bags	4	5
21	To Clover-seed, for 120 lb. at 7 1/4 d	4	3 12 6
Apr. 2	To Sundries, per J.		48 15 11
6	To Royal Bank, drawn on them	2	60
14	To George Gordon, in part	5	35
25	To Share of ship Hazard for share profits p. J	5	33
		599	15 11
<hr/>			
Dr. Meal,			
1789			
Jan. 1	To Stock on hand, at 13 s	200	1 130
30	To Sundries, per J. at 13 s 2 d	150	98 15
Mar. 2	To Cash, paid charges and loft-rent	1	3 3
Apr. 6	To Cash, per J.	70	45 16 8
30	To Profit and Loss, for gain Outcome	1	9 18
		3	
		423	287 12 8
<hr/>			
Dr. Port-wine,			
1789			
Jan. 1	To Stock on hand, at L 15	6	1 90
Feb. 19	To Calicoes, in barter	1	3 14 10
Apr. 30	To Profit and Loss, for gain	1	6 15
		7	1 11 5

(1) L E G E R .		F s . (1)	
Contra		Cr.	
1789			
Jan. 1	By Sundries, per J.		824 2 8
Apr. 30	By Profit and Loss, for nett gain	1	16 13 8
			840 16 4
<hr/>			
Contra		Cr.	
1789			
Jan. 22	By Cash, received int. on Hen. Hardy's bill	1	2 10
Apr. 30	By Sundries, per J.		65 9 10
			67 19 10
<hr/>			
Contra		Cr.	
1789			
Jan. 3	By Calicoes, for 105 yards, at 3 s 2 d	3	16 12 6
10	By William Nisbet, in full	3	28 7 3
22	By Royal Bank, paid them	2	100
26	By Yarn, in part, for 500 sp. four hank	2	15
Feb. 3	By Meal, paid balance of 150 bolls	1	2 15
16	By Royal Bank, paid them	2	100
21	By Sundries, per J.		117 18 4
Mar. 2	By Sundries, per J.		4 5 6
12	By Clover-feed, paid freight and charges	4	1 5
17	By Sundries, paid Tho. Smith, with int. per J.		20 10
Apr. 6	By Sundries, per J.		78 16 8
	By William Ainslie, paid him	5	30
16	By Baillie and Bell, paid their bill on me ft.	4	38 8 2
30	By Sundries, for charges and expences per J.		37 3 8
	By Balance-account	5	8 3 10
			599 15 11
<hr/>			
Contra		Cr.	
1789			
Jan. 3	By James Cuthbert, at 13 s 3 d	50	3 33 2 6
Feb. 10	By Yarn in barter, at 13 s 6 d	30	2 20 5
19	By Sundries, per J.	154	100 5 4
Apr. 2	By Cash, at 13 s 7 d	30	1 20 7 6
14	By George Gordon, at 13 s 8 d	35	5 23 10 4
30	By Balance-account, at 13 s 4 d	124	5 83 14
		423	287 12 8
<hr/>			
Contra		Cr.	
1789			
Jan. 10	By Meal, in barter, at L 16	6	1 96
Mar. 28	By Baillie and Bell	1	4 15 5
		7	1 11 5

Dr.		Paper,		R.	
1789	Jan. 1	To Stock on hand, at 10s 6d	70	136	15
	Apr. 30	To Profit and Loss, for gain		4	18 6
			70	41	13 6

Dr.		Yarn,		Spindles	
				4 H 5 H	
1789	Jan. 1	To Stock on hand, at 2s 3d	120	13	10
	Jan. 26	To Sundries, per J. at 1s 11d	500	47	18 4
	Feb. 10	To Sundries, per J. at 2s	334 1/2	33	9
	Apr. 30	To Profit and Loss, for gain		2	3 2
			834 1/2	97	6

Dr.		House in Lawn-market,		R.	
1789	Jan. 1	To Stock, for value	300		

Dr.		Ja. Boswell merchant Edinburgh,		R.	
1789	Jan. 1	To Stock due by him, per account	73	4	
	Jan. 15	To Paper, for 30 reams, at 12s	2	18	
	Feb. 2	To Sundries, per J.	27	17	
	Mar. 17	To Clover-seed, for bal. of 2 bags, per J.	4	1	10
	Apr. 11	To Train-oil, for 20 casks, at 27s	5	27	
			147	11	

Dr.		Thomas Pirie writer Edinburgh,		R.	
1789	Jan. 1	To Stock due by him per account	12	3	8

Dr.		Henry Hardy merchant Glasgow,		R.	
1789	Jan. 1	To Stock due by him per bill	75		
	Feb. 19	To Meal, for 45 bolls, at 13s 10d	31	2	6

Dr.		David Miller manufacturer Haddington,		R.	
1789	Jan. 1	To Stock due by him per receipt	18		

Dr.		Royal Bank of Scotland,		R.	
1789	Jan. 22	To Cash, paid them	100		
	Feb. 16	To Cash, paid them	100		
	Mar. 24	To Ja. Boswell, paid them by him	2	40	
	Apr. 30	To Balance-account	5	20	3 2
			441	3	2

Contra		Cr.		R.	
1789	Jan. 15	By Sundries, per J.	47	27	19
	Feb. 10	By Yarn in barter, at 12s	22	2	13 4
		By Charges Merchandize, for shop-use	1	4	10 6
			70	41	15 6

Contra		Cr.		Spindles	
				4 H 5 H	
1789	Jan. 5	By Diaper, at 2s 4d	60	3	7
	Feb. 2	By James Boswell, at 2s 3 1/2d	60	2	6 17 6
	Mar. 5	By James Dalton, per J.	360	4	35 5
	Apr. 30	By Balance-account, at 2s Amiffing	474	5	47 8
			834 1/2	120	97 6

Contra		Cr.		R.	
1789	Apr. 30	By Balance account	5	300	

Contra		Cr.		R.	
1789	Feb. 16	By Cash in part	1	70	
	Mar. 24	By Royal Bank, paid in by him	2	40	
	Apr. 30	By Balance-account	5	37	11
				147	11

Contra		Cr.		R.	
1789	Mar. 4	By Sundries in full, with discount, per J.		12	3 8

Contra		Cr.		R.	
1789	Jan. 22	By Cash in full	1	75	
	Apr. 30	By Balance-account	5	31	2 6

Contra		Cr.		R.	
1789	Apr. 30	By Balance-account	5	18	

Contra		Cr.		R.	
1789	Jan. 1	By Stock, due them per account	1	230	
	Feb. 23	By Cash, drawn on them	1	120	
	Apr. 6	By Cash, drawn on them	1	60	
	22	By J. Jonkheer, for his bill paid them, p. J.	4	28	12
	30	By Profit and Loss, for interest due them	1	2	1 2
				441	3 2

(3) L E G E R .

L E G E R . (3)

Dr.									
1789									
Feb. 23	To Cash, paid his bill on me at sight		1	35					
Mar. 17	To Cash, in full		1	19					
				54					
<hr/>									
1789									
Jan. 10	To Cash, paid him in full		1	28	7	3			
<hr/>									
1789									
Jan. 3	To Cash, at 3s 2d	Yds.	1	16	12	6			
Apr. 30	To Profit and Loss, for gain		1	1	13	4			
				105					
<hr/>									
1789									
Jan. 3	To Meal, for 50 bolls, at 13s 3d		1	33	2	6			
Mar. 21	To Clover-feed, for 70 lb. at 7½		4	2	3	9			
				35	6	3			
<hr/>									
1789									
Jan. 5	To Yarr. in barter, at 1s 9d	Yds.	80	2	7	15	10		
Apr. 30	To Profit and Loss, for gain		1						
				80					
<hr/>									
1789									
Jan. 13	To William Bruce, at 1s 8d	Bush.	200	3	16	13	4		
Mar. 2	To Cash, paid charges and cellar-rent		1	1	2	6			
				200					
<hr/>									
1789									
Feb. 23	To Cash in part			50					
Apr. 30	To Balance-account		1	20					
				70					
<hr/>									
1789									
Jan. 13	To William Bruce, at 3s 4d	Stones,	320	5	3	6	8		
Apr. 30	To Profit and Loss, for gain		3	2	7	11			
				320					

Contra									
1789									
Jan. 1	By Stock, due him per account		1	54					
				54					
<hr/>									
1789									
Jan. 1	By Stock, due him per account.		1	28	7	3			
<hr/>									
1789									
Feb. 19	By Sundries, per J. at 3s 6d	Yds.	100	17	10				
Apr. 19	By proper Expences taken at 3s 2d		5	5					
				105					
<hr/>									
1789									
Feb. 3	By Cash in part		1	30					
Apr. 30	By Balance account		5	5	6	3			
				35	6	3			
<hr/>									
1789									
Apr. 2	By Cash at 1s 11d	Yds.	50	1	4	15	10		
	By William Ainslie, at 2s		30	5	3				
				80					
<hr/>									
1789									
Jan. 19	By Sundries, per J. at 1s 9d	Bush.	150	13	2	6			
Feb. 2	By J. Boswell, for the rem. at 1s 8d½d		48	2	4	2			
Apr. 30	By Profit and Loss, Inlake		2						
				200					
<hr/>									
1789									
Jan. 13	By Sundries per J.			70					
<hr/>									
1789									
Feb. 2	By James Boswell, at 3s 4½d	Stones.	100	2	16	17	6		
Mar. 28	By Baillie and Bell, at 3s and 7d		150	4	20	17	6		
Apr. 2	By Cash, at 3s 6d½d		30	1	5	6	3		
Apr. 30	By Balance-account, at 3s 4d		40	5	13	4			
				320					

B O O K - K E E P I N G .

L E G E R .

FO.

L E G E R .

FO. (4.)

L E G E R .				L E G E R .			
(4)				(4.)			
Dr.	<i>Jo. Henderson Stationer Edinburgh,</i>						
1789				1789			
Jan. 14	To paper, for 12 reams at 12 s	2	7 4	Apr. 30	By Balance-account	5	7 4
Dr.	<i>William Hunter merchant Dunbar,</i>						
1789				1789			
Jan. 19	To Salt, for balance of 150 bushels, per J.	3	3 2 6	Feb. 16	By Cash in full	1	3 2 6
Feb. 19	To Meal, for 27 bolls, at 13 s 10 d	1	18 13 6	Apr. 30	By Balance-account	5	18 13 6
Dr.	<i>Alexander Sharp merchant Dundee,</i>						
1789				1789			
Feb. 23	To Cash, in full	1	32 18 4	Jan. 20	By Yarn, for balance of 300 spindles, per J.	2	32 18 4
Dr.	<i>Charges Merchandize,</i>						
1789				1789			
Feb. 10	To paper, taken for shop-use, 1 ream	2	— 10 6	Apr. 30	By Profit and loss	1	13 14 2
Apr. 30	To cash, for small charges since 1st Jan.	1	5 3 8				
	To Tho. Sharp, for wages	5	8 — —				
			13 14 2				13 14 2
Dr.	<i>Baillie and Bell Borrowstoness,</i>						
1789				1789			
Feb. 19	To Meal, for 52 bolls, at 3 s 10 d	1	35 19 4	Apr. 8	By William Ainslie, paid him by them	5	117 — —
Mar. 28	To Sundries per J.		42 2 6				
Apr. 16	To Cash, pd their bill on me to C. Cowan, st	1	38 18 2				
			117 — —				117 — —
Dr.	<i>James Dalton Manchester,</i>						
1789				1789			
Mar. 5	To Yarn, for 360 spindles four hank, per J.	2	35 15 —	Apr. 7	By Balance-account,	5	35 15 —
Dr.	<i>Clover-feed,</i>						
1789				1789			
Mar. 12	To Sundries per J. for pr. cost and char.	1200	29 17 —	Mar. 7	By Sundries per J.	400	12 — —
Apr. 30	To Profit and Loss, for gain	1	5 — 1	Apr. 17	By Sundries per J.	330	10 3 9
			1200	Apr. 2	By Cash, at 7 $\frac{3}{4}$ d	160	5 3 4
			34 17 1	Apr. 30	By Balance-account, at 6 d Inlake	300	5 7 10
						10	
						1200	34 17 1
Dr.	<i>J. Jonkbeer merchant Rotterdam,</i>						
1789				1789			
Apr. 22	To Ro. Bank, for his bill on me paid by them	2	28 12 —	Mar. 12	By Clover-feed, for 6 bags, per J.	6	28 12 —
Dr.	<i>Lint-feed,</i>						
1789				1789			
Mar. 17	To Clover-feed, in barter at 55 s	2	4 5 10 —	Apr. 2	By Cash	1	1 3 3 —
Apr. 30	To Profit and Loss, for gain	1	— 18 —	Apr. 14	By George Gordon	15	3 5 —
			2 6 8 —			2	6 8 —

B O O K - K E E P I N G .

(5)	L E G E R.	P.	L E G E R.	P.	(5)
Dr. 1789	<i>John Scott farmer at Haughead,</i>		Contra		Cr.
Mar. 21	To Clover-feed, for 140 lb. at 7½ d	4 4 7 6	1789	Apr. 30	By Balance-account
					5 4 7 6
Dr. 1789	<i>Share of Ship Hazard,</i>		Contra		Cr.
Mar. 25	To William Ainslie, bought ¼ share for	5 150	1789	Apr. 25	By Cash, for share profit of a voyage to Rot.
Apr. 30	To Profit and Loss,	1 23	Apr. 30		By Balance-account
		173			1 33
					5 140
					173
Dr. 1789	<i>William Ainslie merchant Alloa,</i>		Contra		Cr.
Apr. 6	To Sundries, per J.	33	1789	Mar. 25	By Share of Ship Hazard, for ½ bt. from him
Apr. 10	To Baillie and Bell, for bal. paid him by them	4 117			5 150
		150			150
Dr. 1789	<i>Train-oil,</i>		Contra		Cr.
Apr. 6	To Cash, at 22 s	30 1 33	1789	Apr. 11	By James Boswell, at 27 s
Apr. 30	To Profit and Loss, for gain	1 8	Apr. 14		By George Gordon, at 28 s
		30			20 2 27
					10 5 14
					30 41
Dr. 1789	<i>George Gordon merchant Stirling,</i>		Contra		Cr.
Apr. 14	To Sundries, per J.	41 3 4	1789	Apr. 14	By Cash in part
			Apr. 30		By Balance-account
					1 35
					5 6 3 4
					41 3 4
Dr. 1789	<i>Proper Expences,</i>		Contra		Cr.
Apr. 18	To Calicoes, for 5 yards, at 3 s 2 d	3 15 10	1789	Apr. 30	By Profit and Loss
Apr. 30	To Cash, for charges since 1st January	1 32			1 32 15 10
		32 15 10			32 15 10
Dr. 1789	<i>Thomas Sharp, my clerk,</i>		Contra		Cr.
Apr. 30	To balance-account	5 8	1789	Apr. 30	By Charges Merchandize, due him for wages
					4 8
Dr. 1789	<i>Balance-account,</i>		Contra		Cr.
Apr. 30	To Sundries, per J.	757 12 3	1789	Apr. 30	By Sundries, per J.
					By Stock
					229 3 2
					1528 9 1
					757 12 3

T R I A L - B A L A N C E .

	<i>Dr.</i>		<i>Cr.</i>
1 Stock	L 312 7 3		L 824 2 8
Profit and Loss	4 4 10		2 10 —
Cash	599 15 11		591 12 1
	<u> </u>	L 916 8 —	<u> </u>
			L 1418 4 9
2 Meal	L 277 14 8		L 203 18 8
Port-wine	104 10 —		111 5 —
Paper	36 15 —		41 13 6
Yarn	94 17 4		49 12 6
1 House in Edinburgh	300 — —		— — —
	<u> </u>	813 17 —	<u> </u>
			406 9 8
3 James Boswell	L 247 11 —		L 110 — —
Henry Hardie	31 2 6		— — —
David Miller	18 — —		— — —
Royal Bank	140 — —		441 3 2
	<u> </u>	436 13 6	<u> </u>
			551 3 2
4 Calicoes	L 16 12 6		L 18 5 10
James Cuthbert	35 6 3		30 — —
Diaper	7 — —		7 15 10
Salt	17 15 10		17 4 6
	<u> </u>	76 14 7	<u> </u>
			73 6 2
5 Iron	L 53 6 8		L 49 1 3
William Bruce	50 — —		70 — —
John Henderfon	7 4 —		— — —
William Hunter	18 13 6		— — —
Charges Merchandize	13 14 2		— — —
	<u> </u>	142 18 4	<u> </u>
			119 1 3
6 James Dalton	L 35 15 —		L — — —
Clover-feed	29 17 —		27 7 1
Flax-feed	5 10 —		6 8 —
John Scott	4 7 6		— — —
Share of Ship Hazard	150 — —		33 — —
	<u> </u>	225 9 6	<u> </u>
			66 15 1
7 Train-oil	L 33 — —		L 41 — —
George Gordon	41 3 4		35 — —
Proper Expences	32 15 10		— — —
Thomas Sharp	— — —		8 — —
	<u> </u>	106 19 2	<u> </u>
			84 — —
		L 2719 — 1	L 2719 — 1

C O M P U T A T I O N S .

	Dr.	Cr.		Dr.	Cr.
Cash	L 599 15 11	L 591 12 1	4 Salt	L 17 15 10	L 17 4 6
	591 12 1			17 4 6	
	L 8 3 10		Lofs	L — 11 4	
2 Meal	L 277 14 8	L 203 18 8	5 William Bruce	L 50 — —	L 70 — —
Dr. 420 bolls		83 14 —			50 — —
Cr. 299	L 83 14 —		Iron	L 53 6 8	L 20 — —
		L 287 12 8	320 stone	6 13 4	L 49 1 3
121		277 14 8	280		6 13 4
124				L 55 14 7	53 6 8
3 outcome		Profit L 9 18 —	40		
Port-wine	L 104 10 —	L 111 5 —	J. Henderson	L 7 4 —	Profit L 2 7 12
		104 10 —	W. Hunter	L 18 13 6	
			Char. Merchan.	L 13 14 2 lofs.	
		Profit L 6 15 —	6 Ja. Dalton	L 35 15 —	
Paper	L 36 15 —	L 41 13 6	Clover-feed	L 29 17 —	L 27 7 1
		36 15 —	1200 lb.		7 10 —
			890	L 7 10 —	L 34 17 1
Yarn	L 94 17 4	L 49 12 6	310		29 17 —
Spindles		47 8 —	300		
834 1/2 120		L 91 — 6	10 inlake		Profit L 5 — 1
360 120		94 17 4	Lint-feed	L 5 10 —	L 6 8 —
474 1/2					5 10 —
Amiffing 1/2		Profit L 2 3 2			
House in Edinburgh	L 300 — —		J. Scott	L 4 7 6	Profit L — 18 —
3 Ja. Boswell	L 147 11 —	L 110 — —	Share Hazard	L 150 — —	33 — —
	110 — —			140 — —	
				L 140 — —	L 173 — —
Henry Hardy	L 27 11 —				150 — —
David Miller	L 31 2 6				
Royal Bank	L 18 — —	L 441 3 2			Profit L 23 — —
	L 240 — —	240 — —			
		L 201 3 2	7 Train-oil	L 33 — —	L 41 — —
4 Calicoes	L 16 12 6	L 18 5 10			33 — —
		16 12 6	George Gordon	L 41 3 4	L 35 — —
				35 — —	
		Profit L 1 13 4			
J. Cuthbert	L 35 6 3		Proper Ex.	L 6 3 4	
	30 — —		Thomas Sharp	L 32 15 10 lofs.	L 8 — —
	L 5 6 3		STOCK	L 312 7 3	L 824 2 8
Diaper	L 7 — —	L 7 15 10	Balance	528 9 1 prof.	16 13 8
		7 — —			
				L 840 16 4	L 840 16 4
		Profit L — 15 10			

PROFIT

B O O K - K E E P I N G,

P R O F I T A N D L O S S S H E E T.

Salt	L — 11 4	Meal	L 9 18 —
Charges Merchandize	13 14 2	Port-wine	6 15 —
Proper Expences	32 15 10	Paper	4 18 6
	<hr/>	Yarn	2 3 2
In Leger	L 47 1 4	Calicoes	1 13 4
	4 4 10	Diaper	— 15 10
	<hr/>	Iron	2 7 11
	L 51 6 2	Clover-feed	5 — 1
		Lint-feed	— 18 —
		Share of ship Hazard	23 — —
		Train-oil	8 — —
			<hr/>
Nett gain	16 13 8	In Leger	L 65 9 10
	<hr/>		2 10 —
	L 67 19 10		<hr/>
			L 67 19 10
			<hr/> <hr/>

B A L A N C E - S H E E T.

Cash	L 8 3 10	Meal, outcome 3 b.	
Meal, 124 b. at 13s 4d	83 14 —	Royal Bank	L 201 3 2
Yarn, 474 sp. at 2s	47 8 —	William Bruce	20 — —
Amiffing $\frac{1}{2}$		Thomas Sharp	8 — —
House in Edinburgh	300 — —		<hr/>
James Boswell	37 11 —		L 229 3 2
Henry Hardie	31 2 6		
David Miller	18 — —		
J. Cuthbert	5 6 3		
Iron, 40 stone, at 3s 4d	6 13 4		
J. Henderfon	7 4 —		
W. Hunter	18 13 6		
James Dalton	35 15 —		
Clover-feed, 300 lb. at 6d	7 10 —		
Inlake 10 lb.			
J. Scott	4 7 6		
Share of ship Hazard	140 — —		
George Gordon	6 3 4	STOCK	528 9 1
	<hr/>		<hr/>
	L 757 12 3		L 757 12 3
			<hr/> <hr/>

The present article, it is hoped, will appear sufficiently extended for a work of this nature. It contains the general principles of Italian book-keeping; and is sufficient to unfold the nature and design of that art to the speculative inquirer, to direct the accountant in common and easy cases, and prepare him for understanding those that are more complicated. In fact, if he has a clear apprehension of the sense of the transactions, the tendency of the journal-entries, and the import of the balances in the ledger, he will seldom be at a loss how to proceed.

Subsidiary Books used by merchants.

Though all merchant-accounts may be kept by the *Waste-book*, *Journal*, and *Leger*, alone; yet men of great business find it convenient, either for abridging these, or for other ends, to use some others, generally called *Subsidiary* or *Subservient Books*; the most common of which are these nine following, *viz.*

1. *Cash-book.* This book is kept in a folio form, like the ledger, and serves to abridge the cash-account there. On the left-hand page, or Dr. side, *Cash* is charged Dr. for all the sums received; and on the right-hand page, *Cash* is made Cr. for all the sums paid. Once a-week, or, which is more ordinary, once a month, this book is posted to the ledger; or, if you please, first to the journal, by two entries, *viz.* *Cash* Dr. to *Sundries*, for all the receipts, and *Sundries* Drs. to *Cash*, for all the payments. By this means the cash-account in the ledger will be so far contracted as to consist of 12 lines, *viz.* one for each month in the year.

2. *Book of Charges of Merchandize.* This book is only paged, and designed to abbreviate the cash-book. It contains particular charges on goods and voyages; such as carriage, custom, freight, cranage, wharfage, &c.: as also other expences that affect trade in general; such as, warehouse-rent, shop-rent, accountant's wages, postage of letters, and the like. At the end of each month the money-columns of this book are added up, and the sum carried to the credit-side of the cash-book.

3. *Book of House-expences.* This book is also paged, and designed likewise to ease the cash-book. It contains all disbursements for family provisions, servant's wages, house-rent, apparel, utensils, &c. The money-columns of this book are also added up at the end of each month, and the sum transferred to the credit-side of the cash-book.

4. *Invoice-book.* This book, which is used chiefly by factors, is paged, and contains doubles or copies of the invoices of goods sent to sea, or of goods received from abroad.

5. *Sales-book.* This book too is chiefly used by factors; and into it is posted, from the waste-book, the particular sales of every consigned cargo; by which means the several articles of a sale, that lie scattered in the waste-book, are brought together, and represented under one view, and that in a manner more full and minute than they are collected in the ledger account.

This book exhibits the sales of every consignment separately and by themselves: to which are subjoined the respective charges, such as freight, custom, the factor's commission, as also abatements allowed to buyers, &c. whose sum subtracted from the gross amount of sales gives the neat proceeds. From this book, when a cargo is sold off, an account of sales is drawn out, in order to be transmitted to the employer.

6. *Bill-book.* The design of this *Bill-book*, or *Month-book*, is to furnish a merchant with a ready way of knowing the time when bills or other debts become payable to or by him. It consists of 12 folios, one for each month in the year. The left-hand page contains the debts that fall due to the merchant in the month on the top, and the right-hand page contains the debts payable by him to others in the same month.

7. *Receipt-book.* In this book a merchant takes receipts of the payments he makes. The receipt should contain the date; the sum received, expressed in words at large, and also in figures in the money-columns; the reason why; and whether in full or in part; and must be signed by the person receiving. But there is no occasion to mention the merchant's name; for the book being his own, sufficiently implies that.

8. *Letter-book.* It is very imprudent in any person to send away a letter of business, without keeping a double of it to himself; and therefore to prevent the bad consequences of such a careless practice, merchants are provided with a large book in folio, into which is copied *verbatim* every letter of business before it be sent off. So that this book, together with the letters received (which must also be carefully kept in files or boxes), makes a complete history of all the dealings that pass betwixt a merchant and his correspondents; which may be very useful and necessary on many occasions.

9. *Pocket-book.* This is a small book, of a portable size, which a merchant carries in his pocket when business calls him abroad to a tavern, a fair, the country, or other places. In this he sets down the bargains he makes, the expences he is at, the debts he pays, or sums he receives, with every other part of business he transacts while abroad; as also any occurrence or piece of news he thinks worth while to record. And when he comes home to his counting-house or shop, he transfers the things contained in this book, each to their proper places in the waste-book, or books subsidiary.

Factors of great business sometimes keep another small book, called the *Memorandum-book*. Into this book is copied, from letters as they come to hand, short notes of the several commissions for buying goods contained in them; and as the commissions are effected, the notes are crossed, or have some mark affixed to them. This is more convenient in doing business, than to be continually running to the letters themselves.

The above are the subsidiary books most in use; but a merchant is not tied down or restricted to them; he may keep some, and neglect others, or invent more as the nature of his business requires, and he finds convenient.

B O O

BOOKSELLER, one who trades in books, whether he prints them himself, or gives them to be printed by others.

B O O

BOOKSELLERS, among us, are the same with *bibliopole* among the ancients, whose office was distinct from that of *librarii*. Petty dealers, or venders of small

Bookfeller. ware, like our publishers, were more particularly denominated *libelliones*. At Rome, the Argiletum was the mart of books, as Paul's Church-yard, or Fleet-street, and Paternoster-row, have been among us: whence that of Martial,

*Argiletanas mexis habitare tabernas,
Cum tibi, parve liber, scirinia nostra vacent.*

Bookfellers in many places are ranked among the members of universities, and intitled to the privileges of students: as at Tubingen, Salisburg, and Paris, where they have always been distinguished from the vulgar and mechanical traders, and exempted from divers taxes and impositions laid on other companies.

Formerly, the offices of bookfellers and printers were united in the same persons. Labbe gives a list of learned bookfellers; most of whom were also authors. Of late, bookfellers have drawn their business into less compass, and leaving the labour of composing books to one set of persons, and that of printing them to another, content themselves with the gainful part; thus ministering to the republic of letters not with the head or the hand, but the purse only. In this view, they have been very important and useful agents between authors and the public; and have contributed, in no small degree, to the encouragement of genius and literary industry, and the spread of science. There are few authors, who have undertaken the printing and publishing of any work likely to be transmitted to posterity, without being connected with some bookfeller, or bookfellers, eminent in their profession.

The fairs of Francfort and Leipzig are famous for the resort of bookfellers, not only from all parts of the empire, but Holland, Flanders, &c. They have each their shop or warehouse, over which is inscribed the name of some celebrated bookfeller of former times; *officina, Elseviriana, Frobeniana, Moralliana, Jansenion,* &c.

An acquaintance with the bookfellers marks or signs, frequently expressed on the title-pages of their books, is of some use; because many books, especially in the last century, have no other designation either of printer, bookfeller, or even city. The anchor is the mark of Raphelengius at Leyden: and the same with a dolphin twisted round it, of the Manutii at Venice and Rome; the Arion denotes a book printed by Oporinus at Basil; the caduceus, or pegasus, by the Wecheliuses at Paris and Francfort; the cranes, by Cramoisy; the compass, by Plantin at Antwerp; the fountain, by Vascosan at Paris; the sphere in a balance, by Janson or Blaew, at Amsterdam; the lily, by the Juntas at Venice, Florence, Lyons, and Rome; the mulberry-tree, by Morel at Paris; the olive-tree, by the Stephenses at Paris and Geneva, and the Elzeviers at Amsterdam and Leyden; the bird between two serpents, by the Frobeniuses at Basil; the truth, by the Commelins at Heidelberg and Paris; the Saturn, by Colinaeus; the printing-press, by Badius Ascencius, &c.

The traffic of books was anciently very inconsiderable, insomuch that the book-merchants of England, France, Spain, and other countries, were distinguished by the appellation of *stationers*, as having no shops, but only stalls and stands in the streets. During this state, the civil magistrates took little notice of the bookfellers, leaving the government of them to the univer-

sities, to whom they were supposed more immediate retainers; who accordingly gave them laws and regulations, fixed prices on their books, examined their correctness, and punished them at discretion. But when, by the invention of printing, books and bookfellers began to multiply, it became a matter of more consequence; and the sovereigns took the direction of them into their own hands, giving them new statutes, appointing officers to fix prices, and granting licences, privileges, &c.

BOOM, in the sea language, a long piece of timber with which the clew of the studding sail is spread out; and sometimes the boom is used to spread or boom out the clew of the main-mast.

BOOM, denotes also a cable stretched athwart the mouth of a river or harbour; with yards, top-masts, battling or spars of wood lashed to it, to prevent an enemy's coming in.

BOOMING, among sailors, denotes the application of a boom to the sails. A ship is said to come booming forwards, when she comes with all the sail she can make.

BOONEN (Arnold), portrait painter, was born at Dort in 1669, and at first was a disciple of Arnold Verbuis, a painter of history and portrait. Afterwards he placed himself with Godfrey Schalcken, and continued with that artist for six years. The sweetness of his colouring, and the neatness of his touch, with a striking likeness in his portraits, procured him a number of admirers. He painted in the manner of his master, particularly subjects by candle-light, which were very delicate, and very natural; and much more of his work was requested by the lovers of the art than it was possible for him to undertake. He had the honour to paint the portraits of the Czar of Muscovy; of Frederic I. King of Prussia; of the victorious Duke of Marlborough, as well as many of the princes of Germany; and most of the noblemen who attended the Czar. His style of colouring was extremely good, and he had an elegant manner of disposing the attitudes of his figures; his handling was neat, and the whole had so much harmony that he was justly ranked among the ablest artists of his time. The small pictures of Boonen are in the taste of his master Schalcken; but his excessive application, to answer the multitude of his engagements, impaired his health, and destroyed while it enriched him. He died in 1729.

BOOPHTHALMUS, a kind of agate with large circles in it, bearing some resemblance to an ox's eye, from whence it has got this name.

BOOPS, in zoology, the trivial name of a species of balæna. See **BALÆNA**.

BOOSHATTER, formerly the city of Utica, famous for the retreat and death of Cato, lies about seven miles inland from PORTO FARINA in the bay of TUNIS. Nothing remains of its ancient grandeur except part of a large aqueduct, some cisterns, and other magnificent ruins, which cover a large extent of ground, and show it to have been a very considerable place. The sea, it is known, came up anciently to this city, though now seven miles distant.

BOOT, a leathern cover or defence for the leg, used on horseback, both to keep the body more firm, and defend the part from the injuries of the weather. Boots

Boot
||
Booth.

seem to have taken their name from the resemblance they bear to a sort of jacks or leathern bottles formerly in use, and called *bottes*, in the old French *bouts*. Borel derives the name from the old French word *bot*, a stump, by reason the boot gives the leg this appearance. The Chinese have a kind of boots made of silk or fine stuff lined with cotton, a full inch thick, which they always wear at home. This people are always booted; and when a visit is made them, if they happen to be without their boots, their guest must wait till they put them on. They never stir out of doors without their boots on; and their scrupulousness in this respect is the more remarkable as they are always carried in their chairs.

The boot was much used by the ancients, by the foot as well as by the horsemen. It was called by the ancient Romans *ocrea*; in middle-age writers, *greva*, *gamberia*, *hainberga*, *bembarga*, or *benbarga*. The boot is said to have been the invention of the Carians. It was at first made of leather, afterwards of brass or iron, and was proof both against cuts and thrusts. It was from this that Homer calls the Greeks *brazen-booted*. The boot only covered half the leg; some say the right leg, which was more advanced than the left, it being advanced forwards in an attack with the sword; but in reality it appears to have been used on either leg, and sometimes on both. Those who fought with darts or other missile weapons, advanced the left leg foremost, so that this only was booted.

Fishing-Boots, are a thick strong sort used in dragging ponds, and the like. *Hunting-boots*, a thinner kind used by sportsmen. *Jack-boots*, a kind of very strong boots used by the troopers.

BOOT, is likewise a kind of torture for criminals; to extort a confession, by means of a boot, stocking, or buskin of parchment; which being put on the leg moist, and brought near the fire, in shrinking squeezes the leg violently, and occasions intolerable pain.

There is also another kind of boot; consisting of four thick strong boards bound round with cords: two of these are put between the criminal's legs, and the two others placed one on the outside of one leg and the other on the other; then squeezing the legs against the boards by the cords, the criminal's bones are severely pinched, or even broken, &c.

The boot is now disused in England and Scotland; but it subsists still in some other countries.

Boot-Tree, or *Bot-last*, an instrument used by shoemakers to widen the leg of a boot. It is a wooden cylinder slit into two parts, between which, when it is put into the boot, they drive by main force a wedge or quoit.

BOOTES, a constellation of the northern hemisphere, consisting of 23 stars according to Ptolemy's catalogue, of 18 in Tycho's, of 34 in Bayer's, of 52 in Hevelius's, and of 54 in Mr Flamsteed's catalogue.

BOOTH (Barton), a famous English actor, born in Lancashire in 1681, and educated in Westminster school under the celebrated Dr Bulby, where his success in the Latin plays customarily performed by the scholars gave him an inclination for the stage. He was intended for the church; but running away from school to Dublin, he there commenced actor. His first appearance was in the part of Oroonoko, in which he came off with every testimonial of approbation from the

audience. From this time he continued daily improving; and, after two successful campaigns in that kingdom, conceived thoughts of returning to his native country, and making a trial of his abilities on the English stage. To this end, he first, by letter, reconciled himself to his friends; and then, as a farther step towards insuring his success, obtained a recommendation from Lord Fitzharding (one of the lords of the bed-chamber to prince George of Denmark) to Mr Betterton, who with great candour and good nature took him under his care, and gave him all the assistance in his power. The first part Mr Booth appeared in at London was that of Maximus in Lord Rochester's *Valentinian*, his reception in which exceeded even his most sanguine expectations; and very soon after his performance of *Artaban*, in Rowe's *Ambitious Stepmother*, which was a new tragedy, established his reputation, as second at least to his great instructor. *Pyrrhus*, in the *Distressed Mother*, was another part in which he shone without a rival. But he was indebted to a happy coincidence of merit and chance, for that height of fame which he at length attained in the character of Cato, as drawn by Mr Addison, in 1712. For this play being considered as a party one, the Whigs, in favour of whose principles it was apparently written, thought it their duty strongly to support it, while at the same time the Tories, who had too much sense to appear to consider it as a reflection on their administration, were still more vehement in their approbation of it, which they carried to such an height, as even to make a collection of 50 guineas in the boxes during the performance, and present them to Mr Booth, with this compliment, "That it was a slight acknowledgement for his honest opposition to a perpetual dictator, and his dying so bravely in the cause of liberty." Besides this, he had a present of an equal sum from the managers, in consideration of the great success of the play, which they attributed in a good measure to his extraordinary merit in the performance; and certain it is, that no one since that time has ever equalled, or even nearly approached, his excellence in that character.— But these were not the only advantages which were to accrue to Mr Booth from his success in this part; for Lord Bolingbroke, then one of the principal secretaries of state, in a little time after procured a special licence from queen Anne, recalling all the former ones, and nominating Mr Booth as joint manager with Wilks, Cibber, and Dogget; none of whom were pleased at it; but the last especially took such disgust as to withdraw himself from any further share in the management. In 1704, Mr Booth had married a daughter of Sir William Barkham Bart. who died in 1710, without issue. Being now established in the management, he once more turned his thoughts towards matrimony; and in the year 1719 united himself to the celebrated Miss Hester Santlow, a woman of a most amiable disposition, whose great merit as an actress, added to the utmost discretion and prudent economy, had enabled her to save up a considerable fortune. During the 20 years in which Mr Booth continued a manager, the theatre was in the greatest credit; and his illness and death, which happened on the 10th of May 1733, contributed not a little to its decline.

Mr Booth wrote a dramatic entertainment called *Dido and Aeneas*; but his mallet-piece was a Latin in-

Booth.

Booty
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Borak.

scription to the memory of Mr William Smith, a celebrated actor, who died while he was young.—As an actor, his excellency lay wholly in tragedy, not being able to endure such parts as had not strong passion to inspire him. And even in this walk, dignity rather than complacency, rage rather than tenderness, seemed to be his taste. For a particular idea of his abilities, we must refer to the description Mr Cibber has given of him in his Apology; and the admirable character drawn of him by that excellent judge of dramatic perfection, Aaron Hill, Esq; in a political paper published by him called the *Prompter*, which may be seen at length in Theoph. Cibber's Lives of the Poets, and Chetwood's History of the Stage.—His character as a man was adorned with many amiable qualities, among which, a goodness of heart, the basis of every virtue, was remarkably conspicuous; and so particularly was he distinguished and cared for, and his company sought by the great, that, as Chetwood relates of him, not one nobleman in the kingdom had so many sets of horses at command as he had.

BOOTY, whatever is taken from an enemy in time of war.—Among the Greeks, the booty was divided in common among the army, the general only claiming a larger share. By the military discipline of the Romans, spoils taken from the enemy belonged to the republic, particular persons having no right to them. The generals who piqued themselves on their probity carried it wholly to the public treasury. Sometimes indeed they divided it among the soldiery, to animate them, and serve in lieu of a reward. But this distribution depended on the generals, who were to conduct themselves herein with great equity and moderation; otherwise it became a crime of peculate to lay hands on the pillage, as regularly belonging only to the state. The consuls Romulus and Vaturius were condemned for having sold the booty taken from the Æqui.—Among the Jews, the booty was divided equally between the army and the people, though under the kings a different kind of distribution obtained.—Among the Mahometans, two thirds of the spoils are allowed to the army: the other third to God, to Mahomet and his relations, and to the orphans, the poor, and the pilgrims.—Among us, formerly the booty was divided among the soldiery. If the general be in the field, every body takes what he can lay hold on: if the general be absent, the booty is distributed among the soldiery, two parts being allowed to the cavalry, and one to the infantry. A captain is allowed ten shares, a lieutenant six, and a cornet four.

BOPPART, a town of Germany, in the circle of the Rhine, and electorate of Treves; it is seated at the foot of a mountain near the Rhine, in E. Long. 7. 35. N. Lat. 50. 19.

BOPSINGEN, a town of Suabia in Germany, seated on the river Egar, in E. Long. 9. 55. N. Lat. 48. 51.

BOQUINIANS, in church-history, a sect of heretics, so called from Boquinus their founder, who taught that Christ did not die for all mankind, but only for the faithful, and consequently was only a particular Saviour.

BORAGO, in botany, a synonyme of the ANCHUSA.

BORAK, among Mahometans, a fabulous animal,

supposed to be of the middle kind between an ass and a mule, whereon their prophet was carried in his nocturnal flight from Jerusalem into the heavens. This animal the Arabians call *Al-Borak*, q. d. *shinin*. The night when the journey was performed is called *Lailat al-Meeraga*, i. e. *the night of ascension*; and the flight itself *Al-Meja*; concerning which there are a multitude of traditions.

BORAX, in chemistry, a salt in appearance somewhat similar to crystals of alum, brought originally from the East Indies in an impure state, and afterwards freed from its impurities by certain processes in the European countries. It was long a matter of uncertainty whether this salt be a natural or factitious substance in those countries from whence it is brought; but it is now beyond a doubt, that it is naturally produced in the mountains of Thibet, from whence other parts of the eastern continent are supplied. Mr Kirwan, in his mineralogy, informs us, that Mr Grill Adamson sent some to Sweden in the year 1772, in a crystalline form, as dug out of the earth in the kingdom of Thibet, where it is called *pounxa*, *my poun*, and *kou poun*. It is said to have been found in Saxony in some coal-pits.

In the Philosophical Transactions, vol. 77. we have two different accounts of the place where it is found, and the manner of obtaining it. One of these is by William Blane, Esq; who tells us that in the language of the country it is called *swagah*, and is brought into Hindostan from the mountains of Thibet. It is produced in the kingdom of Jumlate, about 30 days journey north from Betowle, a small principality about 200 miles N. E. of Lucknow. The place where it is found is said to be a small valley surrounded with snowy mountains, in which is a lake about six miles in circumference; the water of which is constantly so hot that the hand cannot bear it for any time. Around this lake the ground is perfectly barren, not producing even a blade of grass; and the earth is so full of a saline matter, that after falls of rain or snow it concretes in white flakes on the surface like the natron of Hindostan. On the banks of this lake, in the winter season, when the falls of snow begin, the earth is formed into small reservoirs six inches high: when these are filled with snow, the hot water from the lake is thrown upon it; which, together with the water from the melted snow, remains in the reservoir, to be partly absorbed by the earth and partly evaporated by the sun; after which there remains at the bottom a cake of sometimes half an inch thick of crude borax, which is taken up and reserved for use. It can only be made in the winter season, because the falls of snow are indispensably requisite, and also because the saline appearances upon the earth are strongest at that time. When once it has been made on any spot, it cannot be made again on the same until the snow has fallen and dissolved three or four times, when the saline efflorescence appears as before. The borax, in the state in which it is taken off the earth, is carried from hill to hill upon goats, and passes through many hands, which increases the difficulty of obtaining any authentic information concerning the original manufacture. When brought down from the hills, it is refined from the gross impurities by boiling and crystallization. Our author could obtain no answer from those who gave him the account, to any of his questions concerning the quality of the wa-

Borax.

Borax. ter and the mineral productions of the soil. All they could tell him was, that the water was very hot, very foul, and as it were greasy; that it boils up in many places, and has a very offensive smell; and that the soil is remarkable only for the saline appearances already mentioned. The country in general produces considerable quantities of iron, copper, and sulphur; and our author was assured that all the borax in India came from this place.

As this part of Asia is entirely unfrequented by Europeans, our author could only obtain his information from the natives: however, as he had an opportunity of seeing some of those who resided near the spot, it might be reckoned as genuine as could well be expected. The place, he tells us, is inaccessible not only to the Europeans, but even to the inhabitants of Indostan, being never visited by any of them except a few wandering Faquirs, who have been sometimes led there, either with a view to visit some of the temples in the mountains, or to do penance. They describe the cold in winter to be so intense, that every thing is frozen up; and life can only be preserved by loads of blankets and skins. In the summer, again, the reflection of heat from the sides of the mountains, which are steep and close to one another, renders the heat intolerable. With respect to the credibility of the account, he observes, first, "That borax is really brought from the mountains of Thibet is certain, as he himself often had occasion to see large quantities of it brought down, and had purchased it from the Tartar mountaineers, who brought it to market; secondly, he had never heard of its being produced or brought into India from any other quarter; and, thirdly, if it was made on the coast of Coromandel, as some books mention, he thinks there can be little doubt but that the whole process would have been fully inquired into, and given to the public long before this time."

The other account is from father Joseph de Ravato, president of the mission of Thibet, and sent in a letter to the Royal Society, communicated by Joseph Banks, Esq; He pretends also to have had his intelligence from a native of the country where the borax is made, though it differs very considerably from that of Mr Blanc. "In the province or territory of Marme (says he), 28 days journey to the north of Nepal, and 25 to the west of Lassa, the capital of Thibet, there is a vale about eight miles broad. In a part of this vale there are two villages or castles, the inhabitants of which are wholly employed in digging the borax which they sell into Thibet and Nepal, they having no other means of subsistence, the soil being so barren as to produce nothing but a few rushes. Near these two castles there is a pool of a moderate size, and some smaller ones, where the ground is hollow and the rain-water collects. In these pools, after the water has been some time detained in them, the borax is formed naturally: the men wading into the water, feel a kind of a pavement under their feet, which is a sure indication that borax is there formed; and there they accordingly dig it. Where there is little water, the layer of borax is thin; where it is deep, it is thicker; and near the latter there is always an inch or two of soft mud, which is probably a deposit of the water after it has been agitated by rain or wind. Thus is the borax produced merely by nature, without either boiling or distillation.

Borax. The water in which it is formed is so bad, that the drinking a small quantity of it will occasion a swelling of the abdomen, and in a short time death itself. The earth that yields the borax is of a whitish colour; and in the same valley, about four miles from the pools, there are mines of salt, which is there dug in great abundance for the use of all the inhabitants of these mountains, who live at a great distance from the sea. The natives, who have no other subsistence on account of the sterility of the soil, pay nothing for digging borax; but strangers must pay a certain retribution, and usually agree at so much per workman. Ten days journey farther north, there is another valley named *Tapre*, where they dig borax; and another still farther to the northward, named *Cizga*. Borax, in the Hindoo and Nepalese languages, is called *Soaga*. If it be not purified, it will easily deliquesce; and in order to preserve it for any time till they have an opportunity of selling it, the people often mix it with earth and butter. In the territory of Mungdan, 16 days journey to the north of Nepal, there are rich mines of arsenic; and in various other places are found mines of sulphur, as also of gold and silver, whose produce is much purer than those of the mines of Pegu."

Mr Fourcroy informs us, that borax is found in commerce in three different states. 1. Crude borax, tincal, or chrysofocolla, which comes from Persia. He describes it as consisting of a greenish mass of a greasy feel, or in opaque crystals of an olive green, which are six-sided prisms terminated by irregular prisms. There are two varieties of these crystals, differing in magnitude: this salt is very impure by the addition of foreign matters. Mr Kirwan tells us, that this kind is called *brute borax, tincal, or chrysofocolla*, and that it is in the form of large, flat, hexangular, or irregular crystals, of a dull white or greenish colour, greasy to the touch; or in small crystals, as it were cemented together by a rancid, yellowish, oily substance, intermixed with mud, gravel, and other impurities. Mr Engstrom, he adds, has a suspicion that the tincal is only the residuum of the mother liquor of borax evaporated to dryness; and that the greasiness arises from its being mixed with butter-milk, to prevent its efflorescence.

2. Borax of China is somewhat purer than the foregoing, and is met with in the form of small plates or masses irregularly crystallized, and of a dirty white. It appears to consist of fragments of prisms and pyramids confounded together without any symmetrical arrangement: a white powder is observed on the surface, which is thought to be of an argillaceous nature.

3. The Dutch or purified borax, in the form of portions of transparent crystals of considerable purity. Pyramids with several facets may be observed among them, the crystallization appearing to have been interrupted. "This form (says Mr Fourcroy) shows to a certainty that the Dutch refine this salt by solution and crystallization."—Mr Kirwan says, that it is purified by solution, filtration, and infaturation; and the crystals thus obtained are calcined, to free them still farther from greasiness; and then dissolved, filtered, and crystallized, a second time. Sometimes more mineral alkali is added, as tincal is said to contain an excess of sedative salt. Mr Fourcroy tells us, that a purified borax, not inferior to the Dutch, but perhaps

Borax. even of greater purity, is prepared by some chemists at Paris.

The same author informs us, that Mr La Piame, an apothecary at Paris, has discovered, that it is continually formed in the soap-suds and refuse-waters of the kitchen, which a person preserves in a kind of ditch; and from which, at the end of a certain time, he obtains true borax in fine crystals. "All that we can deduce (says he) from the known facts concerning its formation, is simply, that it is produced in stagnant waters which contain fat matters." Some authors affirm, that it is produced by art in China. A mixture of grease, clay, and dung, is said to be deposited in a ditch, *stratum superstratum*. This mixture is sprinkled with water, and suffered to remain for some years; at the end of which time it is lixiviated, and affords crude borax by evaporation. Others have supposed that it is obtained from water, which filters through copper mines. Mr Beaume positively asserts, that the former of these processes succeeded very well with him; but Dr Black gives little credit to his assertions.

Borax serves as a flux to vitrifiable earths, with which it forms a good glass, and is employed in making artificial gems. It vitrifies clay, but much less completely than siliceous earths; and from this property it adheres to the insides of crucibles, and glazes them.

Borax, as is related at length under the article CHEMISTRY, is a peculiar neutral salt formed by the union of a kind of acid with mineral alkali. This acid, from some supposed properties of allaying the heat of fevers, had the name of *sal sedativus*, which it still retains. It has been supposed to be an artificial product, and perhaps may be artificially made*: but Mr Hoefer, apothecary to the grand duke of Tuscany, has discovered that the waters of several lakes of that country contain it in a state of great purity; and the chemists of the academy of Dijon have confirmed this discovery by analysing the waters of Monte Rotondo, which were sent to them; and in which they found sedative salt, as discovered by Mr Hoefer. It is probable (says our author) that it may hereafter be found in other mineral waters; and it seems to be produced by the putrefaction of fat substances.

* See *Clemens's* *Ministry*.

Migellan's
Notes on
Cronstedt's
Mineralogy,
p. 315.

Mr Hoefer first discovered this acid in the waters of the Lagoon named *Cerchiaio* near Monte Rotondo, of which discovery an account was published in the year 1778. The same was found, in a concrete state, by Mr Paul Mafgagni professor of Anatomy, in several streams of the Lagoon in the neighbourhood of Siena and Volterra. He enumerates six places; viz. the lake of *Travale*, 20 miles to the west of Siena; that of *Rotondo*, which lies 30 miles to the westward of the same town; of *del Sasso*, three miles further; at another called *Sarazzano*, six miles from Monte Rotondo; another named *Castel Nuovo*, seven miles from Monte Rotondo and 24 from Siena; and that of *Monte Cerboli*, four miles distant from *Castel Nuovo*. In the neighbourhood of all these lakes are considerable springs of hot water rushing out of the earth, some clear, and some muddy; either of a dark or a whitish colour; and, in some, a kind of metallic crust or pellicle is perceived on the surface of the water. Many cavities from which the waters rush out seem to be true small volcanic craters, and continually emit from the earth vapours of a sulphureous and ammoniacal na-

ture. These waters not only contain the acid of borax, both in the fluid and concrete state, but various other concretions are there observed, such as martial vitriol, ammoniacal, aluminous, concrete boracic salts, brimstone, &c.

"It is remarkable (says our author, p. 363.), that, near 40 years ago, Dr Hill, in his notes to *Theophrastus's Treatise on Stones*, asserted, that borax was a salt made by evaporation of an ill tasted and foul water, of which there were springs in Persia, Muscovy, and Tartary. But he was hardly believed, on account of the many bold and groundless assertions of which he had been found guilty in almost all his numerous works. Mr Beaumé at Paris pretended to have discovered the method of making the sedative salt by a long maceration of greasy and earthy substances; but nobody has yet been able to verify this fanciful discovery.

"The unrefined borax which is brought to Europe under the name of *tincal*, looks like soft soap, is fat, and covers or encrusts the borax crystals. The mineral matter, Mr Swab, has published some experiments upon this tincal in the acts of the Royal Academy of Sciences at Stockholm for 1756. He found in it a martial earth, and a fat substance, which, to smell and other circumstances, comes nearest to a mineral fat: as also, that pure borax does not yield any *hepar sulphuris* when united with a phlogiston and a vitriolic acid; from which he concludes, that borax is prepared from its own particular mineral substance.

"Professor Pott and M. d'Henouville have very carefully examined the refined borax; and from their experiments, which have been published, it is evident, that it is of a peculiar nature. However, there remains to be known, for certain, from whence it is prepared by the Indians: for if it is produced from a mineral substance, as is very probable, there must exist other mixtures and compositions as yet unknown to the learned world.

"I have also found in the tincal small bits of leather, bones, and small pebbles, whence there is no certainty to be concluded on from its examination; but if it should happen that it is prepared from animal substances, it must be allowed, that nature has formed an alkaline salt in the animal kingdom analogous to the *sal fusibile microcosmicum*. Some years ago a report was propagated from Saxony, that somebody had discovered there a substance out of which borax could be made, and also the art of preparing it: but nothing more has transpired since, than that the author showed it in secret to his friends, and gave a description of it which was only intended to mislead them, if he really did possess the art."

According to Mr Kirwan, 100 parts of purified borax contain 32 of real boracic acid, 17 of mineral alkali, and about 47 of water; but of this quantity of mineral alkali only about five parts are saturated; whence, in many cases, borax acts as an alkali. Bergman informs us, that it requires an equal weight of acid to make the alkaline properties entirely disappear; and Dr Withering, that double the quantity of acid is required for this purpose, both in the tincal and refined borax.

This acid, like the borax in substance, is made use of to fuse vitrifiable earths, with which it forms clear and nearly colourless glasses: by the assistance of heat it dissolves

Borax.

borbeto-
magus
||
Borde.

dissolves the earth precipitated from the liquor of flints. It unites with ponderous earth, magnesia, lime, and alkalis, and forms, with these different substances, salts distinguished by one general name of borax, though only that formed by the combination of sedative salt and mineral alkali is used in the arts. It is used in many other chemical operations as a flux, besides that of glass-making; and the dyers also use it for giving a gloss to silks. In medicine it has been given as a narcotic, and was formerly an ingredient in a powder for promoting delivery, but is now disused.

BORBETOMAGUS, (anc. geog.), a city of the Vangiones on the Rhine; now *Worms*, in Germany.

BORBONIA, in botany: A genus of the decandria order, belonging to the diadelphia class of plants; and in the natural method ranking under the 32d order, *Caryophyllea*. The stigma is emarginated; the calyx has pointed spines; and the legumen is pointed.—There are six species, all of which are natives of warm countries. They are a kind of broom; and in the places where they grow naturally, they rise to the height of ten or twelve feet, but in Europe seldom rise more than four or five. They must be kept constantly in the stove, and may be propagated by laying down the young shoots; but as these are generally two years before they put forth proper roots, the most eligible method is by seeds, which must be procured from those places where they grow naturally, as they do not come to perfection in this country.

BORBORITES, in church-history, a sect of gnostics, in the second century, who, besides embracing the errors of these heretics, denied the last judgment. Their name comes from the Greek *Barbotes*, "filth;" on account of a custom they had of daubing their faces and bodies with dirt and filth.

BORCH, a town of the duchy of Magdeburgh in Lower Saxony, seated on the river Elbe, in E. Long. 12. 14. N. Lat. 52. 25.

BORCHLOEN, a town of the bishopric of Liege in Germany, situated in E. Long. 5. 28. N. Lat. 50. 50.

BORCOVIUM, (anc. geog.), a town of the Ottadini in Britain, now *Berwick on Tweed*.

BORD-HALFPENNY, a small toll by custom paid to the lord of the town for setting up boards, tables, booths, &c. in fairs and markets.

BORD Lands, the demesnes which lords keep in their hands for the maintenance of their board or table.

BORD Lode, a service required of tenants to carry timber out of the woods of the lord to his house. It is also used to signify the quantity of provision which the bordarii or bordmen paid for their bord-lands.

BORD-Service, the tenure of bord-lands, by which some lands in certain places are held of the bishop of London, and the tenants now pay sixpence per acre, in lieu of sending provision anciently for their lord's table.

BORDAT, in commerce, a small narrow stuff, which is manufactured in some parts of Egypt, particularly at Cairo, at Alexandria, and Damietta.

BORDE (Andrew), a physician, was born at Pevensey in Sussex, early in the 16th century, and supposed to have been educated at Westminster school. In his *Introduction to Knowledge*, he says, that he was a student of Oxford; but of what college he does not

mentioned. He left the university without a degree, and entered himself a brother of a Carthusian convent in or near London; but, not liking the severe discipline of that order, he returned to Oxford, and applied himself to the study of physic. Some time after, he embarked for the Continent; and, as he himself expresses it, "travelled through and round about Christendom, and out of Christendom into some parts of Africa." In the years 1541 and 1542, he resided at Montpellier in France, where he was made doctor of physic, and after his return to England was incorporated into the same degree at Oxford. From the preface to his *introduction* above mentioned, it appears that he had been in Scotland, which probably was soon after his return from France. Having now satisfied his inclination for travelling, he settled first at Pevensey where he was born, afterwards at Winchester, and finally in London, where he is said to have become a fellow of the college of physicians, and first physician to king Henry VIII. But, notwithstanding his eminence in his profession, he had the misfortune to spend the latter end of his life in the Fleet prison, where he died in the year 1549. As to his character, Wood says, that "he was esteemed a noted poet, a witty and ingenious person, and an excellent physician." Pits calls him a man of sufficient learning, but too volatile and inconstant. Bale and some others, on the contrary, abuse him grossly. His writings are, 1. A book of the introduction of knowledge, the which doth teach a man to speak part of all manner of languages, &c. Lond. 1542, 4to; dedicated, from Montpellier, to the lady Mary daughter to Henry VIII. It is written partly in verse, and partly in prose, containing 39 chapters, before each of which is a wooden print of a man. 2. The breviary of health, wherein are remedies for all manner of sicknesses and diseases, &c. Lond. 1547, &c. 4to. 3. Dietary of health, Lond. 1576, 8vo. 4. The merry tales of the madmen of Gotham. Printed, says Wood, in the time of Henry VIII. in whose reign, and after, it was accounted a book full of wit and mirth by scholars and gentlemen. Afterwards being often printed, it is now sold only on the stalls of ballad-singers. 5. A right pleasant and merry history of the mylner of Abington, with his wife and his fair daughter, and of two poor scholars of Cambridge. Lond. printed by Richard Jones, 4to. 6. A book of every region, country, and province; which shows the miles and leagues distance from city to city, and from town to town, with the noted things in the said cities and towns. Wood says that the author lent the manuscript of this book to his friend Thomas Cromwell, who lost it, to the great grief of the author, who would otherwise have published it. In this instance, however, the antiquary was misinformed; for it has since been published by Hearne at the end of *Benedictus abbas Peterb. de vita Henrici II.* Oxf. 1735, 8vo. 7. The principles of astronomy, the which diligently persecuted is in a manner a prognostication to the world. Lond. printed by Robert Copland, 12mo. The author says that he wrote this little book in four days, with one old pen without mending.

BORDER, in gardening, is made to inclose parterres, that they may not be injured by walking in them. Borders are made either circular, straight, or in cants; and are turned into knots, scrolls, volutes, and other

Borduni
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Borelli.

other compartments. They are rendered very ornamental by the flowers, shrubs, yews, &c. that are raised in them. They are always laid with a sharp rising in the middle; because, if they are flat, they are noways agreeable to the eye: and as for their breadth, the largest are allowed five or six feet, and the smallest commonly four.

BORDUNI, or BORDONE, (Paris), an excellent Italian painter, was born at Venice about the year 1512; and, being of a noble family, had a polite education. He was the disciple of Titian; but has been admired more for the delicacy of his pencil than for the truth of his outlines. He was at the court of France in the reign of Francis I. who had a great esteem for him, and for whom he drew not only abundance of history-pieces, but the portraits of several court-ladies, in so fine a manner, that original nature was hardly more charming. He at length returned to Venice, laden with riches and honour; and having gained great reputation in all parts of Italy, died in 1587, aged 75.

BORDURE, in heraldry. See there, n^o 10.

BORE, among engineers, denotes the diameter of the barrel of a gun or cannon, or rather its whole cavity.

BOREAS, a Greek name, now in common use for the north wind. Pezron observes, that anciently Boreas signified the *north-east wind* blowing at the time of the summer solstice. The Greeks erected an altar to Boreas. He is represented on the temple at Athens with his robe before his mouth, as if he felt the cold of the climate over which he presides, agreeably to the description of Ovid, who calls him *gelidus tyrannus*, "the shivering tyrant," Met. vi. ver. 711. But he is usually described by the Roman poets as violent and impetuous; *ibid.* ver. 686—ver. 707. In painting, he is generally represented like an old man with a horrible look, his hair and beard covered with snow or hoar frost, with the feet and tail of a dragon. M. Spierlingius has a treatise in praise of Boreas, wherein he shows the honours paid to him by antiquity. Boreas, according to this author, purifies the air, renders it calm and salubrious, preserves buildings from decay, drives away the plague and other noxious diseases, and expels locusts and other vermin hurtful to the grounds.

BOREL (Peter), a learned physician, was the son of James Borel who published several poems, and was born at Castres in 1620. He applied himself to the study of physic, of which he was created doctor, and practised with great success in the city of Castres. Towards the end of the year 1653, he went to Paris, and was soon after made physician in ordinary to the king. In 1674, he was received into the academy of sciences, and distinguished himself by writing a great number of works. The most esteemed are, 1. *Historiarum & observationum medico-physicarum*. 2. *Bibliotheca chymica, duodecimo*. 3. *De vero telescopii inventore, cum brevi omnium conspiciendorum historia*. He died in 1678.

BORELLI (John Alphonso), a famous philosopher and mathematician born at Naples the 28th of January 1608. He was professor of philosophy and mathematics in some of the most celebrated universities of Italy, particularly at Florence and Pisa, where he became highly in favour with the princes of the

house of Medicis; but having been engaged in the revolt of Messina, he was obliged to retire to Rome, where he spent the remainder of his life under the protection of Christina queen of Sweden, who honoured him with her friendship, and by her liberality towards him softened the rigour of his hard fortune. He continued two years in the convent of the regular clergy of St Pantaleon, called the *pious schools*, where he instructed the youth in mathematical studies. He died there of a pleurisy, the 31st of December 1679, in the 72d year of his age. He wrote, in Latin, 1. Euclid restored. 2. The theory of the influence of the planets in medicine, deduced from physical causes. 3. Of percussive force. 4. Of natural motions depending upon gravity. 5. An historical and meteorological account of the burning of mount Ætna, in the year 1669. 6. Of the motion of animals; and several other works, some of which are in Italian.

BORGIA (Cæsar), natural son of pope Alexander VI. was a brave general, but a most abandoned villain. See (*History of*) ITALY.—It is incredible what numbers he caused to be taken off by poison, or by the sword; and it is notorious that swarms of assassins were constantly kept in pay by him at Rome, for the sake of removing all who were either obnoxious or inconvenient to him. He experienced various turns of fortune; and was sometimes very prosperous, sometimes the reverse. He very narrowly escaped dying by poison in 1503; for having concerted with the pope a design of poisoning nine newly created cardinals at once, for the sake of possessing their effects, the poisoned wine, destined for the purpose, was by mistake brought to and drank by themselves. The pope died of it; but Cæsar, by the vigour of his youth, and the force of antidotes, after many struggles, recovered. He only recovered to outlive his fortune and grandeur, to see himself depressed, and his enemies exalted; for he was soon after divested of all his acquisitions, and sent a prisoner to Spain, in order to free Italy from an incendiary, and the Italian princes from those dangers which the turbulent and restless spirit of Cæsar made them fear, even though he was unarmed. He escaped from thence; and got safe to Navarre, to king John his brother-in-law, who was then at war with his subjects. Cæsar served as a volunteer in that war, and was killed in 1507.

BORGIO, an ancient town of Sweden, seated on the gulf of Finland, in the province of Nyland. E. Long. 26. 25. N. Lat. 60. 34.

Borgio de St Sepulchro, a town of Tuscany, in Italy, situated in E. Long. 13. 0. N. Lat. 43. 30.

Borgio de val de Faro, a town of Italy, in the duchy of Parma, in E. Long. 10. 36. N. Lat. 44. 35.

Borgio-Forte, a town of the Mantuan in Italy, situated at the confluence of the rivers Po and Menzo. E. Long. 11. 0. N. Lat. 44. 50.

Borgio San Demino, a town of Italy, in the duchy of Parma, with a bishop's see. E. Long. 10. 31. N. Lat. 41. 53.

BORGOGNONE, a celebrated painter, whose true name was *Giacomo Cortesi*; but he is commonly called *Borgognone*, from the country where he was born, about the year 1605. He was much admired and highly applauded for his admirable gusto and grand manner of painting battles. He had for several years been con-

Borgia
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Borgognone.

Boria ||
Athene. versant in military affairs, was an officer of considerable rank in the army, made the camp his school, and formed all his ideas from what he had seen performed in the field. His style is roughly noble, full of fire and spirit, and there are a few prints etched by his own hand. Towards the close of his life he retired to the Jesuits convent in Rome, where he is said to have taken sanctuary to rid his hands of an ill bargain he had got of a wife; but happily surviving her, he lived in great esteem and honour till after the year 1675.

BORIA, a small town of Spain, in the kingdom of Arragon. W. Long. 2. 2. N. Lat. 41. 50.

BORING, in a general sense, the art of perforating, or making a hole through any solid body.

BORING of Water-pipes. The method of boring water-pipes is as follows. The poles of alder, which is a very useful wood in making pumps, water-pipes, &c. being laid on horses or trassels of a foot height, to rest the augre upon while they are boring, they set up a lath to turn the least end of the poles, to fit them to the cavities of the great end of the others. They turn the small ends of the poles about five or six inches in length, to the size they intend to bore the bigger ends about the same depth, viz. five or six inches. This is designed to make a joint to shut each pair of poles together, the concave part being the female part, and the other the male of the joint. In turning the male part, they turn a channel in it, or a small groove at a certain distance from the end; and in the female part they bore a small hole to fit over this channel. This being done, they bore the poles through; and to prevent them from boring out at the side, they stick great nails at each end to be a guide in boring. It is usual, however, to bore them at both ends, so that if a pole be crooked one way, they can bore it through and not spoil it.

BORING, in farricity, a cruel and absurd method of treating a wrenched shoulder. See **FARRICRY**, § xxiii. 7.

BORING, in mineralogy, a method of piercing the earth with scooping irons, which being drawn back at proper times, bring up with them samples of the different strata through which they have passed; by the examination of which the skilful mineralogist will be able to guess whereabouts a vein of ore may lie, or whether it will be worth while to open a mine there or no.

BORIQUEN, one of the Caribbee islands in North America, near that of Porto Rico. The English formerly had a settlement there, but were driven away by the Spaniards. It is at present without inhabitants, though agreeable and fertile; the air being wholesome, and the water good. There are a great number of land-crabs, whence some have called it *Crab-island*. W. Long. 64. 35. N. Lat. 18. 0.

BORISTHENES, (anc. geog.), the largest river of Sarmatia Europea, thus described by Mela, who copies *verbatim* from Herodotus: "It runs through a cognominal people, is the most pleasant of all the rivers of Seythia, and calmer than all of them in its course, and very agreeable to drink: it feeds very rich pastures, and produces large fish of the best flavour, and without bones: it comes a great way, rising from springs unknown; its course is a distance of 40 days, and so far it is navigable." It is now called the *Dnieper* or *Nieper*.

BORKELO, a strong town in the United Provinces, in the county of Zutphen, seated on the river Borkele, in E. Long. 6. 30. N. Lat. 52. 15.

Borkelo
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Borlace.

BORLASE (Dr Edmund), an eminent physician and English writer in the 17th century, was the son of Sir John Borlase, master of the ordnance, and one of the Lord Justices of Ireland in 1643. He studied in Dublin college, and afterwards at the university of Leyden, at which last place he took the degree of doctor of physick. He afterwards practised physick with great success in the city of Chester, and was incorporated doctor of the faculty in the university of Oxford. Among the books which he wrote and published are the following. 1. *Latham Spaw* in Lancashire, with some remarkable cases and cures performed by it. 2. *The reduction of Ireland to the crown of England*. 3. *The history of the Irish rebellion*. 4. *Brief reflections on the earl of Castlehaven's memoirs, &c.* He died after the year 1682.

BORLASE (William), a very ingenious and learned writer, was of an ancient family in Cornwall, and born at Pendeen, in the parish of St Just. Feb. 2. 1695-6. He was put early to school at Penzance, and in 1709 removed to Plymouth. March 1712-13, he was entered of Exeter college, Oxford; and, June 1719, took a master of arts degree. In 1720, he was ordained a priest; and, in 1722, inducted to the rectory of Ludgvan in Cornwall. In 1732, the lord chancellor King presented him to the vicarage of St Just, his native parish; and this, with the rectory aforesaid, were all the preferments he ever had. In the parish of Ludgvan were rich copper works, which abound with mineral and metallic fossils; and these, being a man of an active and inquisitive turn, he collected from time to time, and thence was led to study at large the natural history of his native county. He was struck at the same time with the numerous monuments of remote antiquity that are to be met with in Cornwall; and, enlarging therefore his plan, he determined to gain as accurate an acquaintance as possible with the Druid learning, and with the religion and customs of the ancient Britons, before their conversion to Christianity. In 1750 he was admitted a fellow of the Royal Society; and, in 1753, published in folio at Oxford his "*Antiquities of Cornwall*;" a second edition of which was published, in the same form, at London, 1769, with this title, "*Antiquities, historical and monumental, of the county of Cornwall; consisting of several essays on the ancient inhabitants, Druid superstition, customs and remains of the most remote antiquity in Britain, and the British isles, exemplified and proved by monuments now extant in Cornwall and the Scilly islands; with a vocabulary of the Cornu-British language. Revised, with several additions, by the author; to which is added a map of Cornwall, and two new plates.*" His next publication was, "*Observations on the ancient and present state of the islands of Scilly, and their importance to the trade of Great Britain; Oxf. 1756,*" 4to. This was the extension of a paper which had been read before the Royal Society in 1753. In 1758 came out his "*Natural history of Cornwall; Oxf.*" fol. After these publications, he sent a variety of fossils and remains of antiquity which he had described in his works, to be deposited in the Ashmolean

Bornio
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Borneo.

museum: for which, and other benefactions of the same kind, he received the thanks of the university, in a letter from the vice-chancellor, Nov. 18. 1758; and, March 1766, the degree of doctor of laws. He died in 1772, aged 77 years, leaving two sons out of six, whom he had by a lady he married in 1724. Besides his literary connections with many ingenious and learned men, he had a particular correspondence with Mr Pope; and there is still existing a large collection of letters written by that poet to Dr Borlase. He furnished Pope with many of the materials which formed his grotto at Twickenham, consisting of curious fossils; and there may at present be seen Dr Borlase's name in capitals, composed of crystals, in the grotto. On which occasion Pope says to Borlase in a letter, "I am much obliged to you for your valuable collection of Cornish diamonds: I have placed them, where they may best represent yourself, *in a shade, but shining*;" alluding to the obscurity of the doctor's situation, and the brilliancy of his talents. Besides the above works, he sent many curious papers to the Philosophical Transactions, and had in contemplation several other works.

BORMIO, a county depending on the republic of the Grisons in Switzerland. It is bounded on the south by the estate of Venice, on the east by the territory of the house of Austria, and on the south and west by Caddea. It is 15 miles over both ways; and is divided into five communities, viz. the town of Bormio, the valley of Forbia, the Interior Valley, the Lower Valley, and the Valley of Luveno. Bormio is the only town in this district; and has a governor called a *podesta*, sent by the Grisons to preside in civil and criminal affairs. It is seated at the confluence of the rivers Addo and Isalacua, in E. Long. 10. 10. N. Lat. 46. 45.

BORNE, a market town of Lincolnshire in England. W. Long. 0. 20. N. Lat. 52. 40.

BORNEO, an island of Asia, in the East Indies, and one of the three great Sunda islands. It is thought to be the largest island in the world, next to New Holland; being 1500 miles in circumference. It is seated under the equator, that line cutting it almost through the middle. It is almost of a circular figure; abounds with gold; and the finest diamonds in the Indies are found in its rivers, being probably washed down from the hills by torrents. Here are also mines of iron and tin, and loadstones. Birds nests † are to be had in this island, which are eatable, and reckoned a great delicacy. The beasts are, oxen, buffaloes, deer, goats, elephants, tigers, and monkeys. This island has five rivers, especially towards the west and south. In their monsoon from April to September, the wind is westerly; and they have continual heavy rains, attended with violent storms of thunder and lightning. The rainy season continues for eight months of the year, and as during that time all the flat country near the coast is overflowed, the air is rendered very unhealthy, and the inhabitants are forced to build their houses on floats, which they make fast to trees. The houses have but one floor, with partitions made with cane; and the roofs are covered with palmetto leaves, the eaves of which reach within four or five feet of the bottom. The west and north-east sides of the island are almost desert, and the east is but little known. The inland parts are very mountainous; and the south-

N^o 50.

east, for many leagues together, is a stinking morass, which being overflowed in the wet season, is very unhealthy.

The Portuguese, who first discovered Borneo, had arrived in the Indies above 30 years before they knew any thing of it more than the name, and its situation, by reason of their frequently passing by its coast. At last one captain Edward Corril had ordered to examine it more narrowly; and being once acquainted with the worth of the country, they made frequent voyages thither. They found the coasts inhabited by Malayan Moors, who had certainly established themselves there by conquest; but the original inhabitants still remain in the mountains, and are styled *Beajus*, which in the Malayan language signifies a *wild man*. The most authentic account of these people is the following, which was extracted from the papers of father Antonio Ventimiglia, an Italian missionary. He was sent to Borneo from Macao, on board a Portuguese ship, converted great numbers to Christianity, and died on the island about the year 1691. The Beajus have no kings, but many little chiefs. Some are subject to the Moorish kings, and pay them tribute; but such as live far up the country, are altogether independent, and live according to their own customs. They are generally very superstitious, and much addicted to augury. They do not adore idols; but their sacrifices of sweet wood and perfumes are offered to one God, who, they believe, rewards the just in heaven, and punishes the wicked in hell. They marry but one wife; and look upon any breach of conjugal faith, either in the man or woman, as a capital offence. The Beajus are naturally honest and industrious, and have a brotherly affection for one another. They have a notion of property, which yet does not render them covetous. They sow and cultivate their lands; but in the time of harvest, each reaps as much as will serve his family, and the rest belongs to the tribe in common; by which means they prevent necessity or disputes. With the Moors on the coasts the Portuguese for some time carried on a considerable trade, and at their request settled a factory there; which, however, was afterwards surprised and plundered by the Moors, who put most of the people to the sword. The most considerable river in Borneo is called *Banjar*, at the mouth of which our East India company have a factory.

BORNHOLM, an island in the Baltic sea, to the south-east of the province of Schonen in Sweden. It is twenty-one miles in length, and above thirteen in breadth. It has three considerable towns, Rattum, Sandwick, and Nexia; with a great number of villages; and is fertile and populous. It was conquered by the Swedes in 1658; but the inhabitants, under the conduct of Jens Roefelds, voluntarily surrendered it to the king of Denmark, on account of the bad usage they received from the former. In 1678, a body of 5000 Swedish troops, in their passage from Pomerania to Sweden, being shipwrecked on this island, such of them as remained were made prisoners of war. The inhabitants defend the island by their own militia, without any expence to the crown. The commandant or governor resides at Rattum. E. Long. 14. 56. N. Lat. 55. 15.

BORNOU, a kingdom or province of Zaara in Africa, extending from 12 to 22. degrees of east longitude

Borneo
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Bornou.

† See Bir-
2^o 7^o.

Bornou
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Borondon.

itude, and from 17 to 21 degrees of north latitude. The northern part is poor, and like the rest of the provinces of Zaara: but all the rest is well watered by springs and rivers that tumble down with a dreadful noise from the mountains; rendering the country prolific in corn, grass, and fruits, and giving it a pleasing aspect. The eastern and western frontiers are divided into mountains and valleys, the latter being all covered with flocks of cattle, fields of rice and millet, and many of the mountains with wood, fruit-trees, and cotton. On the north-west stands the mountain of Tarton, having plenty of good iron mines; and on the south flows the river Niger, which, it is said, after running a great many leagues under a long chain of mountains, rears up its head again, and mingles its streams with the waters of the lake Bornou in its course, from whence it washes the walls of the capital of this kingdom. The compilers of the Universal History, however, are of opinion, that in these mountains the river Niger hath its source, because no river hath been traced to the eastward, except the Nile, which runs in a different course from north to south, and the White river, on the western frontiers of Abyssinia, which is a branch of the Nile. The eastern and western parts of Bornou are inhabited by a people of a roving disposition, who live in tents, and have their women, children, and every thing else, in common; the word *property*, or any idea equivalent to it, being utterly unknown among them. They have neither religion, laws, government, nor any degree of subordination; and hence they have been supposed by Cluverius to be the lineal descendants of the ancient Garamantes, and this to have been the residence of that people. In these parts, the natives are almost to a man shepherds and husbandmen. In summer they go naked, except a short apron before; but in winter they are warmly clothed with the softest sheepskins, of which they also form their bed-clothes; and indeed this is scarce a sufficient defence against the inclemency of the weather at certain seasons of the year, when a cold piercing wind blows from the northern mountains that chills the blood in proportion as the pores of the body have been opened by the scorching heats of summer. Baudrand and Daper affirm, that the natives are scarce superior in their understanding to brutes; not even having any names whereby to distinguish each other, except what they take from some personal defect or singularity; such as lean, fat, squinting, hump-backed, &c. In the towns, however, it is acknowledged that they are something more civilized and polite, being many of them merchants; but of these towns, or indeed of the kingdom in general, very little is known.

BOROMÆUS. See BOROMEUS.

BORONDON, (St.), an island in the Atlantic Ocean, mentioned by some writers, particularly Linschotten, in their description of the Canary islands, as something supernatural. It is said to be about 100 leagues distant from Ferro, probably well, though no writer has pretended to lay down its exact situation. Here it is affirmed several ships have touched by accident, and all agree in their relations of the state of the inhabitants and island. They affirm, that it is perpetually clothed with a great variety of wood, chiefly fruit-trees: that the valleys are in a perpetual state of verdure; and continually decked with flowers, grass, and plants, the

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spontaneous productions of the earth; or with corn and pulse, cultivated with great care by the inhabitants: that the soil is so prolific as to raise large quantities of corn for exportation; and that the ships that call here never fail of meeting with refreshments of every kind. It is said to be peopled by Christians, who have a language of their own, apparently combined of a variety of modern languages; for, say they, whoever understands the European tongues may make shift to hold conversation with this people. It is remarkable, that no ships, expressly sent upon this discovery, were ever fortunate enough to fall in with the island of St Borondon, though the Spaniards have several times attempted it from the Canaries. Hence it has been called the *marvellous island*; and hence indeed we may conclude, either that it exists wholly in imagination, or at least that it is surrounded with such currents as insensibly carry ships out of their course, and prevent their meeting with it. Some writers affirm that it actually disappears upon certain occasions, and shifts its position: while others, with more appearance of truth, allege, that it is frequently overcast with thick and impenetrable clouds, which occasion the disappointment of all the adventurers who have gone in search of it.

BOROUGH, BURROUGH, *Borow*, or *Burgh*, is frequently used for a town or corporation which is not a city.

BOROUGH, in its original Saxon *berge*, or *borgh*, is by some supposed to have been primarily meant of a tithing or company consisting of ten families, who were bound and combined together as each others *pledge*. Afterwards, as Verstegan informs us, borough came to signify a town that had something of a wall or inclosure about it: so that all places which among our ancestors had the denomination borough, were one way or other fenced or fortified. But, in later times, the same appellation was also bestowed on several of the *ville insigniores*, or country towns of more than ordinary note, though not walled.

The ancient Saxons, according to Spelman, gave the name burgh to those called, in other countries, cities. But divers canons being made for removing the episcopal sees from villages and small towns to the chief cities, the name *city* became attributed to episcopal towns, and that of borough retained to all the rest; though these too had the appearance of cities, as being governed by their mayors, and having laws of their own making, and sending representatives to parliament, and being fortified with a wall and castle, and the like.

BOROUGH, or *burgh*, is now particularly appropriated to such towns and villages as send burgesses or representatives to parliament. Boroughs are equally such, whether they be incorporate or not; there being great numbers of our English boroughs not incorporated; and, on the contrary, several corporations that are not boroughs; *e. gr.* Kingston, Deal, Kendal, &c.

BOROUGH, in Scotland. See LAW, N^o clviii. 11.

Royal Boroughs, in Scotland, are corporations made for the advantage of trade, by charters granted by several of their kings; having the privilege of sending commissioners to represent them in parliament, besides other peculiar privileges. The Royal Boroughs are not only so many distinct corporations, but do also constitute one entire body, governed by, and accountable to, one general court, anciently called *the court of*

Borough *four boroughs*, held yearly to treat and determine concerning matters relating to the common advantage of all boroughs. The four boroughs which composed this court were, Edinburgh, Stirling, Roxburgh, and Berwick; which two last falling into the hands of the English, Linlithgow and Lanerk were put in their places; with a saving to the former, whenever they should return to their allegiance. But this court not being sufficient to answer the necessities of the royal boroughs, they were all empowered, under James III. in 1487, to send commissioners to a yearly convention of their own, which was then appointed to be held at Inverkeithing, but is now held at Edinburgh, under the denomination of the *convention of boroughs*, vested with great power, and having for their object the benefit of trade, and the general interest of the boroughs.

Borough-Courts, are certain courts held in boroughs, by prescription, charter, or act of parliament: such are the sheriff's court, and court of haultings, in London.

Borough-English, a customary descent of lands or tenements, in some ancient boroughs and copy-hold manors, by which the youngest son, and not the eldest, succeeds to the burgage tenement on the death of his father. For which Littleton gives this reason; because the younger son, by reason of his tender age, is not so capable as the rest of his brethren to help himself. Other authors have indeed given a much stranger reason for this custom; as if the lord of the fee had anciently a right to break the seventh commandment with his tenant's wife on her wedding night; and that therefore the tenement descended, not to the eldest, but to the youngest son, who was more certainly the offspring of the tenant. But it cannot be proved that this custom ever prevailed in England, though it certainly did in Scotland, (under the name of *mercheta*, or *marcheta*), till abolished by Malcolm III. But perhaps a more rational account than either may be brought from the practice of the Tartars; among whom, according to Father Duhalde, this custom of descent to the youngest son also prevails. That nation is composed totally of shepherds and herdsmen; and the elder sons, as soon as they are capable of leading a pastoral life, migrate from their father with a certain allotment of cattle, and go to seek a new habitation. The youngest son, therefore, who continues latest with his father, is naturally the heir of his house, the rest being already provided for. And thus we find, that among many other northern nations it was the custom for all the sons but one to migrate from the father, which one became his heir. So that possibly this custom, wherever it prevails, may be the remnant of that pastoral state of the ancient Britons and Germans which Cæsar and Tacitus describe.

Borough-head, or *Head-borough*, called also *borough-holder*, or *burgholder*, the chief man of the decenna, or hundred, chosen to speak and act in behalf of the rest.

Head-borough also signifies a kind of head constable, where there are several chosen as his assistants, to serve warrants, &c. See **CONSTABLE**.

BOROUGHBRIDGE, a town in the north riding of Yorkshire in England, seated on the river Your, over which there is a handsome stone bridge. The town is not large, but commodious, and sends two members to parliament. W. Long. 1. 15. N. Lat. 54. 10.

BOROZAIL, or the zeal of the Ethiopians, a dis-

ease epidemic in the countries about the river Senega. **Borrachio** It principally affects the pudenda, but is different from the lues venerea. It owes its rise to excessive venery; in the men this distemper is called *afab*, and in women *affabatus*. **Borrachio** || **Borroneus**, ||

BORRACHIO. See **CAOUCHOUK**.

BORRAGE. See **ANCHUSA**.

BORRELLISTS, in church-history, a Christian sect in Holland; so denominated from their founder Borrel, a person of great learning in the Hebrew, Greek, and Latin tongues. They reject the use of the sacraments, public prayer, and all other external acts of worship. They assert, that all the Christian churches of the world have degenerated from the pure apostolical doctrines, because they have suffered the word of God, which is infallible, to be expounded, or rather corrupted, by doctors who are not infallible. They lead a very austere life, and employ a great part of their goods in alms.

BORRICHIOUS, one of the most learned men of his age, the son of a Lutheran minister in Denmark, was born in 1626. He applied himself to physic in the university of Copenhagen, and began to practise during a most terrible plague that made great havoc in that city. He travelled: but before his departure, in 1660, he was appointed professor in poetry, botany, and chemistry; and at his return discharged his duties with great assiduity, of which the works he published afford full proof. He was raised to the office of counsellor in the supreme council of justice, in 1686; to that of counsellor of the Royal Chancery, in 1689; and died of the operation for the stone, in 1690. He published, 1. *Lingua pharmacopæorum*. 2. *Dissertationes de poeticis Græcis et Latinis*. 3. *De ortu et progressu chemiæ*; and several other works.

BORROMEUS (St Charles), cardinal, and archbishop of Milan; a personage of great note in the Romish kalendar, and whose sincere piety, simplicity of manners, and zeal for reformation, render him indeed a character equally interesting and instructive to the members of any church. He was the son of Gilbert Borromeus Count of Arona and of Mary of Medicis, and was born at the castle of Arona upon Lake Major in the Milanese in October 1538. When he was about 12 years old, Julius Cæsar Borromeus resigned an abbacy to him of a considerable revenue, which was considered as an hereditary inheritance of the family; which Charles accepted, but applied the revenue wholly in charity to the poor. Having acquired a sufficient knowledge of the languages at Milan, he studied the civil and canon law at Pavia, where he lived like another Lot in Sodom, preserving his innocence among a thousand snares by which it was endangered. He received great advantage from the company and conversation of Francis Alciat, one of the most learned men of the age, for whom he afterwards procured the purple. He would accept no new benefice but upon condition that he should be at liberty to apply the revenue to public uses. In the year 1554, Charles being then 16 years old, his father died, an event which brought him back to the castle of Arona; where, though he had an elder brother, Count Frederick, he was requested by the family to take upon him the management of the domestic affairs, to which at length he consented.

After

Borromeus. After some time he returned again to his studies, which, in the year 1559, being then just 21, he finished by a solemn act, and took his doctor's degree. The promotion of his uncle to the pontificate, by the name of *Pius IV.* which happened the year following, seemed to have very little effect upon him; but he was very soon made protonotary, and intrusted both with the public and privy seal of the ecclesiastical state: he was also, at the same time, created cardinal deacon, and soon after archbishop of Milan. In obedience to the will of his uncle the pope, he lived in great splendor, having a brilliant retinue and a great number of domestics; yet his own temperance and humility were never brought into question. In order to render even his amusements useful, he established an academy of select and learned persons, as well ecclesiastics as laics, from among his household and dependants, who were employed in some exercise which tended to inspire a love of virtue, and to form a just taste. Each of them was to write upon some chosen subject, either in verse or in prose, and to communicate to each other in frequent conferences the fruits of their studies. The works produced by this society have been published in many volumes, under the title of *Noctes Vaticanæ*, because these useful assemblies were held at the Vatican, and at night, after the business of the day was over. About this time Charles also formed a design of founding a college at Pavia, which should at the same time be a school of science and an asylum from the vices and vanities of the world. In prosecution of this design, he raised a large edifice upon the foundations of several houses which belonged to the family of Borromeus in that city; he obtained from the pope several benefices, which he attached to his building; he provided it with all things necessary for the young scholars out of his own revenue; and he dedicated his college to St Justina virgin and martyr.

Upon the death of his only brother Frederick, his relations, his friends, and even the pope himself, advised him to change his state, to quit the church, and marry, that his family might not become extinct. Charles, however, contrary to this advice and the expectations of the world, received the priesthood, and addressed the pope in these terms: "Do not complain of me, Holy Father, for I have taken a spouse whom I love and on whom my wishes have been long fixed." From this time he became more fervent in exercises of piety and ecclesiastical knowledge: He perceived that some literati who had departed from the faith had also corrupted the writings of some holy doctors of the church, and he thought he should render religion good service if he could restore the genuine reading: He therefore employed Achilles Statius, a Portuguese of great learning, in this work, whom for that purpose he retained at Rome. To his zeal and attention also is owing the congregation of eight cardinals, still subsisting, to resolve doubts and obviate difficulties which should arise in explanations of the council of Trent.

There was a very intimate friendship between Borromeus and Don Barthelemy des Martyris archbishop of Prague, and author of a work intitled *Stimulus Pastorum*. This work falling into Borromeus's hands gave him an earnest desire to become a preacher, as he was now convinced that preaching was one of the principal duties of a prelate. An almost inconceivable

multiplicity of business, ill health, a feeble voice, and a difficult pronounciation, were no inconsiderable obstacles to his design, yet he surmounted them all; and though his beginnings were weak, yet perseverance crowned them with success.

Having obtained permission to visit his church, which the pope had hitherto refused as he found his presence necessary at Rome, he prepared to set out for Milan. He had before sent thither his grand vicar Ormanetus, whose labours at first had not been unsuccessful, but who soon found oppositions so pertinacious and obstinate as put an end to his hopes: Borromeus therefore saw the necessity of going in person, and he was received with the most distinguished honours. He was, however, soon recalled to Rome, where many things made his presence necessary: the pope was gradually dying; and Charles arrived just time enough to administer to him the last sacraments.

Pius IV. died on the 7th of January 1566, and 28 days afterwards Cardinal Alexandrine mounted the papal chair, and assumed the name of *Pius V.* the skill and diligence of Borromeus having contributed not a little to prevent the cabals of the conclave.

As soon as this event had taken place, and all was quiet at Rome, Borromeus gave himself wholly up to the reformation of his diocese, where the most flagitious irregularities were openly practised, having first made another reform in his own family. He began by making pastoral visits in his metropolis, where the canons were not distinguished for the purity of their manners. He soon restored proper decency and dignity to divine service, by a variety of wise and necessary regulations: In conformity to the decrees of the council of Trent, he cleared the cathedral of many pompous tombs, rich ornaments, banners, arms, and in general of all the trophies with which the vanity of man had disfigured the house of God; and in order to give a sanction to his zeal by his example, he spared not the monuments of his nearest relations. Nor did his zeal stop here: he divided the nave of the church through its whole length into two parts, by strong thick planks, that the two sexes, being separated, might perform their devotions without any attention to each other, and with a modelly and recollection more suitable to the place.

This pastoral care extended from the cathedral to the collegiate churches, and even to the fraternities or societies of penitents, particularly that of St John the Baptist. The duty of this society was to attend criminals to the place of punishment, to assist, comfort, and prepare them for death; but the spirit of the institution was now forgotten, and the wretches who were condemned to death were commonly dragged to execution like beasts, without any spiritual assistance or consolation. But the archbishop revived the original fervor of this order, in the exercise of their peculiar duty, and persuaded many of the nobility and principal persons of the city to become members of a society appropriated to so eminent a branch of Christian charity. The reformation of the monasteries followed that of the churches, and the vigilance of the pastor soon extended itself from the city to the country round it, which abounded with irregularities that required his correction. The great abuses and irregularities which had over-run the church at this time arose prin-

Borromeus. cipally from the gross ignorance of the clergy; in order therefore to attack these evils at their root, Charles established seminaries, colleges, and communities, for the education of young persons intended for holy orders. He met with many difficulties, and much opposition in his endeavours to bring about a reformation of manners; but he prevailed against every obstacle by an inflexible constancy, tempered with great sweetness of manners.

The governor of the province, and many of the senators, were apprehensive that the cardinal's ordinances and proceedings would encroach upon the civil jurisdiction, and become inconsistent with the rights of his catholic majesty, to whom the duchy of Milan was then in subjection. And this was a fruitful source of remonstrances, representations, and complaints, which long troubled the courts of Rome and Madrid, and which the king of Spain, Philip II. referred entirely to the decision of the pope. But Borromeus had a more formidable opposition to struggle with, that of several religious orders, particularly the Brothers of Humility. Three provosts of this society entered into a conspiracy to cut him off; and one of their confederates, called *Jerom Donat*, whose surname was *Farina*, took upon him to carry the design into execution. For this purpose he mixed with the crowd that went into the archiepiscopal chapel, where the cardinal spent an hour every evening in prayer with his domestics and other pious persons; and having watched his opportunity, he fired an arquebus at him, which was loaded with a ball suited to the bore of the piece, and with a considerable charge of leaden shot. It is said that the ball struck him on the spinal bone, but fell down at his feet without doing any other damage than soiling his rochet, and that one of the shot penetrated his clothes to the skin, and there stopped, without imprinting any wound, which was considered as a miracle, especially as the other shot tore away part of a wall, and went quite through a table.

In the year 1576, the city and diocese of Milan were visited by the plague, which swept away incredible numbers; and the behaviour of Borromeus, on this occasion, was truly christian and heroic: He not only continued on the spot, but he went about giving directions for accommodating the sick, and burying the dead, with a zeal and attention that were at once ardent and deliberate, minute and comprehensive; and his example stimulated others to join in the good work. He avoided no danger, and he spared no expence; nor did he content himself with establishing proper regulations in the city, but went out into all the neighbouring parishes where the contagion raged, distributing money to the poor, ordering proper accommodations for the sick, and punishing those, especially the clergy, who were remiss in the duties of their calling. Charles, notwithstanding the fatigue and perplexity which he suffered by thus executing his pastoral charge, abated nothing of the usual austerity of his life, nor omitted any of his stated devotions; for, whatever approached to luxury or magnificence, he considered as incompatible with the propriety of his character. It happened, that being once on a visit to the archbishop of Sienna at his palace, a very sumptuous entertainment was provided for him. Borromeus, though he had been used to content himself with bread and wa-

ter, yet sat down at the table, where however he eat but little, and gave sufficient intimation that he was much displeas'd with such ostentatious prodigality; but what was his surprize when he saw the table again covered with a desert, consisting of whatever was most rare, exquisite, and costly? He immediately rose lastly from his seat, as if he had suddenly recollected some pressing business, and gave orders for his departure, notwithstanding the rain, and the most earnest entreaties of the archbishop. "My Lord," said the cardinal, "if I should tarry here to-night, you would give me another such treat as that I have just seen, and the poor will then suffer another loss, great numbers of whom might have been fed with the superfluities that have been now set before us."

The continual labours and austerities of Borromeus naturally shortened his life; he went to Verceil to put an end, if possible, to the divisions which threatened the most fatal consequences; and, when he was there, he received a message from the Duke of Savoy, requesting his presence at Turin. From Turin he retired to a place called the *Sepulchre*, on the mountain Varais, where he was seized with an intermittent fever, which scarce permitted him to return alive to Milan, where he arrived on the 31 of November 1584, and died the next day. He was lamented by the city and the whole province with such marks of sincere sorrow as are rarely seen; and he was immediately worshipped as a saint without waiting for the pope's approbation. The pope, however, when he was told of it by Cardinal Baronius, gave directions that the devotion of the people should not be restrained, though Borromeus was not canonized till the 1st of November 1610, in the pontificate of Leon XI. Since that time many churches and chapels have been erected in honour of this saint, and many religious societies instituted and put under his protection.

The foregoing particulars are extracted from an account of the life of Borromeus, written some years ago by Father Anthony Touron. Upon a comparison of this life with that written by Ribadeneira a Spanish Jesuit above a century ago, it appears that the improvement of knowledge has made a very striking difference in this kind of biography. Ribadeneira, who lived in the midst of ignorance and superstition, did not suspect that the time was at hand when the incredible and ridiculous fables he recites could not be believed: his life of this saint therefore abounds with particulars which Touron has justly omitted. We are told that a miraculous light was seen over the chamber of Borromeus's mother when she was in labour: That Borromeus, seeing two persons carried violently down a rapid river on their horses, and just ready to perish, caused their horses suddenly to leap with them out of the water, by giving them his benediction: That Oclavian Varese, a gentleman of Milan, who was confined to his bed by sickness, when Borromeus died became instantly well, by recommending himself to the Saint's intercession. That a daughter of Julius Bonacina was instantly cured of a disorder in her eye, which had taken away the sight of it, by performing an act of devotion in honour of this Saint: That a count of Ferrara was instantly seized with a violent disease upon speaking irreverently of Borromeus's picture, but was cured upon confessing his fault. It would certainly be

Borrowing a work of infinite service to the Romish church, to new-write the lives of her saints in such a manner as can now be believed, since the lives already written might by that means be gradually superseded, which are a better antidote against Popery than the arguments of the best reasoner in the world.

BORROWING AND HIRING, in law, are contracts by which a qualified property may be transferred to the hirer or borrower; in which there is only this difference, that hiring is always for a price or stipend, or additional recompense; borrowing is merely gratuitous. But the law in both cases is the same. They are both contracts, whereby the possession and transient property is transferred for a particular time or use, on condition and agreement to restore the goods so hired or borrowed, as soon as the time is expired, or the use performed, together with the price or stipend (in case of hiring) either expressly agreed upon by the parties, or left to be implied by law, according to the value of the service. By this mutual contract, the hirer or borrower gains a temporary property in the thing hired, accompanied with an implied condition to use it with moderation, and not to abuse it; and the owner or lender retains a reversionary interest in the same, and acquires a new property in the price or reward. Thus, if a man hires or borrows a horse for a month, he has the possession and a qualified property therein during that period; on the expiration of which his qualified property determines, and the owner becomes (in case of hiring) intitled also to the premium or price for which the horse was hired.

There is one species of this price or reward the most usual of any, but concerning which many good and learned men have in former times very much perplexed themselves and other people, by raising doubts about its legality *in foro conscientie*. That is, when money is lent on a contract to receive not only the principal sum again, but also an increase by way of compensation for the use, which is generally called *interest* by those who think it lawful, and *usury* by those who do not so. But as to this, see the article **INTEREST**.

BORROWSTOWNNESS. See **BURROWSTOWNNESS**.

BORSEHOLDER, among the Anglo-Saxons, one of the lowest magistrates, whose authority extended only over one freeburgh, tithing, or decenary, consisting of ten families. Every freeman who wished to enjoy the protection of the laws, and not to be treated as a vagabond, was under the necessity of being admitted a member of the tithing where he and his family resided; and in order to obtain this admission, it was as necessary for him to maintain a good reputation; because all the members of each tithing being mutual pledges and sureties for each other, and the whole tithing sureties to the king for the good behaviour of all its members, they were very cautious of admitting any into their society who were of bad or doubtful characters. Each tithing formed a little state or commonwealth within itself, and chose one of its most respectable members for its head, who was sometimes called the *alhorman* of such a tithing or freeburgh, on account of his age and experience, but most commonly *borsholder*, from the Saxon words *borh*, "a surety," and *alder*, "a head or chief." This magistrate had authority to call together the members of his tithing, to preside in their meetings, and to put their sentences in execution. The members of

each tithing, with their tithing-man or borseholder at their head, constituted a court of justice, in which all the little controversies arising within the tithing were determined. If any dispute of great difficulty or importance happened, or if either of the parties was not willing to submit to a sentence given in the tithing-court, the cause was referred or appealed to the next superior court, or court of the hundred.

BORSET, or **BORSETT**, celebrated for its baths, a place about half a league from Aix-la-Chapelle in Germany. The abbey here is a very magnificent pile of building. It was formerly a monastery; but serves for a nunnery, whose abbess is a princess of the empire, and lady of Borset. The waters are warm, and of the nature of those of Aix-la-Chapelle; but they are only used as baths for the diseases in which the waters last mentioned are recommended, and also in dropsical and oedematous cases. The waters are distinguished into the upper and lower springs. The former were found by Dr Simmons, to raise the thermometer to 158°, the latter to only 127°. All the baths are supplied by the first. Dr Simmons observed that these waters were much less sulphureous than those of Aix-la-Chapelle, probably on account of their greater heat. He likewise found that they abounded much with selenites, which incrust the pipe through which the water passes, and likewise the sides of the bath.

BORYS THENES. See **BORISTHENES**.

BOS (John Baptist du), a celebrated author and member of the French academy, was born at Beauvais in 1670, and finished his studies at the Sorbonne. In 1695, he was made one of the committee for foreign affairs under Mr Torez; and was afterwards charged with some important transactions in England, Germany, Holland, and Italy. At his return to Paris, he was handsomely preferred, made an abbé, and chosen perpetual secretary of the French academy. He was the author of several excellent works; the principal of which are, 1. Critical reflections upon poetry and painting, 3 vols 12mo. 2. The history of the four Gordians, confirmed and illustrated by medals. 3. A critical history of the establishment of the French monarchy among the Gauls, 2 vols 4to, 4 vols 12mo. He died at Paris on the 23d of March 1742.

Bos (Lewis Janssen), an esteemed painter, was born at Bois-le-Duc. Having been carefully instructed in the art of painting by the artists of his native city, he applied himself entirely to study after nature, and rendered himself very eminent for the truth of his colouring and the neatness of his handling. His favourite subjects were flowers, and curious plants, which he usually represented as grouped, in glasses, or vases of crystal, half filled with water; and gave them so lovely a look of nature, that it seemed scarce possible to express them with greater truth or delicacy. It was frequent with this master to represent the drops of dew on the leaves of his objects, which he executed with an uncommon transparency; and embellished his subjects with butterflies, bees, wasps, and other insects, which, Sandart says, were superior to any thing of that kind performed by his cotemporary artists. He likewise painted portraits with very great success; and showed as much merit in that style as he did in his compositions of still life. He died in 1507.

BOS, in zoology, a genus of quadrupeds belonging to the order of pecora. The characters of this genus

Borse

B. S.

are taken from the horns and teeth. The horns are hollow within; and turned forward, in the form of crescents: There are eight fore-teeth in the under jaw, and none in the upper, their place being supplied by a hard membrane; and there are no dog-teeth in either jaw. Linnæus enumerates six species, viz.

I. The TAURUS, including the bull and cow, has cylindrical horns bent outwards, and loose dewlaps. The bull, or male, is naturally a fierce and terrible animal. When the cows are in season, he is perfectly ungovernable, and often altogether furious. When chafed, he has an air of fullen majesty, and oft tears up the ground with his feet and horns. The principal use of the bull is to propagate the species; although he might be trained to labour, his obedience cannot be depended on. A bull, like a stallion, should be the most handsome of his species. He should be large, well-made, and in good heart; he should have a black eye, a fierce aspect, but an open front; a short head; thick, short, and blackish horns, and long shaggy ears; a short and straight nose, large and full breast and shoulders, thick and fleshy neck, firm reins, a straight back, thick fleshy legs, and a long tail well covered with hair. Castration remarkably softens the nature of this animal; it destroys all his fire and impetuosity, and renders him mild and tractable, without diminishing his strength; on the contrary, after this operation, his weight is increased, and he becomes fitter for the purposes of plowing, &c.

The best time for castrating bulls is at the age of puberty, or when they are 18 months or two years old; when performed sooner, they often die. However, it is not uncommon to castrate calves a few days after birth. But such as survive an operation so dangerous to their tender age, generally grow larger and fatter, and have more courage and activity than those who are castrated at the age of puberty. When the operation is delayed till the age of six, seven, or eight years, they lose but few of the qualities of bulls; are much more furious and untractable than other oxen; and when the cows are in season, they go in quest of them with their usual ardour.

The females of all those species of animals which we keep in flocks, and whose increase is the principal object, are much more useful than the males. The cow produces milk, butter, cheese, &c. which are principal articles in our food, and besides answer many useful purposes in various arts. Cows are generally in season, and receive the bull, from the beginning of May to the middle of July. Their time of gestation is nine months, which naturally brings the veal or calves to our markets from the beginning of January to the end of April. However, luxury has fallen upon methods of interrupting this natural course, and veal may be had almost every month in the year. Cows, when improperly managed, are very subject to abortion. In the time of gestation, therefore, they ought to be observed with more than ordinary care, lest they should leap ditches, &c. Neither should they be suffered to draw in the plough or other carriage, which is a practice in some countries. They should be put into the best pasture, and should not be milked for six weeks or two months before they bring forth their young. The calf should be allowed to suck and follow its mother during the first six or eight days. After this it

begins to eat pretty well, and two or three sucks in a day will be sufficient. But if the object be to have it quickly fattened for the market, a few raw eggs every day, with boiled milk, and a little bread, will make it excellent veal in four or five weeks. This management of calves applies only to such as are designed for the butcher. When they are intended to be nourished and brought up, they ought to have at least two months suck; because the longer they suck, they grow the stronger and larger. Those that are brought forth in April, May, or June, are the most proper for this purpose; when calved later in the season, they do not acquire sufficient strength to support them during the winter. The cow comes to the age of puberty in 18 months, but the bull requires two years: but although they are capable of propagating at these ages, it is better to restrain them till they be full three years. From three to nine years those animals are in full vigour; but when older, they are fit for nothing but to be fed for the butcher. A milk-cow ought to be chosen young, fleshy, and with a brisk eye.

The heaviest and most bulky animals neither sleep so profoundly, nor so long, as the smaller ones. The sleep of the ox is short and slight; he wakes at the least noise. He lies generally on the left side, and the kidney of that side is always larger than the other. There is great variety in the colour of oxen. A reddish or black colour is most esteemed. The hair should be glossy, thick, and soft; for when otherwise, the animal is either not in health, or has a weakly constitution. The best time for inuring them to labour is at the age of two and a half or three years. The ox eats very quick, and soon fills his first stomach; after which he lies down to ruminate or chew the cud. The first and second stomachs are continuations of the same bag, and very capacious. After the grass has been chewed over again, it is reduced to a kind of mass, not unlike boiled spinach; and under this form it is sent down to the third stomach, where it remains and digests for some time; but the digestion is not fully completed till it comes to the fourth stomach, from which it is thrown down to the guts. The contents of the first and second stomachs are a collection of grass and other vegetables roughly macerated; a fermentation, however, soon commences, which makes the grass swell. The communication between the second and third stomach is by an opening much smaller than the gullet, and not sufficient for the passage of the food in this state. Whenever then the two first stomachs are distended with food, they begin to contract, or rather perform a kind of reaction. This reaction compresses the food, and makes it endeavour to get out: now the gullet being larger than the passage between the second and third stomachs, the pressure of the stomach necessarily forces it up the gullet. The action of ruminating, however, appears to be in a great measure voluntary; as animals of this kind have a power of increasing the reaction of their stomachs. After the food undergoes a second mastication, it is then reduced into a thin pulp, which easily passes from the second to the third stomach, where it is still further macerated; from thence it passes to the fourth, where it is reduced to a perfect mucilage, every way prepared for being taken up by the lacteals, and converted into nourishment. What confirms this account of chewing the cud is, that

Bos. that as long as these animals suck or feed upon liquid aliment, they never ruminate; and in the winter, when they are obliged to feed upon hay and other dry vi- tuals, they ruminate more than when they feed upon fresh grafs.

Bulls, cows, and oxen, are fond of licking them- selves, especially when lying at rest. But this practice should be prevented as much as possible; for as the hair is an indigestible substance, it lies in the stomach or guts, and is gradually coated by a glutinous substance, which in time hardens into round stones of a consider- able bulk, which sometimes kills them, but always prevents their fattening, as the stomach is rendered in- capable of digesting the food so well as it ought.

The age of these animals may be distinguished by the teeth and horns. The first fore-teeth fall out at the age of six months, and are succeeded by others of a darker colour, and broader. At the end of sixteen months, the next milk-teeth likewise fall out; and at the beginning of the fourth year all the fore-teeth are renewed, and then they are long, pretty white, and equal: However, as the animal advances in years, they become unequal and blackish. The horns of oxen four years of age are small pointed, neat, and smooth, but thickest near the head: This thick part next season is pushed further from the head by a horny cylinder, which is also terminated by another swelling part, and so on (for as long as the ox lives, the horns continue to grow); and these swellings become so many annular knots by which the age may easily be reckoned: But from the point to the first knot must be counted three years, and every succeeding knot only one year. The bull, cow, and ox, generally live about fourteen or fif- teen years.

Ox-beef is very nourishing, and yields a strong ali- ment; the flesh of a cow, when well fatted and young, is not much inferior. Bull-beef is hard, tough, and dry; for which reason it is not much used for food. Veal is well tasted, easy of digestion, and rather keeps the body open than otherwise.

The northern countries of Europe produce the best cattle of this kind. In general, they bear cold better than heat; for this reason they are not so plenty in the southern countries. There are but few in Asia the south of Armenia, or in Africa beyond Egypt and Barbary. America produced none till they were car- ried there by the Europeans. But the largest are to be met with in Denmark, Podolia, the Ukrain, and among the Calmuck Tartars; likewise those of Ireland, England, Holland, and Hungary, are much larger than those of Persia, Turkey, Greece, Italy, and Spain; but those of Barbary are least of all. In all mountainous countries, as Wales, the Highlands of Scotland, &c. the black cattle are small; but hardy, and when fat- tened make excellent beef. In Lapland, they are mostly white, and many of them want horns.

The British breed of cattle, Mr Pennant observes, has in general been so much improved by foreign mix- ture, that it is difficult to point out the original kind of these islands. Those which may be supposed to have been originally British are far inferior in size to those on the northern part of the European continent: the cattle of the Highlands of Scotland are exceedingly small; and many of them, males as well as females, are hornless: the Welsh runts are much larger: the black

cattle of Cornwall are of the same size with the last. The large species that is now cultivated through most parts of Great Britain, are either entirely of foreign extraction, or our own improved by a cross with the foreign kind. The Lincolnshire kind derive their size from the Holstein breed; and the large hornless cattle that are bred in some parts of England, come originally from Poland.

About 250 years ago, there was found in Scotland a wild race of cattle, which were of a pure white colour, and had, if we may believe Boethius, manes like lions. Mr Pennant says, he cannot but give credit to the re- lation; having seen in the woods of Drunkanrig in North Britain, and in the park belonging to Chilling- ham castle in Northumberland, herds of cattle probably derived from the savage breed. They had lost their manes, but retained their colour and fierceness; they were of a middle size, long legged, and had black muz- zels and ears; their horns fine, and with a bold and elegant bend.—The keeper of those at Chillingham said, that the weight of the ox was 38 stones; of the cow, 28: that their hides were more esteemed by the tanners than those of the tame; and they would give sixpence per stone more for them. These cattle were wild as any deer; on being approached, they would in- stantly take to flight, and gallop away at full speed; never mix with the tame species; nor come near the house, unless constrained to it by hunger in very severe weather. When it is necessary to kill any, they are al- ways shot: if the keeper only wounds the beast, he must take care to keep behind some tree, or his life would be in danger from the furious attacks of the animal, which will never desist till a period is put to its life.

Frequent mention is made of our savage cattle by historians. One relates, that Robert Bruce was (in chasing these animals) preserved from the rage of a wild bull by the intrepidity of one of his courtiers, from which he and his lineage acquired the name of *Turn-bul*. Fitz-Stephen* names these animals (*uri* * History of London preferred in Ireland's Ann. VIII. *gloustris*) among those that harboured in the great fo- rest that in his time lay adjacent to London. Another enumerates, among the provisions at the great feall of Nevil archbishop of York, six wild bulls; and Sibbald assures us, that in his days a wild and white species was found in the mountains of Scotland, but agreeing in form with the common sort. These were probably the same with the *bifontes jubati* of Pliny found then in Germany, and might have been common to the con- tinent and our island; the loss of their savage vigour by confinement might occasion some change in the ex- ternal appearance, as is frequent with wild animals de- prived of liberty; and to that we may ascribe their loss of mane. The urus of the Hercynian forest described by Cæsar (lib. vi.) was of this kind; the same which is called by the modern Germans, *aurechs*, i. e. *bos sylvestris*.

The ox is the only horned animal in these islands that will apply his strength to the service of mankind. It is now generally allowed, that, in the draught, oxen are in many cases more profitable than horses; their food, harness, and shoes, being cheaper; and should they be lamed or grow old, an old working beast will be as good meat, and fatten as well, as a young one.

There is scarce any part of this animal without its

etc.

affon Hist. Nat. Arlic.

notis of madruped.

B 15.

use. The blood, fat, marrow, hide, hair, horns, hoofs, milk, cream, butter, cheese, whey, urine, liver, gall, spleen, bones, and dung, have each their particular use in manufactures, commerce, and medicine.

The skin has been of great use in all ages. The ancient Britons, before they knew a better method, built their boats with osiers, and covered them with the hides of bulls, which served them for short coasting voyages.

*Primum cava salix madefacto vimine parvum
Texitur in pappim, casque induta juvenco,
Pectoris patiens, tumidum super emicat annem:
Sic Venetus stagnante Pado, fusoque Britannus
Navigat oceano.* LUCAN. lib. iv. 131.

The bending willow into barks they twine;
Then line the work with spoils of slaughter'd kine.
Such are the floats Venetian fishers know,
When in dull marshes stands the settling Po;
On such to neighbour Gaul, allur'd by gain,
The bolder Britons cross the swelling main.

ROWE.

Vessels of this kind are still in use on the Irish lakes; and on the Dee and Severn: In Ireland they are called *curach*: in English, *coracles*: from the British *curragh*, a word signifying a boat of that structure. At present the hide, when tanned and curried, serves for boots, shoes, and numberless other conveniences of life.—Vellum is made of the thinnest calve-skins, and the skins of abortions. Of the horns are made combs, boxes, handles for knives, and drinking vessels; and when softened by water, obeying the manufacturer's hands, they form pellucid laminæ for the sides of lanterns. These last conveniences were invented by the great king Alfred, who first used them to preserve his candle time-measures from the wind; or (as other writers will have it) the tapers that were set up before the reliques in the miserable tattered churches of that time. The very smallest fragments, and even the dust and filing, of horn, are found very serviceable in manuring cold lands. The matter lying within, on which the horn is formed, is called the *slough*; and, when dry, is used in making walls or fences, in which, covered from wet, it will last a long time. It is also most admirable in mending roads, where the soil is soft and spewy; for, dissolving, it becomes a glutinous substance, that binds amazingly with gravel. As a manure, they allow between two and three quarter-facks to an acre. Horn saw-dust with mould is an excellent compost for flowers. It is also of use in hardening, and giving what is called a proper temper, to metals. In medicine, horns were employed as alexipharmics or antidotes against poison, the plague, or the small-pox; they have been dignified with the title of *English bazaar*, and are said to have been found to answer the end of the oriental kind.

The teguments, cartilages, and gristles, for the indifferant,—and, for the finer, all the cuttings, parings, and scrapes of hides,—are boiled in water, till the gelatinous parts of them are thoroughly dissolved; and the mass, properly dried, becomes glue. See GLUE.

The bones are used by mechanics where ivory is too expensive; by which the common people are served with many neat conveniences at an easy rate. From the tibia and carpus bones is procured an oil much used by coach-makers and others in dressing and clean-
N^o 51.

ing harness, and all trappings belonging to a coach; and the bones calcined afford a fit matter for tests for the use of the refiner in the smelting trade. The blood is used as an excellent manure for fruit-trees, and is the basis of that fine colour the Prussian blue. The finews are prepared so as to become a kind of thread or small cord, used in sewing saddles, in making racquets, and other things of a like nature. The hair hath also its value, and is employed in many different ways. The long hair of the tail is frequently mixed with horse-hair spun into ropes, and sometimes wove. The short hair serves to stuff saddles, seats of several kinds, mattresses, and chairs. The refuse is a good manure, and operates more speedily than the horns. The fat, tallow, and suet, furnish us with light; and are also used to precipitate the salt that is drawn from briny springs. The gall, liver, spleen, and urine, had also their place in the materia medica, though they have now resigned it to more efficacious and agreeable medicines. The uses of butter, cheese, cream, and milk, in domestic œconomy, and the excellence of the latter in furnishing a palatable nutriment for most people whose organs of digestion are weakened, are too obvious to be insisted on.

II. The *BONASUS* has a long mane; its horns are bent round towards the cheek, and are not above a span long. It is about the size of a large bull, and is a native of Africa and Asia. When enraged, he throws out his dung upon dogs or other animals that annoy him; the dung has a kind of caustic quality, which burns the hair off any animal it falls upon.

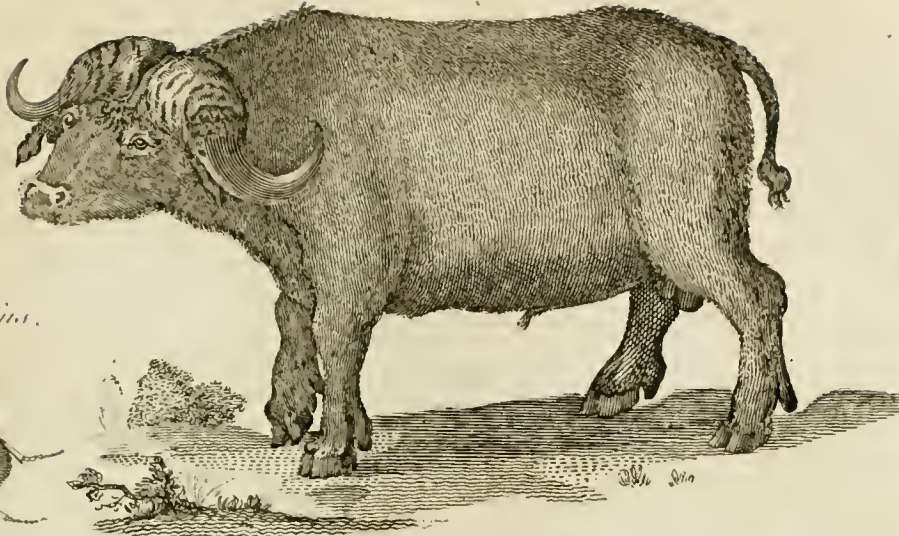
III. The *BISON* has short black rounded horns, with a great interval between their bases. On the shoulders is a vast hunch, consisting of a fleshy substance, much elevated. The fore-parts of the body are thick and strong; the hind-part, slender and weak. The hunch and head are covered with a very long undulated fleece, divided into locks, of a dull rust-colour: this is at times so long, as to make the fore-part of the animal of a shapeless appearance, and to obscure its sense of seeing. During winter, the whole body is clothed in the same manner. In summer the hind part of the body is naked, wrinkled, and dusky. The tail is about a foot long; at the end is a tuft of black hairs, the rest naked. It inhabits Mexico and the interior parts of North America. It is found in great herds in the Savannas; and is fond of marshy places, where it lodges amidst the high reeds. In Louisiana they are seen feeding in herds innumerable, promiscuously with multitudes of stags and deer, during morning and evening; retiring in the sultry heats into the shade of tall reeds, which border the rivers of America. They are exceedingly shy; and very fearful of man, unless they are wounded, when they pursue their enemy, and become very dangerous.

The chase of these animals is a favourite diversion of the Indians; and is effected in two ways. First, by shooting: when the marksman must take great care to go against the wind; for their smell is so exquisite, that the moment they get scent of him they instantly retire with the utmost precipitation. He aims at their shoulders, that they may drop at once, and not be irritated by an ineffectual wound. Provided the wind does not favour the beasts, they may be approached very near, being blinded by the hair
which

Campbell's
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Survey.

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Fig. 1. BOS 3 b.
The Cape Ox.



Bombylus.



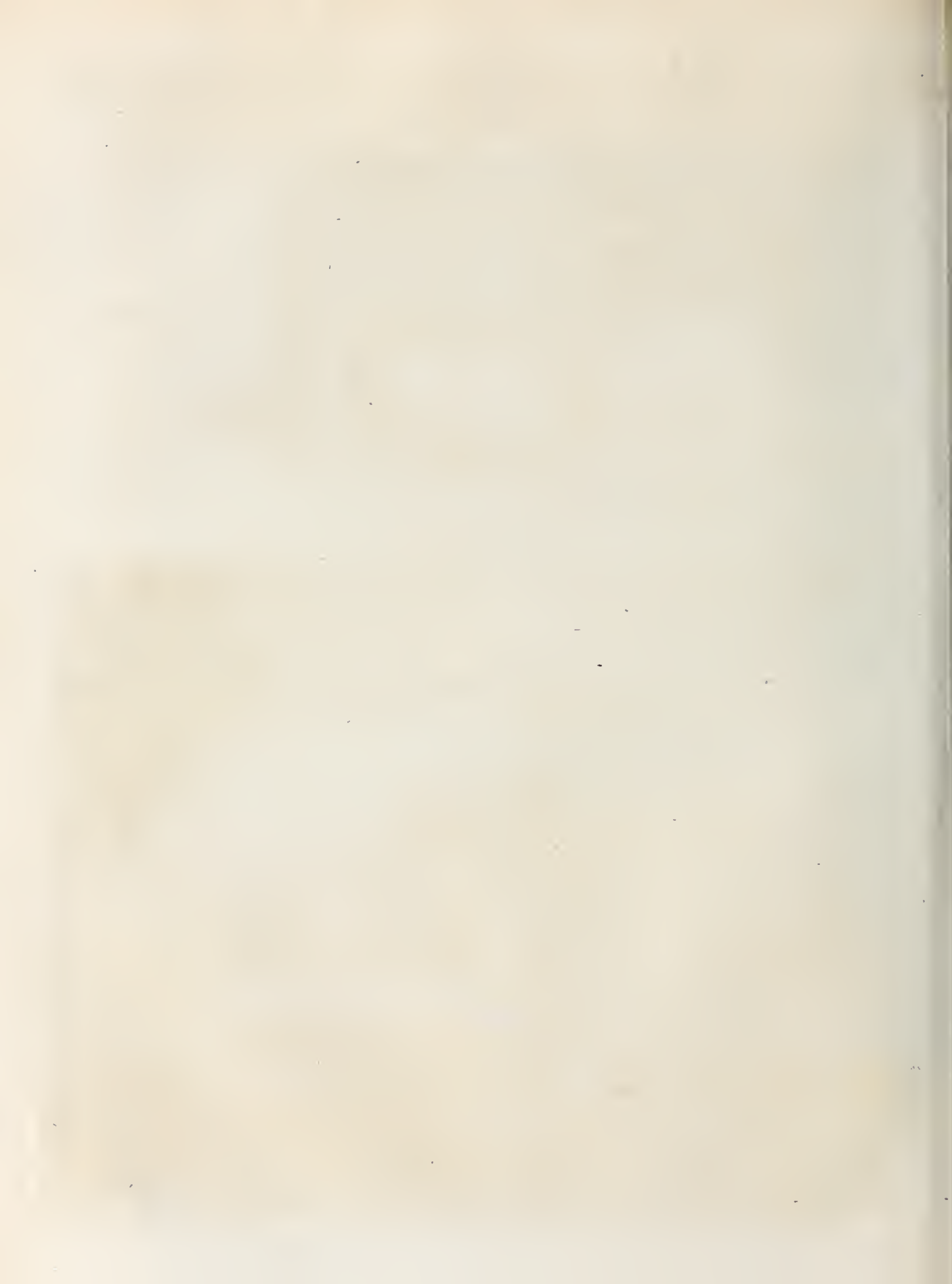
Buprestis.



Fig. 2. BOS 3 a.
Musk Bull & Cow.



W. Bull & Cow. Sculpted by J. J. G. J.



which covers their eyes.—The other method is performed by a great number of men, who divide and form a vast square: each hand sets fire to the dry grass of the savannah where the herds are feeding: these animals having a great dread of fire which they see approach on all sides, they retire from it to the centre of the square; when the bands close and kill them (pressed together in heaps) without the least hazard. It is pretended, that on every expedition of this nature they kill 1500 or 2000 beeves. The hunting-grounds are prescribed with great form, lest the different bands should meet and interfere in the diversion. Penalties are enacted on such who infringe the regulations, as well as on those who quit their posts and suffer the beasts to escape from the hollow squares; the punishments are, the stripping the delinquents, the taking away their arms (which is the greatest disgrace a savage can undergo), or lastly the demolition of their cabins.

The uses of these animals are various. Powder-flasks are made of their horns. The skins are very valuable; in old times the Indians made of them the best targets. When dressed, they form an excellent buff; the Indians dress them with the hair on, and clothe themselves with them; the Europeans of Louisiana use them for blankets, and find them light, warm, and soft. The flesh is a considerable article of food, and the bunch on the back is esteemed a very great delicacy. The bulls become excessively fat, and yield great quantities of tallow, 150 pounds weight having been got from a single beast, which forms a considerable matter of commerce. These over-fed animals usually become the prey of wolves; for, by reason of their great unwieldiness, they cannot keep up with the herd. The Indians, by a very bad policy, prefer the flesh of the cows; which in time will destroy the species: they complain of the rankness of that of the bulls; but Du Pratz thinks the last much more tender, and that the rankness might be prevented by cutting off the testicles as soon as the beast is killed. The hair or wool is spun into cloth, gloves, stockings, and garters, which are very strong, and look as well as those made of the best fleeces wool; Governor Pownall assures us, that the most luxurious fabric might be made of it. The fleece of one of these animals has been found to weigh eight pounds.

Their sagacity in defending themselves against the attacks of wolves is admirable. When they see the approach of a drove of those ravenous creatures, the herd sings itself into the form of a circle: the weakest keep in the middle; the strongest are ranged on the outside, presenting to the enemy an impenetrable front of horns: should they be taken by surprise, and have recourse to flight, numbers of the fattest or the weakest are sure to perish. Attempts have been made to tame and domesticate the wild, by catching the calves and bringing them up with the common kind, in hopes of improving the breed; but it has not yet been found to answer: notwithstanding they had the appearance for a time of having lost their savage nature, yet they always grew impatient of restraint, and by reason of their great strength would break down the strongest inclosure, and entice the tame cattle into the corn-fields. They have been known to engender together, and to breed.

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a, The *musk-ox* of Hudson's bay, a variety of this species, wants the hump between the shoulders. It is about the size of a Scotch bullock; has a thick body, and short legs. The horns are large, and very remarkable: they are united at their origin in the skull; but immediately after, they fall down on each side of the crown of the head, then taper away small, the points turning up. The hair is black, and grows to a great length; underneath which is a fine wool superior to Vigonia wool. The male only has the curious sculp; the female is covered with hair. These animals frequent the country about 100 miles inwards to the north-west of Churchill river in Hudson's bay, where they are very numerous. They live in herds of 30, 40, and upwards to the number of 80 or 100. The bulls are very few in proportion to the cows: for, according to Mr Graham's information, it is rare to see more than two or three full-grown bulls with the largest herd; and from the number of males which at times are found dead, the Indians are of opinion that they kill each other in contending for the females at the rutting season. They are then so jealous of their mistresses, that they run at either man or beast who offers to approach them, and have been seen to run and bellow even at ravens and other large birds which chanced to fly or light near them. They go to rut in August. The females bring forth their young about the latter end of May or beginning of June, and are never known to have more than one at a time. They delight most in the stoniest and mountainous parts of the barren grounds, and are seldom found at any great distance through the woods. Though a beast of considerable magnitude and apparently unwieldy form, yet it climbs the rocks with great ease and agility; and is nearly as sure-footed as a goat, and like that animal will feed on any thing: for though they seem fondest of grass, yet in winter they eat moss and any other herbage they can find; also the tops of the willows and the bough of the pine-tree. The flesh of this animal no ways resembles that of the western buffalo; but is more like that of the moose or elk, the fat being of a clear white slightly tinged with a light azure. The calves and young heifers are exceedingly good eating; but the flesh of the bulls both smell and taste so strong of musk, as to render it very disagreeable. It seems to have been from want of better information, that Mr Drage asserts the heart to be the most impregnated: had he said the kidneys, he would have been much nearer the truth. The urine must contain this scent in a very great degree: for the penis is always lubricated with a brown gummy substance, so lightly scented with musk, that after having been kept for several years it does not seem to have lost any of its quality. The dung of this animal (though so large) is all in little round knobs; and so exactly like that of the varying hare both in size and colour, that it would be very easy to mistake the one for the other, were it not for the quantity. The Indians kill great numbers of them. From 2000 to 4000 weight of the flesh frozen is brought to Prince of Wales's fort annually, and is served out as provisions to the Europeans. See the figures, Plate CI.

b, The *Cape Buffalo*, or *Bös Caffer* of Sparrman, another variety, inhabits the interior parts of Africa north of the Cape of Good Hope, but does not extend to the north of the Tropic. They are said to be greatly superior

Bos.

in size to the largest English ox: hang their heads down, and have a most ferocious and malevolent appearance. They are in fact excessively fierce and dangerous to travellers; will lie quietly in wait in the woods, and rush suddenly on passengers, and trample them, their horses, and oxen of draught, under their feet: so that they are to be shunned as the most cruel beasts of this country. They will even return to the attack, and delight to lick the slaughtered bodies. They are prodigiously swift, and so strong, that a young one of three years of age, being placed with six tame oxen in a waggon, could not by their united force be moved from the spot. They are also found in the interior parts of Guinea; but are so fierce and dangerous, that the negroes who are in chase of other animals are fearful of shooting at them. The lion, which can break the back of the strongest domestic oxen at one blow, cannot kill this species, except by leaping on its back, and suffocating it by fixing its talons about its nose and mouth. The lion often perishes in the attempt; but leaves the marks of its fury about the mouth and nose of the beast. They live in great herds, especially in Krake-Kamma, and other deserts of the Cape; and retire during the day into the thick forests. They are reckoned good meat by the Dutch of the Cape. They are called *Aurochs*, but differ totally from the European. The warmth of the climate has prevented the vast length and abundance of hair which distinguishes the former, and the luxuriance of herbage in this country has given it the vast superiority of size.

Of this animal we have the following account by Dr Sparrman, who was the first who gave a distinct delineation and description of it. Describing the death of one that was shot, he informs us, that "immediately after the report of the gun, the buffalo fell upon its knees: that he afterwards, however, raised himself up, and ran seven or eight hundred paces into a thicket; and directly upon this, with a most dreadful bellowing, gave us to understand that it was all over with him. All this together formed a spectacle, which most sportsmen would have been highly delighted to have been present at. This creature, as well as most of the larger kind of game, was shot by a Hottentot. Even some of the best huntsmen among the farmers are obliged, for the most part, to make use of Hottentots by way of bush-hunters; as in their skin cloaks they do not excite the attention of the wild beasts so much as the Europeans do in their dresses. They are likewise ready at any time when there is occasion for it, to go barefoot, and crawl softly upon their bellies, till they come within a proper distance of the animal. Moreover, when the buffalo at length is irritated, the Hottentots can much easier escape from the danger which threatens them than a Christian. I myself, on another occasion, saw two Hottentots run with amazing swiftness when a buffalo was in pursuit of them. It was not without the greatest discontent on the part of my Hottentots that I made a draught and took the dimensions of this buffalo; thus preventing them, in the mean while, from falling aboard of the flesh. Neither did they afterwards delay one moment to cut a few slices off and broil them. They likewise laid two bones on the fire to broil, for the sake of the marrow. After this they began to take out the entrails, which, according to the testimony of my

Bos.

Hottentots, perfectly resembled those of an ox: the buffalo's, however, are much larger, and take up more room, and indeed gave us no little trouble in clearing them away; for the diameter of this creature's body was full three feet.

"Upon the whole, the size of the buffalo was as follows: the length eight feet, the height five and a half, and the fore legs two feet and a half long; the larger hoofs were five inches over; from the tip of the muzzle to the horns was twenty-two inches. This animal in shape, as may be seen in the plate, very much resembled the common ox; but the buffalo has much stouter limbs, in proportion to its height and length. Their fetlocks hang likewise nearer to the ground. The horns are singular, both in their form and position: the bases of them are 13 inches broad, and are only an inch distance from each other; by which means, there is formed between them a narrow channel or furrow, in a great measure bare of hair. Measuring them from this furrow, the horns rise up in a spherical form, with an elevation of three inches at most. In this way they extend over a great part of the head, viz. from the nape of the neck to the distance of three and a half inches from the eyes; so that the part from which they grow out, does not occupy a space of less than 18 or 20 inches in circumference. From hence bending down on each side of the neck, and becoming more cylindrical by degrees, they each of them form a curve, the convex part of which is turned towards the ground, and the point up in the air; which, however, at the same time is generally inclined backwards. The distance between the points of the horns is frequently above five feet; the colour of them is black; and the surface, to within about a third part of them, measured from the base, is very rough and craggy, with cavities sometimes an inch deep. Neither these cavities, nor the elevations which are formed between them, appear to be at all accidental, as there is a tolerable similarity between these excrescences, though they are very different in different buffaloes. The ears are a foot in length, somewhat pendant, and in a great measure covered and defended by the lower edges of the horns. The edges of the ears are notched and shrivelled up in divers ways, which probably proceeds from the wounds these creatures frequently receive in their battles with each other, and from the rents they get in the briars and almost impenetrable thickets through which they pass, together with other casualties of that nature: Though several Hottentots have been induced from thence to imagine, that the buffaloes belonged to certain supernatural beings, who marked these animals in this manner for their own cattle. By way of naming these beings to me, they made use of the word *duyvel*, which means devil.

"The hairs of the buffalo are of a dark brown colour, about an inch long; harsh; and on such males as are advanced in years, very thin, especially on the middle of the sides of the belly: hence they appear at some distance as if they were girt with a belt; and what contributes not a little to this appearance is, that the buffaloes in general are very fond of rolling in the mire. The hairs on the knees are in most buffaloes somewhat longer than those on the rest of the body, and lie as it were in whirls. The eyes are somewhat sunk

Bos. sunk within their prominent orbits. This, together with the near situation of them to the bases of the horns, which hang somewhat over its pendant dangling ears, and its usual method of holding its head inclined to one side, gives the buffalo a fierce and treacherous aspect. The disposition likewise of the animal seems to correspond with its countenance. He may in some sort be called treacherous, as he is wont to hide himself among the trees, and stand there skulking till somebody happens to come very near him, when he rushes out at once into the road, and attacks them. This animal likewise deserves the appellation of fierce and cruel; as it has been remarked, that, not content with throwing down and killing the person whom he attacks, he stands over him afterwards, in order to trample upon him with his hoofs and heels, at the same time crushing him with his knees, and with his horns and teeth tearing to pieces and mangling the whole body, and stripping off the skin by licking it with his tongue. This, however, he does not do all at once, but at intervals, going away between whiles to some distance off. Notwithstanding all this, the buffalo will bear to be hunted; though sometimes he will turn and hunt his pursuer, whose only dependence in that case is upon the swiftness of his fleet. The surest way to escape from him is to ride up some hill, as the great bulk of the buffalo's body, like that of the elephant, is a weight sufficient to prevent him from being able to vie with the slender and fine limbed horse in swiftness; though, on the other hand, the buffalo, in going down-hill, gets on much faster than the horse; a fact to which I have more than once been an eye-witness.

"The flesh of the buffalo is coarse and not very fat, but full of juice, and of a high and not disagreeable flavour. The hide is thick and tough, and is in great request with the farmers for thongs and harnesses. Of it we made the only halters that can be depended upon for securing our horses and oxen; so that these beasts cannot get loose by snapping them asunder, which they are otherwise apt to do when the lions and wolves make their appearance in the neighbourhood. Every such halter should be a finger and a half in breadth and about three yards long, and are sold a good way up in the country for a quarter of a rixdollar a-piece.

"The hide of the buffalo we had now shot, after it had been dressed in some sort by my Hottentots, by being stretched out and salted a little, and afterwards half dried, served to make a pair of new four-plaited traces for my waggon. We observed, that the ball had hit the lower part of the neck, and entered the lungs; where, though it did not seem to have struck against any bone, and though it was alloyed with the usual quantity of tin, it was yet found to be pretty much flattened. In other buffaloes that we shot since, I have sometimes found the balls, though alloyed with tin, shivered into several pieces against the bones in the internal parts, or at least very much flattened. It is not, therefore, worth while to set about shooting the buffalo with balls made of lead only, for they will seldom be able to penetrate into those parts where they are likely to prove mortal. Besides being possessed of the degree of hardness requisite, a ball should be of a tolerable size, in order to kill so large an animal as the

buffalo. The least that ought to be used for this purpose should weigh two ounces and a quarter.

"My Hottentots showed so much diligence and zeal both in cutting up and eating this beast, that the encouragement and stimulation which is otherwise frequently necessary to set their sluggish and heavy souls in motion, would on this occasion have been quite superfluous. They drove the waggon then up to the place where the beast lay, and loaded it with the best and fattest part of the flesh. The raw hide, which was of considerable weight and extent, was tied under the waggon till it should be wanted, and the two remaining legs or marrow-bones were fastened to each side of the body of the waggon. Notwithstanding this, our Boshies-men had each of them loaded themselves with a quantity of slips of flesh made up into bundles. Thus covered up to the eyes and ears in meat, we made a singular appearance, which might have given any traveller who had happened to pass that way the idea of a walking flesh-market. As we proceeded on our journey, a swarm of other carnivorous animals in a considerable number, *viz.* eagles, falcons, and common hawks, were seen soon afterwards to occupy our places about the buffalo's remains; though we saw none of them either in the trees or flying about in the air till we had got to the distance of a few gun-shots from the spot."

Another hunt of this formidable animal he afterwards describes as follows: "There was now again a great scarcity of meat in the waggon; for which reason my Hottentots began to grumble, and reminded me that we ought not to waste so much of our time in looking after insects and plants, but give a better look out after the game. At the same time they pointed to a neighbouring dale over-run with wood, at the upper edge of which, at the distance of a mile and a quarter from the spot where we then were, they had seen several buffaloes. Accordingly we went thither; but though our fatigue was lessened by our Hottentots carrying our guns for us up a hill, yet we were quite out of breath and overcome by the heat of the sun before we got up to it. Yet, what even now appears to me a matter of wonder is, that as soon as we had got a glimpse of the game, all this languor left us in an instant. In fact, we each of us strove to fire before the other, so that we seemed entirely to have lost sight of all prudence and caution. When we advanced to within twenty or thirty paces of the beast, and consequently were perhaps likewise in some degree actuated by our fears, we discharged our pieces pretty nearly at the same time; while the buffalo, which was upon rather lower ground than we were, behind a thin scrambling bush, seemed to turn his head round in order to make towards us. In the mean while, however, the moment we had discharged our guns, we had the pleasure to see him fall, and directly afterwards run down into the thickest part of the wood. This induced us to hope that our shot had proved mortal; for which reason, we had the imprudence to follow him down into the close thickets, where luckily for us we could get no farther. We had, however, as we found afterwards, only hit the hindmost part of the chine, where the balls, which lay at the distance of three inches from each other, had been shivered to pieces against the bones. In the

Bos.

mean while our temerity, which chiefly proceeded from hurry and ignorance, was considered by the Hottentots as a proof of spirit and intrepidity hardly to be equalled; on which account, from that instant they ever after appeared to entertain an infinitely higher opinion of our courage than they had ever done before. Several of our Hottentots now came to us, and threw stones down into the dale, though without success, in order to find out by the bellowings of the beast whether he had retired: afterwards, however, he seemed to have plucked up his courage; for he came up at last out of the dale of his own accord to the skirts of the wood, and placed himself so as to have a full view of us on the spot where we were resting ourselves somewhat higher up: his intention was, in all probability, and in the opinion of our old sportsmen, to revenge himself on us, if we had not happened to see him in time, and fired at him directly. What, perhaps, in some measure put a stop to his boldness was, that we stood on higher ground than he did: for several veteran sportsmen have assured me of it as a fact, that they know from experience, that the buffaloes do not willingly venture to ascend any hill or eminence in order to attack any one. The third shot, which afterwards was observed to have entered at the belly, was fatal. This occasioned the buffalo to take himself down again into the vale, dyeing the ground and bushes all the way he went with his blood. Though still hot upon the chase, yet we advanced with the greatest caution, accompanied by two of our Hottentots, thro' the thin and more pervious part of the wood, where the buffalo had taken refuge. He was advancing again in order to attack some of us, when Mr Immelman, from the place where he was posted, shot him in the lungs. Notwithstanding this, he had still strength enough left to make a circuit of a hundred and fifty paces, before we heard him fall: during his fall, and before he died, he bellowed in a most stupendous manner; and this death-song of his inspired every one of us with joy, on account of the victory we had gained: and so thoroughly steeled is frequently the human heart against the sufferings of the brute creation, that we hastened forwards, in order to enjoy the pleasure of seeing the buffalo struggle with the pangs of death. I happened to be the foremost amongst them; but think it impossible for anguish, accompanied by a savage fierceness, to be painted in stronger colours than they were in the countenance of this buffalo. I was within ten steps of him when he perceived me, and bellowing raised himself suddenly again on his legs. I had reason to believe since, that I was at the time very much frightened; for before I could well take my aim, I fired off my gun, and the shot missed the whole of his huge body, and only hit him in the hind legs, as we afterwards discovered by the size of the ball. Immediately upon this I flew away like lightning, in order to look out for some tree to climb up into. Notwithstanding the tedious prolixity it might occasion me to be guilty of, I thought the best and readiest method of giving my reader an idea of the nature of this animal, and of the method of hunting it, as well as of other contingent circumstances, would be to adduce an instance or two of what occurred during the chase. My Hottentots cut up the buffalo with their usual alacrity and ardour; but as they had a great way to

carry the flesh to the waggon, they took it thither in a rather unusual way. This was as follows: they cut out large slips of flesh, whole and entire, with holes in the middle, wide enough for them to put their heads and arms through, and loaded themselves with it in this manner before, behind, and on every side of them; the meat all the while dangling about their bodies in a manner ludicrous enough, though not much adapted to create an appetite in the spectator. In this way, their hands being entirely disengaged, excepting that each man carried a stick, they clambered up the brow of the hill that overhung the vale, and thus walked on towards the waggon, whither one might trace them all the way by the blood."

IV. The GRUNNIENS, or hog-cow, has cylindrical horns bent backwards. The body is so hairy, that the hair hangs down upon its knees like a goat. The colour of the body is black, but the front is white. It has bristles on its back, tail, and hind-legs, and it grunts like an hog. It is an inhabitant of the north of Asia.

a. A variety of this species is the *Indian ox*, with a vast hump on the shoulders. They differ much in size and in the form of their horns. Some are very large, and of a reddish colour; with horns short, and bending close to the neck; others very small, with horns almost upright, bending a little forward. In Surat is a minute kind not bigger than a great dog, which have a very fierce look, and are used to draw children in small carts. In Celebes is a small species not bigger than a middle-sized sheep, called *Anoa*, very fierce and wild, of a dark ash-colour, inhabiting the rocks. Mr Loten, when in India, put some of them into a paddock, and in one night's time they killed 14 or 15 of his deer by ripping up their bellies.

V. The *BUDALUS*, or common buffalo, has large black horns bent backward and inward, and plain before. The hair on the back is very hard, but thinly scattered over the body. It is a native of Asia; but they are tamed in Italy, and used for the same purposes as black cattle in other countries. They draw carriages, and are guided by a rope tied to a string thrust through their noses. This buffalo is larger than an ox, has a thicker body, and a very hard hide. His pace is slow; but he will carry a great burden. They feed in herds like cows; and yield plenty of milk, of which very good butter and cheese is made. Their flesh is pretty good, but not to be compared to beef. The wild buffalo is a very fierce and dangerous animal; he often attacks travellers, and tears them in pieces. However, they are not so much to be feared in woods as in the plains, because their horns, which are sometimes ten feet long, are apt to be entangled in the branches of trees, which gives those who are surpris'd by them time to escape. They are excellent swimmers, and will cross the largest rivers without any difficulty. They run wild in great troops on the coast of Malabar; for which reason strangers are allowed to hunt and kill them at pleasure.

VI. The *INDICUS*, or little Indian buffalo, has horns shorter than its ears, a bunch on its back, and no mane. It is about the size of a calf six months old, and used in the East Indies for drawing coaches.

BOS, in antiquity, was peculiarly used for an ancient Greek silver coin, which was *didrachmus*, or equivalent to two drachms. It was so called as having on it

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the impression of an ox, and chiefly obtained among the Athenians and Delians; being sometimes also struck of gold. From this arose the phrase *Bos in lingua*, applied to those who had taken bribes to hold their tongue.

BOSA, a maritime town in the western part of the island of Sardinia, with a castle, a good port, and a bishop's see. It is seated on the river Bofa, to the north-east of an island of the same name; and has good salt-pits. E. Long. 8. 30. N. Lat. 40. 19.

BOSCAGE, the same with a grove or thicket.

BOSAGE, in a law sense, is that food which trees yield to cattle; as malt, &c. But Manwood says, to be quit of bosage is to be discharged of paying any duty for windfall wood in the forest.

BOSAGE, among painters, denotes a landscape representing much wood and trees.

BOSCAN (John), a Spanish poet of the 16th century, born at Barcelona. He was the friend of Garcilasso de Vega, another Spanish poet. These two were the first who made any great improvement in the poetry of their nation, and their pieces were printed together. Boscan, who died about the year 1542, principally succeeded in sonnets.

BOSCAWEN (Edward), a brave British admiral, was the second son of Hugh late lord viscount Falmouth. Having early entered into the navy, he was, in 1740, captain of the *Shoreham*; and behaved with great intrepidity as a volunteer under admiral Vernon, at the taking of Porto Bello. At the siege of Carthage, in March 1740-1, he had the command of a party of seamen who resolutely attacked and took a battery of 15 twenty-four pounders, though exposed to the fire of another fort of five guns. Lord Aubrey Beauclerk being killed at the attack of Boca-Chica, captain Boscawen succeeded him in the command of the prince Frederic of 70 guns. In May 1742, he returned to England, and married Frances daughter of William Glanville, Esq; and the same year was elected representative for Truro in Cornwall. In 1744, he was made captain of the *Dreadnought* of 60 guns; and soon after he took the *Media*, a French man of war commanded by M. Hoquart, the first king's ship taken in that war. May 3. 1747, he signalized himself under the admirals Anson and Warren, in an engagement with the French fleet off Cape Finisterre, and was wounded in the shoulder with a musket ball. Here M. Hoquart, who then commanded the *Diamond* of 56 guns, again became his prisoner; and all the French ships of war, which were ten in number, were taken. On the 15th of July, he was made rear-admiral of the blue, and commander in chief of the land and sea forces employed on an expedition to the East Indies; and, on the 4th of November, sailed from St Helen's, with six ships of the line, five frigates, and 2000 soldiers. On the 29th of July 1748, he arrived at St David's, and soon after laid siege to Pondicherry; but the men growing sickly, and the monsoons being expected, the siege was raised, and Mr Boscawen showed himself as much the general as the admiral in his retreat. Soon after he had news of the peace, and Madras was delivered up to him by the French. In April 1750, he arrived at St Helen's in the *Exeter*, and found that in his absence he had been appointed rear-

admiral of the white. He was the next year made one of the lords commissioners of the admiralty, and chosen an elder brother of the Trinity-house. In February 1755, he was appointed vice-admiral of the blue. On the 19th of April, sailing in order to intercept a French squadron bound to North America, he fell in with the *Alcide* and *Leys* of 64 guns each, which were both taken: on this occasion M. Hoquart became his prisoner a third time, and he returned to Spithead with his prizes and 1500 prisoners. In 1756, he was appointed vice-admiral of the white; and in 1758, admiral of the blue, and commander in chief of the expedition to Cape Breton; when, in conjunction with general Amherst, and a body of troops from New England, the important fortresses of Louisbourg and the whole island of Cape Breton was taken, for which he afterwards received the thanks of the House of Commons. In 1759, being appointed to command in the Mediterranean, he arrived at Gibraltar, where hearing that the Toulon fleet, under M. de la Clue, had passed the Straits, in order to join that at Brest, he got under sail, and on the 18th of August saw, pursued, and engaged the enemy. His ship, the *Namur* of 90 guns, losing her main-mast, he shifted his flag to the *Newark*; and, after a sharp engagement, took three large ships, and burnt two in Lagos-bay, and the same year arrived at Spithead with his prizes and 2000 prisoners. On December 8. 1760, he was appointed general of the marines with a salary of L. 3000 *per annum*, and was also sworn one of the privy-council. He died in 1761.

BOSCH (Jacob Vanden), a painter of still life, was born at Amsterdam in 1636, and painted summer fruits of various kinds, peaches, pears, apples, plums, nectarines, and cherries, with extraordinary neatness of pencil. He painted all his objects after nature, and imitated every sort of fruit, with so great truth and delicacy, with such natural and transparent colour, that they appeared delicious, and almost real. He died in 1676.

BOSCHAERTS (Thomas Willcborts), a celebrated painter, was born at Bergen-op-zoom; and, like the great painters who flourished at that time, began to draw, when very young, in the books that were intended for other studies. Preferring his pencil to every thing else, he drew his own picture, by his resemblance in a looking-glass, so like, that those who saw it were astonished. This he did before he had the least instruction from any one, and when he was only 12 years of age. Upon this his parents sent him to a master, that he might follow the bent of his genius; but his first master being only an indifferant painter, and incapable of satisfying his earnest desire of learning, he left him, and engaged himself with Gerard Segers; under whom, after four years practice, he proved a most accomplished artist. Antwerp being at that time the seat of arts, where there was a conflux of the most eminent painters, he thought it the fittest place for his improvement; and there executed such a number of noble pieces as added greatly to the splendor of that wealthy city. In 1642, Henry Frederick prince of Orange, and his son prince William, employed him in their service; in which he continued several years, and made those excellent pieces that are to be seen in that prince's palace at the Hague and other parts of Holland,

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Holland, and painted portraits for most of the persons of quality that were then living. He died in the flower of his age, in 1670.

BOSCO, or BOSCHI, a town of Italy, in the Milanese, seated on the river Olbe. E. Long. 9. 44. N. Lat. 44. 53.

BOSCOI, or BOSCI, in ecclesiastical history, denotes a species or tribe of monks in Palestine, who fed on grass like the beasts of the field. The word is Greek, βόσχοι, q. d. "grazers;" formed from βόσκειν, *pasco*, "I feed." The Boscoi are ranked among the number of Adamites, not so much on account of their habit, as food. They took no care about provision; but when eating-time came, or any of them was hungry, went into the fields, with each his knife in his hand, and gathered and eat what he could find.

BOSEA, GOLDEN-ROD TREE: A genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 53d order, *Scabride*. The calyx is pentaphyllous; there is no corolla; and the berry is monospermous. Of this genus there is but one species, viz. the yervamora. This is a native of the Canary islands, and also of some of the Caribbees. It hath been long an inhabitant of the British botanic gardens, but hath never been observed to flower in this country. It is a pretty strong woody shrub, growing with a stem as large as a middling person's leg; the branches come out very irregular, and make considerable shoots every summer, which should be shortened in the spring. These branches retain their leaves till towards the spring, when they fall away, and new leaves are produced in their place. It may be propagated by cuttings planted in the spring; and the plants must be housed in winter, for they are too tender to bear the open air at that season of the year.

BOSHIES-MEN, a species of Hottentots, so called, according to Dr Sparrman, from their dwelling in woody or mountainous places. They are sworn enemies to a pastoral life. Some of their maxims are, to live on hunting and plunder, and never to keep any animal alive for the space of one night. By this means they render themselves odious to the rest of the inhabitants of the Cape; and are pursued and exterminated like the wild beasts, whose manners they have assumed. Others of them again are kept alive, and made slaves of. Their weapons are poisoned arrows, which shot out of a small bow will fly to the distance of 200 paces, and will hit a mark with a tolerable degree of certainty at the distance of 50 or even 100 paces. From this distance they can by stealth, as it were, convey death to the game they hunt for food, as well as to their foes, and even to so large and tremendous a beast as the lion; this noble animal thus falling by a weapon which perhaps it despised, or even did not take notice of. The Hottentot, in the mean time, concealed and safe in his ambush, is absolutely certain of the operation of his poison, which he always culls of the most virulent kind; and it is said he has only to wait a few minutes in order to see the wild beast languish and die. The dwellings of these foes to a pastoral life are generally not more agreeable than their maxims and manners. Like the wild beasts, bushes and cliffs in rocks by turns serve them instead of houses; and some of them are said to be so far worse than beasts, that their

soil has been found close by their habitations. A great many of them are entirely naked; but such as have been able to procure the skin of any sort of animal, great or small, cover their bodies with it from the shoulders downwards as far as it will reach, wearing it till it falls off their backs in rags. As ignorant of agriculture as apes and monkeys, like them they are obliged to wander about over hills and dales after certain wild roots, berries, and plants (which they eat raw), in order to sustain a life that this miserable food would soon extinguish and destroy were they used to better fare. Their table, however, is sometimes composed of several other dishes, among which may be reckoned the larvæ of insects, or that kind of caterpillars from which butterflies are generated; and in like manner a sort of white ants (the *termes*), grasshoppers, snakes, and some sorts of spiders. With all these changes of diet, the Boshies-man is nevertheless frequently in want, and famished to such a degree as to waste almost to a shadow. "It was with no small astonishment (says Dr Sparrman), that I for the first time saw in Lange Kloof a lad belonging to this race of men with his face, arms, legs, and body, so monstrously small and withered, that I could not have been induced to suppose but that he had been brought to that state by the fever that was epidemic in those parts, had I not seen him at the same time run like a lapwing. It required but a few weeks to bring one of these starvelings to a thriving state, and even to make him fat; their stomachs being strong enough to digest the great quantity of food with which they are crammed, as they may rather be said to bolt than eat. It sometimes happens indeed that they cannot long retain what they have taken in; but this circumstance, it is said, does not hinder them from beginning again upon a new score."

The capture of slaves from among this race of men is by no means difficult; and is effected (Dr Sparrman informs us) in the following manner. "Several farmers that are in want of servants join together and take a journey to that part of the country where the Boshies-men live. They themselves, as well as their Lego-Hottentots, or else such Boshies-men as have been caught some time before, and have been trained up to fidelity in their service, endeavour to spy out where the wild Boshies-men have their haunts. This is best discovered by the smoke of their fires. They are found in societies from 10 to 50 and 100, reckoning great and small together. Notwithstanding this, the farmers will venture in a dark night to set upon them with six or eight people, which they contrive to do by previously stationing themselves at some distance round about the caal. They then give the alarm by firing a gun or two. By this means there is such a conternation spread over the whole body of these savages, that it is only the most bold and intelligent among them that have the courage to break through the circle and steal off. These the captors are glad enough to get rid of at so easy a rate; being better pleased with those that are stupid, timorous, and struck with amazement, and who consequently allow themselves to be taken and carried into bondage. They are, however, at first treated by gentle methods; that is, the victors intermix the fairest promises with their threats, and endeavour, if possible, to shoot some of the

Boshies-
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the larger kinds of game for their prisoners, such as buffaloes, sea-cows, and the like. Such agreeable baits, together with a little tobacco, soon induce them, continually cockered and feasted as they are, to go with a tolerable degree of cheerfulness to the colonist's place of abode. There this luxurious junketting upon meat and fat is exchanged for more moderate portions, consisting for the most part of butter-milk, frumenty, and hasty-pudding. This diet, nevertheless, makes the Boshies-man fat in a few weeks. However, he soon finds his good living embittered by the mauling and grumbling of his master and mistresses. The words *t'guzeri* and *t'gaunatsi*, which perhaps are best translated by those of "young forcerer" and "imp," are expressions which he must frequently put up with, and sometimes a few curses and blows into the bargain; and this for neglect, remissness, or idleness: which last failure, if it cannot be said to be born with him, is however in a manner naturalised in him. So that, both by nature and custom detesting all manner of labour, and now from his greater corpulency becoming still more slothful, and having besides been used to a wandering life subject to no controul, he most sensibly feels the want of his liberty. No wonder, then, that he generally endeavours to regain it by making his escape: but what is really a subject for wonder is, that when one of these poor devils runs away from his service, or more properly bondage, he never takes with him any thing that does not belong to him. This is an instance of moderation in the savages towards their tyrants which is universally attested, and at the same time praised and admired by the colonists themselves; which, however, I cannot easily reconcile with what I have learned of the human heart. Is it in consequence of their fearing to meet with harder usage in case they should be retaken? Thus far, however, is certain, that none of this species of Hottentots are much given to violence or revenge. Free from many wants and desires that torment the rest of mankind, they are little, if at all, addicted to thieving, if we except brandy, victuals, and tobacco. It is not improbable, likewise, that the advantages accruing from a theft may be overlooked by them, when their thoughts are taken up with regaining their liberty, the greatest of all treasures. It is necessary to observe here, that some of the Hottentots or Boshies-men, who are thus forced into the service of the colonists, live in small societies peaceably and quietly in desert tracts, where the colonists cannot easily come at them, and are sometimes in the possession of a few cows. These people probably originate from Boshies-men who have run away from the colonists service.

"I must confess (continues our author), that the Boshies-men in some husbandmen's service are treated in the gentlest manner, and perhaps even without ever having a harsh word given them; live very well with regard to provisions; are well clad, relatively to their condition in life; and are very comfortably lodged, in comparison of what others are, in their own filthy cottages. The chief of their business perhaps consists in tending a herd of cattle or flock of sheep during the heat of the day, when they have an opportunity of getting into a gentle state of intoxication by smoking tobacco; a state which excites in them sensations

of as agreeable a nature as the frenzy produced by spirituous liquors and opium seems to afford to many others, who are never at ease but when they can procure to themselves this delicious pleasure. And yet, though they may thus agreeably pass away the otherwise tedious hours of their lives in smoking and sleep, they nevertheless generally run away. The colonists wonder at this, as a procedure entirely devoid of reason; without perceiving that in so doing they suppose the Hottentots not endued with a desire, which has its immediate foundation in nature, and which is common to the human race, and even to most brute animals, viz. an earnest longing after their birth-place and families, and especially after their liberty.

"The slave business, that violent outrage to the natural rights of mankind, always in itself a crime, and which leads to all manner of misdemeanors and wickedness, is excused by the colonists in general with a cruelty towards the nation of Boshies-men which merits the abhorrence of every one; though I have been told that they pique themselves upon it: and not only is the capture of those Hottentots considered by them merely as a party of pleasure, but in cold blood they destroy the bands which nature has knit between husbands and their wives and children. Not content, for instance, with having torn an unhappy woman from the embraces of her husband, her only protection and comfort, they endeavour all they can, and that chiefly at night, to deprive her likewise of her infants; for it has been observed, that the mothers can seldom persuade themselves to flee from their tender offspring. The amiable tenderness of the mother, which perhaps glows with a more lively flame in the breast of this poor heathen than in those of her Christian tyrants, is the very circumstance laid hold on by their persecutors in order to rivet the chains of this wretched female so much the faster. There are some mothers, however, that set themselves free, when they have lost all hopes of saving their children. After having made their escape, they sometimes keep secretly about the neighbourhood, in hopes of finding some opportunity of recovering their infants again."

BOSNA-SERAGO, a large and strong town of Turkey in Europe, and capital of the province of Bosnia. E. Long. 18. 57. N. Lat. 44. 40.

BOSNIA, a province of Turkey in Europe, seated between Slavonia and Dalmatia. It belongs entirely to the Turks; but they were on the point of being expelled from it by the Christians, when the Spaniards invaded Sicily, and obliged the emperor to conclude the peace of Passarowitz in 1718, by which he gave up Bosnia to the Turks. It is 200 miles in length, and 75 in breadth. It is a barren country, and but little cultivated; the principal revenue arising chiefly from the silver mines. Among the game there are falcons, which are held in great esteem.

BOSPHORUS, or BOSFORUS, in geography, a long and narrow sea, which it is supposed a bullock may swim over. In a more general sense, it is a long narrow sea running in between two lands, or separating two continents, and by which two seas, or a gulph and a sea, are made to communicate with each other: In which sense, bosphorus amounts to the same with what we otherwise call an arm of the sea, channel, or Strait:

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the Italians, *saro*; the Latins, *selun*; and the French, *par, manche*. The word is Greek, *βουφορ*, formed from *βου* "bullock", and *φορ* "passage."

The name *bosphorus*, is chiefly confined to two straits in the Mediterranean sea, viz. the *bosphorus of Thrace*, commonly called the *straits of Constantinople*, or *channel of the Black Sea*; and the *Cimmerian* or *Scythian bosphorus*, so called, it seems, from its resemblance to the Thracian; now more commonly the *straits of Kapha*, or *Kiderleri*, from two cities standing on it.

The origin of the name is better agreed on than the reason why it was first given to the Thracian bosphorus. Nymphius tells us, on the authority of Accarion, that the Phrygians, desiring to pass the Thracian strait, built a vessel, on whose prow was the figure of a bullock; and which was hence called *βου*, "bullock;" and served them for a ferry-boat. Dionysius, Valerius Flaccus, Callimachus, Apollodorus, Marcellinus, &c. say, that Iö, being transformed into a cow by Juno, passed this strait swimming, which hence was called *bosphorus*. Arrian tells us, that the Phrygians were enjoined by the oracle, to follow the rout which a bullock should mark out to them; and that, upon stirring one up, it jumped into the sea to avoid their pursuit, and swam over this strait. Others say, that an ox, tormented by a gad-fly, threw itself in, and swam over; and others, that anciently the inhabitants of these coasts, when they would pass over, joined little boats together, and had them drawn over by bullocks, &c.

BOSQUETS, in gardening, groves so called from *boscetto*, an Italian word which signifies a *little wood*. They are compartments in gardens formed by branches of trees disposed either regularly in rows, or wildly and irregularly, according to the fancy of the owner. A bosquet is either a plot of ground inclosed with palisades of horn beam, the middle of it being filled with tall trees, as elm or the like, the tops of which make a tuft or plume; or it consists of only high trees, as horse-chestnut, elm, &c. The ground should be kept very smooth and rolled, or else covered with grass, after the manner of green plots. In planting bosquets, care should be taken to mix the trees which produce their leaves of different shapes, and various shades of green, and hoary or mealy leaves, so as to afford an agreeable prospect. Bosquets are only proper for spacious gardens, and require a great expence to keep them up.

BOSSAGE, in architecture, a term used for any stone that has a projecture, and is laid rough in a building, to be afterwards carved into mouldings, capitals, coats of arms, &c. Bossage is also that which is otherwise called *rustic work*; and consists of stones which advance beyond the naked, or level of the building, by reason of indentures or channels left in the joinings. These are chiefly used in the corners of edifices, and thence called *rustic quoins*. The cavities or indentures are sometimes round, sometimes chain-framed, or bevelled, sometimes in a diamond form, sometimes inclosed with a cavetto, and sometimes with a listel.

BOSSE (Abraham), an able engraver, born at Tours, was well skilled in perspective and architecture. He wrote two treatises, which are esteemed, the one on the manner of designing, and the other upon engraving.

BOSSINEY, or **BOSS-CASTLE**, a town of Cornwall N^o 51.

wall, in England, which sends two members to parliament. W. Lon. 5. o. N. Lat. 50. 40.

BOSSU (Rene le), born at Paris in 1631, was admitted a canon regular in the abbey of St Genevieve, in 1649; and after a year's probation, took the habit. He taught polite literature with great success in several religious houses for 12 years, when he gave up the task for retirement. He then published a parallel betwixt the principles of Aristotle's natural philosophy and those of Des Cartes, with a view to reconcile them; which was but indifferently received. His next treatise was on epic poetry; which Boileau declared one of the best compositions on that subject in the French language, and which produced a great friendship between them. He died in 1680, and left a great number of MSS. which are kept in the abbey of St John de Chartres.

BOSSUET (James Benigne), bishop of Meux, was born at Dijon, on the 27th of September, 1627. He distinguished himself by his preaching, and the zeal he discovered in his endeavours to bring over the Protestants of France to the Romish church: by his opposition to Quietism; and by his numerous writings both in French and Latin, which have been collected together, and printed at Paris in 17 vols 4to. This famous divine died at Paris, in 1704, aged 77.

BOSSUPT, a town of the Austrian Netherlands, in the province of Brabant. E. Long. 4. 30. N. Lat. 50. 52.

BOSSUS (Matthew), distinguished by his virtue and his learning, was born in 1427. He devoted himself to the ecclesiastical state in 1451, in the congregation of regular canons of Lateran, and afterwards taught divinity at Padua. His orations, his sermons, and his letters, have been often printed. He also wrote a sort of an apology for Phalaris, and other works. He died at Padua in 1502, aged 75.

BOST, a very strong town of Persia, and capital of the province of Zablestan. E. Long. 64. 15. N. Lat. 31. 50.

BOSTANGIS, in the Turkish affairs, persons employed in the garden of the seraglio, out of whose number are collected those that are to row in the Grand Signior's brigantines, when he has a mind to divert himself with fishing, or to take the air upon the canal. They who row on the left hand are only capable of mean employments in the gardens: but they who row on the right hand may be promoted to the charge of *bofangi-bachi*, who has the general intendency of all the Grand Signior's gardens, and commands above 10,000 *bofangis*.

BOSTON, a corporation-town of Lincolnshire in England, which sends two members to parliament. It is commodiously seated on both sides the river Witham, over which it has a handsome, high, wooden bridge; and, being near the sea, enjoys a good trade. It has a spacious market-place, and the largest parish church without cross isles in Europe, the steeple of which serves for a land-mark to sailors. Bolton is a barony in the Irby family. E. Long. 0. 15. N. Lat. 53. 3.

BOSTON, the capital of New England in North America, built in 1630, in a peninsula of about four miles in circumference, at the bottom of Massachusetts bay, in a very convenient situation for trade. The following

Bos
||
Bolton.

lowing is a description of this capital before the commencement of the present American war. "The town stands in W. Long. 71. 5. N. Lat. 42. 24. about nine miles from the mouth of the bay. At the entrance of this bay are several small rocks which appear above water, and upwards of a dozen of small islands, some of which are inhabited. There is but one safe channel to approach the harbour; and that so narrow, that two ships can hardly fail through abreast; but within the harbour there is room for 500 sail to lie at anchor in a good depth of water. On one of the islands of the bay stands Fort William, the most regular fortress in British America. This castle is defended by 100 guns, 20 of which lie on a platform level with the water, so that it is scarce possible for an enemy to pass the castle. To prevent surprise, they have a guard placed on one of the rocks, at two leagues distance, from whence they make signals to the castle when any ships come near it. There is also a battery of guns at each end of the town. At the bottom of the bay is a noble pier near 2000 feet in length; along which on the north side extends a row of warehouses for the merchants; and to this pier ships of the greatest burden may come and unload without the help of boats. The greatest part of the town lies round the harbour in the form of a half moon, the country beyond it rising gradually and affording a delightful prospect. The neck of land which joins the peninsula to the continent is but 40 yards over; which situation, if properly improved, might render the town impregnable on the land side. Boston contains

only about 18,000 inhabitants. They were more numerous 50 years ago; but the surprising increase of Newbury port, Salem, Marble-head, Cape Ann, Plymouth, Dartmouth, and the island of Nantucket, checked the growth and trade of the capital. The trade of Boston, however, was so considerable, that, in 1768, 1200 sail entered and cleared at the custom-house there. The predominant religion is the Independent; though there are other persuasions, and ten churches serve for them all, but the Independents have six." Boston has frequently suffered by fire, but the houses that were thus destroyed have always been rebuilt to advantage. The late American war began here by the attack at Bunker's-hill, where many brave men lost their lives.

BOSWORTH, a town of Leicestershire in England, situated in W. Long. 1. 24. N. Lat. 52. 45. It has a lofty situation on a hill, and the country about it is fertile in corn and grass. It is memorable for the decisive battle fought near it between Richard III. and the earl of Richmond, afterwards Henry VII. wherein the former lost his crown and life.

BOTALLUS (Leonard), physician to the duke of Alençon, and to Henry III. was born at Asti in Piedmont. He introduced at Paris the practice of frequent letting of blood; which was condemned by the faculty; but soon after his death it came into practice with all the physicians. He published several books in physic and surgery; and the best edition of his works is that of Leyden in 1660, octavo.

B O T A N Y,

IN the utmost extent of the word, signifies a knowledge of plants, and of the uses to which they may be applied, either in medicine, chemistry, or in the different arts. But as the medical virtues of plants fall properly under the province of the physician, their chemical properties belong to the chemist, &c.; hence the science of botany is commonly restricted to a bare knowledge of the different plants themselves, and of the distinguishing marks whereby each individual species may be known from every other. This knowledge is indispensably necessary for those who propose to apply plants to any useful purpose: for example, though we should suppose a physician ever so well acquainted with the virtues of opium, and a chemist ever so well acquainted with the method of preparing it, yet if both of them were entirely ignorant of botany, so as to be unable to distinguish the particular species of poppy which produces opium from others of the same genus, it is evident their medicinal and chemical skill could be of no use.

The utility of botanical classifications may be further illustrated from the following considerations.

1. With regard to *Food*. Many animals are endowed with an instinctive faculty of distinguishing with certainty whether the food presented to them be salutary or noxious. Mankind have no such instinct. They must have recourse to experience and observation. But these are not sufficient to guide us in every case. The traveller is often allured by the agreeableness of smell and taste to eat poisonous fruits. Neither will a gene-

ral caution, not to eat any thing but what we know from experience to be salutary, answer in every emergency. A ship's company, in want of provisions, may be thrown upon an uninhabited coast or a desert island. Totally ignorant of the nature of the plants they meet with, diseases, or scarcity of animals, may make it absolutely necessary to use vegetable food. The consequence is dreadful: they must first eat before any certain conclusion can be formed. This is not the description of danger arising from an imaginary situation. Before the vegetables that grow in America, the East and West Indies, &c. became familiar to our sailors, many lives were lost by trials of this kind: neither has all the information received from experience been sufficient to prevent individuals from still falling a prey to ignorance or rashness.—If the whole science of botany were as complete as some of its branches, very little skill in it would be sufficient to guard us infallibly from committing such fatal mistakes. There are certain orders and classes which are called *natural*, because every genus and species comprehended under them are not only distinguished by the same characteristic marks, but likewise possess the same qualities, though not in an equal degree. For example: Show a botanist the flower of a plant whose calyx is a double-valved glume, with three stamina, two pistils, and one naked seed; he can pronounce with absolute certainty, that the plant from which the flower was taken, bears seeds of a farinaceous quality, and that they may be safely used as food. In like manner, show him a flower with 12 or more stamina

mina all inserted into the internal side of the calyx, tho' it belonged to a plant growing in Japan, he can pronounce without hesitation, that the fruit of it may be eat with safety. On the other hand, show him a plant whose flower has five stamina, one pistil, one petal, or flower-leaf, and whose fruit is of the berry kind, he will tell you to abstain from it, because it is poisonous. Facts of this kind render botany not only a respectable, but a most interesting, science.

2. With respect to *Medicine*, the same thing holds good. It is found by experience, that plants which are distinguished by the same characters in the flower and fruit have the same qualities, though not always in an equal degree as to strength or weakness; so that, upon inspection of the flower and fruit, a botanist can determine *à priori* the effects that will result when taken into the stomach. In order, therefore, to determine the medical virtues of all the plants belonging to a natural class, the physician has nothing to do but to ascertain by a set of clear and unquestionable experiments, the virtues of any one of them. This greatly shortens the labour of investigation. Supposing the number of known species to be 20,000; by ascertaining the virtues of one genus, at a medium, you determine the virtues of 12 species. But by ascertaining the virtues of one genus belonging to a natural order, the virtues of perhaps 300 or 400 species are ascertained.

Sect. I. *History of Botany.*

THE origin of this science, like that of most others, cannot be found out from the most ancient histories; but it is very probable, that some degree of botanical knowledge has existed in every age of the world. The first botanical writings of which we have any account are those of Solomon, who we are informed by scripture wrote a treatise upon this subject; which, however, is absolutely lost, not being quoted by any ancient author, nor the least fragment of it remaining. Among the Greeks, Anaxagoras, Pythagoras, and other ancient philosophers, wrote treatises on plants: but their works are also lost; and from the quotations that yet remain in the works of Theophrastus, Dioscorides, and Pliny, we learn, that those first botanical writings could convey but very little knowledge.

The historical æra of botany, therefore, commences with Theophrastus the disciple of Aristotle. He was born at Eresium, in the island of Lesbos; and flourished in the third century before the Christian æra, being about 100 years posterior to Hippocrates. His work is intitled *The History of Plants*, and treats of their origin, propagation, anatomy, and construction; of vegetable life, and of vegetation. It consisted originally of ten books; but of which only nine are now extant. In these, vegetables are distributed into seven classes or primary divisions: which have for their object, the generation of plants; their place of growth; their size, as trees and shrubs; their use, as pot-herbs and esculent grains; and their lactescence, or the liquor, of whatever colour, that flows from plants when cut. In his work, about 500 different plants are described.

The next botanist of any note was Dioscorides, a Grecian by birth, but under the Roman empire, being near 400 years posterior to Theophrastus. He de-

scribes about 600 plants; and these he has arranged, from their uses in medicine and domestic œconomy, into four classes, which are thus designed: aromatics; alimentary vegetables, or such as serve for food; medicinal, and vinous plants.

Almost cotemporary with Dioscorides flourished Antonius Musa, Cato, Varro, Virgil, and Columella; the first, author of a treatise still extant on the plant *betony*; the four others celebrated for their useful tracts on agriculture and rural œconomy.

Pliny the Elder, in his voluminous work intitled *The History of the World*, hath a botanical part which is contained in 15 books. In these, besides the plants of Theophrastus and Dioscorides, he has given descriptions of several new species, extracted probably from works which would otherwise have been totally lost. Pliny uses scarce any mode of arrangement, except the ancient, but very incorrect, distinction into trees, shrubs, and herbs. His plan, however, extends not only to botanical distinctions, but to gardening, agriculture, and whatever is connected either more nearly or remotely with the science of plants. He gives descriptions of above 1000 different species; but from the want of a proper systematic arrangement, it is often difficult, and perhaps impossible, to determine what plants he or other ancient botanists do really describe.

This want of precision in properly arranging their plants was the reason why the botany of the ancients was always very limited, and after the time of Pliny declined so rapidly. On the destruction of the western empire by the Goths and other barbarous nations, it is not to be thought that botany could survive any more than the other sciences. It was not till near the close of the eighth century, that the ancient botany began again to appear in Arabia. Serapion, well known in medicine, stands first in the Arabian catalogue of botanists; to him succeeded Rasis, Avicenna, Averrhoes, Actuarius, &c. An author known by the name of *Plato Apuleius*, or *Apulensis*, of whose *Herbarium* very old manuscript copies are preserved in some curious libraries, is supposed to have lived near this period. The works of most of these botanists, however, were only translations and compilations from the Greek writers; so that, for want of a proper systematic arrangement, the science sunk a second time into total oblivion. For near 400 years after Abenguehit, an Arabian physician who flourished in the end of the 12th century, scarce any attempts were made in the botanical way. Some obscure writers indeed appeared in several parts of Europe; as Arnoldus de Villa Nova; Platearius; Matheu. Sylvaticus; and Bartholomew Glanvil, commonly called *Bartholomeus Anglus*, a Franciscan monk, descended of the family of the Earls of Suffolk, who lived in the reign of King Edward III. and wrote a book of natural history, intitled *De proprietatibus rerum*, which was translated into English by John de Trevisa in 1398; but though all these wrote of plants, they were so totally destitute of method, that their works remain one great chaos, from whence it is impossible to extract any thing intelligible.

On the revival of letters in the beginning of the 16th century, the botany of the ancients was restored a second time. The Greek writings were translated into Latin, the common language of Europe. Gaza, a Greek refugee at Rome, made elegant translations of Aristotle's

Aristotle and Theophrastus, who afterwards were commented upon by Scaliger and Stapel. Dioscorides was also translated and commented on. His best commentators are Hermolaus Barbarus, Fuchsius, Ruellus Cordus, Gesner, and Matthioli. The most distinguished commentators of Pliny are Dalechamp in 1604, Salmasius in 1689, Harduin, and Guilandinus. Meurcius and Ursinus have written commentaries upon Cato; Campegius and Monardes upon Mesue the Arabian, and Lonicer upon Avicenna. This last hath been translated by several writers, particularly Alpagus, Costæus, and Plempius, into Latin; and by one writer, Amalthæus, into Hebrew.

Hieronymus Bock, or Boue, a German, generally known by the name of *Tragus*, is the first modern who has given a methodical distribution of vegetables. In 1532, he published a History of Plants, in which he describes 800 species; and these he divides into three classes, founded on the qualities of vegetables, their figure, habit, and size. The same method of arrangement was followed by Lonicer, Dodonæus, L'Obel, Clusius, Brunsellius, Monardes, Cordus, and some other botanists of this period. How far such a method was deficient, shall be considered in the following section; however, it was not till 1560 that Conrad Gesner first proposed to the world an arrangement of vegetables from the parts of the flower and fruit. He did not establish any plan founded upon this principle; but, having suggested the idea, left the application to be made by others: and in 1582, Dr Andrew Cæsalpinus, physician at Pisa, and afterwards professor of botany at Padua, first availing himself of the ingenuity of his predecessor, proposed a method of arrangement which has the fruit for its basis; and thus gave origin to systematic botany, the second grand æra in the history of that science.

Even this improved method of Cæsalpinus was not without very great inconveniences, which shall be taken notice of hereafter. As it was, however, so greatly superior to every thing that had appeared before, it might have been expected that the learned would have immediately adopted it, and that all the former equivocal and insufficient characters would have been rejected. But the fact was otherwise. Cæsalpinus's method of arrangement died with him; and it was not till near a century after, that Dr Robert Morison of Aberdeen, attaching him to the principles of Gesner and Cæsalpinus, re-established scientific arrangement upon a solid foundation; so that, from being only the restorer of system, he has been generally celebrated as its founder. In the long interval between Cæsalpinus and Morison, flourished some eminent botanists. The most noted are, Dalechamp, author of *A general History of plants*; Theodore, surnamed *Tabernaemontanus*, and Thalius, two German writers; Porta, an Italian, famous for an arrangement of plants from their relations to the stars, to men, and other animals; Prosper Alpinus, author of a Catalogue of the plants of Egypt; Fabius Columna, inventor of many of the botanical terms now used; the two Baulins; Gerard, and Parkinson; Zaluzianski, a Pole, author of an arrangement from the qualities and habit of plants; Marcgrave and Piso, celebrated for their Natural History of Brasil; Hernandez, equally celebrated for his History of Mexi-

co; Passæus, or Du Pas, author of an arrangement of plants from the time of flowering, of all characters the most uncertain and insufficient; Johnston; Bontius, a Dutchman, author of a Natural History of the East Indies; Aldrovandus, the celebrated naturalist; and Rheede, governor of Malabar, and author of the well-known *Hortus Malabaricus*.

The method proposed by Morison has the fruit for its basis, as well as that of Cæsalpinus; to which, however, it is greatly inferior both in the plan and execution. It is indeed of all others the most difficult in practice; and was therefore not adopted by any succeeding writer, except Bobart, who in 1699 completed Morison's Universal History of Plants, and an anonymous author whose work appeared in 1720. Imperfect, however, as his method is, it furnished many useful hints, which succeeding botanists have not failed to improve. Ray and Tournefort have owed him much, and are not ashamed to own the obligation. The same has been done even by Linnæus; who hath established the science of botany on the most solid foundation, by introducing a method of arrangement, if not absolutely perfect, at least as nearly approaching to perfection as can be expected; and therefore hath been deservedly followed, in preference to every other, by all botanists, since its first publication. But to give a particular account of all the different botanical systems, with the particular advantages and disadvantages attending each, shall be the business of the subsequent sections.

SECT. II. *Of the Ancient Method of arranging Vegetables.*

In giving an account of the works of Theophrastus and Dioscorides, we have already taken notice that the former chose seven distinguishing characters, *viz.* the generation of plants; their place of growth; their size, as trees and shrubs: their use, as pot-herbs and esculent grains; and their lactescence, or liquor that flows from them when cut. Dioscorides divided them into aromatics, alimentary, medicinal, and vinous plants. The good properties of this method are, that the botanist as it were comes to the point at once; and when he knows the plant, knows also its virtues and uses, or at least part of them: but this convenience is greatly overbalanced by innumerable disadvantages; for the qualities and virtues of plants are neither fixed and invariable, nor are they impressed in legible characters on the plants themselves. The different parts of a plant often possess different and even opposite virtues; so that supposing the virtues to be known, and applied to the purpose of vegetable arrangement, the root must frequently fall under one division, the leaves under a second, and the flower and fruit under a third. Besides, if we reflect that the sole end of such arrangement is to facilitate the knowledge of plants to others, the insufficiency and even absurdity of methods founded upon their virtues will immediately appear. A stalk of vervain, for instance, is presented to me, which I am to investigate from a presupposed knowledge of the virtues of plants. Before I can settle the class to which it belongs, I must discover whether or not it has the virtues belonging to any of the plants I know; and this dif-

covery being the result of repeated experiments on various parts of the human body, may require many years for its accomplishment.

The same causes which render methods founded on the virtues of plants unfavourable for the purpose of investigation, must evidently disqualify all their other variable quantities and accidents from having a place in a genuine systematic arrangement. The *natale solum* of plants, which is one of Theophrastus's divisions, affords no better distinctive characters than their powers and virtues. Many countries as well as many soils produce the same individual plants. The same species which crown the mountains, frequently cover the fens; and plants which have long been reckoned the peculiar inhabitants of some parts of Asia and America, are now found to grow naturally in equal perfection in the very different climates of Lapland and Siberia. The size of plants, which suggested the ancient division into trees and shrubs, is no less an equivocal mark of distinction than the circumstances already mentioned. The vine, which modern botanists denominate a shrub, was ranged by Theophrastus in his third class containing trees. In fact, every thing respecting size is so much affected by differences of soil, climate, and culture, that the same plant, in different circumstances, shall differ exceedingly in height; and in a method founded upon the size, would sometimes be ranged as a tree, and sometimes as a shrub, or even an under-shrub, according as it happens to exceed, equal, or fall short of, a given standard. No less insufficient are characteristical marks drawn from the colour, taste, and smell of plants. Of all the attributes of vegetable nature, colour is perhaps the most inconstant. Heat, climate, culture, soil, &c. contribute to the production of endless diversities of colour, and render the transition from one to another natural and easy. Red and blue pass easily into white, white into purple, yellow into white, red into blue, blue into yellow, &c. In the same leaf or flower, different colours are frequently observed. Variations too in point of colour are frequently observed to take place not only in different individuals of the same species, but even in similar parts of the same plant. Marvel of Peru and Sweet William produce flowers of different colour upon the same stalk. Objections equally valid lie against characteristical marks drawn from the taste and smell. The former varies in different individuals from differences of age, and even in the same individual at different times, according to the morbid or sound state of the organ. The latter is different in different subjects, and varies in each; nor are the effluvia sent forth from the same body always of equal intensity. In plants, taste is subject to continual variations from differences of climate, soil, and culture. Garlic in some climates, particularly in Greece, is said to lose its rankness; apples and pears, that grow naturally in the woods, are intolerably acid; celery and lettuce, which culture renders sweet and palatable, are in their wild uncultivated state bitter, disagreeable, and in some cases noxious.

These considerations are abundantly sufficient to show the imperfection of the ancient system of botany; and, indeed, considering the vague and uncertain marks by which the ancients distinguished one plant from another, we may rather wonder how such a science as botany came to have an existence among them, than that

they arrived at no greater perfection in it, or suffered it so soon to fall into oblivion.

SECT. III. *Of the different Botanical Systems from the time of Gesner to that of Linnaeus.*

THE insufficiency of the ancient botanical system being so fully shown in the last section, we think it needless to take much notice of the methods used by Tragus and his cotemporaries and followers. The virtues of plants being found an insufficient characteristic, succeeding botanists had taken in the root, stem, and leaves; but these being also found insufficient and variable, Gesner turned his eye to the flower and fruit, as being the most permanent and unchangeable parts of the plant. In proposing the parts of fructification, however, as the most proper for arranging plants, he communicated no hints respecting the choice of some of those parts in preference to others. Each particular organ of the flower and fruit furnishes sufficient variety to serve as the foundation of a method; but all of them are not equally proper for this purpose. Cæsalpinus, the first follower of Gesner, made a mistake in his choice, and took his distinguishing characteristics only from the fruit. The parts of the flower, therefore, being employed by the first systematic writers only as subaltern distinctions in finding out orders and genera, it is evident that the plant could not be fully investigated for several months. Suppose a plant ripens its fruit in October, and does not produce flowers till the following May: the class, upon inspection of the fruit in the month of October, is immediately ascertained; but the plant still remains unknown, and will continue so upwards of six months after, if the characters of the order and genus have been made to depend on any part of the flower. Methods founded on the fruit have another inconvenience; plants constantly ripen their fruit in those countries where they grow naturally, but not always in the countries to which they may be accidentally transported. So far from this, many plants that are natives of a warm climate neither ripen nor form fruit in a cold one. Few of the African, Asiatic and West-Indian plants produce fruit in Britain. A method, therefore, founded upon the fruit, could only facilitate the knowledge of such plants to the inhabitants of those countries where they grow: to the English botanist they could be of little or no service. The same objection cannot reasonably be urged against methods founded on the flower, since the influence of climates much colder than that of Britain has not been able to destroy the faculty of producing flowers in many, perhaps in most, of the plants just mentioned.

Cæsalpinus sets out with an ancient distinction of vegetables, from their duration, into trees and herbs. With the former he combines shrubs; with the latter, under-shrubs; and distributes his plants into the 15 following classes. 1. Trees with the germ (radicle or principle of life in the seed) on the point of the seed. 2. Trees with the germ on the base of the seed. 3. Herbs having one seed only. 4. Herbs having two seeds. 5. Herbs having four seeds. 6. Herbs having many seeds. 7. Herbs having one grain or kernel. 8. Herbs having one capsule. 9. Herbs having two capsules. 10. Herbs having fibrous roots. 11. Herbs having bulbous roots. 12. Herbs having succory or

endive-like flowers. 13. Herbs having common flowers. 14. Herbs having several follicles or seed-bags. 15. Herbs having neither flower nor seed.

The inconveniences of this method have been already pointed out pretty fully, and will evidently appear upon an attempt to refer any common plant to one of the 15 abovementioned classes. His sections, orders, or secondary divisions, are 47 in number, and depend upon a variety of parts and circumstances. The principal of these are, the disposition, situation, and figure, of the flowers; the nature of the seed-vessel, or cover of the seeds; the situation of the radicle in the seed; the number of seed-lobes, or feminal leaves; the disposition of the leaves, and colour of the flowers. The lactescence too, or milkiness, which is observed in the compound flowers with flat florets, is made a characteristic distinction, and discriminates the first order of the 12th class. Thus, in the first systematic arrangements, the characters of the classes only were borrowed from the parts of fructification; while those of the subaltern divisions were very numerous, and respected every part of the plant; but that such divisions might be perfect, they should be constituted, like the classes, from the modifications of a single part of the fructification.

The great object had in view by Morison, who comes next in order to Cæsalpinus, was to investigate the order of nature, not to fabricate an easy method of arranging plants. Hence his system is devoid of uniformity, and clogged with a multiplicity of characters; his classes are frequently not sufficiently distinguished from one another, and the key of arrangement seems totally lost. He sets out with a division of plants, from their consistence, into ligneous or woody, and herbaceous. He founds his system on the fruit, the corollæ or blossoms, and the habit of the plants. His classes are as follow: 1. Trees. 2. Shrubs. 3. Under-shrubs. 4. Herbs climbing. 5. Herbs leguminous or papilionaceous. 6. Herbs podded. 7. Herbs tricapsular or with three capsules. 8. Herbs with four or five capsules. 9. Herbs corymbiferous. 10. Herbs having a milky juice, or downy tops. 11. Herbs culmiferous, as grasses. 12. Herbs umbelliferous. 13. Herbs having three kernels. 14. Herbs having helmet-shaped flowers. 15. Herbs having many capsules. 16. Herbs berry-bearing. 17. Herbs called *capillary plants*, as the fern kind. 18. Anomalous or irregular herbs.

Of these classes, the fourth and eight possess no genuine distinctive character; nor are the ninth and tenth classes sufficiently distinguished; the fifteenth class is not sufficiently distinguished from the eighth, nor the 16th from the fourth. His sections or secondary divisions, which are 108 in number, arise from the figure and substance of the fruit; the number of seeds, leaves, and petals; the figure of the root; the direction of the stem; the colour of the flowers; the place of growth; and, in one class, from the medicinal virtues of some of the plants that compose it.

In 1682, Ray proposed his method to the world, two years after the publication of Morison's, which served in some measure as its basis. It consisted originally of the following 25 classes: 1. Trees. 2. Shrubs. 3. Herbs imperfect. 4. Herbs having no flower. 5. Capillary plants. 6. Staminate herbs having only the stamina. 7. Those having one naked seed. 8. Umbelliferous herbs. 9. Verticillated, annular, or ring-

shaped ones. 10. Rough-leaved plants. 11. Stellated or star-shaped ones. 12. Apple-bearing herbs. 13. Berry-bearing herbs. 14. Herbs having many pods. 15. Monopetalous uniform, or regular herbs. 16. Monopetalous irregular, or having different forms. 17. Tetrapetalous, having large pods. 18. Tetrapetalous, having small pods. 19. Papilionaceous. 20. Pentapetalous herbs. 21. Corns. 22. Grasses. 23. Grass-leaved plants. 24. Bulbous rooted plants. 25. Plants near akin to the bulbous.

This method Ray carefully corrected and amended at different times; so that the plan of arrangement which now bears the name of that author, and was first published in 1700, is entirely different from what had appeared in 1682. It now consists of 33 classes. Their distinguishing marks are taken from the port or habit of the plants; their greater or less degree of perfection; their place of growth; the number of seed-lobes, or feminal leaves, petals, capsules, and seeds; the situation and disposition of the flowers, flower-cup, and leaves; the absence or presence of the buds, flower-cup, and petals; the substance of the leaves and fruit; and the difficulty of classing certain plants. They are as follow.

1. Submarine, or sea-plants. 2. Fungi. 3. Mosses. 4. Capillary plants. 5. Those without petals. 6. *Platanipetale*, those with compound flowers; semislosculous, or half-florets. 7. Those with compound flowers radiated. 8. Those with compound flowers, slosculous, or with whole florets. 9. Plants with one seed. 10. Plants umbellated. 11. Those stellated or star-shaped. 12. Rough-leaved plants. 13. Plants verticillate or whorled. 14. Those with many seeds. 15. Apple-bearing herbs. 16. Berry-bearing herbs. 17. Those with many pods. 18. Monopetalous herbs. 19. Those with two and three petals. 20. Those with great and small, or long and short, pods. 21. Leguminous plants. 22. Pentapetalous ones. 23. Bulbs, and bulbous-like plants. 24. Staminate ones, or those having only the stamina. 25. Anomalous plants, or those of an uncertain family. 26. The palms. 27. Trees without petals. 28. Trees with an umbilicated fruit. 29. Trees with fruit not umbilicated. 30. Trees with a dry fruit. 31. Trees with podded fruit. 32. Anomalous, or irregular trees.

The distinction into herbs and trees with which Ray's method sets out, acknowledges a different, though not more certain, principle than that of Cæsalpinus and Morison. The former, in making this distinction, had an eye to the duration of the stem; the latter, to its consistence. Ray called in the buds as an auxiliary; and denominates trees, "all such plants as bear buds;" herbs, "such as bear none." But against this auxiliary there lies an unanswerable objection; namely, that though all herbaceous plants rise without buds, all trees are not furnished with them; many of the largest trees in warm countries, and some shrubby plants in every country, being totally destitute of that scaly appearance which constitutes the essence of a bud. In other respects, it is evident that neither Mr Ray's plan nor execution is in any degree calculated to facilitate the knowledge of plants. In fact, it seems to have been Ray's great object, no less than Morison's, to collect as many natural classes as possible; and these being separately investigated, a multiplicity of characters and steps was necessarily required to connect them: and hence

hence the intricacy complained of in both these methods, which must always take place where the classes give rise to the connecting characters, and not the characters to the classes. The characters of the orders, or secondary divisions, in Ray's method, are no less multifarious than those of the classes. They respect the place of growth of plants; their qualities; the figure of the stem; the number, situation, substance, and division, of the leaves: the situation and disposition of the flowers and calyx; the number and regularity of the petals; with the number and figure of the fruit. In his improved method, Ray has adopted Tournefort's characters of the genera, wherever his plan would permit. His general History of Plants contains 18,655 species and varieties. The third volume, which was not published till 1704, and was designed as a supplement to the two former, contains the plants discovered by Tournefort in the Levant, and by Camelli at Luzon one of the Philippine islands. Ray's method was followed by Sir Hans Sloane, in his Natural History of Jamaica; by Petiver, in his British Herbal; by Dillenius, in his Synopsis of British plants; and by Martyn, in his Catalogue of plants that grow in the neighbourhood of Cambridge.

To Ray's original method succeeded that of Christopher Knaut, a German; which acknowledges the same principle, and is manifestly founded upon it. In his enumeration of the plants that grow round Hal in Saxony, published in 1687, he divides vegetables into 17 classes, which have for their basis the size and duration of plants, the presence or absence of the petals, the disposition of the flowers, the substance of the fruit, the number of capsules or seeds, the number and figure of the petals, and the presence, absence, or figure of the calyx. His classes are, 1. Herbs berry-bearing. 2. Monopetalous, or with one flower-leaf. 3. Tetrapetalous and regular, with four petals. 4. Tetrapetalous and irregular. 5. Pentapetalous, or with five petals. 6. Hexapetalous, or six petals. 7. Polypetalous, or many petals. 8. Multicapsular, or many capsules. 9. Naked seeds. 10. Solid, or not downy. 11. Downy seeds. 12. Without petals. 13. Staminate, without petals or calyx. 14. Imperceptible. 15. Imperfect. 16. Trees. 17. Shrubs.

The sections or subdivisions of the classes in Knaut's method are 62 in number; and arise from the figure of the stem and petals, the number of capsules and cells, their figure, the number of seeds and leaves, and situation of the flowers.

In 1696, a new method, proposed by Dr Herman professor of botany at Leyden, was published by Zumbach, who arranged according to it the plants contained in the public garden of Leyden. Rudbeckius the Younger, in a dissertation published the same year, on the fundamental knowledge of plants, adopted Herman's method with a few inconsiderable variations. The classes of Dr Herman are 25 in number. They are founded on the size and duration of the plants; the presence or absence of the petals and calyx; the number of capsules, cells, and naked seeds; the substance of the leaves and fruit; the form and consistence of the roots; the situation and disposition of the flowers, leaves, and calyx; and figure of the fruit. 1. Herbs having one naked seed and a simple flower. 2. Having one naked seed and a compound flower. 3. With two naked seeds, and stellated or star-shaped. 4. Two naked seeds, and

umbelliferous. 5. Four naked seeds, and rough leaves. 6. Four naked seeds, and verticillated or whorl-shaped. 7. With many naked seeds. 8. Having seed-vessels, bulbous and tricapsular. 9. Having one seed-vessel. 10. With two seed-vessels. 11. With three seed-vessels. 12. With four seed-vessels. 13. With five seed-vessels. 14. Podded, which are always tetrapetalous. 15. Leguminous and papilionaceous. 16. With many capsules. 17. Having fleshy fruit, berry-bearing. 18. With fleshy fruit, apple-bearing. 19. Without petals, but having a calyx. 20. Without petals, chaffy or staminateous. 21. Without petals, calyx, chaff, or stamina, *i. e.* a naked anthera, as the mosses. 22. Trees. Imperfect fructification, bearing catkins. 23. Trees with a fleshy fruit umbilicated. 24. Trees with a fleshy fruit not umbilicated. 25. Trees with a dry fruit.

The classes in Herman's method are subdivided into 82 sections or orders; which have for their basis the number of petals, seeds, capsules, and cells, the figure of the seeds and petals, and disposition of the flowers.

To the method of Dr Herman succeeded that of Dr Boerhaave, who succeeded to the botanical chair of Leyden in 1709. His method is that of Herman, blended with part of the systems of Tournefort and Ray; and contains the following classes. 1. Herbs submarine, or sea-plants. 2. Imperfect land-plants. 3. Capillary plants, or the fern kind. 4. Many naked seeds. 5. Four naked seeds, and verticillated. 6. Four naked seeds, and rough leaves. 7. Four naked seeds, and four petals. 8. Plants having one seed-vessel. 9. Two seed-vessels. 10. Three seed-vessels. 11. Four seed-vessels. 12. Five seed-vessels. 13. Many seed-vessels. 14. Two naked seeds, and umbelliferous. 15. Two naked seeds, and star-shaped. 16. One naked seed, and a simple flower. 17. One naked seed, and compound flowers femisofculous. 18. One naked seed, and compound flowers radiated. 19. One naked seed, and compound flowers corymbiferous. 20. One naked seed, and compound flowers sofculous. 21. Berry-bearing herbs. 22. Apple-bearing herbs. 23. Without petals. 24. One cotyledon, and having petals. 25. One cotyledon, and without petals. 26. Trees having one cotyledon. 27. Many podded. 28. Podded. 29. Tetrapetalous and cruciform. 30. Leguminous. 31. Having no petals. 32. Bearing catkins. 33. Monopetalous flowers. 34. Rosaceous flowers.

These 34 classes of Dr Boerhaave are subdivided into 104 sections, which have for their characters, the figure of the leaves, stem, calyx, petals, and seeds; the number of petals, seeds, and capsules; the substance of the leaves; the situation of the flowers, and their difference in point of sex. By this method, Dr Boerhaave arranged near 6000 plants, the produce of the botanical garden at Leyden, which he carefully superintended for the space of 20 years, and left to his successor Dr Adrien Royen, in a much more flourishing state than he himself had received it. His Index or Catalogue of the Leyden plants was published in octavo in 1710; and afterwards, with great additions, in quarto, in 1720. This last edition contains descriptions of 5650 plants; of which number upwards of two thirds had been introduced into the garden since the time of Herman, by his illustrious successor. Boerhaave's characters are derived from the habit or general appearance of plants combined with all the parts of fructification; and

so that, as Linnæus very properly observes, he was the first who employed the calyx, stamina, and style, in determining the genus. About 17 new genera were established by this author; among others, the very splendid family of the protea and silver-tree, which, although partly described by Morison, had remained generally unknown till this period. His method was adopted by one Emsting, a German, in a treatise intitled *The first principles of Botany*, published in octavo at Wolfenbüttele, in 1748.

Hitherto all the botanists had been intent upon investigating the order of nature, rather than facilitating the arrangement of vegetables: therefore their methods were very intricate and perplexed; and their writings, however entertaining to the learned, could afford but very little instruction to the young botanist. In 1690, however, Augustus Quirinus Rivinus, a German, professor of Botany at Leipsic, relinquishing the pursuit of natural affinities, and convinced of the insufficiency of characteristic marks drawn only from the fruit, attached himself to the flower, which, he was sensible, would furnish characters no less numerous, permanent, and conspicuous, than those drawn from the fruit. The calyx, petals, stamina, and style or pistil, which constitute the flower, are sufficiently diversified in point of number, figure, proportion, and situation, to serve as the basis of a mode of arrangement; yet all are not equally proper for this purpose. Rivinus made use of the petals as the largest and most beautiful part, and that from which the flower itself is commonly characterized. His method consists of the following 18 classes, which have for their basis the perfection and disposition of the flowers, and regularity and number of the petals. 1. Regular monopetalous, or having one petal. 2. Dipetalous. 3. Tripetalous. 4. Tetrapetalous. 5. Pentapetalous. 6. Hexapetalous. 7. Polypetalous, or having many petals. 8. Irregular monopetalous. 9. Irregular dipetalous. 10. Irregular tripetalous. 11. Irregular tetrapetalous. 12. Irregular pentapetalous. 13. Irregular hexapetalous. 14. Irregular polypetalous. 15. Compound flowers of regular florets. 16. Compound flowers of regular and irregular florets. 17. Compound flowers of irregular florets only. 18. Incomplete, or imperfect plants.

As Rivinus set out with the professed design of imparting facility to botany, he judged very properly in divesting his method of all extraneous matter, and rendering it as simple and uniform as the nature of the science would admit. The distinction into herbs and trees had been adopted by every writer on plants since the time of Aristotle. Rendered in some measure sacred by its antiquity, this distinction maintained a kind of importance to which it was by no means essentially intitled. Rivinus was the first who in this matter dared to think for himself. He was early sensible of the inconveniences to which those had submitted who employed it as a primary division; and therefore resolved at once to get rid of a distinction that is frequently uncertain, always destructive to uniformity, and in its nature repugnant to the genuine spirit of system, because totally unconnected with the parts of fructification. In the uniformity of its orders or secondary divisions, which are 91 in number, and acknowledge the fruit for their principle, Rivinus's method equals, perhaps excels, all that went before or succeeded it. Only three

classes of his method were published by Rivinus himself. These are the 11th, 14th, and 15th, which were offered to the public at different times, illustrated with very splendid figures. The method was completed and published entire by Heucher, in a work intitled *Hortus Wittenbergensis*, printed in quarto at Wittenberg in 1711.

Several German authors have followed Rivinus's method, either wholly or in part, without offering any considerable amendment. The principal of these are, Koenig, in a work on vegetables, published at Basil in 1696; Welfch, in his *Basis Botanica*, printed at Leipsic in octavo, in 1697; Gemeinhart, in a catalogue of plants published in 1725; Kramer, in a work intitled *Tentamen Botanicum*, published at Dreiden in 1728, and afterwards reprinted with additions at Vienna in 1744; and Hecker, in a dissertation on botany published at Hal in Saxony, in 1734. To these may be added Hebenstreit, an ingenious botanist, who in a treatise on plants published at Leipsic in 1731, just before his famous African expedition, established general characters, which had hitherto been wanting in Rivinus's method.

The writers who have attempted to improve upon Rivinus's method are Bernard Rappius, Christopher Ludwig, and Christian Knaut. Rappius, in his *Flora Jenensis*, published at Frankfort in 1718, has arranged the 1200 plants there described by a method partly Rivinus's, and partly his own. It consists of 17 classes, and sets out with the same divisions and subdivisions as that of Rivinus; with this difference, however, that, whereas in Rivinus's method all perfect flowers are divided into simple and compound, in Rappius the division of regular and irregular flowers precedes that just mentioned, and simple and compound flowers are made subdivisions of the regular flowers only.

Christopher Ludwig's method, which was published in 1737, and consists of 20 classes, differs but little from that of Rivinus. The author accompanied Hebenstreit on his expedition into Africa, and seems to have made plants his favourite study. The improvement, however, which he has made on Rivinus's plan, consists only in rendering it more universal, having enriched it with a multitude of genera collected from the works of Tournefort, Ray, Boerhaave, Dillenius, and other eminent botanists, whose general characters he has likewise adopted. His plan of arrangement has been followed by two succeeding writers; M. Wedel, in a botanical essay published in 1747; and three years after by M. Boehmer, in his catalogue of the plants which grow in the garden of Leipsic.

The method of Christian Knaut is much more properly his own, and departs in a much greater degree from that of Rivinus than either of the two former. The regularity and number of the petals furnished the classical divisions in Rivinus's method; in that of Knaut, number takes place of regularity, so that it is very properly termed by Linnæus, "The system of Rivinus inverted." This method was published in 1706; and sets out with a division into flowers which have one petal, and such as have more than one. It consists of the 17 following classes. 1. Monopetalous uniform or regular. 2. Monopetalous difform or irregular. 3. Monopetalous compound uniform or regular. 4. Monopetalous compound difform or irregular. 5. Monopetalous compound uniform and difform together. 6. Dipetalous uniform

uniform or regular. 7. Dipetalous difform or irregular. 8. Tripetalous uniform or regular. 9. Tripetalous difform or irregular. 10. Tetrapetalous uniform or regular. 11. Tetrapetalous difform or irregular. 12. Pentapetalous uniform or regular. 13. Pentapetalous difform or irregular. 14. Hexapetalous uniform or regular. 15. Hexapetalous difform or irregular. 16. Polypetalous uniform or regular. 17. Polypetalous difform or irregular.

The sections or secondary divisions in Knaut's method are 121, and depend upon the internal divisions of the fruit; and upon this his opinions are somewhat singular. Every kind of fruit, whether pulpy or membranaceous, is termed by our author a *capsule*. Neither is the term restricted to fruits properly so called: it is extended also to those termed by botanists *naked seeds*, the existence of which Knaut absolutely denies. Agreeable to this opinion, capsules, he says, with respect to their consistence or substance, are of two sorts; pulpy, or membranaceous. The former correspond to the fruits of the apple, berry, and cherry kind; the latter to the capsules properly so called, and naked seeds of other botanists. Again, with respect to their cells or internal divisions, capsules are either simple or compound. Simple capsules have an undivided cavity or a single cell; compound capsules are internally divided into two or more cells. With other botanists, the umbelliferous flowers bear two, the lip-flowers four, naked seeds; according to Knaut, the former produce two, the latter four, simple capsules. Ranunculus, adonis, anemomy, herb-bennet, and some other plants, have their flowers succeeded by a number of naked seeds collected into an aggregate or head; each of these seeds passes with Knaut for a simple capsule; so that the whole is an aggregate of several capsules with an undivided cavity or single cell. In numbering the cells or internal divisions of the pulpy fruits, our author has adopted a very singular method. Some fruits of the apple kind inclose a capsule that is divided into five membranaceous cells. It might then be very reasonably expected to find such fruits arranged with compound capsules of five cells; but, instead of this, the author whimsically enough combines in their arrangement the idea both of a simple and compound capsule. The pulpy part is undivided; in other words, it is a simple capsule furnished with one cell; the compound capsule inclosed contains five cells, which added to that of the pulp make the number six; and thus these kinds of fruits are arranged with those having capsules of six cells. By the same kind of reasoning, the fruit of the dogwood, which is of the cherry kind, and contains a stone with two cells or cavities, is placed by Knaut among compound capsules with three cells; the pulp passing for one division, and cavities of the stone or nut for the remaining two. This method of calculation is not the only singularity for which Knaut is remarkable. The essence of the flower is made by Ray, Tournefort, Rivinus, and most other botanists, to consist in the stamina and style. This position Knaut absolutely denies; and has established for a principle, that the flower is essentially constituted by the petals only. With him, the flower-cup, stamina, and style, are of little significance: their presence does not constitute a flower, if the petals are wanting; neither is their absence sufficient to destroy its existence, if the petals are present.

From this it follows, 1. That there can be no flowers without petals; and, 2. That the regularity or irregularity of the flower can never depend on the stamina and style, which are only occasionally present, and no-wise essential to its existence; both of which are evidently false to every botanical reader.

Since the time of Rivinus, no leading method in botany has appeared except that of Tournefort and Linnæus. Tournefort sets out with reviving the distinction of plants into herbs and trees, which had been exploded by Rivinus. His system is founded on the regularity and figure of the petals, together with the two-fold situation of the receptacle of the flowers; his orders, on the pistillum or calyx. The classes are, 1. Herbs with simple flowers monopetalous, and bell-shaped. 2. Simple flowers monopetalous, tunnel and wheel-shaped. 3. Simple flowers monopetalous, labiated or lipped. 4. Simple flowers monopetalous, anomalous, or irregular. 5. Simple flowers polypetalous, cruciform or cross-shaped. 6. Simple flowers polypetalous, and rosaceous or like a rose. 7. Simple flowers polypetalous, umbellated. 8. Simple flowers polypetalous, caryophyllaceous, clove-form. 9. Simple flowers polypetalous, liliaceous or lily-form. 10. Simple flowers polypetalous, papilionaceous, or butterfly form. 11. Simple flowers polypetalous, anomalous or irregular. 12. Compound flowers, flosculous, tubular or whole florets. 13. Compound flowers semilosculous, flat or half florets. 14. Compound flowers radiated, like the spokes of a wheel. 15. Apetalous, having no petals. 16. No flower, but bearing seed. 17. No flower nor seed, in the vulgar estimation. 18. Trees with no petals, but bare stamina. 19. Trees with no petals bearing catkins. 20. Trees monopetalous. 21. Trees rosaceous. 22. Trees papilionaceous.

The secondary divisions in Tournefort's method, which are 122 in number, have obtained the name of *sections*. Their general distinctions are founded principally upon the fruit, as those of the classes are upon the flower.

Tournefort hath been followed by a vast number of botanical writers, of whom the most considerable are, Dr William Sherard, an eminent botanist of the last and present centuries. In 1689, he published the first sketch of Tournefort's method, under the title of *Schola Botanices*; or a catalogue of the plants demonstrated by Dr Tournefort, in the royal garden at Paris. It was not till five years after, that the *Elementa Botanica*, a work which contains the rudiments and illustration of his method, was published by Tournefort himself.—Father Plumier, termed by way of eminence the *Tournefort of America*, published in 1703, at Paris, a description of American plants, which he has arranged according to the system of Tournefort. In this work he accurately characterized 96 new genera. Falugi, an Italian, has described, in pretty elegant Latin verse, all the genera of Tournefort, in a work intitled *Proprietas Botanice*, published at Florence, 12mo, 1705. Several celebrated French academicians, particularly Marchant, Dodart, Nissole, Jussieu, and Vaillant, have also occasionally paid their tribute of acknowledgment to this author, from the year 1700 to 1740. The other authors of note who have followed Tournefort's method, are, M. Petit, an ingenious French botanist; Jöhren, a German, author of a treatise published at Colberg

Colberg in 1710, intitled *Vade mecum Botanicum, seu Odeus Botanicus*; Feuille, in his description of the plants of Chili and Peru, published at Paris in quarto, 1714; Christopher Valentin, a German, author of a book intitled *Tournefortius Contractus*, published at Francfort, in folio, 1715; Ripa, an Italian, in a work intitled *Historia Universalis Plantarum Conscripta Propositum*, published in quarto, at Padua, in 1718; Michael Valentin, a German, in his *Viridarium Reformatum*, published in folio, at Francfort, in 1719; the celebrated Dillenius, professor of botany at Oxford, and author of several much esteemed publications on botany, particularly the *Hortus Elthamensis*, and History of Mosses, in his *Flora Giffensis*, printed at Francfort in 1719; Pontedera, an Italian, author of the delineation of a method which combines those of Tournefort and Rivinus, published at Padua, in his botanical dissertations, in 1720; Monti, an Italian, in a work published at Bologna in 1724, under the title of *Indices Plantarum Varii*; Lindem, a German, in his *Tournefortius Alfacicus*, first published in 1728; Signior Micheli, author of several curious discoveries respecting mosses and mushrooms, in his *Nova Genera Plantarum*, published in folio at Florence in 1729; Elvebemes, a Swede, in a work published in the Swedish language at Upsal in 1730; Fabricius, a German, author of a work intitled *Primitia Floræ Butijbacensis, seu sex Decades Plantarum Rariorum*, published in 1743; Sabbati, an Italian, in his catalogue of the plants that grow in the neighbourhood of Rome, printed at Rome in 1745; and the ingenious Dr Charles Allston, late professor of botany at Edinburgh, in his *Tyrocinium Botanicum*, published at Edinburgh in 1753.

Of all this numerous list of writers, Father Plumier and Pontedera alone have ventured to quit the tract pointed out by Tournefort. The former, in his arrangement of American plants, has relinquished the distinction into herbs and trees; but the latter has attempted more considerable variations. His classes are, 1. Uncertain. 2. Having no flowers. 3. Without buds, imperfect plants. 4. Anomalous or irregular. 5. Labiated. 6. Bell-shaped. 7. Saucer-shaped. 8. Wheel-shaped. 9. Tunnel-shaped. 10. Flosculous. 11. Semiflosculous. 12. Radiated. 13. Irregular. 14. Papilionaceous. 15. Liliaceous. 16. Caryophyllaceous. 17. Cruciform, or cross-shaped. 18. Umbellated. 19. Staminous, or with naked stamina. 20. Bearing buds, apetalous, or without petals. 21. Bearing buds irregular. 22. Bearing buds bell-shaped. 23. Bearing buds wheel-shaped. 24. Bearing buds tunnel-shaped. 25. Bearing buds, papilionaceous. 26. Bearing buds, rosaceous.

Besides all these methods, there have been invented two others, founded upon the calyx. The first of these was the invention of Peter Magnol, a celebrated professor of botany at Montpellier, and published in 1720, five years after the author's death. The other was delineated by Linnæus, and published in his *Classes Plantarum* in 1738, three years after the publication of the sexual system. Magnol distinguishes two kinds of calyx; one external, which envelops and sustains the flower, and is the flower-cup properly so called; the other internal, which is the seed vessel or fruit. According to this idea, all plants, whether herbaceous or woody, are furnished with either the external calyx only, or with both. His classes are, 1. Herbs with the calyx

external, including a flower unknown. 2. Calyx external, including a flower staminous. 3. Calyx external, including a flower monopetalous. 4. Calyx external, including a flower polypetalous. 5. Calyx external, including a flower compound. 6. Calyx external, supporting a flower monopetalous. 7. Calyx external, supporting a flower polypetalous. 8. Calyx internal only, which is the corolla. 9. Calyx external and internal, flower monopetalous. 10. Calyx external and internal, flower with two and three petals. 11. Calyx external and internal, tetrapetalous. 12. Calyx external and internal, polypetalous. 13. Trees with the calyx external only. 14. Calyx internal only. 15. Calyx external and internal both.

The characters of the orders, or secondary divisions, in Magnol's method, are derived chiefly from the figure of the calyx, petals, and seeds; from the disposition of the flowers, from the number of petals, and substance of the fruit. Fifty-five sections or orders arise from the combination of these characters with those of the classes; and these are again subdivided into genera, which possess this singularity, that, in place of distinctive characters hitherto employed, they exhibit complete descriptions of all the parts of fructification of one or two species of each genus. From this improvement Linnæus manifestly borrowed the hint of his general characters.

Sir John Hill, in his vegetable system, endeavours to class plants according to their internal structure * Vol. 1. "Perhaps (says he), upon the foundation of a true P. 130. anatomy of plants a natural method may be established: for it is certain, the forms of all the external parts of vegetables depend on the disposition of the internal; and all their differences are founded there. On the different inner structure of the vegetable body, under certain courses of its vessels, evidently depend the differences which characterize the seven first families, to the distinctions of which all classes are subordinate; and as these original distinctions are truly natural, we may here begin very safely.

"The seven families are these, 1. The mushrooms. 2. The algæ, or foliaceous sea and land plants. 3. The mosses. 4. The ferns. 5. The grasses. 6. The palms. 7. The common race of plants. Their distinctions one from another are these:

"1. The mushrooms are fleshy; and are destitute of leaves and visible flowers. 2. The algæ are merely foliaceous, the entire plant consisting of a leafy matter without other visible parts. 3. The mosses have processes of the inner rind for leaves. 4. The ferns consist of a single leaf raised on a stalk; and bear their flowers upon its back. 5. The grasses have jointed stalks and undivided leaves, and hulks to hold the seeds. 6. The palms have a simple trunk, with leaves only on the top, and have the flowers and fruit in divided ears."

Lastly, the seventh class, which he calls the *common race of plants*, are such as have their roots, leaves, stalks, flowers, and fruits, distinct and obvious; and have not the characters of any of the other six families.

To this natural method his artificial one, consisting of 43 classes, and which takes up the whole of his voluminous work, is designed only as an index; but as this is universally allowed to be inferior to Linnæus's, though he pretends to improve that system, we think it needless to take any farther notice of it.

Besides the sexual system of Linnæus, which is now almost universally followed, he formed another, which, like that of Magnol, had the calyx for its basis; but greatly superior both in the idea and execution, being indeed singularly serviceable to the novice in botany, by familiarizing to him various appearances of an organ so important in its nature, and so diversified in its form, as the calyx is. The classes are,

1. Spathaceous, like a sheath or hose.
2. Glumose or chaffy.
3. Amentaceous, or catkins.
4. Umbellated.
5. Common calyx or flower-cup.
6. Double calyx.
7. Flowering; the petals and stamina inserted into the flower-cup.
8. Crowned, or crown-shaped, with a radius.
9. Irregular.
10. Difform, or different shapes.
11. Caducous, which fall off or shed their leaves.
12. Not caducous, uniform and monopetalous.
13. Not caducous, uniform and polypetalous.
14. Not caducous, difform and monopetalous.
15. Not caducous, difform and polypetalous.
16. Incomplete calyx.
17. Apetalous, or a bare calyx without petals.
18. Naked, or neither petals nor calyx.

Sect. IV. *Of the Method of reducing Plants to Classes, Orders, Genera, and Species, according to Linnæus's Sexual System.*

BEFORE proceeding to explain this system, it will be proper to make the reader acquainted with the principal outlines of a plant, as delineated by our author in his *Principia Botanica*.

A plant consists of Root, Trunk, Leaves, Props, Frustrification, and Inflorescence; to which may be added the Habit.

I. The ROOT consists of two parts, *viz.* the caudex and the radicle, distinguished according to shape, direction, duration, &c.

1. CAUDEX, or *stump*, is the body or knob of the root from which the trunk and branches ascend, and the fibrous roots descend; and in different plants is either solid, bulbous (placed under a bulb), or tuberos. Solid, as in trees, shrubs, and many of the herbs. Bulbous will be explained under *Hybernacle*.—Tuberos knobs are also solid and hard, containing one or more embryos or eyes. They are either only one knob, as turnip, carrot, &c. containing only one eye at the top; or consist of many knobs connected together by slender fibres, as in potatoes, jerusalem artichokes, &c. each containing many eyes dispersed over the surface: and are either pitted, when the eyes lie inward, as in potatoes, &c. or tuberculated, containing the eyes outward, as in jerusalem artichokes, &c. In tuberos knobs, the fibres or stringy parts issue from every part of the surface; which is an essential difference from bulbous knobs, where they are confined to the caudex of the bulb only, and are the true and genuine roots, the bulb itself being only a large bud under ground. Those tuberos knobs with only one eye, differ as to duration, but are in general biennial; those with many eyes are perennial; both seem to be produced by the nutriment of the stem like buds, and not by the fibrous roots, for the stem is first formed and becomes strong, and as it grows to maturity, the tuberos knobs increase.

2. RADICULA, a *little root*, is the stringy or fibrous part of the root, descending from the caudex: it is really the principal and essential part of every root, and

by which the nourishment is drawn from the earth for the support of the plant.

II. The TRUNK, which includes the branches, is that part which rises immediately from the caudex, and produceth the leaves, flowers, and fruit. It is either herbaceous, shrubby, or arborecent; and is distinguished according to its shape, substance, surface, &c. and admits of the following sorts.

1. CAULIS, a *stalk* or *stem*, is the main or universal trunk which elevates the leaves and fructification, and is applied to trees, shrubs, and herbs: It is denominated *simple* when it doth not divide, and *compound* when it is divided into branches.

2. CULMUS, a *straw* or *haulm*, is the proper trunk of grasses; and also elevates both the leaves and fructification: It is sometimes jointed, and sometimes not; it is also sometimes round, and sometimes angular.

3. SCAPUS, a *stalk*, is an herbaceous trunk, which elevates the fructification, but not the leaves; that is, it is a stalk proceeding immediately from the root, and terminated by the flowers, as in narcissus, hyacinth, &c.

4. STIPES, a *trunk*, used by Linnæus for the trunk of mushrooms: as also for that slender thread or foot-stalk which elevates the feathery or hairy down with which some seeds are furnished, and connects it with the seed.

III. The LEAVES are said by Linnæus to be the muscles or organs of motion of a plant; by others, the organs by which perspiration and inspiration are performed. They are defined as proceeding from the expansion of the vessels of the stalk, forming several ramifications like net-work, extended in length and breadth in a determinate manner, having the interstices filled up with a tender pulpy substance; and the external covering is supposed to be a continuation of the scarf skin of the stalk.

Leaves are either simple or compound; and are distinguished by their figure, situation, insertion, number, divisions, &c.

A *simple leaf*, is such as either adheres to the branch singly, or whose footstalk is terminated by a single simple expansion, not parted to the middle rib; and is determined by its shape, surface, and divisions.

A *compound leaf*, is such whose footstalk is furnished with several separate simple expansions; or, in other words, whose divisions extend to the middle rib, now called a *common petiole* or footstalk, supporting several lobes or little simple leaves, of which the compound leaf consists: they are distinguished by shape, &c. and the form by which they are attached to the common footstalk, as palmated, winged, feathered, &c. Sometimes leaves are twice or more compounded; which divisions admit of many modifications, and give rise to as great variety of terms. It may sometimes be difficult, at first sight, to know a common footstalk to a compound leaf, from a branch: but it may be observed, that a common footstalk, where it issues from the branch, is either flat or hollow on one side, and convex on the other; whereas branches are alike on both sides, whether round, flat, or angular: again, buds are never found at the angles formed by the lobes of a compound leaf with the footstalk, but at the angles formed by the footstalk of the whole compound leaf and the stem: and it may always certainly be distinguished by its falling off with the little leaves which it supports.

The

The manner or place in which leaves are attached to the plant, is called the *determination of leaves*; and is distinguished by several terms, according to number, disposition, insertion, figure, &c.

IV. The PROPS, *fulcra*, a term used to express those external parts which strengthen, support, or defend the plants on which they are found, or serve to facilitate some necessary secretion; and are as follow:

1. PETIOLUS, the footstalk or support of a leaf.
2. PEDUNCULUS, the footstalk or support of a flower.
3. STIPULA, *haulm* or *husk*, a sort of scale or small leaf, stationed on most plants (when present) on each side the base of the footstalk of leaves and flowers, at their first appearance, for the purpose of support: They are placed either single or double; and sometimes on the inside, as in the fig and mulberry; or on the outside, as in the birch, lime, and papilionaceous flowers: They are also either sitting, extended downwards, or sheathing along the stem, as in the plane tree. As to duration, they sometimes fall before the leaves, and sometimes are equally persistent: They often afford a good distinction for the species.
4. CIRRHUS, a *curl*, meaning a clasper or tendril, is the fine spiral string or fibre by which plants fasten themselves to some other body for support: They are sometimes placed opposite to the leaves; sometimes at the side of the footstalks of the leaves; sometimes they issue from the leaves themselves; and sometimes they put out roots, as in ivy, &c.

5. PUBES, a term applied to the hair, down, wool, beard, bristles, glands, and several other appearances on different parts of plants, serving the double purpose of defence and vessels of secretion.

6. ARMA, the defensive weapon of plants; as thorns, prickles, &c

7. BRACTEÆ, *thin plates of metal*, are the floral leaves; and mean not only those leaves situated on the stalk nearest to the lower parts of the flower, but those which sometimes terminate the flower stalk; being composed of large bractææ, resembling a bush of hair, and are then called *bractææ comæse*, as in crown-imperial, lavender, and some species of sage.

V. The FRUCTIFICATION, or *mode of fruit-bearing*, consisting of the calyx, corolla, stamina, pistillum, pericarpium, semina, and receptaculum; which will be afterwards explained.

VI. The INFLORESCENCE, or mode by which flowers are joined to their several peduncles, whether common or partial.

A flower in the Sexual botany hath a very different signification from the same term of former writers; for if the antheræ and stigma be present, though the calyx, corolla, filaments of the stamina, and style of the pistillum be wanting, it is still a flower; and if all the parts are present, it is a complete flower. The seed also constitutes the fruit, whether there be a pericarpium or not.

Complete flowers are either simple or aggregate; *simple*, when no part of the fructification is common to many flowers or florets, but is confined to one only; *aggregate*, when the flower consists of many florets collected into a head by means of some part of the fructification common to them all, as by a common receptacle, or common calyx; as in dipacus, scabiosa, &c.

From the different structure, disposition, and other circumstances of the receptacle or calyx, being the

only common part to aggregate flowers, arise seven divisions.

1. AGGREGATE, properly so called, consisting of such flowers as are formed by the union of several lesser flowers or florets, placed on partial peduncles, on a common dilated receptacle, and within a common perianthium; and in those flowers where each floret hath its proper calyx, that is also a perianthium. [A flower is said to be *radiate*, when the florets in the radius or circumference differ from those in the disk; in which case they are generally larger, and are called *semi-florets*, from their difference in form, and in distinction from those of the disk, which are called *proper florets*; and they also differ as to sex, which gives rise to several of the orders in the class syngenesia, which contains the compound flowers.]

2. COMPOUND AGGREGATE, consisting also of several florets, placed sitting (or without partial peduncles) on a common dilated receptacle, and within a common perianthium; and where each floret hath its proper calyx, it is also a perianthium. Compound flowers also admit of a further description, viz. each floret consists of a single petal, with generally five divisions, and having five stamina distinct at the base, but united at the top by the antheræ into a cylinder, through which passeth the style of the pistillum, longer than the stamina, and crowned by a stigma with two divisions that are rolled backwards, and having a single seed placed upon the receptacle under each floret. This is the general character of a compound flower, to which there are a few exceptions; it also differs when the flower is radiate: but the essential character of a regular floret consists in the antheræ being united so as to form a cylinder, and having a single seed placed upon the receptacle under each floret.

3. UMBELLATE AGGREGATE, when the flower consists of many florets placed on fastigate peduncles proceeding from the same stem or receptacle; and which, though of different lengths, rise to such a height as to form a regular head or umbel, whether flat, convex, or concave; and both the common and partial calyx Linnæus calls an *involucrum*. It is called a *simple umbel*, when it hath no lesser divisions; a compound umbel, when each peduncle is subdivided at its extremity into many lesser peduncles for supporting the flowers, so as to form several little umbellas, uniting in one head; the whole together is called an *universal umbel*, and the little umbellas are called *partial umbels*. In some genera, that have radiated umbels, the florets of the center and those of the circumference, differ both as to sex and size; but in general each hath five petals, five stamina, and two styles, or one that is bifid, with a germen placed beneath and two naked seeds, which when ripe, separate below, but remain connected at the top.

4. CYMOUS AGGREGATE (from *cyma*, a sprout) called by Linnæus a *receptacle*, is when several fastigate peduncles proceed from the same centre like the umbel, and rise to nearly an even height; but unlike the umbel, the secondary or partial peduncles proceed without any regular order, as in sambucus, viburnum, &c.

5. AMENTACEOUS AGGREGATE, are such flowers as have a long common receptacle, along which are disposed squaræ or scales, which form that sort of calyx called an *amentum* or *catkin*, as in corylus, pinus, juglans, &c. Amentaceous flowers generally want the

petals, and all of them are of the classes monoecia and dioecia.

6. **GLUMOSE AGGREGATE**, are such flowers as proceed from a common husky calyx belonging to grasses, called *gluma*; many of which are placed on a common receptacle called *rachis*, collecting the florets into the spike, as triticum, hordeum, secale, lolium, &c.

7. **SPADICEOUS AGGREGATE**, are also such flowers as have a common receptacle, protruded from within a common calyx called *spatha*, along which are disposed several florets. Such a receptacle is called a *spadix*: and is either branched, as in phœnix; or simple, as in narcissus, &c.: In this last case the florets may be disposed, either all around it, as in calla, draconitium, pothos, &c.; on the lower side of it, as in arum, &c.; or in two sides, as in zosteria, &c. These flowers have generally no partial calyx.

These are the several distinctions of aggregate flowers (according to Linnæus); besides which there are several other modes of flowering, properly so called, that come under the general term *Inflorescence*, and often afford the best marks to discriminate the species. These modes of flowering are chiefly expressed as follows:

1. **VERTICILLUS**, a *whorl*, when the flowers are placed in whorls at each joint, round the common stalk: they have very short partial peduncles; are all of the labiated kind; and have either two or four stamina, and four naked seeds, as in salvia, marrubium, mentha, &c. A verticil hath several distinctions, as naked, bracted, &c.; and all those genera with four stamina are of the class didynamia.

2. **CAPITULUM**, a *little head*, is when many flowers are connected into nearly a globular form or head, on the summit of the common stalk, sometimes with and sometimes without partial peduncles, as in gomphrena, &c. and is distinguished by its shape and other circumstances.—Under *capitulum* is now introduced the term *fasciculus* (a little bundle), which in former editions stood distinct. It means when the peduncles are erect, parallel, approaching each other, and raised to the same height as in sweet William, where they generally proceed from different parts of the common stalk, opposite to each other.

SPICA, a *spike*, when the flowers, having no partial peduncles, are arranged alternately around a common simple peduncle. It is called *spica secunda* (a single-row'd spike), when the flowers are all turned one way, following each other; and *spica disticha* (a double-row'd spike), when the flowers stand pointing two ways, as in lolium, &c.: And it is distinguished by shape and other circumstances.

4. **CORYMBUS**, (a *cluster of ivy-berries*), when the lesser peduncles of the flowers proceed from different parts of the common peduncle or stalk; and though of unequal lengths, and sometimes simple, and sometimes branched, yet form a regular surface at the top; as in the siliquose plants (class *Tetradynamia*.) The corymbus may be supposed to be formed from a spike, by adding partial peduncles to the flowers; and seems to be the mean between racemus and umbella, the peduncles rising gradually from different parts of the common stalk, like those of the raceme, and proceed to a proportionable height like those of the umbel.

5. **THYRSUS** (a *young stalk*); a mode of flowering resembling the cone of a pine: Linnæus saith, it is a

panicle contracted into an ovate or egg-shaped form; the lower peduncles, which are longer, horizontally; and the upper, which are shorter, mount vertically, as syringa, &c.

6. **RACEMUS**, (a *bunch of grapes*), is when the flowers are placed on short partial peduncles, proceeding as little lateral branches, from and along the common peduncle. It resembles a spike in having the flowers placed along a common peduncle, but differs from it in having partial peduncles: it also differs from a corymbus in the shortness and equal length of its peduncles, not forming a regular surface at the top; as in ribes-rubrum, vitis, &c.

7. **PANICULA**, (the *tuff upon reeds*), is when the flowers are dispersed upon peduncles variously subdivided; or it is a sort of branching spike, composed of several smaller spikes, attached along a common peduncle, as in avena panicum, and several other grasses, and many other plants. When the partial peduncles diverge and hang loose, it is called a *diffuse*, and when they converge, it is called a *close*, *panicle*.

To these may be added the term **AXILLARES**, (from *axilla*, the arm-pit), being such flowers as proceed from the angle formed by the leaf and the stem, as is most common: And **TERMINALES**, being such flowers as terminate the stalk or branch. Also every other mode of flowering is called the *Inflorescence*, whether opposite to the leaves, lateral, single, double, erect, bending, &c.

Under this head of Inflorescence may be explained **LUXURIANT FLOWERS**, (commonly called *double-flowers*); which, as they are considered only as varieties and unnatural, belong properly to the head, Habit of plants. A luxuriant flower is supposed generally to be owing to superabundant nourishment; the luxuriant part is generally the corolla, but sometimes the calyx also. It is divided into three degrees: 1. *multiplicatus*; 2. *plenus*; 3. *prolifer*: To which may be added, as an opposite imperfection, *flos mutilatus*.

1. **MULTIPLICATUS**, when the petals of the corolla are only so far multiplied as to exclude part of the stamina; and is called *duplicate*, *triplicate*, *quadruplicate*, &c. according to the number of rows of petals.

2. **PLENUS**, when the corolla is so much multiplied, as to exclude all the stamina; which is occasioned by the stamina turning petals, and the flower is often so crowded as to exclude or choak the pistillum also. Therefore, as the essential parts of generation are thus wholly, or in part destroyed, the plants become barren and imperfect, and no seed, or very little, can be expected from them. Flowers with one petal are not very subject to fulness; when they are, it generally arises from an increase of the divisions of the petal. It is most usual in flowers of many petals, where it arises various ways; sometimes by multiplication of the petals only, sometimes of the calyx or nectarium, and sometimes of all. Compound flowers are also subject to luxuriance, arising several ways.

3. **PROLIFER**, when one flower grows out of another; this generally happens in full flowers, from their greater luxuriance. In simple flowers, it rises from the centre, and proceeds from the pistillum shooting up into another flower, standing on a single footstalk. In aggregate flowers (properly so called) many footstalked flowers are produced out of one common calyx. In

umbellate flowers, a second umbel proceeds from the centre of the first umbel, producing little umbels; which by a greater exertion of luxuriance may produce others with little umbels, and thus may proceed several heads of flowers, each growing out of that immediately below it, furnished with little umbels variously compounded. A prolific flower is also called *leafy* (frondosus), when it produceth branches with flowers and leaves, which, though rare, sometimes happens in rosa, anemone, monarda, and others. [As in luxuriant flowers many parts of the natural character are deficient in the whole or in part, they can only be distinguished by the general habit, and by such parts as remain in the natural state; as very often by the calyx, and in polypetalous flowers, the lowest series or rows of petals remain the same, as in rosa, papaver, nigella, &c.]

FLOS MUTILATUS, is such a flower as occasionally is deprived of all, or the greatest part, of the petals, yet bears seeds, as in some species of tusilago, campanula, &c. This term is opposed to luxuriance, and is supposed by Linnæus to be caused by a defect of heat, though it may also happen by other causes.

Under this head of flowers, may also be mentioned the different sexes.

FLOWERS, in respect to SEX, are distinguished into male, female, hermaphrodite, and neuter. Male flowers are such as have only the stamina or males, as in the classes monoecia, dioecia, and polygamia. Female flowers are such as have only the pistilla or females, as in the same classes monoecia, dioecia, and polygamia. Hermaphrodite flowers are such as have both the stamina and pistilla in the same flower, as in all the other classes: hermaphrodites are also distinguished into male hermaphrodites, when the female is ineffectual; and female hermaphrodites, when the male is ineffectual. Neuter flowers are such as have neither stamina nor pistilla perfect. The plants themselves also take a denomination from the sex of their flowers; as male plants are such as bear male flowers only; female plants are such as bear female flowers only; hermaphrodite plants are such as bear hermaphrodite flowers only. Androgynous (male and female) plants are such as bear both male and female flowers, distinct, upon the same root, as in the class monoecia. Polygamous plants are such as bear hermaphrodite flowers, and male or female flowers, or both distinct, on the same or on different roots: if on the same root, the flowers are either male hermaphrodites and female hermaphrodites; or hermaphrodites and male; or hermaphrodites and female, distinct: if on different roots, the flowers are either hermaphrodites and male; hermaphrodites and female; hermaphrodites and both male and female; or are androgynous and male; and sometimes androgynous and male and female on three distinct plants.

VII. The HABIT of plants, by which ancient botanists meant the whole external appearance of every part thereof, whereby they were arranged in their several systems; but by Linnæus it is meant to be the agreement of plants of the same genus or natural order; chiefly in the following circumstances.

Germation. The structure and disposition of the bulb, as solid, coated, scaly, stem-bulb. Also of the bud; its origin petioled, stipuled, cortical; its contents leafy, floral, common.

Vernation. The complication of the leaves within the bud, as conduplicate or doubled together; convo-

lute or rolled together; involute or rolled in; revolute or rolled back; imbricated or tiled; equitant or riding; obvolvute or rolled against each other; plaited or folded over; spiral or coiled like a watch-spring, one end in the centre.

Effivation. The state of the bud in summer, as convolute, imbricated, conduplicate, valved, unequal-valved.

Tortion. The twisting or bending of the parts, as uniform, dissimilar, from the right, from the left, reciprocal, resupine, spiral.

Nuptials. Male, female, androgynous, hermaphrodite.

Semination. The shape and other circumstances of the seed, as tail, wing, tuft, awn, hooks, gluten, curvature. Also of the pericarpium; as berrying, inflation, viscosity, elasticity, structure.

Placentation. The number and disposition of the cotyledons; or if wanting.

Variation. Of colour, size, pubescence, age.

External: plaited, bundled, broad-leaved, curled, awnless.

Internal: mutilated, great-flowered, luxuriant, crested; viviparous, bulb-bearing.

By *variation* or *variety* are meant such differences as are only incidental to vegetables, and are not found constant and unchangeable; that is, where plants raised from the same seed, by some accidental cause differ in form and appearance, from the true character of the species to which they belong; which cause being removed, the plant is restored to its true specific character: and these incidental varieties chiefly arise by difference of soil or culture, in some of the above circumstances. And though it is as necessary to collect varieties under their proper species, as the species under their proper genera; yet it is often more difficult; first, from the difficulty of ascertaining the genus, and secondly, from the variety of confounding the species; and sometimes some parts of the specific character itself are also subject to variety, particularly the leaves; though in general the true specific character is constant and unchangeable, arising only from such circumstances wherein plants of the same genus are found to disagree, which distinctions are commonly taken with most certainty, from the following parts, (viz.) root, trunk, leaves, fulera, hybernacle, inflorescence: all which parts have been already explained, except hybernacle.

The HYBERNACULUM, (*winter lodgement*), is that part of a plant which defends the embryo or future shoot from external injuries during the winter; and, according to Linnæus, is either a bulb or a bud.

I. A BULB (bulbus), is a large sort of bud produced under ground, placed upon the caudex of certain herbaceous plants, hence called *bulbous* plants; all of which are perennial, that is, perpetuated by their bulbs or ground buds, as well as by seeds; they are therefore improperly called roots, being only the hybernacle of the future shoot. Bulbs are of the following sorts:

1. Squamous; consisting of scales laid over each other like tiles, as in the lily.

2. Solid; consisting of a close substance, as in tulips.

3. Coated; consisting of many coats infolding each other, as in onions.

4. Cauline; produced not only from the sides of the principal bulb, called a *sucker* or *offset*, but from other parts of the stem; as in crow or wild garlic, and in some species of onion (hence called *bulbiferous*); where they are produced at the origin of the umbel of flowers.

II. A Bud (*gemma*), is the embryo of the plant, seated upon the stem and branches, covered with scales. In general there are three sorts of buds:—That containing the flower only, as in poplar, ash, &c. where the leaf-buds and flower-buds are distinct:—That containing the leaves only, as in birch, &c. :—and, That containing both flower and leaves, as in the generality of plants; and these last sometimes contain leaves and male flowers, sometimes leaves and female flowers, sometimes leaves and hermaphrodite flowers.

Annual plants are only renewed from seeds; and several other plants, both trees and shrubs, have no winter buds: It is also observed in hot countries, that few plants have buds; or at least they are without that scaly covering which seems essential to a bud, and constitutes the hybernacle; instead whereof are protruded small feather-like branches from the wings of the leaves, (defence and protection from cold not being necessary); whereas in cold countries most plants have buds, which are wrapped up all the winter, in readiness to greet the approaching spring.

Lastly, What is called the SLEEP of plants, according to Linnæus, happens various ways; as by converging, including, surrounding, fortifying, conduplicating, involving, diverging, depending, inverting, imbricating. This disposition in plants is very remarkable in chick-weed, pimpernel, dandelion, goat's-beard, &c. which

expand their flowers only at certain times of the day, and shut them up at the approach of night or a storm: which shows the great care nature takes to protect and invigorate her feeble offspring; and from hence may often be prognosticated a change of weather. In many plants, not only the flowers, but the young shoots, are defended from external injuries, by the nearest leaves converging and inclosing the tender rudiments.

The SEXUAL METHOD of reducing plants to classes, genera, and species, is founded upon the supposition that vegetables propagate their species in a manner similar to that of animals. Linnæus endeavours to support this hypothesis by the many analogies that subsist between plants and animals, which shall be more particularly pointed out in the next section. It is from this circumstance that Linnæus's system of botany has got the name of the *sexual system*. The names of his classes, orders, &c. are all derived from this theory. He calls the stamina of flowers, as we have seen, the *males*, or the male parts of generation; the pistils he calls *females*, or the female parts of generation; and plants whose flowers contain both male and female parts, are said to be *hermaphrodites*, &c. His classes, orders, and genera, are all derived from the number, situation, proportion, and other circumstances attending these parts, as will appear from the following

SCHEME of the SEXUAL SYSTEM, or TABLE of the CLASSES.

- Plants celebrate their nuptials
- Either *PUBLICLY*, *i. e.* have visible flowers:
- { *Monoclinia*, males and females in the same bed:—*i. e.* The flowers are all hermaphrodite, having stamina and pistils in the same flower.
 - { *Diffrinitas*, the males or stamina unconnected with each other.
 - { *Indifferentissimus*, the males or stamina having no determinate proportion betwixt each other as to length.
 1. MONANDRIA, *i. e.* one male or stamen in a hermaphrodite flower.
 2. DIANDRIA, — two males or stamina.
 3. TRIANDRIA, — three males.
 4. TETRANDRIA, — four males.
 5. PENTANDRIA, — five males.
 6. HEXANDRIA, — six males.
 7. HEPTANDRIA, — seven males.
 8. OCTANDRIA, — eight males.
 9. ENNEANDRIA, — nine males.
 10. DECANDRIA, — ten males.
 11. DODECANDRIA, — eleven males.
 12. ICOSANDRIA, — twenty, or more males inserted into the calyx, and not into the receptacle.
 13. POLYANDRIA, — all above twenty males inserted into the receptacle.
 - { *Subordinatio*, two of the males or stamina uniformly shorter than the rest.
 14. DIDYNAMIA, — four males, two of them uniformly shorter than the other two.
 15. TETRADYNAMIA, — six males, two of which are uniformly shorter than the rest.
 - { *Affinitas*, the males or stamina either connected to each other, or to the pistillum.
 16. MONODELPHIA, the males or stamina united into one body by the filaments.
 17. DIADELPHIA, the stamina united into two bodies or bundles by the filaments.
 18. POLYADELPHIA, the stamina united into three or more bundles by the filaments.
 19. SYNGENESIA, the stamina united in a cylindrical form by the antheræ.
 20. GYNANDRIA, the stamina inserted into the pistillum.
 - { *Diclinia*, males and females in separate beds; *i. e.* plants that have male and female flowers in the same species.
 21. MONOECIA, male and female flowers in the same plant.
 22. DIOECIA, male flowers in one plant, and females in another, of the same species.
 23. POLYGAMIA, male, female, and hermaphrodite flowers in the same species.
- Or *CLANDESTINELY*, *i. e.* whose parts of fructification are invisible.
24. CRYPTOGAMIA, the flowers invisible, so that they cannot be ranked according to the parts of fructification.

These 24 CLASSES comprehend every known genus and species. It is an easy matter to class a plant belonging to any of the first 11 classes, as they all depend on the number of stamina or male parts, without regard to any other circumstance: only it is to be observed, that the 11th class, *Decandria*, although its title is expressive of 12 stamina only, consists of such plants as are furnished with any number of stamina from 11 to 19 inclusive. The reason of the chasm in the classes from 10 to 12 stamina, is, that no flowers have yet been found with only 11, so as to form a class. *Reseda* hath sometimes only 11, but oftener more, yet never exceeding 15. The 12th class requires more attention than the preceding. When the stamina amount to above 20, a tyro will be apt to imagine that the plant belongs to the polyandria class. In reducing plants of this kind to their classes, particular regard must be had to the insertion of the stamina. If they are inserted into the calyx or cup, the plant belongs to the icofandria class; if to the receptacle or basis of the flower, it belongs to the polyandria. This distinction it is very necessary to observe, as the fruits of the latter class are frequently poisonous.

The 14th class is likewise in danger of being confounded with the 4th. In the 4th, the number of stamina is the same with that of the 14th: But in the 14th, two of the stamina are uniformly much shorter than the other two; at the same time each particular stamen belonging to the different pairs stands directly opposite to one another.

The 15th class may be mistaken for the 6th, as they consist of the same number of stamina. But in the 15th, four of the stamina are uniformly longer than the other two; and these two are always opposite to each other.

O R D E R S.

In the first 13 classes, the ORDERS, which are inferior divisions, and lead us a step nearer the genus, are taken from the pistils or female parts, in the same manner as the classes from the stamina: Monogynia, digynia, trigynia, tetragynia, &c. *i. e.* one, two, three, four, &c. female parts. When the pistils or female parts have no stalk or filament like the stamina, they are numbered by the stigmata or tops of the pistils, which in that case adhere to the capsule in the form of small protuberances, as may be observed in the flowers of the poppy, &c.

The Orders of the 14th class are derived from a different source. The plants belonging to it have their seeds either inclosed in a capsule, or altogether uncovered. Hence they naturally admit of a division into the following orders, *viz.* *gymnospermia*, comprehending such as have naked seeds; and *angiospermia*, which comprehends such as have their seeds covered, or inclosed in a capsule.

The 15th class is divided into two Orders, *viz.* the *siliclefusa*, or those which have a short silique or pod; and the *siliquosa*, or those which have a longer silique.

The Orders of the 16th, 17th, 18th, and 20th classes, are taken from the number of stamina; *e. g.* monodelphia *pentandria*, *decandria*, *polyandria*, &c.

The 19th class consists of plants whose flowers are compounded of a great number of small flowers or floscules inclosed in one common calyx. The Orders of this class are,

Polygamia aequalis, or such whose floscules are all furnished with stamina and pistils.

Polygamia spuria, comprehends those which have hermaphrodite floscules in the disk, and female floscules in the margin. This circumstance is made the foundation of the three following orders. 1. *Polygamia superflua*, includes all those whose hermaphrodite flowers in the disk are furnished with stigmata, and bear seed; and whose female flowers in the radius likewise produce seeds. 2. *Polygamia frustranea*, include such as have hermaphrodite seed-bearing floscules in the disk; but whose floscules in the radius, having no stigmata, are barren. 3. *Polygamia necessaria*, is the reverse of the former: the hermaphrodite flowers in the disk want stigmata, and are barren; but the female floscules in the radius are furnished with stigmata, and produce seeds.

Polygamia segregata, many floscules inclosed in one common calyx, and each of the floscules likewise furnished with a perianthium proper to itself.

Monogamia. This order consists only of seven genera, *viz.* the *Ilumpliia*, *Seriphium*, *Coyumbium*, *Jasione*, *lobelia*, *viola*, and *impatiens*; none of which have properly compound flowers, but are ranked under this class purely from the circumstance of having their stamina united by the antheræ.

The Orders of the 21st class are partly taken from the number of stamina, and partly from the names and characters peculiar to some of the other classes; *e. g.* monœcia *triandria*, monœcia *syngenesia*, monœcia *gynandria*.

The Orders of the 22d class are founded upon the number, union, and situation of the stamina in the male flowers.

The Orders of the 23d are all taken from classical characters; *e. g.* *polygamia monœcia*, *polygamia diœcia*, and *polygamia triœcia*.

The 24th class is divided into the four following Orders: 1. *Filices*, comprehending all plants that bear their seeds in the back or edges of the leaf, and those that are called *capillary plants*. 2. *Musci*, which comprehends all the moss kind. 3. *Alga*, including the lichens, fuci, and many others whose parts of fructification are either altogether invisible or exceedingly obscure. 4. *Fungi*, comprehending all the mushroom tribe.

TABLE of the ORDERS.

Orders.

CLASS I.	consists of 2:	Monogynia, Digynia; comprehending 18 genera.
II.	3:	Monogynia, Digynia, Trigynia; 35 genera.
III.	3:	Monogynia, Digynia, Trigynia; 76 genera.
IV.	3:	Monogynia, Digynia, Tetragynia; 85 genera.
V.	6:	Monogynia, Digynia, Trigynia, Tetragynia, Pentagynia, Polygynia; 264 genera.
VI.	5:	Monogynia, Digynia, Trigynia, Tetragynia, Polygynia; 82 genera.
VII.	4:	Monogynia, Digynia, Tetragynia, Heptagynia; 7 genera.

		<i>Orders.</i>			
CLASS VIII. consists of 4:		Monogynia, Digynia, Trigynia, Tetragynia; 45 genera.	XXIII.	3:	Syngenesia, Gynandria; 55 genera.
IX.	3:	Monogynia, Trigynia, Hexagynia; 6 genera.	XXIV.	4:	Monœcia, Diœcia, Tricecia; 34 genera.
X.	5:	Monogynia, Digynia, Trigynia, Pentagynia, Decagynia; 94 genera.	APPENDIX, Palmæ.		
XI.	5:	Monogynia, Digynia, Trigynia, Pentagynia, Dodecagynia; 33 genera.	These last, though capable of being arranged in the several classes of the system, yet, on account of their singular structure, have been placed in an appendix, containing such genera as have a spadix and spathe, <i>i. e.</i> whose flowers and fruit are produced on that particular receptacle or seat called a <i>spadix</i> , protruded from a common calyx in form of a sheath called <i>spatha</i> . This order consists of trees and shrubs only. These have always a simple stem, not branched, bearing leaves at the top, resembling those of fern, being a composition of a leaf and a branch, called <i>frondes</i> ; and the corolla hath always three petals, or three deep divisions. The known genera are 10 in number.		
XII.	5:	Monogynia, Digynia, Trigynia, Pentagynia, Polygynia; 29 genera.	G E N E R A.		
XIII.	7:	Monogynia, Digynia, Trigynia, Tetragynia, Pentagynia, Hexagynia, Polygynia; 77 genera.	HAVING thus explained the distinctions of classes and orders, the next step is the investigation of the genus or family.		
XIV.	2:	Gymnospermia, Angiospermia; 102 genera.	The essence of every vegetable, says Linnæus, consists in the fructification (or mode of fruit-bearing), and the essence of the fructification consists in the flower and fruit; the essence of the flower consists in the antheræ and stigma, and the essence of the fruit consists in the seed. Hence, in his sexual theory, he necessarily makes the flower and fruit the foundation of his generic distinctions. These are generally composed of several parts; the CALYX, the COROLLA, the STAMINA, the PISTILLUM, the PERICARPIUM, the SEMINA, the RECEPTACULUM; and the presence or absence, the number, figure, proportion, and situation of the several parts, constitute the genus. But as there are few genera wherein all the parts of the <i>natural</i> character are constant in every one of the species, it is necessary to fix upon such circumstances as are constant in both genus and species, and call those the <i>essential</i> or ruling character, as well the more easily to distinguish one genus from another, as to regulate and fix the several species and their varieties to their respective genera; for which purpose, in some cases, Linnæus was obliged to have recourse to the <i>nectarium</i> , afterwards explained. The first four parts of the fructification are properly parts of the flower, and the last three are parts of the fruit.		
XV.	2:	Siliquosa, Siliculosa; 32 genera.	I. The CALYX (A), a <i>cup</i> , is the termination of the outer bark (<i>cortex</i>) of a plant. Its chief use is to inclose, support, and protect the other parts of the fructification. When present, it is seated on the receptacle:		
XVI.	7:	Triandria, Pentandria, Octandria, Decandria, Endecandria, Dodecandria, Polyandria; 36 genera.			
XVII.	4:	Pentandria, Hexandria, Octandria, Decandria; 56 genera.			
XVIII.	3:	Pentandria, Icofandria, Polyandria; 12 genera.			
XIX.	6:	Polygamia æqualis, Polygamia superflua, Polygamia frustranea, Polygamia necessaria, Polygamia segregata, Monogamia; 16 genera.			
XX.	9:	Diandria, Triandria, Tetrandria, Pentandria, Hexandria, Octandria, Decandria, Dodecandria, Polyandria; 33 genera.			
XXI.	11:	Monandria, Diandria, Triandria, Tetrandria, Pentandria, Hexandria, Hep- tandria, Polyandria, Monadelphia, Syngenesia, Gynandria; 80 genera.			
XXII.	14:	Monandria, Diandria, Triandria, Tetrandria, Pentandria, Hexandria, Octandria, Enneandria, Decandria, Dodecandria, Polyandria, Monadelphia,			

(A) The calyx is considered a part of the flower, though it more generally attends, and is permanent with, the fruit, as in the class didynamia, and most other plants; yet sometimes it drops before or with the corolla, and before the fruit is ripe, as in the class tetradynamia, and many other plants. It is also considered a part of the flower, as there is no instance of its coming out after the plant has done flowering; yet in patagonula it is observed to grow to a much larger size in the fruit than it had in the flower: In some plants there is none, or scarce perceptible; in others, it is only a rim or border (*margo*). The germen is also considered as part of the flower, as being the base of the pistillum, though it afterwards becomes the seed-vessel.

ceptacle: and is distinguished by its figure; by the number, division, and shape of its leaves, or segments; and by the following names, according to the circumstances with which it is attended.

PERIANTHIUM, (*surrounding the flower*), when its station is close to, and surrounds the other parts of the fructification, and it is then called the *perianthium of the fructification*: If it includes many floscules, as in scabiosa, and other aggregate and compound flowers, it is called a *common perianthium*: if it includes only one floscule, in such flowers it is called a *proper perianthium*: if it includes the stamina, and not the germen, it is the perianthium of the *flower*, and is said to be *above*, as in lonicera, ribes, campanula, &c.: if it includes the germen, but not the stamina, it is the perianthium of the *fruit*, and is said to be *below*, as in linnaea and morina, each of which have two calyxes and two receptacles above each other, one of the flower and the other of the fruit, and may therefore serve as instances in both cases.

INVOLUCRUM, (*a cover*), when stationed at the foot of an umbel, below the common receptacle, and at a distance from the flower: it is called *universal*, if placed under the universal umbel; and *partial*, if placed under a partial umbel.

AMENTUM, (*a thong*), meaning a *catkin*, when it consists of a great number of chafly scales, disposed along a slender axis or common receptacle, which, from its resemblance to a cat's tail, hath obtained the name *catkin*; and these flowers have generally no petals: Sometimes the same amentum supports both male and female flowers, distinct, on the same plant, as in carpinus, &c.; sometimes the male and female flowers are removed from each other on the same plant, and the amentum supports only the male flowers, and the female flowers are inclosed by a perianthium, as in corylus, juglans, fagus, &c.; and sometimes an amentum only supports male flowers on one plant, and female flowers on another plant, as salix, populus, &c.

SPATHA, (*a sheath*), being a sort of calyx growing from the stalk, bursting lengthways, and protruding a spadix or *receptacle*, supporting one or more flowers, which have often no perianthium; and consists either of one leaf, with a valve or opening on one side only, as in narcissus, galanthus, and the greater number of spathaceous plants; or of two leaves, with two valves or openings, as in stratiotes, &c.; or is imbricated, as in musa, &c. with one or two valves.

GLUMA, (*a husk*); this chiefly belongs to corn and grasses, consisting of one, two, three, or more valves, folding over each other like scales, and frequently terminated by a long, stiff, pointed prickle, called the *arista* (beard or awn).

CALYPTRA, (*a veil or covering*), the proper calyx to mosses; it is placed over the anthera of the stamina, resembling an extinguisher, a hood, or monk's cowl.

VOLVA, from its *insheathing* or *involving*, is the proper calyx to fungusses, being membranaceous, and surrounding the stalk or pillar before their expansion.

[It is often difficult to distinguish the calyx from the bractea, or floral leaves, which are found on many plants, situated on the flower-stalks; and are often so near to the lower parts of the fructification as to be confounded with, and mistaken for, the calyx, as in tilia, helleborus, passiflora, &c. (in helleborus the calyx

is wanting): but they may be best distinguished by this rule; the floral leaves differ in shape and colour from the other leaves of the plant, but are commonly of the same duration; whereas the calyx always withers when the fruit is ripe, if not before.]

II. The **COROLLA**, (*a wreath or little crown*), is the termination of the inner bark (*liber*) of the plant; which accompanies the fructification, in the form of leaves variously coloured: it is generally seated on the receptacle, sometimes on the calyx; serving as an inner work of defence to the part it incloses; as the calyx, which is usually of stronger texture, does for an outer work. The leaves of which the corolla are composed are called *petals*, by the number, division, and shape of which it is distinguished. It is said to be *below*, when it includes the germen, and is attached to the part immediately below it, as in salvia, borago, convolvulus, primula, &c.; and it is said to be *above*, when it is placed above the germen, as in lonicera, ribes, cratægus, &c. In respect to duration, the corolla either continues till the fruit is ripe, as in nymphæa; or falls off at the first opening of the flower, as in actæa, thalictrum; or falls off with the stamina and other parts of the flower, as in most plants; or does not fall, but withers, as in campanula, cucumis, and others.

There is also a part which Linnæus says principally belongs to the corolla, as an appendage to the petals; which he calls the *nectarium* (from nectar the fabled drink of the gods); and is that part containing the honey, which is the principal food of bees and other insects. But, though in such plants where it is found, it may more commonly be attached to the corolla, and be then most evident; yet it is almost as often attached to other parts of the fructification: Linnæus therefore chiefly makes use of it as an essential character in many of the genera, as being less variable than his other distinctions; and observes, that when it is distinct from the petals, that is, not united with their substance, those plants are generally poisonous: The tube or lower part of monopetalous flowers, he considers as a true nectarium, because it contains a sweet liquor. But as it affords very singular varieties in other instances, it hath obtained the following distinctions.

1. **CALYCINE NECTARIA**, such as are situated upon, and make a part of, the calyx; as in tropæolum, monotropa, &c.

2. **COROLLACEOUS NECTARIA**, such as are attached to the corolla. These are called *calcarate* (from *calcar*), when they resemble a spur or horn: which are either on flowers of one petal, as in valeriana, antirrhinum, &c.; or on flowers of many petals, as in orchis, delphinium, viola, fumaria, &c. Or the nectarium lies within the substance of the petals, as in fritillaria, liliium, berberis, iris, ranunculus, &c.

3. **STAMINEOUS NECTARIA**, such as attend the stamina, and are either seated upon the anthera, as in adenanthera; or upon the filaments, as in lamus, dictamnus, campanula, &c.

4. **PISTILLACEOUS NECTARIA**, such as accompany the pistillum, and are placed upon the germen, as in hyacinthus, butomu., cleinanthus, hesperis, &c.

5. **RECEPTACULACEOUS NECTARIA**, such as join to the receptacle, as in polygonum, sedum, sempervivum, &c.

6. **NECTARIA**, that crown the corolla, that is, when placed in a series or row within the petals, though entirely unconnected with their substance, as in *passiflora*, *lychnis*, *silene*, &c.; and in this situation it often resembles a cup, as in *narcissus*, &c.

7. **NECTARIA** of singular construction, being such as cannot properly be placed under any of the foregoing distinctions, as in *amomum*, *curcuma*, *salix*, *urtica*, &c.

The proper use of the nectarium, and why it should have such very different situations, is not yet known: but as it is found in most plants, there is great reason to believe it an essential part in the fructification, though not always perceptible.

III. The **STAMINA**, (*threads* or *chives*); the males of the flower, proceeding from the wood of the plant, each stamen consisting of two parts, viz. the filament and the antheræ. In most flowers they are placed upon the receptacle, within the corolla, and round the germen; and are chiefly distinguished by number.

The **FILAMENT** (from *filum*, a thread), is the thread-shaped part of the stamen, serving as a footstalk to elevate the antheræ, and is sometimes found to have jags or divisions (*laciniæ*); which are either two, as in *salvia*; three, as in *fumaria*; or nine, as in the class *diadelphia*. They are also distinguished by their form or figure, as awl-shaped, thread-shaped, hair-like, spiral, revolute, &c.: by their proportion, as equal, unequal, irregular, long, or short: and by their situation, being generally opposite to the leaves or divisions of the calyx, and alternate with the petals; that is, when the divisions of the calyx are equal in number to the petals, and to the stamina. In monopetalous flowers they are generally inserted into the corolla; but scarcely ever in flowers of more than one petal, but into the receptacle: Yet in the class *icosandria* they are inserted into the calyx or corolla (though the flowers have many petals), as also in a few other plants. But in the class *polyandria*, and most other polypetalous plants, they are inserted into the receptacle, like the calyx and corolla. The class *gynandria*, however, is an exception to the above rules, where the stamina are placed upon the pistillum, or female part of the flower; and are sometimes without filaments.

The **ANTHERA** (from *anthera*, a flower), emphatically so called from its great utility in the fructification, is the top or summit of the filament, containing the impregnating pollen or farina; and is either one to each filament, as in most plants; or one common to three filaments, as in *cucurbita*, &c.; or one common to five filaments, as in the whole class *syngenesia*: or sometimes there are two antheræ to each filament, as in *ranunculus* and *mercurialis*; three to each filament, as in *fumaria*; five to three filaments, as in *bryonia*; or five to each filament, as in *theobroma*. The anthera is also distinguished by its form or figure, as oblong, round, angular, &c. It also consists of one or more cells, which burst differently in different plants; either on the side, as in most plants; on the top; or from the top to the base. It is also fastened to the top of the filament, either by its base, as in most plants, or horizontally by its middle, to the top of the filament, so poised as to turn like a vane (*versatilis*): or it is fixed by its side, leaning to the top of the filament,

then called incumbent: or it sometimes grows to the nectarium, as in *costus*; to the receptacle, as in *arum*; to the pistillum, as in the class *gynandria*.

IV. The **PISTILLUM**, or the female of the flower, proceeding from the pith of the plant. It is that erect column which is generally placed in the centre of the flower, amidst the stamina; and consists of three parts, the germen, the style, and the stigma.

1. **GERMEN** (a *bud*), is the base of the pistillum, supporting the style. After a process of nature, it becomes a seed-vessel, and may therefore be considered as the rudiment of the pericarpium. It is distinguished by its shape, number, and situation; and is said to be *above* or *below*, according to its situation above or below the attachment of the corolla.

2. The **STYLE** (from *stylus*, a pillar), is that part which elevates the stigma from the germen, in order to receive the influence of the stamina, and to convey the effects down to the germen as through a tube. It is distinguished either by its number, which, when present (or when absent, the number of stigmata), gives rise to most of the orders, and are called so many females; or by its divisions (*laciniæ*), being double, treble, or quadruple, &c. though joined at the base; or by its length, being longer, shorter, or equal with the stamina; or by its proportion, being thicker or thinner than the stamina; or by its figure, being angular, cylindric, awl-shaped, bent, &c.; or by its situation, being generally on the top of the germen, tho' in some instances supposed to be both above and below, as in *capparis* and *euphorbia*; unless the lower part in these genera be considered as the extension of the receptacle: It is also often placed on the side of the germen, as in *hirtella*, *furiana*; also in *rosa*, *rubus*, and the rest of the plants in the class and order *icosandria polygynia*. With respect to duration, it generally falls with the other parts of the flower; but in some plants is permanent, and attends the fruit to its maturity, as in the class *tetradynamia*. In flowers which have no style, the stigma adheres to the germen.

3. The **STIGMA** (a *mark*), when single, is generally placed like a head on the summit of the style: when several, they are either placed on the top, or regularly disposed along the side; and covered with a moisture, to retain the pollen of the antheræ. It is distinguished either by its number, being single in most plants; by its divisions; by its figure or shape; by its length; by its thickness; and by its duration, as in most plants it withers when the germen is become a seed-vessel; in some it is permanent, as in *papaver*.

V. The **PERICARPIUM**, (*round the fruit*); the germen grown to maturity, and now become a matrix or seed-vessel. All plants, however, are not furnished with a seed-vessel, as in *corylus*, &c. In many, it is supplied chiefly by the calyx, which converging incloses the seeds till they arrive at maturity; as is the case with the rough-leaved plants, and the labial and compound flowers of the several classes *pentandria*, *didynamia*, and *syngenesia*. Sometimes the receptacle supplies the office of seed-vessel, as in *gundelia*; and sometimes the nectarium, as in *carex*. The pericarpium is situated at the receptacle of the flower, either above or below, or both, as in *saxifraga* and *lobelia*; and is distinguished by the following appellations, according to its different structure.

1. **CAPSULA** (a *little chest* or *capsel*), which is frequently succulent whilst green; but when ripe, it is a dry husky seed-vessel, that cleaves or parts in some determinate manner to discharge its contents; and by some sort of elastic motion, the seeds are often darted forth with considerable velocity, as in distamus, &c. It opens also various ways; either at the top, as in most plants; at the bottom; at the side; horizontally across the middle; or longitudinally; and if it is articulated or jointed, it opens at each of the joints, which contains a single seed. It is further distinguished externally, by its number of valves; and internally, by the number of its cells or divisions, wherein the seed is inclosed; as also by its shape and substance.

2. **SILIQVA** (a *pod*), which is a pericarpium of two valves; but as some are long, others round or broad, Linnæus thought it necessary to distinguish them by their form into *siliqua* and *silicula*; which gives rise to the two orders in the class tetradynamia. The *siliqua* means a long pod, being much longer than broad, as in brassica, sinapis, &c.; the *silicula* (a little siliqua), is a roundish pod, either flat or spherical, and the length and breadth nearly equal, as in lunaria, draba, thlaspi, &c. In both, the apex, which had been the style, is often so long beyond the valves, as to be of equal length with the pod; and the seeds in both are fastened alternately by a slender thread, to both the futures or joinings of the valves.

3. **LEGUMEN** (*pulse*), is also a pod, and is likewise a pericarpium of two valves, wherein the seeds are fastened to short receptacles along the upper future only, on each side, alternate: this chiefly belongs to the papilionaceous or butterfly flowers of the class diadelphia.

4. **FOLLICULUS** (a *little bag*, in former editions called *conceptaculum*), is a pericarpium of one valve only, opening lengthwise on one side, and the seeds not fastened to the future, but to a receptacle within the fruit, as in apocynum, asclepias, &c.

5. **DRUPA** (from *drupes*, unripe olives), is a pericarpium that is succulent, or pulpy, having no valve or external opening. It contains within its substance a stone or nut; that is, a seed inclosed with an hard ligneous crust, as olea, cornus, juglans, prunus, amygdalus, &c.: and when the drupa is seated below the calyx, it is furnished with an umbilicus like the pomum.

6. **POMUM** (an *apple*), is also a pericarpium that is succulent or pulpy, and without valve; but containing in the middle a membranous capsule, with several cells or cavities containing the seeds; and at the end opposite to the footstalk there is generally a small cavity called *umbilicus* (the navel), from its resemblance to that part in animals, and which was formerly the calyx, seated above the fruit, and persistent, as in pyrus, cucumis, cucurbita, &c.

7. **BACCA** (a *berry*), is also a pulpy pericarpium without valve, inclosing one or more seeds, which have no membranous capsule or covering, but are disposed promiscuously through the pulp, as in solanum, &c. and are generally placed on footstalks attached to receptacles within the pulp, as in ribes, &c. The berry also admits of the following distinction: It is said to be *proper*, when it is a true pericarpium formed of a germen; and *improper*, when it is formed from other

parts of the fructification; as in morus, rosa, juniperus, taxus, &c. A large succulent calyx becomes a berry; and in juniperus the three petals become the umbilicus; in poterium the berry is formed of the tube of the corolla; in fragaria, &c. it is formed of the top of the receptacle; in rubus, &c. it is formed from a seed, which is the receptacle of the berry; in rufcus, &c. it is inclosed within and is a part of the nectary. The berry is commonly either round or oval, and is frequently furnished with an umbilicus, as in ribes, &c.: It does not naturally open to disperse the seeds like the capsule, that office being performed by birds and other animals.

8. **STROBILUS** (a *cone*), is a pericarpium formed of an amentum, being a seed-vessel composed of woody scales placed against each other in the form of a cone, opening only at the top of the scales, being firmly fixed below to a sort of axis or receptacle, occupying the middle of the cone; as in pinus, thuya, cupressus, &c.

VI. **SEMINA** (the *seeds*). A *seed* is the essence of the fruit of every vegetable; and is defined by Linnæus to be "a deciduous part of the plant, containing the rudiments of a new vegetable, fertilized by the sprinkling of the pollen;" and they are distinguished according to number, shape, texture, appendage, &c. A seed, properly so called, consists of the five following parts; to which is added the nux and propago.

1. The **CORCULUM** (from *cor*, a heart), is the essence of the seed, and principle of the future plant; and consists of two parts, viz. plumula and rostellum. *Plumula* is the scaly part and essence of the corculum, which ascends and becomes the stem or trunk of the plant: it extends itself into the cavity of the lobes or cotyledons, and is terminated by a small sort of branch resembling a feather. *Rostellum* is the plain or simple part of the corculum, which descends into the earth, and becomes the root: its form is that of a small beak, placed without the lobes, and adhering internally to the plumula.

2. The **COTYLEDONS** (from *cotyledon*, the hollow of the huckle-bone), are the thick porous side-lobes of the seed, consisting of farinaceous matter, and which involve and for some time furnish nourishment to the embryo plant, but wither and die away when it becomes strong. If a plant be cut below the cotyledons, it will scarce ever put out fresh leaves, but withers and decays; if it is cut above the cotyledons, it generally shoots out afresh, and continues to grow: Therefore, if plants whose cotyledons rise above ground, as turnips, &c. be cut or eat to the ground by cattle, they decay; but where the cotyledons remain below ground, as in grasses, and are cut or eat to the ground, they will shoot out afresh. The cotyledons are also called the *seminal* or *seed* leaves: some plants have only one, as in grasses and in cuscuta, &c.; others two, as in vicia, &c.; linum hath four; cupressus hath five; and pinus, Linnæus saith, hath ten. The cotyledons in mushrooms, ferns, and mosses, are not sufficiently ascertained to know if they have any.

3. The **HILUM** (the black spot on a bean, called the *eye*), is the external mark or scar on the seed, where it was fastened within the pericarpium.

4. The **AKILLUS**, a term used to express the proper exterior coat or covering of the seed; which falls off spontaneously, and is either cartilaginous or succulent:

lent: yet seeds are said to be *naked*, when not inclosed in any sort of pericarpium, as in the class and order didynamia gymnospermia.

5. The CORONULA, is either a little sort of calyx adhering to the top of the seed, like a little crown, and assisting to disperse it by flying, as in scabiosa, knautia, &c. where the little calyx of the floret becomes the crown of the seed: Or a down; which is either feathery, as in valeriana, leontodon, gnaphalium, &c.; or is bairy, as in tuffilago, fenecio, hieracium, &c. [This down has generally been thought intended to disperse the seeds; yet as it frequently breaks off when those have flown to some distance, and is seen flying alone, some have imagined that the down is only intended as a defence of the seed till arrived at maturity.] —The coronula is also either sitting (*sessilis*), that is, attached close to the seed, as in hieracium, &c.; or footstalked (*stipitatus*), by a thread elevating and connecting the crown or tuft with the seed, as in lactuca, crepis, &c. Some seeds are also furnished with a wing, a tail, a hook, an awn, &c. all coming under the term *coronula*, and tending either to disperse or fix the several seeds to which they belong. Some seeds are also furnished with an elastic force, in order to disperse them; which is either in the calyx, as in oats and some others; in the pappus, as in centaurea-crupina; or in the capsule, as in geranium, fraxinella, spurting cucumber, &c. Other seeds, especially those whose pericarpium is a berry, as also the nutmeg and other nuts, are dispersed by birds and other animals.

Nux (*Nut*), a seed inclosed in an hard woody substance, called the *shell*, which is one-celled, two-celled, &c. and the inclosed seed is called the *kernel*.

PROPAGO. The seed of a moss, not coming under the above description, Linnæus calls *Propago* (a *slip* or *shoot*); which hath neither coat nor cotyledon, but consists only of a naked plumula where the rostellum is inserted into the calyx of the plant.

VII. The RECEPTACULUM is the base which receives, supports, and connects the other parts of the fructification; but it is only mentioned by Linnæus (in his *Gen. Pl.*) when it can be introduced as a character varying in shape and surface, as principally in the class syngenesia. It hath the following distinctions.

PROPER, when it supports the parts of a single fructification only: When it is a base to which only the parts of the flower are joined, and not the germen, it is called a *receptacle of the flower*; in which case, the germen being placed below the receptacle of the flower, hath a proper base of its own, which is called the *receptacle of the fruit*: And it is called a *receptacle of the seeds*, when it is a base to which the seeds are fastened within the pericarpium. In some simple flowers, where the germen is placed above the receptacle of the flower, the fruit hath a separate receptacle, as in magnolia, uvaria, &c. in which genera the numerous germina are seated upon a receptacle rising like a pillar above the receptacle of the fructification.

COMMON, when it supports and connects a head of flowers in common; as in the amentum, and other aggregate flowers.

UMBELLA, which Linnæus calls a *receptacle*. See aggregate flowers, under the head of INFLORESCENCE, above, p. 427.

CYMA (a *sprout*), is also called a *receptacle*. *Ibid.*

RACHIS (the *back-bone*); a filiform receptacle, collecting the florets longitudinally into a spike, in many of the glumose flowers, as wheat, barley, rye, &c.

SPADIX, anciently only signified the receptacle of a palm (*phœnix*) issuing out of a spathe, and branched; but now every flower-stalk that is protruded from a calyx called *spatha*, is denominated a *spadix*, as in narcissus, &c.

When all these parts are understood, the genus may be easily investigated. But in order still further to assist the young botanist, we shall give a systematic description of a few common plants belonging to different classes. [The numbers refer to the figures in the subjoined *Explanation of the Plates*.]

DIANDRIA MONOGYNIA.

VERONICA, OR SPEEDWELL.

THE CALYX is a perianthium (18) divided into four parts or segments, and persistent (*i. e.* does not fall off till the seeds are ripe); the segments are sharp and lance-shaped.

THE COROLLA (11) consists of one rotated petal; the *tubus* (11) is about the same length with the calyx; the *limbus* (11) is plane, and divided into four oval segments, the lowest of which is narrower than the rest, and the one immediately opposite broader.

THE STAMINA (12) are two, narrower below, and inclined upwards; the antheræ (12) are oblong.

THE PISTILLUM (12) has a compressed germen (12), a filiform or thread-like stylus (12), about the same length with the stamina, and a little declined to one side: the stigma (12) is simple.

THE PERICARPIUM (12) is a heart-shaped capsule, compressed at the top, and having two cells or partitions, and four valves.

THE SEEDS are roundish and numerous.

ICOSANDRIA POLYGAMIA.

FRAGARIA, OR STRAWBERRY.

THE CALYX is a perianthium consisting of one plain leaf, divided into ten segments, each alternately narrower.

THE COROLLA has five roundish open petals inserted into the calyx.

THE STAMINA are 20 in number, subulated or tapering, shorter than the corolla, and inserted into the calyx. The antheræ are lunulated, or shaped like a crescent.

THE PISTILLUM consists of many small germina collected into a little head or knob. The styli are simple, and inserted into the sides of their respective germina. The stigmata are simple.

THE PERICARPIUM is wanting in this plant. But the common receptacle of the seeds, which supplies the place of a pericarpium, is a roundish oval berry, plain at the base, pretty large, soft, pulpy, coloured, and sedulous, *i. e.* falls off before the seeds be ripe.

THE SEEDS are small, pointed, very numerous, and dispersed through the superficial part of the receptacle.

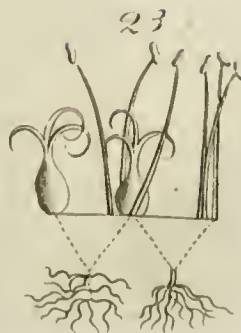
DIDYNAMIA ANGIOSPERMIA.

DIGITALIS, OR FOX-GLOVE.

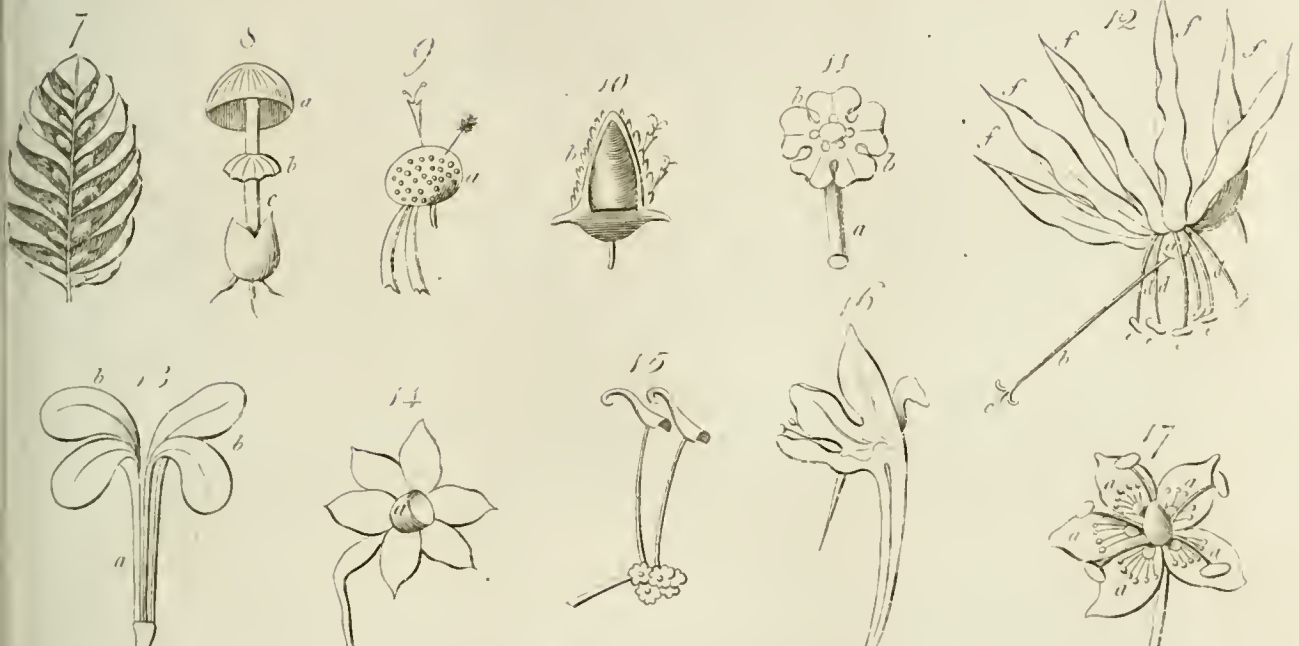
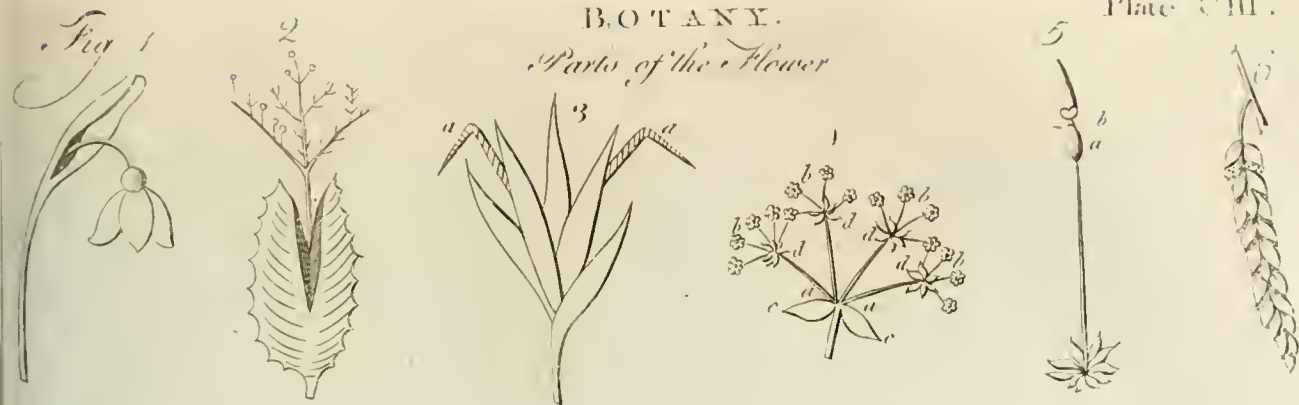
THE CALYX is a perianthium divided into four deep-

BOTANY.
Classes.

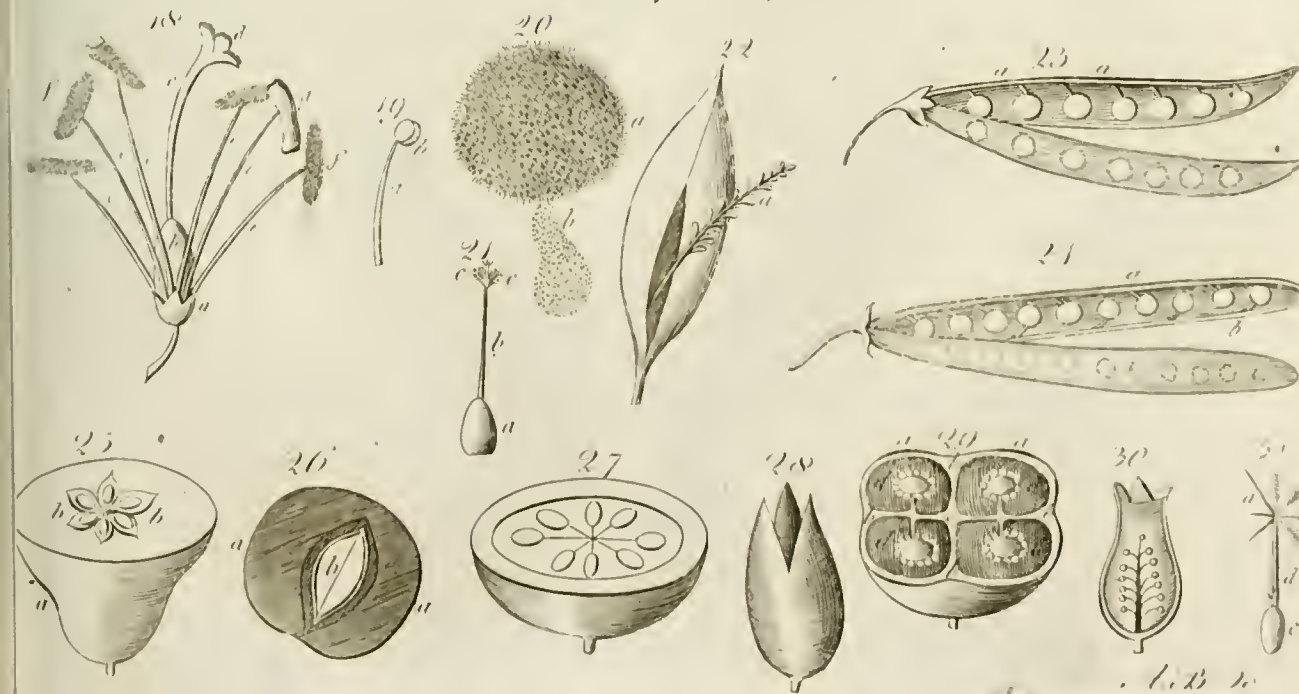
Plate CII.

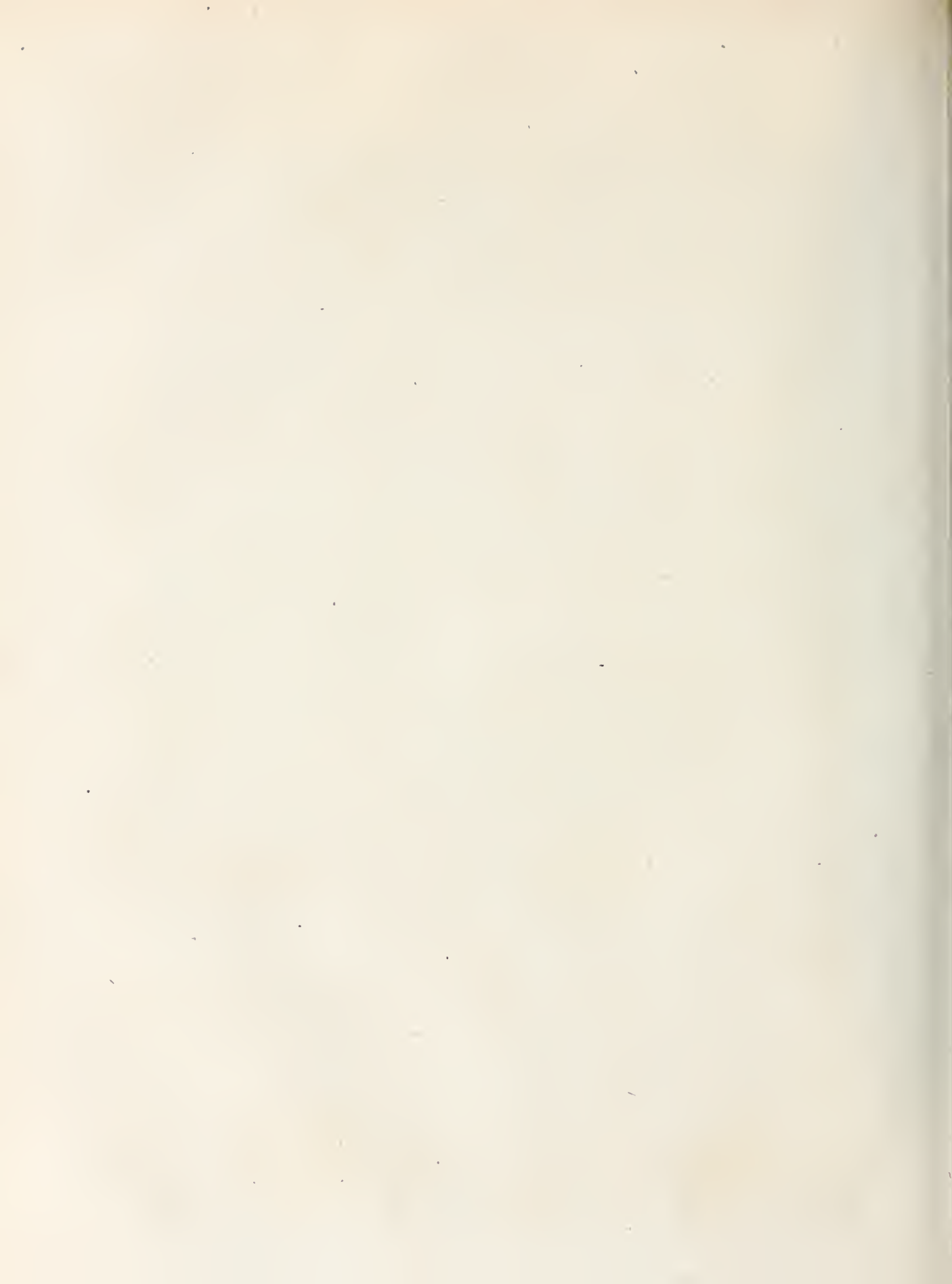


Parts of the Flower



Parts of Fruclification





deep-cut segments, which are roundish, sharp at the top, persistent, and the highest one is narrower than the rest.

The **COROLLA** consists of one bell-shaped petal; the tubus is large, open, ventricose or bellied at the back-side; the base is cylindrical and narrow: the limbus is small, and divided into four segments; the superior segment is more open and more emarginated than the rest.

The **STAMINA** are four, subulated (44), inserted into the base of the corolla, and inclined to the same side; two of them are longer than the other two: the antheræ are divided into two parts, and pointed at the top.

The **PISTILLUM** consists of a germen sharp at the top, a simple style situated like the stamina, and an acute stigma.

The **PERICARPIUM** has an oval capsule, of the same length with the calyx, sharp at the top, having two cells, and two valves which burst open at both sides.

The **SEEDS** are many and small.

TETRADYNAMIA SILIQUOSA.

SINAPIS, OR MUSTARD.

The calyx is a perianthium consisting of four open or spreading leaves; the leaves are linear (43), concave, furrowed, disposed in the form of a cross, and deciduous.

The **COROLLA** consists of four cruciform petals: the petals are roundish, plain, open, entire or not emarginated, with erect linear unguis (13) scarcely so long as the calyx.

The **NECTARIA** (14, &c.), or *glandule nectarifera*, are four, of an oval figure, one of which is situated on each side betwixt the short stamina and stylus, and likewise one on each side between the long stamina and the calyx.

The **STAMINA** have six subulated erect filaments, two of which are of the same length with the calyx, and always opposite to each other, and the other four are uniformly longer: the *antheræ* are erect, and sharp at the top.

The **PISTILLUM** has a cylindrical germen; the stylus is of the same length with the germen, and the same height with the stamina; the stigma is entire, with a little knob or button.

The **PERICARPIUM** is an oblong, scabrous, double-celled, two valved pod, gibbous, and full of little protuberances on the under parts: the dissepimentum (29) is large, compressed, and often twice the length of the valves.

The **SEEDS** are many and round.

MONODELPHIA POLYANDRIA.

MALVA, OR COMMON MALLOW.

The **CALYX** is a double perianthium: the exterior one consists of three lanceolated, loose, persistent leaves; the interior has but one large, broad, persistent leaf, divided into five segments.

The **COROLLA** has five plain leaves united at the base, heart-shaped, and premorse, (54).

The **STAMINA** consist of numerous filaments, united into a cylindrical form below, loose above, and inserted into the corolla: the antheræ are kidney-shaped.

The **PISTILLUM** has an orbicular germen, a cylin-

dricul short stylus, and many bristly stigmata of an equal length with the stylus.

The **PERICARPIUM** consists of several distinct capsules joined by an articulation, resembling a depressed globe, and opening from within when ripe: the receptaculum is a kind of column binding the capsules together.

The **SEEDS** are solitary, and kidney-shaped.

SYNGENESIA POLYGAMIA-ÆQUALIS.

LEONTODON, OR DANDELION.

The **common CALYX** is oblong, and imbricated: the *interior scales* are linear, parallel, equal, and open at the top; the *exterior scales* are fewer in number, and frequently reflected at the base.

The **compound COROLLA** is uniform and imbricated.

The *small hermaphrodite corollæ* are very numerous and equal.

The *corolla* proper to each floscule consists of one ligulated (*i. e.* plain and expanded outwards), linear, truncated (*i. e.* terminated by a transverse line), and five-toothed petal.

The **STAMINA** consist of five very small capillary filaments: the antheræ are connected together, and form a cylindrical tube.

The **GERMEN** of the *pisillum* is situated below the proper corolla. The stylus is filiform, and nearly of the same length with the corolla: the stigmata are two, and turned back in a spiral form.

This plant has no *pericarpium*.

The **SEEDS** are solitary, oblong, rough, and terminated by a long pappous stipes (31).

The receptacle, or common base of the floscules (9), is naked, and full of small hollow points.

GYNANDRIA PENTANDRIA.

PASSIFLORA, OR PASSION-FLOWER.

The **CALYX** is a perianthium consisting of five plain coloured leaves, similar to those of the corolla.

The **COROLLA** consists of five plain obtuse semi-lanceolated leaves, of the same magnitude and figure with those of the calyx.

The *nectarium* is a triple corona, the exterior of which is longest, surrounding the stylus within the petals, and flattened above.

The **STAMINA** are five, subulated, open, and connected to the stylus at the base of the germen: the antheræ are oblong, obtuse, and incumbent.

The **PISTILLUM** consists of an erect cylindrical stylus, upon the top of which an oval germen is placed: the styli are three, thicker and wider above: the stigmata are roundish knobs.

The **PERICARPIUM** is a fleshy, suboval, one-celled berry, resting upon the stylus.

The **SEEDS** are numerous, oval, and each of them inclosed in a small membrane.

MONOECIA TETRANDRIA.

URTICA, OR COMMON NETTLE.

The **CALYX** of the male flowers is a four-leaved perianthium; the leaves are roundish, concave, and obtuse.

The **COROLLA** has no petals; but there is a small ur-

ceolated

ceolated (*i. e.* an inflated skin, gibbous on each side) nectarium in the centre of the flower.

The STAMINA consist of four fabulated open filaments, of an equal length with the calyx, and one of them is placed between each leaf of the calyx: the *antheræ* have no cells.

The CALYX of the female flowers is a double-valved, oval, concave, erect, persistent, perianthium.

The COROLLA is wanting.

The PISTILLUM has an oval germen, no stylus, and a downy stigma.

They have no *pericarpium*.

The SEED is single, oval, shining, and a little compressed.

S P E C I E S.

THE genera include a great number of relative species, distinguished by the specific difference of the root, the trunk, the branches, the leaves, &c. (yet all agreeing in the essential generic character); and are called by trivial names (expressive of the difference or some other circumstance) added to the generic name. In order to investigate the species, therefore, it is necessary to understand those differences, and be acquainted with the names by which they are expressed. Several of these have been already incidentally explained; but for a complete enumeration, the reader must have recourse to the nomenclature subjoined to this section. And to illustrate the manner in which those terms are used, we shall here give a few examples; referring, by numbers, to the figures on the plates.

Class II. DIANDRIA.

Order, MONOGYNIA.

Genus, VERONICA, or SPEEDWELL.

Species, *Veronica arvensis*, has solitary flowers; cut, sessile (130), and cordated (46), leaves.

Veronica agrestis, has solitary flowers; cut, cordated (46), and petiolated (129), leaves.

Class XVI. MONODELPHIA.

Order, POLYGYNIA.

Genus, MALVA, or MALLOW.

Species, *Malva spicata*, has tomentose (84), crenated (74), and cordated (46), leaves, and oblong hairy spicæ (34).

Malva sylvestris, has an erect (119) herbaceous stalk (148), with acute (74), seven-lobed (50) leaves, and hairy pedunculi and petioli (129).

Class XIX. SYNGENESIA.

Order, POLYGAMIA ÆQUALIS.

Genus, CARDUUS, or THISTLE.

Species, *Carduus helenioides*, or *melancholy thistle*, has lanceolated (42), teathed (66), amplexicaule (132) leaves; with unequal, ciliated (86), small spines (157).

Class XXIV. CRYPTOGAMIA.

Order, FILICES,

Genus, ASPLENIUM, or MAIDENHAIR.

Species, *Asplenium trichomanes*, has a pinnated (104) frons (144); the pinnæ are roundish (38), and crenated (74).

To these examples we shall add a description of a plant, according to the *natural* character, from the *Genera Plantarum*; and according to the *essential* character, with the several species, from the *Systema Vegetabilium*, as translated by the Litchfield Society.

P A P A V E R, P O P P Y.

NATURAL CHARACTER.

CALYX. A perianthium two-leaved, ovate, end-nick'd; *leaflets* subovate, concave, obtuse, deciduous.

COROLLA. Petals four, roundish, flat, expanding, large, narrower at the base, less alternately.

STAMINA. Filaments numerous, capillary, much shorter than the corolla: *antheræ* oblong, compressed, erect, obtuse.

PISTILLUM. Germ. roundish, large; *stylus* none; *stigma* peltated, flat, radiated.

PERICARPIUM. A capsule crown'd with the large flat stigma, unilocular, semi-multi-unilocular, gaping at the top under the crown with many apertures.

SEMINA. Seeds, numerous, very small; *receptacles*, longitudinal folds, of equal number with the rays of the stigma adhering to the sides of the pericarpium.

ESSENTIAL CHARACTER.

PAPAVER. *Corolla* four-petal'd, *calyx* two-leav'd, *capsule* one-cell'd, gaping with pores under the permanent stigma. *Poppy*.
* *With hispid capsules.*

1 P. HYBRIDUM. Capsules subglobular, brawny, hispid, stem leafy, many flower'd. *mule.*

2 P. ARGEMONE. Capsules club'd, hispid, stem leafy, many-flower'd.

3 P. ALPINUM. Capsules hispid, scape one-flower'd, naked, hispid, leaves twice-feather'd. *alpine.*

4 P. NUDICAULE. Capsules hispid, scape one-flower'd, naked, hispid, leaves simple, feather-finnous. *naked stem.*
** *With smooth capsules.*

5 P. RHOEAS. Capsules smooth, globular, stem hairy, many-flower'd, leaves feather-cleft, gash'd.

6 P. DUBIUM. Capsules oblong, smooth, stem many-flower'd, with bristles appress'd, leaves feather cleft, gash'd. *dubious.*

7 P. SOMNIFERUM. Calyxes and capsules smooth, leaves stem-clasping, gash'd. *somniferous.*

8 P. CAMERICUM. Capsules smooth, oblong, stem many-flower'd, polih'd, leaves feather'd, gash'd.

9 P. ORIENTALE. Capsules smooth, stem one-flower'd, rugged, leafy, leaves feather'd, saw'd. *oriental.*

Lastly, we shall subjoin a complete description of a plant reduced to its class, order, genus, and species, with figures of all the parts necessary for that purpose.

RHEUM PALMATUM, or *True Rhubarb*,

Plate CVII.

The flower of this plant has no CALYX.

The COROLLA, *dl*, consists of one petal, narrower at the base, not perforated, and divided in the margin into six obtuse segments, one less and one larger alternately; the petal is marcescent, *i. e.* decays, but does not fall off till the seeds be ripe.

The STAMINA, *ee*, consist of nine capillary filaments, inserted into the corolla, and about the same length with it. The *antheræ* are didymous (*i. e.* appear to be double), oblong, and obtuse.

The PISTILLUM, *f*, has a short three-sided germen. It can hardly be said to have any styli; but has three reflected plumose stigmata.

The PERICARPIUM is wanting.

Each flower contains but one large, three-sided, acute SEED *g*, with a membranaceous edge.

The number of *Stamina* determines this plant to belong to the ENNEANDRIA *Class*; and the number of *Stigmata* fixes its *Order* to be TRIGYNIA. The other parts of the above description clearly demonstrate the genus to be the RHEUM or *Rhubarb*, and sufficiently distinguish it from the *Laurus*, *Tinus*, *Cassia*, and *Butomus*, the only other genera belonging to this class.

The SPECIFIC mark is taken from the leaves, which are PALMATED (58), and sharp and tapering at the points. There are but five species of *Rheum*, none of whose leaves are *palmated*, except the species now described.

EXPLANATION of the PLATES.

PLATE CII. exhibits the 24 classes; fig. 1. representing the first class, or Monandria; fig. 2. the second class, or Diandria; fig. 3. the third class, or Triandria; and so on, according to the enumeration in the table.

Plate CIII. represents the parts of a plant upon which the investigation of the GENUS depends.

Parts of the FLOWER.—Fig. 1. *Spatha*. Fig. 2. *Spadix*. Fig. 3. *Gluma*, or glume; *bb*, *arista*, or awn. Fig. 4. *Umbella* and *involucrum*: *a*, *Umbella universalis*, or universal umbel; *b*, *partialis*, or partial umbel; *c*, *Involucrum universale*, universal involucre; *d*, *partiale*, or partial involucre. Fig. 5. *Calyptra*: *a*, *capitulum*; *b*, *operculum*; parts of mosses. Fig. 6. *Amentum*. Fig. 7. *Strobilus*. Fig. 8. *a*, *Pileus*; *b*, *volva*; *c*, *stipes*: parts of fungi or mushrooms. Fig. 9. *a*, *Receptaculum commune nudum*, the common receptacle, or base of the flower, when the stamina, pistillum, capsule, &c. are taken off. Fig. 10. *Receptaculum commune paleis imbricatum*, or common receptacle imbricated with paleæ or membranaceous lamellæ. Fig. 11. *Corolle monopetalæ*—*a*, *tubus*; *b*, *limbus*: *i. e.* a tube, *b* the edge or margin, of a monopetalous corolla. Fig. 12. is a flower laid in a proper position for showing its different parts. *a*, *Germen*, which includes the seeds and capsule in which they are inclosed; *b*, *stylus*, a continuation of the germen; *c*, *stigma*, or top of the stylus; *ddd*, *filamenta*, or threads; *eeeee*, *antheræ*; *fffff*, *Petala*, or flower-leaves. Fig. 13. *a*, the *ungues* or *claws*, *b* the *laminae* or plates, of a poly-petalous corolla. Fig. 14. *a*, *Nectarium campanulatum in narcisso*, or bell-shaped nectarium of the narcissus. Fig. 15. *Nectarium cornutum in oenite*, horned nectarium of the monkhood. Fig. 16. *Horned necta-*

rium in the calyx of the tropæolus. Fig. 17. *a a a a*, *Nectarium in parnassia*; the nectarium of the parnassia grafs are six in number, each of which have 13 styli, with round buttons on their tops.

Parts of the FRUCTIFICATION.—Fig. 18. *a*, *Perianthium*; *b*, *germen*; *c*, *stylus*; *d*, *stigma*; *ee*, *filamenta*; *ff*, *antheræ dehiscentes*, or antheræ shedding the pollen or dust; *g*, *anthera integra*, *i. e.* the appearance of the anthera before it sheds the pollen. Fig. 19. *a* the *filamentum*, and *b* the *anthera*, separated from the flower. Fig. 20. *a*, one grain of the pollen magnified by a microscope; *b*, *calculus elasticus*, *i. e.* an elastic aura supposed to be necessary for impregnating the seeds. Fig. 21. *a*, *Germen*; *b*, *stylus*; *c*, *stigma*. Fig. 22. *Falliculus*: The seeds not adhering to the future, are inclosed in a particular receptacle *a*. Fig. 23. *Legumen*, or a double-valved pericarpium, having the seeds fixed only to one of the futures *aa*. Fig. 24. *Siliqua*, or a double-valved pericarpium with the seeds fixed to both futures or margins *ab*. Fig. 25. *Pomum*, or a fleshy pericarpium, containing a capsule in which the seeds are inclosed, as in the apple, &c.; *a*, the *pericarpium*; *b*, the *capsule* or seed-case. Fig. 26. *a*, *Drapa*, or pericarpium containing a nut or stone, and having no valve. *b*, The *nucleus*, or stone. Fig. 27. *Bacca*, or berry, a pericarpium containing naked seeds dispersed through the pulpy part. Fig. 28. *Capsula apice dehiscens*, a capsule opening at the top to allow the seeds to fall out. Fig. 29. Four capsules inclosed in a common pericarpium. *aa*, The valves; *bb*, the dissepi-mentum, or partition which separates the different seed-capsules from one another; *c*, *columnella*, or central column, by which the capsules are connected. Fig. 30. A capsule cut open longitudinally, to show the receptacle of the seeds. Fig. 31. *Pappus*, or down; *a*, *filifus*, resembling hair; *b*, *plumosus*, or feathered; *c*, *semen*; *d*, *stipes*.

Pedunculi or *Footstalks* of FLOWERS.—Fig. 32. *Corymbus*. 33. *Racemus*. 34. *Spica*. 35. *Verticillus*. 36. *Panicula*.

PLATES CIV. CV. CVI. contain delineations relative to the SPECIES of plants.

1. LEAVES as to figure. *A*, *Simple*.—Fig. 37. *Orbiculatum*, of a circular figure. Fig. 38. *Subrotundum*, roundish or nearly circular. Fig. 39. *Ovatum*, ovate. Fig. 40. *Ovale*, *five Ellipticum*, oval or elliptical. Fig. 41. *Oblongum*, oblong. Fig. 42. *Lanceolatum*, lanceolate. Fig. 43. *Lineare*, linear. Fig. 44. *Subulatum*, subulated, or awl-shaped. Fig. 45. *Reniforme*, reniform, kidney-shaped. Fig. 46. *Cordatum*, cordate, heart-shaped. Fig. 47. *Lunulatum*, lunulated. Fig. 48. *Triangulare*, triangular. Fig. 49. *Sagittatum*, sagittated. Fig. 50. *Cordato-sagittatum*, heart-shaped behind and sharp like the point of an arrow before. Fig. 51. *Hastatum*, halberd-shaped. Fig. 52. *Fisum*, notched. Fig. 53. *Trilobum*, trilobous, or having three (55) lobes. Fig. 54. *Præversum*, fore bitten. Fig. 55. *Lobatum*, lobed. Fig. 56. *Quinquangulare*, quinquangular. Fig. 57. *Erosum*, eroded. Fig. 58. *Palmatum*, palmated. Fig. 59. *Pinnatum*, pinnated. Fig. 60. *Laciniatum*, lacinated. Fig. 61. *Sinuatum*, sinuated. Fig. 62. *Dentato sinuatum*, tooth sinuous. Fig. 63. *Retrosum sinuatum*: sinuous backwards. Fig. 64. *Partitum*, partite. Fig. 65. *Repandum*, scollop'd. Fig. 66. *Dentatum*, dentated. Fig. 67. *Serratum*, serrated or sawed.

Fig. 32—

Fig. 32—

Fig. 32—

Fig. 32—

Fig. 32—

Fig. 32—

Fig. 32—

Fig. 32—

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Fig. 32—

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Fig. 32—

Fig. 32—

Fig. 32—

Plate CIV.
fig. 32—

36.

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Fig. 68. *Duplicato-ferratum*, doubly ferrated. Fig. 69. *Duplicato-crenatum*, doubly crenated. Fig. 70. *Cartilagineum*, cartilaginous. Fig. 71. *Acute-crenatum*, acutely crenated. Fig. 72. *Obtuse-crenatum*, obtusely crenated. Fig. 73. *Plicatum*, plaited. Fig. 74. *Crenatum*, crenated. Fig. 75. *Cristatum*, curled. Fig. 76. *Obtusum*, obtuse. Fig. 77. *Acutum*, acute. Fig. 78. *Acuminatum*, acuminate. Fig. 79. *Obtusum cum acumine*, obtuse with a sharp point superadded. Fig. 80. *Emarginatum acute*, acutely emarginated. Fig. 81. *Cuneiforme emarginatum*, cuneiform and emarginated. Fig. 82. *Retusum*, retuse. Fig. 83. *Pilsum*, hairy. Fig. 84. *Tomentosum*, tomentose or downy. Fig. 85. *Hispidum*, bristly. Fig. 86. *Ciliatum*, ciliated, or fringed. Fig. 87. *Rugosum*, rugose or wrinkly. Fig. 88. *Venosum*, venose or veined. 89. *Nervosum*, nervose. Fig. 90. *Papillosum*, papillous. Fig. 91. *Linguiforme*, linguiform or tongue-shaped. Fig. 92. *Acinaciforme*, scimitar-shaped. 93. *Dolabriforme*, hatchet-shaped. Fig. 94. *Deltoides*, deltoid. Fig. 95. *Triquetrum*, triquetrous or prismatic. Fig. 96. *Canaliculatum*, channelled. Fig. 97. *Sulcatum*, sulcated. Fig. 98. *Teres*, cylindrical.—B. Compound Leaves. Fig. 99. *Binatum*, binate. Fig. 100. *Ternatum foliis petiolatis*, ternated with sessile feuilletts or leaflets. Fig. 101. *Ternatum foliis petiolatis*, ternated with petiolated feuilletts. Fig. 102. *Digitatum*, digitated or fingered. Fig. 103. *Pedatum*, pedated. Fig. 104. *Pinnatumcum impari*, pinnated with an odd feuillet. Fig. 105. *Pinnatum abrupte*, abruptly pinnated. Fig. 106. *Pinnatum alternatim*, pinnated alternately. Fig. 107. *Pinnatum interrupte*, abruptly pinnated. Fig. 108. *Pinnatum cirrhosum*, pinnated with a cirrhus. Fig. 109. *Pinnatum conjugatum*, pinnated with only two feuilletts. Fig. 110. *Pinnatum decursivè*, pinnated decursively. Fig. 111. *Pinnatum articulatè*, pinnated jointly. Fig. 112. *Lyratum*, lyre-shaped. Fig. 113. *Biternatum*, or *duplicato-ternatum*, biternate (100), or double-ternate, or having three ternated (100) leaves upon one petiole. Fig. 114. *Bipinnatum*, or *duplicato pinnatum*, bipinnated, or double pinnated, *i. e.* having the primary *pinnæ* pinnated again a second time. Fig. 115. *Triternatum*, or *triplicato-ternatum*, triple ternated, or consisting of three biternated (113) leaves. Fig. 116. *Tripinnatum sine impari*, triple-pinnated without an odd feuillet, or having the secondary *pinnæ* pinnated again, and these last *pinnæ* not terminated by an odd feuillet. Fig. 117. *Tripinnatum cum impari*, triple-pinnated with an odd feuillet.

2. LEAVES, as to determination.—Fig. 118. *Inflexum*, incurvated. Fig. 119. *Erectum*, erect. Fig. 120. *Patens*, patent or expanding. Fig. 121. *Horizontale*, horizontal. Fig. 122. *Reclinatum*, or *reflexum*, reclined or reflex. Fig. 123. *Revolutum*, revolute. Fig. 124. *Seminale*, seminal leaves, or seed leaves. Fig. 125. *Caulinum*, cauline or stem leaf. Fig. 126. *Rameum*, a branch leaf. Fig. 127. *Florale*, floral; leaf next the flower; also termed a *bractea* or *spangle*. Fig. 128. *Peltatum*, peltated. Fig. 129. *Petiolatum*, petiolated. Fig. 130. *Sessile*, sessile or sitting. Fig. 131. *Decurrens*, decurrent. Fig. 132. *Amplexicaule*, amplexicaule. Fig. 133. *Perfoliatum*, perfoliate. Fig. 134. *Connatum*, connate. Fig. 135. *Vaginans*, sheathing. Fig. 136. *Articulatum*, articulated or jointed. Fig. 137. *Stellatum*, stellated, or verticillated. Fig. 138. *Quaterna*,
N^o 51.

quina, *sena*, &c. denote different species of stellated, or verticillated leaves, when there are four, five, six, &c. leaves in one verticillus or whirl. Fig. 139. *Opposita*, opposite. Fig. 140. *Alternata*, alternate. Fig. 141. *Acerosa*, linear and persifling. Fig. 142. *Imbricata*, imbricated, or tyled. Fig. 143. *Fasciculata*, fasciculated or penciled. Fig. 144. *Frons*, a species of Italk or trunk, consisting of branches and leaves, and sometimes the fructification, all united together; peculiar to the Filices or Ferns, and the Palmæ. Fig. 145. *Folium spatulatum*, (Sauv.) spatulated, or roundish above, with a long linear base. Fig. 146. *Folium parabolicum*, parabolic; having its longitudinal diameter longer than the transverse, and growing narrower from the base till it terminate somewhat like an oval.

3. CAULFS, OR STEMS.—Fig. 147. *Culmus squamosus*, a scaly culm or stalk. Fig. 148. *Caulis repens*, a reptent or creeping stalk or stem; appropriated to herbaceous plants. Fig. 149. *Scapus*, scape. Fig. 150. *Culmus articulatus*, a jointed culm (147) or stalk. Fig. 151. *Caulis volubilis*, a twining stem. Fig. 152. *Caulis dichotomus*, a dichotomous or two-forked stem. Fig. 153. *Caulis brachiatus*, brachiated.

4. FULCRA OR SUPPORTS.—Fig. 154. a, *Cirrhus*, a clasper or tendril; b, *Stipula*, the little scales at the base of the petiole or foot-italk of the leaf, or at the base of the peduncle or flower-stalk; c, *Glandulæ concavæ*, small hollow glands for the secretion of some particular fluid. Fig. 155. a, *Glandulæ pedicellatæ*, small pedicellate glands. Fig. 156. a, *Bractea*, a spangle or flower-leaf, differing from the other leaves of the plant. Fig. 157. a, *Spina simplex*, a simple or one-pointed spine. b, *Spina triplex*, a triple or three-pointed spine. Fig. 158. *Aculeus simplex*, a simple or one-pointed prickle. Fig. 159. *Aculeus triplex*, a triple or three-pointed prickle. Fig. 160. *Folia opposita*, opposite leaves; a, the *axilla*, or angle betwixt the leaf and the stalk.

5. ROOTS.—Fig. 161. *Bulbus squamosus*, a scaly bulb. Fig. 162. *Bulbus solidus*, a solid bulb. Fig. 163. *Bulbus tunicatus*, a tunicated or coated bulb. Fig. 164. *Radix tuberosa*, a tuberous root. Fig. 165. *Radix fusiformis*, fusiform or spindle-shaped. Fig. 166. *Radix ramosa*, a branchy root. Fig. 167. *Radix repens*, a reptent or creeping root.

ARRANGEMENT and RECAPITULATION
of the BOTANICAL TERMS used in the *Linnaean*
System.

THE ARRANGEMENT.

I. Names of parts.

GENERAL TERMS applicable to all Parts whatever.

- II. Terms expressing the mode of Duration.
- III. of Magnitude.
- IV. of Substance.
- V. of Division.
- VI. of Direction.
- VII. of Figure; as,
 - { 1. of Surfaces.
 - { 2. of Solids.
 - { 3. of Similitude.

Pedunculati or *Footstalks of Flowers.*

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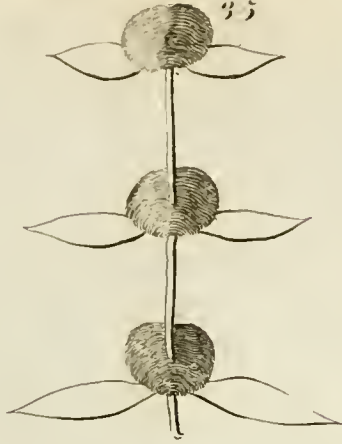
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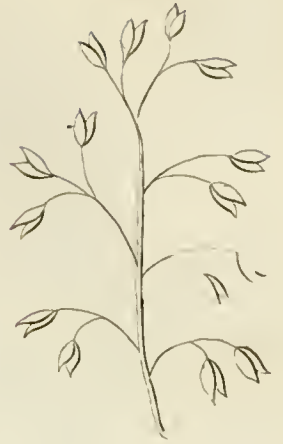
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Various as to figure A., simple.

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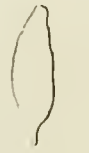
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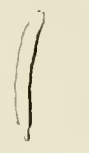
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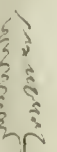
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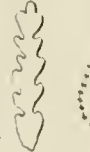
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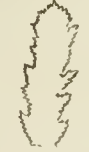
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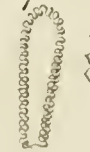
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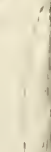
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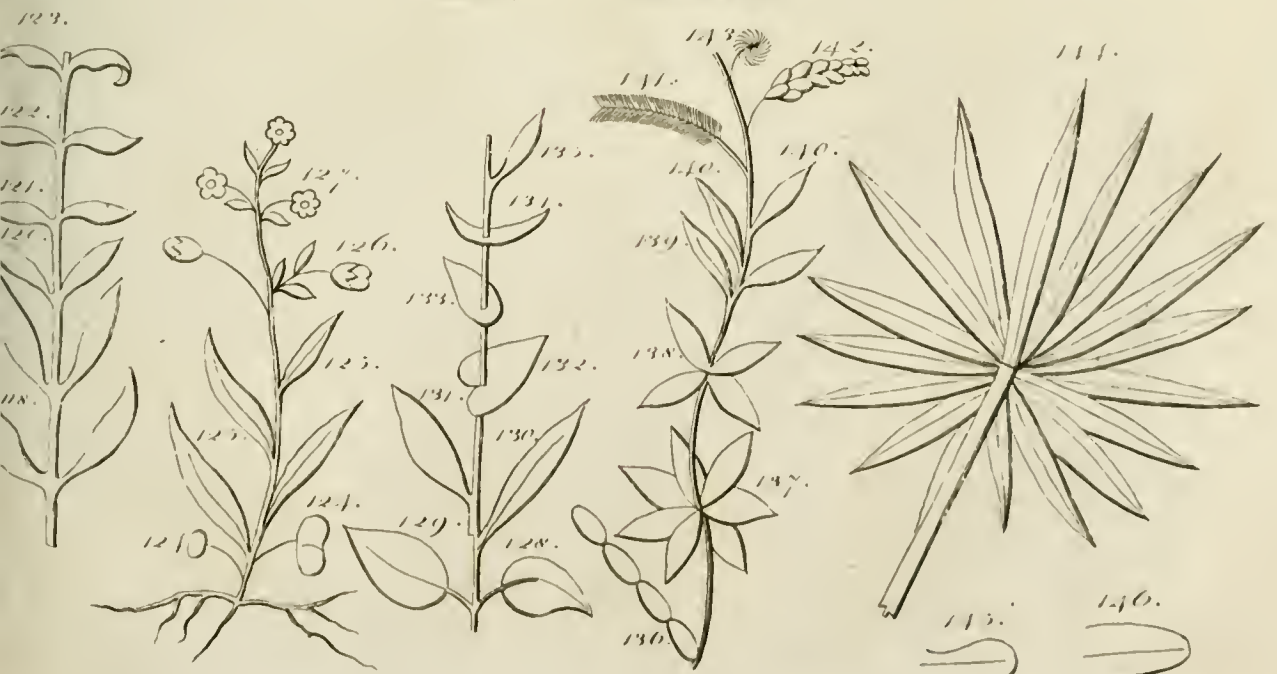


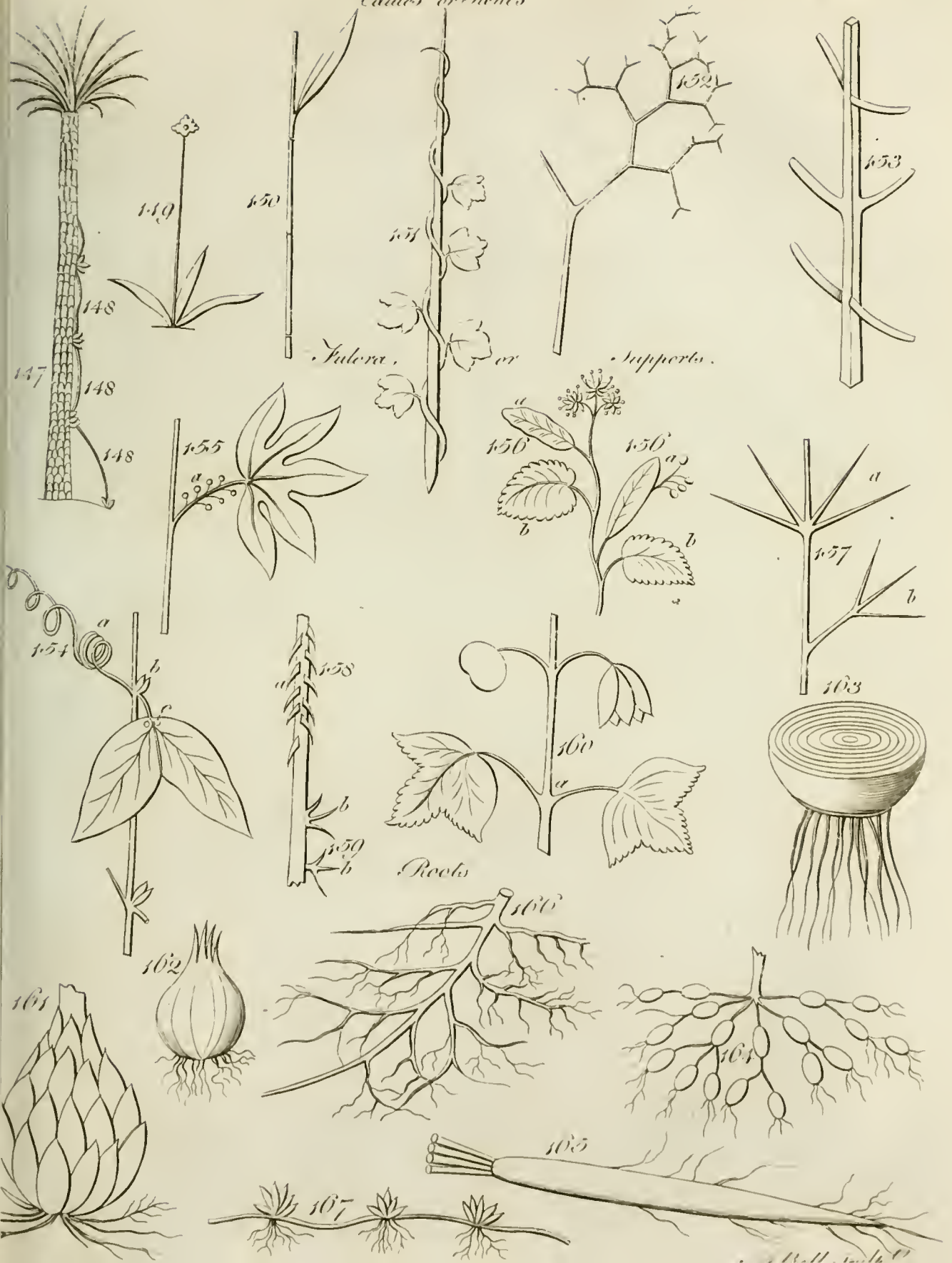
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Leaves, as to determination.







Rheum Palmatum.
or
True Rhubarb.

G. Bell: Del. H. G. Scaup: sculpsit.

- VIII. Terms expressing the mode of Expansion.
- IX. of Place.
- X. of Situation.
- XI. of Surface.
- XII. of the Margin.
- XIII. of the Point or Top.

SPECIAL TERMS or such as agree or are applicable only to certain Parts.

- XIV. Terms applicable to the Root.
- XV. the Trunk.
- XVI. the Petiole.
- XVII. the Leaf: as being either
 - 1. Simple; or
 - 2. Compound, Decom-
pound, or Supra-
decompound.
- XVIII. the Down, Hair, &c.
- XIX. the Armour.
- XX. the Floral-leaves.
- XXI. the Peduncle.

Under this are included the Inflorescence and its different modes.

XXII. Terms applicable to the Fructification.

Under this are included,

- 1. The calyx or cup.
- 2. The corolla, or coloured part of the flower.
- 3. The stamina, or chives.
- 4. The pistillum.
- 5. The pericarpium, or seed-case.
- 6. The seed.
- 7. The receptacle.

XXIII. Terms applicable to the Vernation.

XXIV. Additional Terms.

N^o I. *The PARTS of a PLANT are,*

- 1 The root, the organ that nourishes the plant.
- 2 The trunk or stalk, the organ that multiplies it.
- 3 The branches, or divisions and subdivisions of the stalk.
- 4 The petioles, or stalks that support the leaves (6).
- 5 The peduncles, or stalks that support the fructification.
- 6 The leaves, which are the organs of motion to the plant.

The FRUCTIFICATION, consisting of the Flower and the Fruit.

The Parts of a Flower are,

- 7 The cup, or outer rind of the plant, continued to and present in the fructification.
- 8 The corolla, or inner rind of the plant, continued to and present in the coloured part of the flower, fig. 11.
- 9 The stamina, or chives, the organs destined for the preparation of the pollen (332) or flower-dust, fig. 18. f, f.
- 10 The pistil, or organ adhering to the fruit, for the reception of the pollen, f. 18. c d.

The Parts of the Fruit are,

- 11 The pericarpium, or seed-case; the bowel or organ

- containing the seeds (12), which, when ripe, it lets go, f. 23, 24, 28.
- 12 The seed, or rudiment of a new plant, supposed to be vivified by the irrigation or sprinkling of the pollen or flower-dust, f. 27.
- 13 The receptacle, or base with which the parts of the fructification are connected, f. 9, a.
- 14 The stipula, or small scaly leaf that usually stands at the base of the petioles when they are rising, fig. 154. b.
- 15 A cirrus, tendril, or spiral thread by which a plant is tied to any neighbouring body, fig. 154. a.
- 16 A bractea, spangle, or floral leaf, differing in its appearance from the other leaves of the plant, fig. 156. a a.
- 17 The pubes, the down or hairyness of any sort on plants.
- 18 Arma, the armour or sharp points that defend a plant from being hurt by animals.
- 19 A bulb, the winter habitation of a plant, consisting of the remains of its former leaves.
- 20 A gem or bud, consisting of the rudiments of the plant's future leaves.

GENERAL TERMS.

N^o II. *The DURATION of a Plant is either,*

- 21 Annual, or dying within one year.
- 22 Biennial, or flowering the second year, and then dying.
- 23 Perennial, or flourishing for many years.
- 24 Caducous, or falling down and dying before the end of one season.
- 25 Deciduous, dying at the end of one season.
- 26 Persisting, not dying after one season.
- 27 Sempervirent, evergreen, or remaining fresh and green through all the seasons of the year.

N^o III. *MAGNITUDE.*

"I very seldom admit," says Linnæus, "any other than the proportional measure between the different parts of plants, where this or that part is longer or shorter, broader or narrower, than another."
Phil. Bot. p. 262.

N^o IV. *SUBSTANCE is either,*

- 28 Solid, filled internally with hard matter.
- 29 Inane, filled only with spongy matter.
- 30 Pulpous, filled with tenacious or glutinous matter.
- 31 Carnous, or fleshy, filled with a hardish pulp.
- 32 Cartilaginous, consisting of gristly matter.
- 33 Membranaceous, consisting of dry and skinny matter.
- 34 Filulous, tubulated or hollow within.

N^o V. *DIVISION is either,*

- 35 Fissured, or divided by linear (70) notches, with straight (42) margins, f. 52.
- 36 Bisid, trisid, &c. to quinquesid, according to the number of fissures.
- 37 Partite, divided almost to the base.
- 38 Bipartite, tripartite, &c. to quinquepartite, according to the number of divisions.
- 39 Lobate, or lobed, divided down to the middle into parts standing asunder, fig. 55.

- 40 Sinuated, admitting of wide sinuses or notches on the sides, f. 61, 62, 63.
 41 Dichotomous, trichotomous, &c. divided successively into two, three, or more parts, fig. 152.

N^o VI. DIRECTION is either,

- 42 Right, or straight, free of bendings.
 43 Erect, rising nearly to a perpendicular, f. 119.
 44 Oblique, departing from a perpendicular, or horizontal line.
 45 Ascending, or turned archwise upward.
 46 Declining, or declined, turned archwise downward.
 47 Incurvated, turned archwise inward.
 48 Nutant, nodding, having the point turned outward.
 49 Reflex, having any part turned backward.
 50 Revolute (377) rolled back into a spiral line.
 51 Procumbent, weak and leaning on the ground.
 52 Flexuose, bent hither and thither.

The following terms respect chiefly the direction of branches (3).

- 53 Patent, expresses the direction of an acute angle.
 54 Diverging, parting at a right angle.
 55 Divaricated, expresses the direction of an obtuse angle.
 56 Dependent, looking straight to the ground.
 57 Dittich, or dittichated [flowers, leaves, or branches] turning to the two sides, though inserted all round.
 58 Sequent, turning all to one side.
 59 Apprest, approaching so as to be almost parallel to the stalk or trunk.
 60 Coarctate, almost incumbent towards the top.
 61 Diffuse, having small patent (53) branches.

N^o VII. FIGURE is that, either of Surfaces, or Solids, or Similitudes.

1. The figure of Surfaces is either,

- 62 Orbicular, of a circular form, f. 37.
 63 Subrotund, almost circular; and Subglobose, almost spherical, fig. 38.
 64 Ovate, having its longitudinal diameter longer than the transverse, with the base terminated by a segment of a circle, and the top narrower, f. 39.
 65 Parabolical, resembling a parabola.
 66 Elliptical, resembling an ellipse or oval, f. 40.
 67 Cuneiform, wedge-shaped, growing by degrees narrower toward the base.
 68 Oblong, having the longitudinal diameter any number of times longer than the transverse diameter, f. 41.
 69 Lanceolate, oblong (68), and attenuated (75) on either end, f. 42.
 70 Linear, everywhere of equal breadth, f. 43.
 71 Triangular, quadrangular, &c. according to the number of angles, f. 48.
 72 Rhombeous, or rhomboidal, of the shape of a rhombus.
 73 Trapeziform, of the shape of a trapezium.

2. The figure of Solids is either,

- 74 Filiform, everywhere of equal thickness.
 75 Attenuated, gradually losing its thickness towards the point.

- 76 Subulated, awl-shaped; linear, but attenuated towards the point.
 77 Clavated, club shaped, growing thicker towards the point or top.
 78 Turbinate, top-shaped like an inverted cone.
 79 Globose, globular, like a sphere.
 80 Conical, resembling a cone.
 81 Teres, round, like a cylinder, f. 98.
 82 Semiteres, half round, semicylindrical.
 83 Anceps, two-edged, having the two opposite angles acute.

- 84 Trigonous, tetragonous, &c. having three, four, &c. prominent longitudinal angles.
 85 Triquetrous, having three exactly plain sides (109).
 86 Gibbous, or gibbose, having both upper and under surface convex, by reason of a more copious pulp (30) intervening.
 87 Compressed pulpous (30), having the edges flatter than the disk or middle.
 88 Depressed pulpous, having the disk flatter than the edges.

- 89 Lingulated, tongue-shaped; linear (70), carnos (31), convex (112), below.

- 90 Ensiiform, sword-shaped, ancipitous (83), gradually attenuated, or tapering from the base to the top.
 91 Acinaciform, sabre shaped, compressed (87), carnos, having the one edge convex and thin, and the other straighter and thicker, fig. 92.
 92 Dolabriform, hatchet-shaped, compressed, subrotund (63), gibbous on the outside (86), with the edge sharp, and roundish below, f. 93.

The tubulated figures that are mostly applied to the corolla, are,

- 93 Infundibuliform, funnel-shaped, an inverted cone placed upon a tube.
 94 Campanulated, bell-shaped, ventricose (107), without any tube.
 95 Inflated, hollow, and as it were blown up like a bladder.
 96 Rotated, wheel-shaped, plain, and not placed on a tube.

3. The figure of Similitudes is either,

- 97 Cordate, heart-shaped, subovate, having a notch cut out of the base, without any posterior angles, f. 46.
 98 Reniform, kidney-shaped, subrotund (63), having a notch cut out of the base, without posterior angles, f. 45.
 99 Lunular, crescent-shaped, subrotund, having the base notched, with acute posterior angles, f. 47.
 100 Sagittated, arrow-shaped, triangular (71), having acute posterior angles separated by a notch, f. 49, 50.
 101 Hallated, halberd-shaped, sagittated (100), having the posterior angles divided by a blunt notch, and prominent towards the sides, f. 51.
 102 Lyrated, lyre-shaped, divided across into lacinia, or segments of no determinate form, whereof the under ones are lesser and more remote from one another than the upper ones, f. 112.
 103 Runcinated, pinnatifid (*i. e.* divided across into horizontal oblong segments), in such sort that the segments are convex on the fore-side and transverse behind, *e.g.* the dandelion.

- 104 Panduriform, pandour-shaped, oblong, and contracted or narrowed below.
- 105 Spathulated, subrotund or roundish, with a linear and narrower base.
- 106 Palmated, divided past the middle into lobes nearly equal, f. 58.
- 107 Ventricose, gibbous or swelling out on the sides.
- 108 Deltoid, rhomboidal (72), consisting of four angles, of which the lateral ones are less distant from the base than the other two; as the leaves of the black poplar. See also the figure of the ancient *delta* of the Greeks.

N^o VIII. EXPANSION is either,

- 109 Plain, having an equal surface.
- 110 Canaliculated, hollowed above with a deep longitudinal furrow, f. 96.
- 111 Concave, by the margin being less in proportion than the disk, and the disk of course depressed or pushed downwards.
- 112 Convex, by the margin being less in proportion than the disk, so that the disk is elevated or pushed upwards.
- 113 Cucullated, cowl-shaped, having the edges folded or curling inwards at the base, and spreading at the top like a cowl.
- 114 Undated, waved, having the disk alternately bending up and down in obtuse plaits.
- 115 Crisped, curled, by having the margin so luxuriant that the disk becomes longer than its rachis (283) or quill.

N^o IX. PLACE.

I. A Leaf is either,

- 116 Radical, growing out of the root.
- 117 Cauline, growing on the caulis (197) or stalk, f. 125.
- 118 Ramous, growing on a branch, f. 126.
- 119 Axillary, placed under the base of a branch.
- 120 Floral, next the flower. See Def. 16. f. 127.

2. A *Stipula*, or *scale*, is either,

- 121 Lateral, inserted into the side of a petiole.
- 122 Extrafoliaceous, placed below a leaf.
- 123 Intrafoliaceous, placed above a leaf.
- 124 Oppositifolious, placed on the side of the stalk opposite to a leaf.

3. A *Cirrus*, or *tendril*, is either,

- 125 Petiolar, growing out of a petiole or leaf-stalk.
- 126 Peduncular, growing out of a peduncle or flower-stalk, &c. &c.

N^o X. The SITUATION of the Parts of a Plant is either,

- 127 Opposite, when the leaves, &c. are placed in decussated (129) or cross pairs, f. 114, 116.
- 128 Alternate, growing all round a stalk or branch one after another gradually, f. 140.
- 129 Decussated, placed opposite in such a manner, that if one look down from the top of the plant, the leaves, &c. represent four distinct rows.
- 130 Verticillated, whirled; leaves, flowers, &c. surrounding the stalk or trunk at the joints in great number like a whirl, f. 35.

- 131 Bisarious, leaves, &c. growing only on the opposite sides of a stalk or branch.
- 132 Sparse, placed without any certain order.
- 133 Fasciculated, pencilled, growing in numbers out of the same point like a pencil, f. 143.
- 134 Confert, close-ranged, leaves, &c. almost covering the whole surface.
- 135 Distant, parts remote from one another.
- 136 Terminal, placed at the top.

N^o XI. A SURFACE is either,

- 137 Naked, destitute of setæ (245) or bristles, and pili (240) or hairs.
- 138 Levigated, smooth, of an equal plainness. The same with plain (109).
- 139 Glabrous, of a slippery nature.
- 140 Nitid, slippery and shining.
- 141 Lucid, as if it were illuminated.
- 142 Coloured, of a colour different from green (when that is the natural colour).
- 143 Lineated, lined, the nerves being depressed.
- 144 Striated, gently furrowed in parallel lines.
- 145 Sulcated, furrowed in deep lines, f. 97.
 - a. Alveolated, honey-combed, a receptacle deeply pitted so as to resemble a honey-comb.
 - b. Hispid, any surface planted with stiff short hairs, f. 85.
 - c. Rimose, full of rents or chinks.

[The following terms, to 156, belong chiefly to Leaves.]

- 146 Nervous, having unconnected small vessels, resembling nerves, running from the base to the top, f. 89.
- 147 Trinerved, having three small nerves meeting at the base.
- 148 Triplinerved, having three nerves meeting above the base.
- 149 Trinervated, having three nerves meeting below the base.
- 150 *Enervis*, nerveless, the opposite to nervous.
- 151 Venous, having veins or small vessels divided variously, without any regular order.
- 152 *Avenis*, veinless, the opposite to venous.
- 153 Rugose, wrinkled, full of wrinkles, f. 87.
- 154 Bullated, having the surface, from being rugose, raised up in the form of bubbles, by the veins being contracted, the other side by that means becoming concave.
- 155 Lacunous, pitted, by the disk being depressed between the interspersed veins.
- 156 Punctated, besprinkled with hollow points.
- 157 Papillous, covered with carnosous or fleshy points, f. 90.
- 158 Papulous, covered with vesicular or bladder-like points.
- 159 Viscid, besmeared with a gluey moisture.
- 160 Tomentose, covered with fine down interwoven together, hardly to be discerned, f. 84.
- 161 Villous, covered with soft hairs. See *Villi* (241).
- 162 Sericeous, silky, covered with very fine hairs laid close down.
- 163 Lanated, woolly, covered as it were with a cobweb (or spontaneously curled hairs). See *Lana* (242).
- 164 Pilose, hairy, covered with long distinct hairs. See *Pili* (240), and f. 83.

- 165 Bearded, covered with parallel hairs. See *Barba* (243).
 166 Setaceous, bristly, set or covered with bristles. See *Seta* (245).
 167 Scabrous, having hard prominent points causing a roughness to the touch.
 168 Aculeated, armed with prickles fixed only to the bark. See *Aculei* (253).
 169 Strigose, having stiff lanceolated (69) prickles. See *Striga* (244).
 170 Paleaceous, chaffy, covered with dry scales resembling chaff. See *Palea* (246).
 171 Muricated, besprinkled with subulated points.
 172 Spinous, thorny, beset with spines, or prickles rising out of the wood of the plane.
 173 Burning, beset with stimulating and inflaming points, as the nettle, &c.

N° XII. A MARGIN is either,

- 174 Entire, linear without the least dent or notch.
 175 Crenated, having notches without respect to the extremity, f. 74.
 176 Serrated, saw toothed, all the notches and teeth looking towards the extremity, f. 67, 68.
 177 Ciliated, having parallel bristles set in a row lengthwise, like eye-lashes.
 178 Dentated, toothed, with the points patent and asunder, f. 66.
 179 Repand, having a plain serpentine form, f. 65.

N° XIII. An APEX or Point is either,

- 180 Obtuse, terminated within the segment of a circle, f. 76.
 181 Emarginated, terminated by a notch, f. 80, 81.
 182 Retuse, terminated by a round bosom.
 183 Truncated, terminated by a transverse line.
 184 Acute, terminated by an acute angle, f. 77.
 185 Acuminated, terminated by a subulated or awl-shaped point, f. 78.
 186 Cuspidated, terminated by a bristle or prickle.

SPECIAL TERMS.

N° XIV. A ROOT is either,

- 187 Fibrous, consisting wholly of small fibres.
 188 Bulbous, furnished with a bulb (19).
 189 1. Solid (28).
 190 2. Scaly, with the scales imbricated (390).
 191 3. Tunicated, having coats above coats.
 192 Tuberos, consisting of fleshy parts connected by threads to the base.
 193 Fascicular, consisting of fleshy parts connected to the base without the intervention of threads.
 194 Granulated, composed of small fleshy particles.
 195 Fusiform, spindle-shaped, single and tapering, f. 165.
 196 Repent, running out a great way, and budding here and there.

N° XV. A TRUNK is,

- 197 1. A stem or stalk (f. 147, 148), a trunk supporting both the fructification and the leaves.
 98 2. A culm, proper to grasses, f. 147.

- 199 3. A scapus or shaft; a trunk supporting the fructification, but not the leaves, f. 149.
 200 4. A stipes or stock; a trunk changing into leaves.
 201 Scandent, climbing, but needing the support of other bodies.
 202 Voluble, twining, ascending (45) in a spiral line by the assistance of other bodies.
 203 Repent, creeping, lying on the ground and sending out roots here and there. See 196, f. 167.
 204 Sarmentose, full of twigs, filiform, with rooting joints.
 205 Stoloniferous, putting forth young shoots at the root, or tillering.
 206 *Simplicissimus*, very simple, having scarcely any branches.
 207 *Simplex*, simple, extended in a continued series towards the top.
 208 Entire, with the branches gathering inwards.
 209 Proliferous, putting forth branches only from the middle of the top.
 210 Subramose, having only a few lateral branches.
 211 Ramose, having many lateral branches.
 212 *Ramosissimus*, very ramose, loaded with numerous branches, without any determinate order.
 213 Virgated, having small weak pliant branches of unequal length.
 214 Paniced, having branches variously subdivided.

N° XVI. A PETIOLE is either filiform, or,

- 215 Alated, winged, dilated on the sides.
 216 Spinescent, hard and pricking.

N° XVII. A LEAF is either simple or compound.

A. A simple Leaf, f. 37 to 43, may be,

- 217 Submersed, hid under the face of water.
 218 Natant, swimming, lying on the surface of the water.
 219 Acerous, chaff like, linear and persistent (26), f. 141.

The Insertion of Leaves.

- 220 Petiolated, having a petiole inserted at its base, f. 129.
 221 Petated, or targetted, having the petiole in the disk of the leaf, f. 128.
 222 Adnate, connected with the branches at the base on the upper side.
 223 Connate, having the opposite pairs united at the base on each side, f. 134.
 224 Coadunate, having more than two united.
 225 Decurrent, having the base of the leaf running along the stalk downwards, f. 131.
 226 Amplexicaul, having the base surrounding or embracing the stalk, f. 132.
 227 Perfoliated, having the base surrounding the stalk straight across, without any opening before, f. 133.
 228 Vaginating, or sheathing, having the base forming a tube that covers the stalk, f. 135.

B. 1. A Leaf is called Compound, when the same Petiole produces more Leaves than one. It is

- 229 Articulated, jointed, when one leaf grows out of the top of another, f. 111.

- 230 Digitated, when a simple petiole connects leaflets or small leaves at the top. Binate, ternate, &c. are modifications of this according to the number of leaflets thus connected, f. 102.
- 231 Pedated, when a bifid or forked petiole connects several leaflets only by the interior side, f. 103.
- 232 Pinnated, or feathered, when a simple petiole connects any number of leaflets to its sides. Bijugous (double-paired), quadrijugous (four-paired), &c. when only four, eight, &c. leaflets are thus connected, f. 104—110.
- Pinnated with an odd one, when terminated by a single or odd leaflet.
- abruptly, when terminated neither by a tendril nor by a leaflet.
- circuous, when terminated by a tendril (15).
- with opposite (127) leaflets.
- with alternate (128) leaflets.
- with interrupted leaflets, when the leaflets are alternately greater and smaller.
- with decursive leaflets, or leaflets running down the petioles.
2. *A Decomposed Leaf is either,*
- 233 Bigeminous, or double twin, leaves, when the petiole is dichotomous, or successively divided into two, and every top carries a pair of leaflets.
- 234 Biternated, doubly ternated (230), f. 113.
- 235 Bipinnated, doubly pinnated (232), f. 114.
3. *A Supradecomposed Leaf is either,*
- 236 Tergeminous, when the petiole being twice dichotomous, or divided into two, bears a pair of leaflets.
- 237 Internated, thrice ternated, f. 115.
- 238 Tripinnated, thrice pinnated, f. 116.
- Stipula, or Scale.*
Cirrus, or Tendril.
- N^o XVIII. PUBES, the hair, wool, &c. of plants, is either,
- 239 *Tomentum*, a flock. of interwoven hairs (*villi*), scarcely visible. See 160 241, and f. 84.
- 240 *Pili* (164), excretory ducts of a plant resembling setæ or bristles (166).
- 241 *Villi* (161), soft hairs.
- 242 *Lana* (163), curled thick hairs.
- 243 *Burta*, a beard, parallel hairs.
- 244 *Strigæ*, comb-teeth, stiff rigid plain hairs.
- 245 *Setæ*, bristles, stiff round hairs.
- 246 *Palea* (170), a membranaceous scale (33).
- 247 *Hanus*, hook, an acuminate (185) crooked point.
- 248 *Glochis*, a point or prickle with many teeth turned backwards.
- 249 Glandule, a papilla, or small gland secreting moisture, f. 155. a.
- 250 Utricle, a small vessel full of secreted moisture.
- 251 Viscosity, expresses the quality of tenacious moisture.
- 252 Guttinosity, expresses the quality of slippery humour.
- N^o XIX. ARMA, the arms of plants, are either,
- 253 *Aculei*, prickles, pricking points affixed only to the bark.
- 254 *Furcæ*, forks, prickles (253) divided or forked.
- 255 *Spinæ* (172), thorns, points or prickles put forth from the wood of the plant, f. 157.
- 256 *Stimuli* (273), points producing inflammatory punctures, whereby the parts become itching.
- N^o XX. A BRACTEA, or floral leaf.
- 257 *Coma*, the bractæ or spangles on the top of the stalk of some plants, remarkable in size compared to the other leaves.
- N^o XXI. A PEDUNCLE is either,
- 258 Common, to more flowers than one.
- 259 Partial, bearing any number of flowers of the common peduncle.
- 260 A pedicle, proper to flowers in a common peduncle.
- 261 Cernuous, sloping, having the top looking to the ground.
- 262 Retrofract, broken backward, reduced to a depending state as if by force.
- 263 Multiflorous, producing many flowers.
- 264 INFLORESCENCE is the mode in which flowers are connected to the peduncle of a plant; and this is either,
- 265 1. *Verticillus*, a whirl, when a number of flowers surround the plant in a ring.
- 266 2. *Capitulum*, a knot, when a number of flowers are collected together in form of a globe. It signifies also the upper parts of the fructification of mosses.
- 267 3. *Fasciculus*, a bunch, when erect parallel flowers of equal height are collected together (392).
- 268 4. *Spica*, a spike, when sessile alternate flowers are placed on a common simple peduncle. A spike is either
- 269 Simple, continued and undivided.
- 270 Compound, when more small spikes stand on one peduncle.
- 271 Glomerated, when the small spikes are crowded together, without any certain order.
- 272 Interrupted, when the smaller spikes are placed alternately and distant one from another.
- 273 5. A *corymbus*, is formed of a spike (268), having every single flower provided with a pedicle of its own, and the whole elevated to a proportionable height, f. 32.
- 274 6. *Racemus*, a cluster, when the common peduncle has lateral branches, f. 33.
- 275 Unilateral, when all the flowers grow on one side.
- 276 7. *Panicula*, a panicle, when the flowers are sparse, and grow on peduncles variously divided, f. 36.
- 277 8. *Thyrusus*, a panicle (276) gathered into an ovate (64) form.
- 278 *Umbella*, an umbel; a receptacle (13) lengthened out from one centre into filiform peduncles rising to a proportionable height, so as to resemble an umbrella above, f. 4. b. b.
- 279 Simple, when all the peduncles spring out of one and the same receptacle.
- 280 Compound, when every peduncle carries a small umbel on its top.

- 281 *Umbellula sessilis*, a small sessile umbel, when a number of peduncles rise from the same centre, and stand equally all around it.
- 282 *Cyma*, a receptacle rising from the same general centre, with partial ones here and there, and lengthened into peduncles all equally high at top.
- 283 *Rachis*, a filiform receptacle connecting any number of florets into a long spike.
- 284 *Spadix*, the receptacle of a palm-tree rising within a *spatha* or sheath, and divided into fructifying branches, f. 2.

Nº XXII. FRUCTIFICATION *is*,

- 285 The temporary part of a vegetable, destined to generation. And is either
- 286 Simple, consisting of few flowers.
- 287 Compound, when a number of flowers are set together.

A. *Calyx*, the Cup.

- 288 1. *Perianthium*, a cup contiguous to the fructification, f. 18.
- 289 — of the fructification, containing the stamina (9) and the germen (333).
- 290 — of the flower, containing stamina without a germen.
- 291 — of the fruit, containing a germen without stamina.
- 292 — *a*, Proper, belonging to any particular flower. And is either
- 293 — Monophyllous, consisting only of one leaf.
- 294 — Polyphyllous, consisting of a number of leaves.
- 295 — Superior, having the germen below the receptacle.
- 296 — Inferior, having the germen above the receptacle.
- 297 — *b*, Common, containing a number of flowers set together.
- 298 — Calyculated, a calyx or cup, having, as it were, another lesser cup round its base.
- 299 2. *Involucrum*, or wrapper, a cup remote from a flower, f. 4.
- 300 — Universal, set under an universal umbel, (278) f. 4. a a.
- 301 — Partial, set under a partial umbel f. 4. d d.
- 302 — Proper, set under any particular flower.
- 303 3. *Gluma*, a glume or chaff, the cup of any kind of grass, consisting of valves embracing one another, f. 3. Either
- 304 — Uniflorous, containing a single flower.
- 305 — Multiflorous containing any number of flowers.
- 306 *Arista*, or awn, f. 3. a a. a tapering point growing out of the glume or chaff; either straight, or
- 307 Tortile, twisted like a cord.
- 308 4. *Amnium*, a catkin, consisting of a chaffy common receptacle like a gem or bud, f. 6.
- 309 5. *Spatha*, spath or sheath, a cup opening longitudinally, f. 1.
- 310 6. *Calyptra*, hood, the cowl-shaped cup of some mosses placed over the anthera (331) f. 5.
- 311 7. *Volva*, the membranaceous cup of a mushroom.
- *a*, *Perichatium*, a circular tuft of fine hair-like leaves surrounding the bases of the filaments in the genus *Hypnum*.

B. *Corolla*, or coloured part of a flower.

- 312 Petal, a part of a corolla when divided into more parts than one, f. 13. b b.
- 313 Tube, the inferior part of a monopetalous corolla, f. 11. a.
- 314 Limb, the superior spreading part of a monopetalous corolla, f. 13, 14.
- 315 *Unguis*, heel, the inferior part of a polypetalous corolla affixed to the receptacle.
- 316 *Lamina*, lappet, the superior spreading part of a polypetalous corolla, f. 14.
- 317 Regular, equal in figure, magnitude, and proportion of parts.
- 318 Irregular, when the segments of the limb differ in figure, magnitude, or proportion of parts.
- 319 Ringent, irregular (318) gaping like two lips opened very wide.
- 320 *Galea-ringentis*, the vizard or upper lip of a ringent corolla,
- 321 *Faux*, the throat or opening between the segments of a corolla where the tube (313) terminates.
- 322 Cruciated, crossed, having four equal and patent petals.
- 323 *Personata*, masked, ringent (319), but shut close between the lips by the palate.
- 324 Papilionaceous, butterfly-shaped, irregular; the inferior petal being cymbiform or shaped like a boat (called the *carina* or keel); the superior ascending, (called the *vexillum* or flag); the side petals standing single (called the *alæ* or wings).
- 325 Compound, consisting of a number of florets, on a common receptacle, and within a common perianthium.
- 326 1. Ligulated, having all the exterior florets plain on the outside.
- 327 2. Tubulous, having all the small corollæ of the florets tubulated.
- 328 3. Radiated, having all the small corollæ of the disk tubulous, and those of the circumference ligulated and of a different form.
- 329 Nectary, the melliferous part proper to any flower, f. 15, 16.

C. *Stamen*, a Chive.

- 330 Filament, the part supporting the anthera, and connecting it with the plant, f. 18. e e.
- 331 Anthera, the part of a flower which is full of pollen (332) or fine flower-dust, which it discharges as soon as itself comes to maturity, f. 18. f f, g.
- 332 Pollen, flower-dust, bursting by being brought into contact with moisture, and throwing out elastic atoms. (According to the principles of the sexual system, this is the origin of generation in plants).

D. *Pistillum*, a Pistil.

- 333 Germen, the rudiment of the unripe fruit in a flower. This is either,
- 334 Superior, included in the corolla.
- 335 Inferior, placed below the corolla.
- 336 Style, the part of the pistil that raises the stigma (337) from the germen, f. 18. c.
- 337 Stigma, the summit of the pistil bedewed with moisture, f. 18. d.

- E. *Pericarpium*, a Fruit-case, is a
 338 1. Capsule, a fruit-case, hollow and opening in a certain determinate manner, f. 23, 24, 25.
 339 2. Valve, a screen or defence, with which the fruit is covered on the outside.
 340 *Loculamentum*, a hole or cavity for lodging the seeds.
 341 *Dissepimentum*, a partition, by which the fruit is distinguished or divided within, into any number of cavities, f. 29.
 342 Bicapular, having two capsules (338).
 343 Bilocular, having two cavities (340).
 344 Tricoccos, a capsule having three protuberant knobs, and divided into three cavities within, each containing one seed.
 345 Didymous, having two knobs protuberant on the outside.
 346 *Siliqua*, a husk; a fruit-case having two valves, and attaching the seeds along both sutures, f. 23, 24.
 347 *Torulosa*, having prominences swelling out on each side.
 348 *Parallelum dissepimentum*, a parallel partition of equal breadth with the valves.
 349 *Contrarium dissepimentum*, a cross partition narrower than the valves.
 350 3. *Legumen*, a pod or frow; a pericarpium having two valves, and attaching the seeds only along the one suture, f. 23.
 351 *Isthmis interceptum*, having parts at regular distances straiter than the rest, so as to divide it across into different internal cavities.
 352 4. Follicle, a pericarpium of one valve, opening longitudinally on one side, and not having the seeds attached to the suture, f. 22.
 353 5. *Drupe*, plum; a pericarpium stuffed with fleshy substance, without any valve, and containing a nut or stone in the middle, f. 26.
 354 5. *Pomum*, apple or pear; a pericarpium stuffed with fleshy substance without valves, and containing a capsule or seed-case in the middle, f. 25.
 355 6. *Bacca*, berry; a pericarpium full of pulpy or soft substance, without valves, and containing seeds otherwise naked.
 356 7. Nidulant, nestling; seeds dispersed through a pulpy or soft substance.
 357 8. *Strobilus*, cone; a pericarpium formed by the induration of the scales of a catkin, (308). f. 7.

F. *Semen*, Seed.

- 358 *Hilum*, speck; the external scar or mark of the seed, occasioned by its attachment to the fruit-case before it come to maturity.
 359 *Corculum*, the original substance of a new plant within a seed.
 360 *Corona*, crown, or dress adhering to the top of a seed, by which it is enabled to fly about after it is ripe.
 361 *Pappus*, down; a feathery or hairy crown with which it flies, f. 31.
 362 *Stipitatus*, stalked, having a thread betwixt it and the down.

- 363 Capillary, consisting of fine undivided hairs.
 364 Plumose, feathery; consisting of hairs feathered on the sides.
 365 *Cauda*, tail; a thread or membrane at the end of a seed.
 366 *Hamus*, a hook, (247).
 367 *Caliculus*, the interior and proper integument of a seed.
 368 *Nux.* kernel; a seed covered with a bony shell.
 369 *Arillus*; the outer coat of a seed, which falls off of its own accord.

G. *Receptaculum*, a Receptacle.

- 370 Common, containing more flowers and fruits than one.
 371 Compound, or composite flower; having the receptacle dilated and entire, the florets sessile.
 372 Aggregate flower; having the receptacle dilated, and the florets subpedicellated, or standing on very short flower-stalks.
Bulbus, a bulb. *Gemma*, a gem or bud.

N^o XXIII. VERNATION is the

- 373 Disposition of leaves within the bud (20).
 374 Conduplicated, doubled together, having the opposite edges approaching each other in parallel lines.
 375 Convoluted, rolled together spirally like a cowl.
 376 Involute, rolled inwards, having the edges on both sides rolled spirally, so as to be nearly met on the upper surface of the leaf.
 377 Revolute, rolled backwards, having the edges on both sides rolled spirally, so as to be nearly met on the back of the leaf, f. 123.
 378 Equitant, riding, when two leaves opposite to each other close their edges, so that the one includes or clasps about the other.
 379 Oblvolute, when two edges of one leaf close on the upper surface, so that one edge divides or lies betwixt the two sides of the other.
 380 Plicated, plaited, gathered into various plaits, f. 73.
 381 Circinal, rolled spirally from the top to the base, so that the top comes to occupy the centre.

N^o XXIV. GENERAL TERMS to be added.¹

- 382 *Laxus*, flexible at pleasure. *Debilis* (weak), and *flaccidus* (flaccid) are almost synonymous.
 383 Rigid, not enduring to be bent.
 384 Articulated (229), jointed or knotted.
 385 *Enodis*, without joints or knots.
 386 *Pramorsus*, forebitten; having the top as it were bitten off f. 54.
 387 Radicant, pushing down roots.
 388 Squamous, covered with scales.
 389 Proliferous flowers, having one flower rising within another.
 390 Imbricated parts, one overlapping another like tiles or shingles, f. 10.
 391 Squarrose, rough or scurfy, applied to the tops or irregular segments of leaves, &c. when they stand out on all sides.
 392 Fastigiated, trunks, branches, or peduncles rising all alike high.

- 393 Refupinated, turned upside down.
 394 Lacerated, a term applied to the edges of flowers or leaves when divided irregularly as if they were torn.
 395 Lacinated, divided into parts or segments in an indeterminate manner, f. 60.

TERMS omitted to be inserted in their proper places.

- 396 Brachiated branches, when each pair stands at right angles with the pairs immediately above and below them, f. 116, 117.
 397 Aphyllous, without any leaves.
 398 Adverse leaves, turning their faces, not to the sky but to the south; as, *Anomum*.
 399 *Arboreus*, arboreſcent, of the nature of a tree producing buds. A term of great lubricity.
 400 Bulbiferous, bearing bulbs.
 Bulbs are either
 401 Scaly, conſiſting of imbricated lamellæ, as the lily root, f. 161.
 402 Solid, conſiſting of ſolid ſubſtance; as the tulip, f. 162.
 403 Tunicated, coated, like the common onion, f. 163.
 404 Articulated, conſiſting of lamellæ linked together as the *Latbræa*.
 405 Calcareous, of a hard crumbly nature, like dry lime plaſter.
 406 *Circumſciſſus*, parting as if cut ſtraight over; as the capsule of *Stellaria*.
 407 Cirrhouſ, terminating in a tendril.
 408 Columella, the part of a fruit-caſe that connects the internal partitions with the ſeeds.
 409 Intortion, the twiſting of any part towards one ſide:
 410 To the right, ſuppoſing one's ſelf placed in the centre;
 411 To the left, ſuppoſing one's ſelf placed in the centre.
 412 Cotyledon, the lateral body or lobe of a ſeed, porous, and imbibing moiſture, and afterwards falling off.
 413 *Acotyledones*, plants whoſe ſeeds have no lateral bodies or lobes; as the *Muſci*.
 414 *Monocotyledones*, plants whoſe ſeeds have only one lateral body; as the *Græſſes*, &c.
 415 *Dicotyledones*, plants whoſe ſeeds have two lateral bodies or lobes; as the *Legumina*, &c.
 416 *Polycotyledones*, plants whoſe ſeeds have many lateral bodies or lobes; as the *Pines*, &c.
 417 Monoſpermous, capsules or ſeed-caſes that contain only one ſeed.
 418 Di—tri—tetra—penta,—&c. ſpermous, containing 2, 3, 4, 5, &c. ſeeds in one capsule.
 419 Polyſpermous, containing many ſeeds.
 420 *Suberoſus*, reſembling cork.
 421 *Echinatus*, beſet with ſpines or prickles, ſo as to reſemble a hedge-hog.
 422 *Muticus*, without awn, beard, or prickle.
 423 *Pileus*, the hat or bonnet of a muſh:oom, which has the fructifications on its under ſide, f. 8. a.
 424 *Diſcus*, the middle part of a compound flower, conſiſting of regular florets.
 425 *Radius*, the rim or outward part, conſiſting of irregular florets.

SECT. V. *Of the Sexes of Plants.*

As many philoſophers and botaniſts deny that ſuch a thing as the diſtinction of ſexes takes place in vegetables, it will be neceſſary to give a narration of the arguments employed by both parties on this ſubject. We ſhall begin with the arguments in favour of the ſexes.

I. Linnæus is at great pains in tracing the notion of ſexes in plants to the remotest periods of antiquity. He informs us, that Empedocles, Anaxagoras, and other ancient philoſophers, not only attributed the diſtinction of ſexes to plants, but maintained that they were capable of perceiving pleaſure and pain.

Hippocrates and Theophrastus are next introduced as diſtinguiſhing the conyza, the abies, the filix, &c. into male and female. The latter of theſe writers affirms that the fruit of the male palm will not germinate, unleſs the pollen of the male be ſhaken over the ſpatha of the female previous to the ripening of the ſeed.

Dioſcorides takes notice of a male and female mandragora, mercurialis, ciſtus, &c.

Pliny does not confine his views of ſex to animals, but exclaims, that every thing this earth produces is characterized by the diſtinction of ſex.

From the days of Pliny to thoſe of Cæſalpinus, who lived in the 16th century, the analogy between the vegetable and animal ſeems to have been entirely neglected. Cæſalpinus tells us, that the males of the oxycedrus, taxus, mercurialis, urtica, and cannabis, are barren; and that the females of theſe plants only bear fruit.

After Cæſalpinus, we find Dr Grew and Sir Thomas Millington engaged in a converſation concerning the utility of the ſtamina and ſtyli of plants. The reſult of this converſation was the mutual agreement of theſe two eminent naturaliſts, that the ſtamina and ſtyli of vegetables were analogous to the organs of generation in animals, and that they were adapted by nature to answer the ſame purpoſes. Dr Grew, in his anatomy of plants, after enumerating the analogies between plants and animals, concludes, that the pollen probably emits certain *vivific* effluvia, which may ſerve for the impregnation of the ſeeds.

Mr Ray gave a further ſanction to the doctrine of ſexes, by concurring with Grew, and adding ſome further illustrations from analogy.

In the year 1695, Camerarius attempted to prove the ſexes of plants. But, as he truſted ſolely to the palm-tree, and withal ſeemed to be doubtful as to the authenticity of the fact, he cannot be conſidered as having done any thing in confirmation of the ſexual hypotheſis.

Mr Morland, in the year 1703, adopted the ſame hypotheſis; but gave it a new modification, by ſuppoſing that the pollen contained the ſeminal plant in miniature, and conſequently that it behoved one pollen at leaſt to be conveyed into every ſeparate ſeed before it could be properly impregnated. Analogy and the ſtructure of the parts are the only arguments he employs.

Some years after this, Mr Geoffroy wrote a treatiſe on the ſexes of plants: but as he advanced nothing new, we ſhall take no farther notice of him.

Vaillant, in the year 1717, judiciously considering that the canal in the stylus of most plants was too narrow to admit the pollen itself, republished Dr Grew's theory of impregnation by means of a subtle seminal aura.

These are the sentiments of the principal botanists with regard to the generation of plants, till the celebrated Linnæus made his appearance as a botanical writer, who has extended the idea so far as to compose a complete system upon it.

Although Linnæus can have no claim to the supposed discovery of the sexual hypothesis, his being precisely the same with that of Dr Grew; yet, as he is the chief supporter and improver of this doctrine, we shall give a succinct narration of the arguments he makes use of in order to prove that vegetables propagate their species by a regular commerce of sexes.

In a treatise intitled, *Sponsalia Plantarum*, published as an inaugural dissertation by Wahlbom, in the first volume of the *Amœnitates Academicæ*, all the arguments made use of by Linnæus in his *Fundamenta Botanica*, and other works, are collected and arranged in one view. But as Wahlbom honestly attributes all the merit of this dissertation to his great master, we shall here drop his name altogether, and give the arguments as the property of Linnæus, by whom they were originally employed.

Linnæus, then, first attempts to show, that vegetables are endowed with a certain degree of life; and, secondly, that they propagate their species in a manner similar to that of animals.

"That vegetables are really living beings (says he), must be obvious at first sight; because they possess all the properties contained in that accurate definition of life laid down by the great Dr Harvey, namely, *Vita est spontanea propulsio humorum*. But universal experience teaches, that vegetables propel humours or juices: hence it is plain that vegetables must be endowed with a certain degree of life."

Not trusting solely to a syllogism founded on a definition, Linnæus proceeds to support the life of vegetables by arguments drawn from the following particulars in their œconomy; the first of which he intitles,

"*Nutritio*.—The very idea of nutrition implies a propulsion of humours, and of course the idea of life. But vegetables derive their nourishment from the earth, air, &c. and consequently must be considered as living creatures.

"2. *Ætas*.—Every animal must not only begin to exist, and have that existence dissolved by death, but must likewise pass through a number of intermediate changes in its appearance and affections. *Infancy, youth, manhood, old age*, are characterized by *imbecility, beauty, fertility, dotage*. Are not all these vicissitudes conspicuous in the vegetable world? Weak and tender in *infancy*; beautiful and salacious in *youth*; grave, robust, and fruitful, in *manhood*; and when *old age* approaches, the head droops, the springs of life dry up; and, in fine, the poor tottering vegetable returns to that *dust* from whence it sprung.

"3. *Motus*.—No inanimate body is capable of self-motion. Whatever moves spontaneously, is endowed with a living principle: for motion depends on the spontaneous propulsion of humours; and wherever there is a spontaneous propulsion of humours, there also is life.

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That vegetables are capable of motion, is evident from the following facts: plants, when confined within doors, always bend towards the light, and some of them even attempt to make their escape by the windows. The flowers of many plants, especially those of the syngenesia class, pursue the sun from east to west, rejoicing in his beams. Who then can deny that vegetables are possessed of living and self-moving powers?

"4. *Morbis*.—The term *disease* means nothing more than a certain corruption of life. It is well known, that vegetables are subject to diseases as well as animals: when over-heated, they turn thirsty, languish, and fall to the ground; when too cold, they are tormented with the chilblain, and not unfrequently *expire*: they are sometimes afflicted with cancers; and every plant is infested with lice peculiar to its species.

"5. *Mors*.—Death is opposed to life, the former being only a privation of the latter. Experience shows, that every living creature must die. But as vegetables are daily cut off by internal diseases and external injuries; as they are subject to death from the attacks of hunger, thirst, heat, cold, &c. with what propriety could vegetables be thus said to *die*, unless we allow that they previously *lived*?

"6. *Anatomia*.—Under this article we are referred to Malpighius and Grew for the organic fibres, membranes, canals, vesicles, &c. of plants, as additional proofs of their living powers.

"7. *Organizatio*.—Vegetables not only propel humours, but also prepare and secrete a number of different juices for the fruit, the nectar, &c. analogous to the various secretions in animal bodies."

From these facts and observations, Linnæus concludes, that plants are unquestionably endowed with life as well as animals; and then proceeds in the following manner to show how these animated vegetables propagate their species.

After discussing the long exploded doctrine of equivocal generation, he lays hold of another maxim of Dr Harvey, viz. *Omne vivum ex ovo*.—"It being fully evident (says he), from the foregoing chain of reasoning, that vegetables are endowed with life, it necessarily follows, agreeable to this maxim of Harvey's, that every vegetable must in like manner derive its existence from an *egg*. But as vegetables proceed from eggs, and as it is the distinguishing property of an egg to give birth to a being similar to that which produced it, the seeds must of course be the *eggs* of vegetables.

"Granting then that the seeds of vegetables are intended by nature to answer the same end as the eggs of animals, and considering at the same time that no egg can be fecundated without receiving an impregnation from the male, it follows, that the seed or eggs of vegetables cannot be fecundated by any other means. Hence also the necessity of vegetables being provided with organs of generation. But where are these organs situated? The answer is easy:—We have already found impregnated seeds within the flowers of plants; and it is natural to expect that the *genitalia* should not be at a greater distance. Now, as *copulation* always precedes *birth*, and every *flower* precedes the *fruit*, the *generating faculty* must be ascribed to the *flower*, and the *birth* to the *fruit*. Again, as the *antheræ* and *stigmata* are the only essential parts of flowers, these parts must necessarily be the *organs of generation*."

Being thus far advanced, Linnæus affirms, that the *antheræ* are the *testes*, and that the pollen performs the office of the male *semen*. These affirmations he attempts to establish by the following arguments; the first of which he terms,

“ 1. *Precedentia*.—The antheræ, or vegetable testes, always precede the fruit; and as soon as the antheræ come to maturity, which constantly happens before the maturity of the fruit, they continue to throw out their pollen as long as the flower lasts; but decay and fall off whenever the fruit comes to perfection.

“ 2. *Situs*.—The antheræ of all plants are uniformly situated in such a manner that the pollen may with the greatest facility fall upon the stigma or female organ.

“ 3. *Tempus*.—The antheræ and stigmata always flourish at the same time, whether the flowers be of the hermaphrodite or dioicous kind.

“ 4. *Loculamenta*.—When the antheræ are dissected, they discover as great a variety of structure as the pericarpia or seed capsules: for some of them have one cell, as the mercury; some two, as the hellebore, &c.

“ 5. *Castratio*.—If all the antheræ be cut off from an hermaphrodite plant, just before the flowers begin to expand, taking care at the same time that no plant of the same species grow near it, the fruit will either prove entirely abortive, or produce barren seeds.

“ 6. *Figura*.—When the pollen of different plants is examined by the microscope, it exhibits as great a variety of figures as is discoverable in the seeds themselves.

“ The accumulated force of these arguments (concludes Linnæus) amounts to a full demonstration that the antheræ are the testes, and that the pollen is the semen or genitura of vegetables.

“ The male organ being thus investigated, we hope (says Linnæus) that none will hesitate to pronounce the stigma to be the female organ, especially when the following observations are sufficiently attended to.

“ The pistillum is composed of the germen, stylus, and stigma. The germen, being only a kind of rudiment of the future fetus or seed, ceases to exist as soon as the flower comes to maturity. Neither is the stylus an essential part, as many flowers have no stylus. But no fruit ever comes to maturity without the assistance of the stigma. It follows, that the stigma must be the female organ adapted by nature for the reception of the pollen or impregnating substance. This will appear still clearer from the following chain of reasoning.

“ 1. *Situs*.—The stigmata are always situated so that the pollen may with most ease fall upon them. Besides, it is remarkable, that in most plants (though not in all) the number of the stigmata exactly corresponds with the loculamenta or cells of the pericarpium.

“ 2. *Tempus*.—Here the observation, that the stigmata and antheræ constantly flourish at the same time, is repeated.

“ 3. *Decidentia*.—The stigmata of most plants, like the antheræ, decay and fall off as soon as they have discharged their proper function; which evidently shews, that their office is not to ripen the fruit, but solely to answer the important purpose of impregnation.

“ 4. *Abscisso*.—The argument here is precisely the

same with the castration of the antheræ; and the result is likewise the same, namely the destruction of the fruit.

“ These arguments (concludes Linnæus) are sufficient to demonstrate, that the stigma is the female organ of generation, or that organ which is suited for the reception and conveyance of the semen to the *vegetable eggs*. Hence plants may be said to be *in actu veneris*, when the antheræ or testiculi spread their pollen over the stigma or female *vulva*.”

To show how the *coitus* of vegetables is effected, is our author's next object of investigation. He affirms, that the pollen is conveyed, by means of the wind or insects, to the moist stigma, where it remains until it discharges a subtile fluid, which being absorbed by the vessels of the stigma, is carried to the seeds or ova, and impregnates them. His proofs are taken from the following particulars.

“ 1. *Oculus*.—When the flowers are in full blow, and the pollen flying about, every one may then see the pollen adhering to the stigma. This he illustrates by mentioning as examples the *viola tricolor*, *iris*, *campanula*, &c.

“ 2. *Proportio*.—The stamina and pistilla, in most plants, are of equal heights, that the pollen, by the intervention of the wind, may, with the greater facility, fall upon the stigma.

“ 3. *Locus*.—The stamina of most plants surround the pistillum, to give the pollen an opportunity of falling upon the stigma at every breeze of wind. Even in the monœcia class, the male flowers stand generally above the female ones, to afford an easier conveyance of the pollen to the stigma.

“ 4. *Tempus*.—It is remarkable that the stamina and pistilla constantly appear at the same time, even in plants belonging to the monœcia class.

“ 5. *Pluvia*.—The flowers of most plants expand by the heat of the sun, and shut themselves up in the evening or in rainy weather. The final cause of this must be to keep the moisture from the pollen, lest it should be thereby coagulated, and of course prevented from being blown upon the stigma.

“ 6. *Palmicole*.—That the cultivators of palm-trees were in use to pull off the spadices from the males, and suspend them over the spathæ of the females, is attested by Theophrastus, Pliny, Prosper Alpinus, Kempfer, and many others. If this operation happened to be neglected, the dates were sour and destitute of nuts. Kempfer adds this singular circumstance, that the male spadix, after being thoroughly dried and kept till next season, still retained its impregnating virtue.

“ 7. *Flores nutantes*.—As the pollen is specifically heavier than air, such flowers as have their pistillum longer than the stamina, hang down, or incline to one side, *e. g.* the *fritillaria*, *campanula*, &c. An easy admission of the pollen to the stigma is the final cause of this appearance.

“ 8. *Submersi*.—Many plants that grow below water, emerge when their flowers begin to blow, and swim upon the surface till they receive their impregnation, and then sink down.

“ 9. *Omnium florum genuina consideratio*.—Here a number of particulars are recited. We shall confine ourselves to those that are most striking and applicable to the subject.

“ When

“When the flowers of the male hemp are pulled off before those of the female are fully expanded, the females do not produce fertile seeds. But as a male flower is sometimes found upon a female plant, this may be the reason why fertile seeds are sometimes produced even after this precaution has been observed.

“The tulip affords another experiment to the same purpose.—Cut off all the anthers of a red tulip before the pollen is emitted; then take the ripe antheræ of a white tulip, and throw the pollen of the white one upon the stigma of the red; the seeds of the red tulip being thus impregnated by one of a different complexion, will next season produce some red, some white, but most variegated flowers.”

In the year 1744, Linnæus published a description of a new genus, which he called *peloria*, on the supposition of its being a *hybrid* or *mule* plant, *i. e.* a plant produced by an unnatural commixture of two different genera. The root, leaves, caulis, &c. of this plant are exceedingly similar to those of the *antirrhinum linaria*; but the flower and other parts of the fructification are totally different. On account of its similarity to the *linaria* in every part but the flower, Linnæus imagined it to have been produced by a fortuitous commixture of the *linaria* with some other plant, although he has never yet been able to point out the father. This doctrine of the production of *mule* plants has since been greatly prized and carefully propagated by Linnæus and the other supporters of the sexual hypothesis. In the third volume of the *Amœnitates Academicæ*, there is a complete dissertation, intitled *Plantæ Hybridæ*, wherein the doctrine of *vegetable mules* is much improved and extended. This dissertation contains a list of 47 mules, with their supposed fathers and mothers. For example,

The *Veronica spuria* is said to be a *mule* plant begot by the *Verbena officinalis* upon the *Veronica maritima*.

The *Delphinium hybridum*, a *mule* begot by the *Aconitum napellus* upon the *delphinium elatum*.

The *Arctotis calendula*, a *mule* begot by the *Calendula plovialis* upon the *arctotis triftis*.

The *Aselepias nigra*, a *mule* begot by the *Cynanchum acutum* upon the *Aselepias vincetoxicum*, &c.

From the examples given in this dissertation, Linnæus draws this conclusion, That only two species of each genus existed *ab origine*; and that all the variety of species which now appear have been produced by unnatural embraces betwixt species of different genera.

Under this head, Linnæus likewise quotes from Ray the story of Richard Baal gardener at Brentford. This Baal sold a large quantity of the seeds of the *brassica florida* to several gardeners in the suburbs of London. These gardeners, after sowing their seeds in the usual manner, were surpris'd to find them turn out to be plants of a different species from that which Baal made them believe they had purchased; for, instead of the *brassica florida*, the plants turned out to be the *brassica longifolia*. The gardeners, upon making the discovery, commenced a prosecution of fraud against Baal in Westminster-hall. The court found Baal guilty of fraud, and decreed him not only to restore the price of the seeds, but likewise to pay the gardeners for their lost time, and the use of their ground. “Had these judges

(says Linnæus) been acquainted with the sexual hypothesis, they would not have found Baal guilty of any crime, but would have ascribed the accident to the fortuitous impregnation of the *brassica florida* by the pollen of the *brassica longifolia*.”

Linnæus next proceeds to celebrate the utility of insects, because they convey the pollen of the male to the stigma of the female. “In this way (says he), it is reasonable to think that many dioicous plants are impregnated. Nay, even the hermaphrodites themselves are greatly obliged to the different tribes of insects, which, by fluttering and treading in the corolla, are constantly scattering the pollen about the stigma.

“Upon the whole then, (concludes Linnæus), the coitus of vegetables is evident to a demonstration. This coitus is nothing more than the conveyance of the pollen to the stigma, to which it adheres till it bursts, and discharges a subtil elastic fluid. This fluid or aura is absorbed by the vessels of the stylus, and carried directly to the ovarium or germen, where the mysterious work of impregnation is fully completed.”

THESE are the arguments employed by Linnæus and other advocates for the sexual commerce of vegetables.—Let us next attend to those employed by the opposers of this hypothesis.

It is admitted by Pontedera, Dr Allston, &c. that some of the ancients applied the terms *male* and *female* to several plants. But then they deny that these terms conveyed the same ideas to the ancients that they do to the moderns. *Male* and *female*, when applied to plants, were to the ancients mere terms of distinction, serving only as trivial names to distinguish one species or variety from another. The ancients were ignorant of the very characters which constitute the difference between what is called a *male* and *female* plant among the moderns. Theophrastus, Dioscorides, Pliny, and, in a word, the whole ancient botanical writers, confound the very notion of the modern sexes: they call the real female, or seed bearing plant the *male*; and the male, or barren plant, the *female*. Nay, they have even applied the terms *male* and *female* to many plants which bear nothing but hermaphrodite flowers.

Such is the nature of this controversy, that it cannot be determined with any degree of certainty, but by experiments made upon dioicous plants. If a female plant can produce fertile seeds without having any communication with the pollen of the male, the use of this pollen with respect to the impregnation of seeds must of necessity be entirely superfluous.

Now, both Camerarius and Dr Allston tried these experiments with the same success. Those two eminent botanists took female plants of the mercury, spinage, and hemp; transplanted them at a great distance from any males of the same genus, and besides had them inclosed by double rows of hedges. The result was, that each of these plants produced great quantities of fertile seeds. Tournefort made the same trial upon the lupulus, Miller upon the bryony, and Geoffroy upon the mays; and all of them declare that the seeds of these plants were as fertile as if they had been surrounded by a thousand males.

Linnæus, in his first argument for the coitus of plants, refers every man to the evidence of his senses.

“Do we not see (says he) the stigma of almost every hermaphrodite

hermaphrodite flower covered over with the pollen or impregnating substance? Do not we see the parietaria, the urtica, &c. by violent explosions, discharging their pollen in the open air, that it may be carried in that vehicle to the stigmata of their respective females?—All this is admitted by the opposers of the sexes: but then they deny that these explosions, &c. are intended to create any intercourse between the male and the female; and further allege, that this ejection of the pollen is intended by nature to throw off something excrementitious, or at least something which, if retained, would prove noxious to the fructification.

Linnæus takes his second argument from the proportion which the stamina bear to the stylus, alleging that they are generally of the same height.—This observation (say the anti-sexualists) is not only contrary to experience, but, allowing it to be universal, no conclusion can be drawn from it either for or against the sexual hypothesis.

The third argument is taken from the *locus* or situation of the stamina with respect to the stylus: “and as the male flowers in the monœcia class stand always above the female flowers, it must be concluded (says Linnæus), that the intention of nature, in this disposition of the parts, is to allow a free and easy access of the pollen to the stigma.”—But the stamina cannot be said to surround the pistillum in the monandria and diandria classes: and the position of the male flowers in the monœcia class is a mere chimera; for in the ricinus, one of the examples which Linnæus mentions in confirmation of his doctrine, the female flowers stand uniformly some inches above the males.

That the stamina and pistilla generally come to perfection at the same time, and that this happens even in the dioecious plants, is Linnæus’s fourth argument. But, as it is acknowledged by Linnæus himself, that there are many exceptions with respect to this fact, the opposers of the sexual hypothesis allege that it carries the best answer in its own bosom.

The fifth argument is founded on the circumstance of some flowers shutting up their petals in rainy or moist evenings.—But many flowers do not shut themselves up, either in the night or moist weather, as the passion-flower, &c. The *lychnis noctiflora*, *mirabilis peruviana*, &c. open their flowers in the night, and shut them at the approach of the sun. Hence this is another final cause (say the anti-sexualists) perverted to support a favourite hypothesis.

We come now to the culture of the palm-tree, which is the sixth and most plausible argument employed by the sexualists. Of this, the most authentic account we have is the following by Dr Hasselquist, in one of his letters to Linnæus, dated Alexandria May 18th, 1750. “The first thing I did after my arrival was to see the date-tree, the ornament and a great part of the riches of this country. It had already blossomed; but I had, nevertheless, the pleasure of seeing how the Arabs assist its fecundation, and by that means secure to themselves a plentiful harvest of a vegetable, which was so important to them, and known to them many centuries before any botanist dreamed of the difference of sexes in vegetables. The gardener informed me of this before I had time to inquire; and would show me, as a very curious thing, the male and female of the date or palm-trees: nor could he conceive how I, a Frank, lately

arrived, could know it before; for, says he, all who have yet come from Europe to see this country, have regarded this relation either as a fable or miracle. The Arab seeing me inclined to be further informed, accompanied me and my French interpreter to a palm-tree, which was very full of young fruit, and had by him been wedded or fecundated with the male when both were in blossom. This the Arabs do in the following manner: When the spadix has female flowers, that come out of its spatha, they search on a tree that has male flowers, which they know by experience, for a spadix which has not yet burst out of its spatha: this they open, take out the spadix, and cut it lengthwise in several pieces, but take care not to hurt the flowers. A piece of this spadix with male flowers they put lengthwise between the small branches of the spadix which hath female flowers, and then lay the leaf of a palm over the branches. In this situation I yet saw the greatest part of the spadices which bore their young fruit; but the male flowers which were put between were withered. The Arab besides gave me the following anecdotes: First, unless they, in this manner, wed and fecundate the date-tree, it bears no fruit. Secondly, they always take the precaution to preserve some unopened spathæ with male flowers from one year to another, to be applied for this purpose, in case the male flowers should miscarry or suffer damage. Thirdly, if they permit the spadix of the male flowers to burst or come out, it becomes useless for fecundation: it must have its *maidenhead* (these were the words of the Arab), which is lost in the same moment the blossoms burst out of their case. Therefore the person who cultivates date-trees must be careful to hit the right time of assisting their fecundation, which is almost the only article in their cultivation. Fourthly, on opening the spatha, he finds all the male flowers full of a liquid which resembles the finest dew; it is of a sweet and pleasant taste, resembling much the taste of fresh dates, but much more refined and aromatic: this was likewise confirmed by my interpreter, who hath lived 32 years in Egypt, and therefore had opportunities enough of tasting both the nectar of the blossoms and the fresh dates.”

Now, though this account seems fully to confirm the fact, *viz.* that such a practice obtains among the Arabs, and that they assert its efficacy in fecundating the trees, it is certain (say the opposers of this doctrine), that no intelligent person, who is not already wedded to an hypothesis, will attempt to found an argument upon the assertions of a people so full of ridiculous superstitions. Before Dr Hasselquist, or any other person, can draw any argument from the above mentioned account, he ought to see the experiment several times repeated, with his own eyes, and not take it upon the word of a people who, besides their superstition, may very probably find it their interest to impose upon travellers.

Mr Milne, author of the Botanical Dictionary, however, relates an experiment, near akin to the above-mentioned, which merits some attention: “In the garde de M. de la Serre, of the Rue S. Jacques at Paris, was a female turpentine tree, which flowered every year, without furnishing any fruit capable of vegetation. This was a sensible mortification to the owner, who greatly desired to have the tree increased.

Messieurs Duhamel and Joffeu very properly judged that they might procure him that pleasure by the assistance of a male pistachio tree. They sent him one very much loaded with flowers. It was planted in the garden of M. de la Serre, very near the female turpentine tree, which the same year produced a great quantity of fruits, that were well-conditioned, and rose with facility. The male plant was then removed; the consequence of which was, that the turpentine-tree of M. de la Serre in none of the succeeding years bore any fruit that, upon examination, was found to germinate."

Upon this experiment it is observed by the antifexualists, that, though it were a thousand times repeated, it never could be decisive. The nature of the controversy, say they, is such, that one experiment is more decisive in favour of their opinion, than 10,000 can be against them. The reason is plain: If there is such a thing as a sexual intercourse in vegetables, it is as wonderful that any seeds should be perfected without that intercourse, as that a virgin should have a child; the last is not in the least more extraordinary than the first. One experiment, therefore, which shows that seeds may be perfected without such sexual intercourse, is either to be resolved into a miracle, or must prove absolutely decisive against the sexual system; while numberless experiments such as that above mentioned could prove nothing, because we know not what effect vegetables may have by growing in each other's neighbourhood, independent of any sexual intercourse.

In Milne's Botanical Dictionary, under the article *Sexus Plantarum*, the author quotes Dr Alison's experiments partially. The facts recorded by Dr Alison are as follow. 1. Three sets of spinach, planted at a great distance from each other, proved all of them fertile, and ripened plenty of seeds, which were found to answer as well as other spinach seed. 2. A plant of hemp growing by itself, being taken care of, produced about 30 good seeds, though in a situation very much exposed, and plucked up too soon, on account of bad weather, in the autumn. 3. This experiment, which is the most remarkable of the three, we shall give in the Doctor's own words. "In the spring of 1741, I carried two young seedling plants of the French mercury, long before there was any in, from the city physic garden, the only place where it was then to be found in this country, to the king's garden at the Abbey; which are more than 700 yards distant from one another, with many high houses, trees, hedges, and part of a high hill, between them: and planted one of them in one inclosure, where it was shaded from the sun the greatest part of the day; and the other in another, 25 yards distant, exposed to the south and west. Both plants ripened fertile seeds; and the last shed them so plentifully, that it proved a troublesome weed for several years, though none of the species was to be found in that garden for more than 20 years preceding."

Of this experiment Mr Milne hath not taken any notice; but upon the other two, has the following remark. "The result of these, and such like experiments, can be accounted for, on the principle of the sexes, in no other way than on the supposition that some male flowers have been intermixed with the female, and operated the fecundation in question. This appears the more probable, as only a part of the seeds

in the above experiments attained to perfect maturity, so as to be capable of vegetation."

The seventh argument of Linnæus is taken from the *flores nutantes*.—The pistils of these flowers, according to Linnæus, are always longer than the stamina; and nature has assigned them this penile posture, that the pollen, which is specifically heavier than air, may the more conveniently fall upon the stigma.—But the pistils of the campanula, liliium, and many other *flores nutantes*, are not longer than the stamina. Besides, granting this were uniformly the case; yet, as the pollen is heavier than air, this posture must of necessity either make the pollen miss the pistillum altogether, or, at any rate, it can only fall upon the back part of the pistil in place of the stigma; and, of course, such a direction would rather tend to frustrate than promote the impregnation of the seed.

The eighth argument is taken from the *plante submersæ*, which are said to emerge as soon as their flowers begin to blow, lest the pollen should be coagulated or washed off by the water.—But many submarine and aquatic plants fructify entirely below water; and, supposing they did not, the same argument would equally prove it to be the intention of nature, that the pollen should be blown away by the winds, as that it should be subservient to the impregnation of the seed.

The ninth and last argument is intitled *Omniium firum genuina consideratio*; which (say the antifexualists) is nothing more than a collection of vague observations upon the structure and œconomy of particular plants, some of them true, others false, but all of them evidently thrust in as supports to a favourite hypothesis.

Thus the dispute rested some years ago; but of late there has appeared a translation of one of Linnæus's works upon the subject, which, though published in 1759, was but little known in this country. A treatise on the Sexual System had also been published by the Abbé Spalanzani, in which he not only opposed the Linnæan doctrine, but treated it with ridicule, though without taking any notice of this last publication, which he seems to have been ignorant of. In this he mentions an experiment with hemp similar to some of those already related; but which was also tried by Linnæus, and in his hands turned out the very reverse of what it did with Spalanzani. In the treatise alluded to, Linnæus mentions Sir Thomas Millington as the first among the moderns who thought of the distinction of sexes in plants. He was Savilian professor at Oxford; and Dr Grew, in his anatomy of plants, relates, that, in a conversation on the nature of the antheræ of flowers, Sir Thomas hinted, that those parts might probably be analogous to the male organs of animals, and serve for the impregnation of the fruit. Grew improved on the idea and pursued it. That the subject, however, may be properly understood, our author is of opinion, that we should first accurately understand the nature of vegetable bodies; and in order to do this, we ought first to consider the operations of nature in the human frame, and from thence continue our researches through the various tribes of inferior animals, till at last we arrive at the vegetable creation. In like manner, to illustrate the generation of plants, we must likewise take our first lights from the animal kingdom, and pursue the same chain till we come to vegetables. This

subject, indeed, he owns to be so obscure, that no naturalists has hitherto been able to say any thing satisfactory concerning it; he only mentions some remarkable facts concerning the production of mule animals from the copulation of two individuals of different species. In the horse-kind we see two different kinds of mules produced. "From the mare and male ass (says he) proceeds the mule properly so called, which in its nature, that is, in its medullary substance and nervous system, agrees with its mother; but in its cortical substance and outward form, in its mane and tail, resembles the ass. Between the female ass and the horse, the other kind of mule is engendered, whose nature or medullary substance resembles that of the ass; but its cortical structure that of the horse. If the he-goat of Angora copulates with the common she-goat, the kid, by that means procured, inherits the external structure and valuable coat of its father; while, on the other hand, if the common he-goat impregnates the goat of Angora, the kid produced has the same external form, and bears the same worthless hair with its father. Hence it seems probable, that the medullary substance, with what Malpighi calls the keel (*carina*), and the nervous system, are latent in the egg of the mother; the cortical substance, or vascular system, being derived from the father."

These cortical and medullary substances are previously explained by our author to be those of which both animal and vegetable bodies are composed. By the medullary substance in animal bodies, he means the spinal marrow arising from the organized brain, and sending off the nerves; by the cortical substance the vessels with the heart attached to them, by which the medullary part is nourished. In vegetables, the cortical part nourishes the plant, not only by its root, but with its whole surface. For a small branch torn from the parent stem, and placed in water, imbibes nourishment at its pores. Thus the *Fuci*, and other marine vegetables, are nourished without a root, solely by the pores dispersed through their whole substance. The bark of trees every year deposits its gelatinous internal layer, which is added to the wood, and assimilates itself to it. The medullary, which is the other essential part of vegetables, is multiplied and extended without end; and whenever it is entirely lost, the death of the plant necessarily follows. In examining this substance, we must be careful, in two cases, that we be not misled; first, by the straws of grasses, and by other hollow stems, where the medulla lines the inside of the bark; and secondly, by large trees, whose trunks become perfectly solid throughout, except in the very summits of the branches. The wood performs the office of bones, when there is no longer any occasion for the medulla in that part; and trees, although become hollow, continue nevertheless to grow so long as this substance remains in the extreme branches. It is by no means necessary that the medulla should have any connection with the root, as it is only nourished by the cortical substance of the plant, and is therefore increased at its upper extremity without end if it meets with no resistance. In those animals whose spinal marrow is surrounded by a bony covering, as in the larger and more perfect kinds, this substance never comes out of its confinement; and the harder its case, the more absolutely is its increase prevented; but in the smaller tribes of worms, where

this covering is less rigid, a perpetual and unlimited increase of the animal takes place.

"The most important parts of the flower, and which are absolutely essential to it, (our author proceeds to observe †), are the stamina and pistilla. So essential are they, that among the many thousands of flowers with which we are acquainted, no one can be found not furnished with both these organs. The stamina derive their origin from the substance of the wood, which was originally formed from the inner bark, and they may therefore be said to spring from the cortical substance of the vegetable. This is perfectly evident in the *Afarum* (*Atarabacca*), whose twelve stamina proceed from twelve fibres in the inner bark. Double flowers illustrate the same fact: in them, the stamina being weakened and dissolved by excess of nourishment, the woody substance re-assumes the softness of the inner bark, of which it was originally formed. All stamina consist of vessels containing the pollen, or impregnating powder, which they discharge in due time, not without the strictest observance of certain natural laws. The form of these vessels, like that of the capsules of the fruit, is accurately defined, as well as their cells, their particular manner of bursting, and the pollen which they contain; this pollen, likewise, is no less certain and uniform in its figure, size, and colour, than the seeds themselves.

"The pistillum is the only part which originates from the medullary substance, and is therefore invariably situated in the centre of the flower. It always contains the rudiments of the seed, which, in process of time, ripen into fruit. The rudiments of the fruit are called the *germen*, or seed-bud; this has constantly another organ connected with it, named the *stigma*, which is in its highest degree of vigour and perfection during the time of flowering.

"Another circumstance worthy of attention is, that the root, which the first year of its growth is large and filled with medullary pulp, the following season becomes hollow, in producing the stem, flowers, and seed; all this pulp being conveyed to the flower, and seeming to be only destined to the formation of seed, so many new and distinct animations being formed from it as there are rudiments of new plants. This is particularly observable in the turnip.

"Thus vegetables, like insects, are subject to a metamorphosis; with this difference only, that their flowers are fixed to one spot, instead of being able, like insects, to fly from place to place; and that their nourishment is not given them by means of peculiar organs for the formation of chyle. We have seen, that the outer bark becomes calyx, the internal bark corolla, the wood stamina, and the medulla pistillum; the fructification exhibiting the internal parts of a plant naked and unfolded. We have likewise seen, that the fructification puts an end to vegetation in the part from whence it arises, stopping the progress of the medulla, which would otherwise have extended itself without end by the branches, and occasioning the division of that medulla into a number of seeds, each endowed with a separate living principle. But as the medulla exists naked in the germen, it cannot support itself, or make any farther progress, without the assistance of the cortical substance which it has left; it must therefore receive this assistance by some means or other,

other, and in fact does receive it from the stamina and their pollen, which owe their origin to the woody matter derived from the inner bark, and originally generated by the outer bark. But if it happens that the cortical substance is able to invest the medullary rudiments of the seed in the flower itself, the plant becomes viviparous, as in *fesluca*, *aira*, and *poa vivipara*, in which nearly the same thing takes place as in the medulla of other plants, which remains in the branches, and is variously distributed, being at once both clothed and nourished by the bark, and enabled to form new branches, just as it happens in the compound animals, or *fertularia*.

“The organs common in general to all plants are, 1. The root, with its capillary vessels, extracting nourishment from the ground. 2. The leaves, which may be called the *limbs*, and which, like the feet and wings of animals, are organs of motion; for being themselves shaken by the external air, they shake and exercise the plant. 3. The trunk, containing the medullary substance, which is nourished by the bark, and for the most part multiplied into several compound plants. 4. The fructification, which is the true body of the plant, set at liberty by a metamorphosis, and consists only of the organs of generation; it is often defended by a calyx, and furnished with petals, by means of which it in a manner flutters in the air.

“Many flowers have no calyx, as several of the lily tribe, the *hippuris*, &c.; many want the corolla, as grasses, and the plants called *apetalous*; but there are none destitute of stamina and pistilla, those important organs destined to the formation of fruit. We therefore infer from experience, that the stamina are the male organs of generation, and the pistilla the female; and as many flowers are furnished with both at once, it follows that such flowers are hermaphrodites. Nor is this so wonderful, as that there should be any plants in which the different sexes are in distinct individuals; for plants being immoveably fixed to one spot, cannot, like animals, travel in search of a mate. There exists, however, in some plants, a real difference of sex. From seeds of the same mother, some individuals shall be produced, whose flowers exhibit stamina without pistilla, and may therefore be properly called *males*; while the rest, being furnished with pistilla without stamina, are therefore denominated *females*: and so uniformly does this take place, that no vegetable was ever found to produce female flowers, without flowers furnished with stamina being produced, either on the same individual, or on another plant of the same species, and *vice versa*.

“As all seed-vessels are destined to produce seeds, so are the stamina to bear the *pollen*, or fecundating powder. All seeds contain within their membranes a certain medullary substance, which swells when dipped into warm water. All pollen, likewise, contains in its membrane an elastic substance, which, although very subtle and almost invisible, by means of warm water often explodes with great vehemence. While plants are in flower, the pollen falls from their anthers, and is dispersed abroad, as seeds are dislodged from their situation when the fruit is ripe. At the same time that the pollen is scattered, the pistillum presents its stigma, which is then in its highest vigour, and, for a portion of the day at least, is moistened with a fine dew. The stamina either surround this stigma, or, if

the flowers are of the drooping kind, they are bent towards one side, so that the pollen can easily find access to the stigma; where it not only adheres by means of the dew of that part, but the moisture occasions its bursting, by which means its contents are discharged. What issued from it, being mixed with the fluid of the stigma, is conveyed to the rudiments of the seed. Many evident instances of this present themselves to our notice; but I have no where seen it more manifest than in the jacobean lily (*amaryllis formosissima*), the pistillum of which, when sufficient heat is given the plant to make it flower in perfection, is bent downwards, and from its stigma issues a drop of limpid fluid, so large that one would think it in danger of falling to the ground. It is, however, gradually re-absorbed into the style about three or four o'clock, and becomes invisible till about ten the next morning, when it appears again; by noon it attains its largest dimensions; and in the afternoon, by a gentle and scarcely perceptible decrease, it returns to its source. If we shake the antheræ over the stigma, so that the pollen may fall on this limpid drop, we see the fluid soon after become turbid, and assume a yellow colour; and we perceive little rivulets, or opaque streaks, running from the stigma towards the rudiments of the seed. Some time afterwards, when the drop has totally disappeared, the pollen may be observed adhering to the stigma, but of an irregular figure, having lost its original form. No one, therefore, can assent to what Morland and others have asserted, that the pollen passes into the stigma, pervades the style, and enters the tender rudiments of the seed, as Loewenhoeck supposed his worms to enter the ova. A most evident proof of the falsehood of this opinion may be obtained from any species of *mirabilis* (marvel of Peru), whose pollen is so very large, that it almost exceeds the style itself in thickness, and, falling on the stigma, adheres firmly to it; that organ sucking and exhaling the pollen, as a cuttle-fish devours every thing that comes within its grasp. One evening in the month of August I removed all the stamina from three flowers of the *mirabilis longiflora*, at the same time destroying all the rest of the flowers which were expanded; I sprinkled these three flowers with the pollen of *mirabilis jalappa*; the seed-buds swelled, but did not ripen. Another evening I performed a similar experiment, only sprinkling the flowers with the pollen of the same species; all these flowers produced ripe seeds.

“Some writers have believed, that the stamina are parts of the fructification, which serve only to discharge an impure or excrementitious matter, and by no means formed for so important a work as generation. But it is very evident, that these authors have not sufficiently examined the subject; for as, in many vegetables, some flowers are furnished with stamina only, and others only with pistilla, it is altogether impossible, that stamina situated at so very great a distance from the fruit as on a different branch, or perhaps on a separate plant, should serve to convey any impurities from the embryo.

“No physiologist could demonstrate, *à priori*, the necessity of the masculine fluid to the rendering the eggs of animals prolific; but experience has established it beyond a doubt. We therefore judge *à posteriori* principally of the same effect in plants.

"In the month of January 1760 the *antholyza cunonia* flowered in a pot in my parlour, but produced no fruit, the air of the room not being sufficiently agitated to waft the pollen to the stigma. One day, about noon, seeing the stigma very moist, I plucked off one of the antheræ, by means of a fine pair of forceps, and gently rubbed it on one of the expanded stigmata. The spike of flowers remained eight or ten days longer; when I observed, in gathering the branch for my herbarium, that the fruit of that flower only on which the experiment had been made had swelled to the size of a bean. I then dissected this fruit, and discovered that one of the three cells contained seeds in considerable number, the other two being entirely withered.

"In the month of April I sowed the seeds of hemp (*cannabis*) in two different pots. The young plants came up so plentifully, that each pot contained 30 or 40. I placed each by the light of a window, but in different and remote apartments. The hemp grew extremely well in both pots. In one of them I permitted the male and female plants to remain together, to flower and bear fruit, which ripened in July; and being macerated in water and committed to the earth, sprung up in twelve days. From the other, however, I removed all the male plants as soon as they were old enough for me to distinguish them from the females. The remaining females grew very well, and presented their long pistilla in great abundance, these flowers continuing a very long time, as if in expectation of their mates; while the plants in the other pot had already ripened their fruit, their pistilla having, quite in a different manner, faded as soon as the males had discharged all their pollen. It was certainly a beautiful and truly admirable spectacle, to see the unimpregnated females preserve their pistilla so long green and flourishing, not permitting them to begin to fade till they had been for a considerable time exposed, in vain, to the access of the male pollen. Afterwards, when these virgin plants began to decay through age, I examined all their calyxes in the presence of several botanists, and found them large and flourishing, although every one of the feed-buds was brown, compressed, membranaceous, and dry, not exhibiting any appearance of cotyledons or pulp. Hence I am perfectly convinced, that the circumstance which authors have recorded, of the female hemp having produced seeds, although deprived of the male, could only have happened by means of pollen brought by the wind from some distant place. No experiment can be more easily performed than the above; none more satisfactory in demonstrating the generation of plants.

"The *Clusia tenella* was in like manner kept growing in my window through the months of June and July. The male plant was in one pot, the female in another. The latter abounded with fruit, not one of its flowers proving abortive. I removed the two pots into different windows of the same apartment: still all the female flowers continued to become fruitful. At length I took away the male entirely, leaving the female alone, and cutting off all the flowers which it had already born. Every day new ones appeared from the axilla of every leaf; each remained eight or ten days; after which their footstalks turning yellow, they fell barren to the ground. A botanical friend, who had amused

himself with observing this phenomenon with me, persuaded me to bring from the stove in the garden a single male flower, which he placed over one of the female ones, then in perfection, tying a piece of red silk round its pistillum. The next day the male flower was taken away, and this single seed-bud remained and bore fruit. Afterwards I took another male flower out of the same stove, and with a pair of slender forceps pinched off one of its antheræ, which I afterwards gently scratched with a feather, so that a very small portion of its pollen was discharged upon one of the three stigmata of a female flower, the two other stigmata being covered with paper. This fruit likewise attained its due size; and on being cut transversely, exhibited one cell filled with a large seed, and the other two empty. The rest of the flowers, being unimpregnated, faded and fell off. This experiment may be performed with as little trouble as the former.

"The *Datisca cannabina* came up in my garden from seed ten years ago, and has every year been plentifully increased by means of its perennial root. Flowers in great number have been produced by it; but being all female, they proved abortive. Being desirous of procuring male plants, I obtained more seeds from Paris. Some more plants were raised; but these likewise, to my great mortification, all proved females, and bore flowers, but no fruit. In the year 1757, I received another parcel of seeds. From these I obtained a few male plants, which flowered in 1758. These were planted at a great distance from the females; and when their flowers were just ready to emit their pollen, holding a paper under them, I gently shook the spike or panicle with my finger, till the paper was almost covered with the yellow powder. I carried this to the females, which were flowering in another part of the garden, and placed it over them. The cold nights of the year in which this experiment was made, destroyed these datiscas, with many other plants, much earlier than usual. Nevertheless, when I examined the flowers of those plants which I had sprinkled with the fertilizing powder, I found the seeds of their due magnitude; while in the more remote datiscas, which had not been impregnated with pollen, no traces of seeds were visible.

"Several species of *Momordica*, cultivated with us, like other Indian vegetables, in close stoves, have frequently born female flowers; which, although at first very vigorous, after a short time have constantly faded and turned yellow, without perfecting any seed, till I instructed the gardener, as soon as he observed a female flower, to gather a male one and place it above the female. By this contrivance we are so certain of obtaining fruit, that we dare pledge ourselves to make any female flowers fertile that shall be fixed on.

"The *Jatropha urens* has flowered every year in my hot-house; but the female flowers coming before the males, in a week's time dropped their petals, and faded before the latter were opened; from which cause no fruit has been produced, but the germina themselves have fallen off. We have therefore never had any fruit of the jatropha till the year 1752, when the male flowers were in vigour on a tall tree at the same time that the females began to appear on a small jatropha which was growing in a garden-pot. I placed this pot under the other tree, by which means the female flowers

flowers bore seeds, which grew on being sown. I have frequently since amused myself with taking the male flowers from one plant, and scattering them over the female flowers of another, and have always found the seeds of the latter impregnated by it.

“Two years ago I placed a piece of paper under some of these male flowers, and afterwards folded up the pollen which had fallen upon it, preserving it so folded up, if I remember right, four or six weeks, at the end of which time another branch of the same *Jatropha* was in flower. I then took the pollen, which I had so long preserved in paper, and strewed it over three female flowers, the only ones at that time expanded. These three females proved fruitful, while all the rest which grew in the same bunch fell off abortive.

“The interior petals of the *Ornithogalum*, commonly, but improperly, called *Canadense*, cohere so closely together, that they only just admit the air to the germen, and will scarcely permit the pollen of another flower to pass: this plant produced every day new flowers and fruit, the fructification never failing in any instance; I therefore, with the utmost care, extracted the antheræ from one of the flowers with a hooked needle; and, as I hoped, this single flower proved barren. This experiment was repeated about a week after with the same success.

“I removed all the antheræ out of a flower of *Cheledonium corniculatum* (scarlet horned poppy), which was growing in a remote part of the garden, upon the first opening of its petals, and stripped off all the rest of the flowers; another day I treated another flower of the same plant in a similar manner, but sprinkled the pistillum of this with the pollen borrowed from another plant of the same species: the result was, that the first flower produced no fruit, but the second afforded very perfect seed. My design in this experiment was to prove, that the mere removal of the antheræ from a flower is not in itself sufficient to render the germen abortive.

“Having the *Nicotiana frutesca* growing in a garden-pot, and producing plenty of flowers and seed, I extracted the antheræ from a newly-expanded flower before they had burst, at the same time cutting away all the other flowers; this germen produced no fruit, nor did it even swell.

“I removed an urn, in which the *Asphodelus fistulosus* was growing, to one corner of the garden, and from one of the flowers which had lately opened I extracted its antheræ; this caused the impregnation to fail. Another day I treated another flower in the same manner: but bringing a flower from a plant in a different part of the garden, with which I sprinkled the pistillum of the mutilated one, its germen became by that means fruitful.

“*Ixia chinensis*, flowering in my stove, the windows of which were shut, all its flowers proved abortive. I therefore took some of its antheræ in a pair of pincers, and with them sprinkled the stigmata of two flowers, and the next day one stigma only of a third flower; the seed-buds of these flowers remained, grew to a large size, and bore seed; the fruit of the third, however, contained ripe seed only in one of its cells.

“To relate more experiments would only be to fatigue the reader unnecessarily. All nature proclaims the truth I have endeavoured to inculcate, and every

flower bears witness to it. Any person may make the experiment for himself, with any plant he pleases, only taking care to place the pot in which it is growing in the window of a room sufficiently out of the reach of other flowers; and I will venture to promise him, that he will obtain no perfect fruit, unless the pollen has access to the pistillum.”

SECT. VI. *Of the Natural Method of Classification.*

BESIDES all the abovementioned methods of classing and distributing plants into their different orders, genera, &c. which are deduced from the fructification, and are therefore called *artificial*, Linnæus and most other botanists are of opinion that there is a natural method, or nature's system, which we should diligently endeavour to find out. That this system, say they, is no chimera, as some imagine, will appear particularly from hence, That all plants, of what order soever, show an affinity to some others; and thus, as formerly observed, not only the virtues of a great number of species may be ascertained, but we may know with certainty how to find a proper succedaneum for plants which cannot easily be had.—Linnæus divides vegetables into the 58 natural methods following.

1. *Palme*. These are perennial, and mostly of the shrub and tree kind. The stem is in height from 2 to 100 feet and upwards. The roots form a mass of fibres which are commonly simple and without any ramifications. The stem is generally simple, without branches, cylindrical, and composed of strong longitudinal fibres. The leaves, which are a composition of a leaf and a branch, by Linnæus called *frondes*, are of different forms; being sometimes shaped like an umbrella or fan; sometimes singly or doubly winged; the small or partial leaves, which are often three feet in length, being ranged alternately. The branches, or principal leaves, are six, eight, ten, or twelve feet long; the length varying according to the age and size of the plant. They are covered at first with a thick brown dust, like those of the ferns. The base of the leaves frequently embraces the greater part of the stem. The flowers are male and female upon the same or different roots; except in stratiotes, which bears hermaphrodite flowers only; and palmetto, in which the flowers are hermaphrodite and male upon distinct roots. The flowers are all disposed in a panicle or diffused spike, except in the hydrocharis, stratiotes, and villisneria; in which they proceed singly from the wings or angles of the leaves. The common calyx, in this order, is that termed a *periantha* or *sheath*, and has either one or two valves. The spadix, or head of flowers protruded from the sheath, is generally branched. Each flower is generally furnished with a perianthium or proper flower-cup, consisting of three leaves or divisions that are small and permanent. The petals are three in number, of a substance like leather, and permanent like the leaves of the calyx. The flowers of zamia have no petals. The stamina are from 2 to 20 and upwards, cohering slightly at their base. The seed buds are from one to three in number, placed in the middle of the flower, and supporting a like number of styles which are very short. The seed-vessel is generally a pulpy fruit of the berry or cherry kind, containing one cell filled with fibrous flesh, and covered with a skin which is of a substance

like leather. The seeds are in number from one to three in each pulpy fruit, of a hard bony substance, round or oval, and attached by their base to the bottom of the fruit.—These plants, particularly the seeds, are astringent, and of efficacy in dysenteries.

2. *Piperitæ*. These plants are mostly herbaceous and perennial. The stalks of pothos creep along rocks and trees, into which they strike root at certain distances. The greatest height which any of them is known to attain is 15 feet; the greater part do not exceed three or four. The fleshy roots of many of these plants are extremely acrid when fresh. They lose this pungent quality, however, by being dried, and become of a soapy nature. The smell of many of them is extremely fetid, frequently resembling that of human excrements. The flowers, however, of an Ethiopian dracunculus or arum, and the cover in which they are involved, are said to emit a very fragrant odour. With regard to their virtues, these plants are commonly astringent.

3. *Calamariæ*. In this class the base of the leaf, which embraces the stalk like a glove, has no longitudinal aperture, but is perfectly entire. The stalk is generally triangular, and without knots or joints. The roots of some are long and knotty; in others they are composed of fleshy fibres which pierce deep into the ground; and in others, of a bulb. The flowers are either hermaphrodite, or male and female upon the same root. The mode of inflorescence in this order is generally a spike; sometimes a capitulum or head. The calyx is either a gluma or an amentum. The corolla is wanting. The filaments of the stamina are three in number, short, slender like a hair, and sometimes bristly. The antheræ are generally long, slender, and erect. The seed-bud is very small, blunt, and sometimes three-cornered. The style is thread-shaped, and of the length of the sealy calyx. The stigmata are generally three in number; slender, hairy, and sometimes permanent. The virtues, uses, and sensible qualities, of this order of plants are the same with those of the following.

4. *Graminæ*. Most of these plants are annual or perennial herbs; some of them creep upon the ground, others are erect. The roots, in the greatest number, are creeping, and emit fibres from each knot or joint; in others they are simply branching and fibrous. The stems and branches are round. The leaves are simple, alternate, entire, very long, and commonly narrow. They form below a sort of sheath, which embraces or surrounds the stem, and is generally cleft or divided on one side through its whole length. The flowers are either hermaphrodite, male and female on the same root, or hermaphrodite and male on the same root. They proceed either singly from the sheath of the leaves, or are formed into a panicle or loose spike. The calyx and corolla in this order are not sufficiently ascertained; in some a single scale or husk, in others two, supply the place of both covers; some grasses have four husky scales, two of which serve for the calyx, and the other two for the corolla; some have five; others six, four of which constitute the calyx, and the other two are termed improperly enough the *husky petals*. The corolla is sometimes composed of one petal with two divisions; and in general the husks of the calyx are always placed opposite to those of the corolla. The stamina are generally three in number, and placed irregularly with re-

gard to the situation of the calyx and corolla. The antheræ are long, furnished with two cells, and slightly attached to the filaments. The seed-bud is placed upon the same receptacle as the calyx, corolla, and stamina. The style is generally double, and crowned with a hairy stigma or summit. The seed-vessel is wanting. The seeds are single, oval, and attached below to the bottom of the flower.—The roots of the grasses are opening; such as have an aromatic smell are stomachic; their feeds are mealy, mucilaginous, and nourishing. All the parts of these plants are wholesome.

5. *Tripetaloidæ* (from *tres*, three; and *petalum*, a petal). These plants have no very striking characters, and are nearly allied to the grasses. All the genera of this order have not the circumstance expressed in the title.

6. *Ensatæ*. This order, which is very nearly allied to the grasses and liliaceous plants, furnishes a very beautiful collection of perennial herbs, which are of different heights, from one inch to 15 feet. The roots are tuberous or fleshy, and garnished with fibres; the stalks are simple, and commonly flat or compressed on the sides. The leaves are simple, alternate, entire, sword shaped, and, like the liliaceous plants, form at their origin a sheath or glove, which in the greatest number is cleft or divided through the whole length, except at the base, where it is entire, and embraces the stalk like a ring. The flowers are hermaphrodite, and generally proceed from the summit of the stalks either singly, in an umbel, a spike, or in a panicle. In pontederia they proceed from the wings or angles of the leaves either singly or in an umbel. Most of these plants want the perianthium or flower-cup; the flowers burst from a common cover or sheath, termed by Linnæus *spatha*, which in this order is frequently permanent. The petals are in number from one to six. The stamina are generally three. The seed-bud is placed sometimes above the flower, sometimes below it. The style is generally single, and crowned with a triple stigma. The seed-vessel is a dry capsule, generally of an oblong shape, and opens at three valves, discovering the same number of cells, each inclosing a quantity of roundish seeds.—These plants resemble the liliaceous in their powers and sensible qualities; very few of them, however, are used in medicine.

7. *Orchidæ*. The roots of many of these plants are composed of one or more fleshy tubercles or knobs, attached to the lower part of the stem, and sending forth fibres from the top. Those of orchis bear an obvious resemblance to the scrotum in animals: from which circumstance the genus has derived its name. The leaves are of a moderate size, inscribed with a number of longitudinal nerves or ribs, and without any footstalk. At their origin they form round the stalk a kind of sheath, which is long, entire, cylindrical, but not furnished, like the grasses and some other plants, with a crown at top. The flowers are hermaphrodite, and placed at the summit of the stalk either in a spike or in a panicle. The calyx is that sort termed by Linnæus a *spatha* or *sheath*, that bursting open protrudes a head or cluster of flowers, termed the *spadix*, which have no perianthium or flower-cup. The petals are five in number, and very irregular. The nectarium in this order is remarkably conspicuous; yet so different in the different genera, that Linnæus has employed it for his principal character or mark of

distinction, instead of the root, which had chiefly engaged the attention of former botanists. It has the appearance of a sixth petal. The filaments are always two in number, and placed upon the pistillum or female organ. The antheræ are erect, and generally covered by the upper lip of the nectarium. The seed-bud is either oblong or pillar-shaped, twisted like a screw, and universally placed below the receptacle of the flower. The style is single, very short, and forms one substance with the inner margin of the nectarium. The seed-vessel is generally a capsule with one cavity or cell, and three valves or openings, which are keel-shaped, and open on the angular sides, being jointed both at the bottom and top. The seeds are numerous; very small, like saw-dust; and attached, without footstalks, to a slender receptacle or rib, which extends itself lengthwise in the middle of each inclosure or valve. The plants of this order are reckoned strong aphrodisiacs.

8. *Scitamineæ*. This class consists of beautiful exotic plants, all natives of very warm countries. Some of them furnish exquisite fruits; but though the plants rise very high, they are perennial only by their roots. Those which have only one filament, have in all their parts an aromatic odour, and an acrid or poignant taste; qualities, however, possessed in a much greater degree by the roots, which are hot and resinous.

9. *Spathaceæ*, so called because their flowers are protruded from a *spatha* or sheath. They are nearly allied in habit and structure to the liliaceous plants, from which they are chiefly distinguished by the *spatha* out of which their flowers are protruded.

10. *Coronariæ*. These plants are herbaceous, perennial, and from one inch to 15 feet high. The roots are either bulbous, fibrous, or composed of small fleshy knots, which are jointed at top. The bulbs either consist of scales laid over each other like tiles, or are solid. The stem of the liliaceous bulbous plants is properly wanting; what supplies its place being nothing else than the base of the leaves, which, wrapping or enfolding each other, form at bottom a roundish fleshy bulb hitherto distinguished, though perhaps improperly, by the name of *root*. In the others the stem is simple, that is, has few branches, and is either furnished with leaves, or rises naked. The branches are alternate and cylindrical. The leaves are simple, alternate, and entire. Those next the root, termed *radical leaves*, generally form at their origin a sheath, which in a great number is entire; that is, goes all round; whilst in others, it is cleft or divided longitudinally on one side. The flowers are universally hermaphrodite, except in white hellebore, which has both male and hermaphrodite flowers mixed together on the same root. The flowers are sometimes single, and terminate the stem; sometimes they form an umbel, sometimes a spike, and sometimes a panicle. The calyx or flower-cup, in this order, according to Linnæus, is generally wanting. In strict propriety, however, the single cover that is present in most of these plants, though beautifully coloured, ought to be denominated a *calyx*; as its divisions, generally six in number, are placed opposite to the stamina. The petals, or, to speak more properly, the coloured leaves of the flower, are in number from one to six. Plants which have a single petal, have the limb or upper part split into six divisions or segments. The petals in some

species are rolled or turned back. The nectarium is various; in the lily it is a longitudinal line which runs through each petal, and reaches from the base to the middle. In crown imperial, it is a small hollow or pore, formed at the base of each petal; in asphodel it consists of six very small valves, which, approaching, form a globe, and are inserted into the base of the petal; in hyacinth, it is composed of three melliferous pores, situated on the top of the seed-bud. In pineapple, it is a small scale lying within the substance of each petal above the base; and in albuca, or ballard star of Bethlehem, it consists of two sharp-pointed bodies proceeding from the furrows of the seed-bud, and covered by the broader base of the three fertile filaments. In some species of lily the nectarium is hairy; in others it is naked. The stamina are six in number; erect, and inserted into the common receptacle, if the flower consists of many petals; into the tube, or divisions of the corolla, if it consists of one. The antheræ are long, commonly divided below, and slightly attached by their sides to the filaments on which they turn like a vane or the needle of a compass. The seed-bud is single, and placed either within the flower-cup or below it. The style is single, thread-shaped, and generally of the length of the petals. The stigma is generally single, of a conic form, and shaggy or hairy at the extremity. The seed-vessel is generally a capsule, divided externally into three valves, internally into three cells.—With respect to the powers of the plants of this order, it may be affirmed in general, that such as have little taste or smell, as the roots of tulip, and star of Bethlehem, are perfectly innocent; whilst those which have a heavy nauseous smell, as squill, hyacinth, crown imperial, and spider-wort, are at least suspicious, and frequently prove noxious.

11. *Sarmentosa*, (from *sarmentum*, a long shoot, like that of a vine.) This order consists of plants which have climbing stems and branches, that, like the vine, attach themselves to the bodies in their neighbourhood for the purpose of support. These plants are far from being a true natural assemblage; in fact they scarce agree in a single circumstance, except that expressed in the title, which is far from being peculiar to this order.

12. *Holeraceæ*. This order consists of plants which are used for the table, and enter into the economy of domestic affairs: it contains trees, shrubs, perennial, and annual herbs. Some of the woody vegetables retain their green leaves during the winter. The roots are very long, and frequently spindle-shaped; from the knots on the stems and branches of such plants as creep on the ground, or float on the water, proceed fibrous and branching roots. The stems and young branches are cylindrical; and in the greatest part of the aquatic plants of this order, the stalks are hollow within. The buds are of a conic form, and naked; that is, not accompanied with scales. The leaves are generally simple, entire, alternate, and attached to the branches by a cylindrical foot-stalk, which is sometimes very long, but commonly very short. Some plants of this kind have two stipule or scales which are attached to the branches near the origin of the foot-stalk of each leaf. In many others, instead of stipule, each leaf bears on its foot-stalk a membranaceous sheath, which is cylindrical, frequently fringed on the margin, and pierced or penetrated

trated by the stem. The flowers are either hermaphrodite; male and female upon the same root; male and female upon different roots; hermaphrodite and male on the same root; hermaphrodite and female on the same root; or hermaphrodite and male on different roots.

13. *Succulentæ*. This order consists of flat, fleshy, and juicy plants, most of them ever-greens. They are astringent, refreshing, and very wholesome.

14. *Gruinales* (from *grus* a crane). These consist of *geranium*, vulgarly called *cranes-bill*, and a few other genera which Linnæus considers as allied to it in their habit and external structure. This order furnishes both herbaceous and woody plants. The roots are sometimes fibrous, sometimes tuberous. In some species of wood-forrel they are jointed. The stems are cylindrical; the young branches, in some, nearly square. The buds are of a conic form, and covered with scales. The leaves are either simple or compound. The flowers are hermaphrodite; they proceed from the wings of the leaves either singly or in clusters. The calyx or flower-cup consists of five distinct leaves, or of one leaf divided almost to the bottom into five parts. It generally accompanies the seed-bud to its maturity. The petals are five in number, spreading, and frequently funnel-shaped. The lamina are generally ten in number, awl-shaped, erect, and of the length of the petals. The stamina are generally oblong; and frequently attached to the filaments by the middle, so as to lie, and sometimes to veer about, upon them. The seed-bud is either oblong or five-cornered. The number of styles is either one or five. In *tribulus*, the style is wanting. The seed-vessel is generally a five-cornered capsule, with one, three, five, or ten cells. The seeds are generally equal in number to the internal divisions or the cells of the seed-vessel; one seed being placed in each cell.

15. *Inundatæ*. The plants of this order are aquatic, of low stature, herbaceous, and mostly perennial. The roots are fibrous. The stem is generally wanting. In its place are an assemblage of leaves, which wrapping or enfolding each other mutually form a sheath; and from the middle of this sheath is produced the foot-stalk of the flower. The leaves are sometimes alternate, sometimes placed in whirls round the stem. In a great many genera the foot-stalk is extended at its origin into a membranaceous substance, which forms a sheath that is cleft through the whole length, on the side opposite to the leaf. The flowers are hermaphrodite, or male and female on the same root. The flower-cup is either wanting, or consists of three, four, or five divisions or leaves, which accompany the seed-bud to its maturity. The petals are generally wanting. The stamina are in number from 1 to 16 and upwards. The filaments in some genera are so short, that they seem wanting. The antheræ are short, and generally marked with four longitudinal furrows. The seed-buds are in number from one to four, the style is frequently wanting. The seed-vessel is universally wanting, except in *Elatine*, which has a dry capsule, with four external openings, and the same number of cells. The seeds are generally four in number.

16. *Calycifloræ*, (from *calyx* the flower-cup, and *flos* the flower), consisting of such plants as have the stamina (the flower) inserted into the calyx. All the plants

of this order are of the shrub and tree kind. Some of them rise to the height of 12 or 14 feet; others not above two or three. The roots are branching, fibrous, and woody. The stems are cylindrical. The branches, when young, are cornered; the buds of a conic form, and without scales. The leaves are simple, alternate, and attached to the branches by a very short foot-stalk. The flowers are either male or female upon distinct roots, or hermaphrodite and male on the same root. The calyx is a perianthium composed of one leaf divided into two, three, or four segments. It is commonly placed upon the germen or seed-bud, which accompanies it to maturity. The corolla is universally wanting, except in *trophis*, the male plants of which, according to Linnæus, have four obtuse and spreading petals. The stamina are generally four in number, slender like a hair, short, placed at a considerable distance from the style, and inserted into the tube of the calyx. The pistillum is composed of a roundish germen, crowned with the calyx; a single thread-shaped style; and a cylindrical stigma. The seed-vessel is either an obtuse oval fruit of the cherry kind, or a globular berry with one cell, containing a roundish seed. The plants of this order are astringent.

17. *Calycanthemæ*, (from *calix* the flower-cup, and *antheræ* the flower); consisting of plants, which, among other characters, have the corolla and stamina inserted in the calyx. This order furnishes trees, shrubs, and annual, biennial, and perennial herbs. The herbaceous annuals are by much the most numerous. The roots are branching and fibrous; the stems and branches cylindrical, square, or four-cornered while young. The buds are of a conic form, and without scales. The leaves are generally either alternate, simple, and attached to the branches by a short foot-stalk, or opposite at the bottom of the stem; and in some, alternate towards the top. They are universally sessile; that is, attached to the branches, without any foot-stalk. The calyx is universally a perianthium, and generally monophyllous, or composed of one leaf. The corolla consists of four, five, and six petals, which are attached to the tube of the calyx, and are sometimes placed alternate, sometimes opposite, to the divisions of the limb. The stamina, which are in number from 4 to 20 and upwards, are attached to the tube of the calyx either on its margin or lower down. When the number of stamina is double the divisions of the calyx, the stamina which stand opposite these divisions are a little longer than the rest. The antheræ are generally of a hemispherical figure; frequently cleft or slit below; and by that aperture attached slightly to the filaments, on which they often veer about like a vane or needle. They are surrounded longitudinally, and open on the sides into two loculi or cells. The pollen, or male dust, consists of a number of minute particles, of an oval figure, yellow and transparent. The germen or seed-bud, is placed either above or under the receptacle of the flower. The style is single, thread shaped, and of the length of the stamina. The stigma is generally single and undivided. The seed-vessel is a capsule, which is generally divided internally into four loculi or cells. The seeds are numerous, minute, and frequently three-cornered. The plants of this order are reckoned astringent.

18. *Bicornes*, (from *bis* twice, and *cornu* a horn), plants whose antheræ have the appearance of two horns.

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This appearance, however, is not very conspicuous, unless in a few genera. The plants of this order are all of the shrub and tree kind. The roots are branching and fibrous. The stems and branches are cylindrical. The buds conic, sometimes covered with scales, and sometimes naked. The leaves are generally alternate. In most plants of this order they are either sessile, or supported by a very short foot-stalk, which is semi-cylindric, and flat above. The flowers are universally hermaphrodite, except in one genus, the Indian date-plant, where hermaphrodite and male flowers are produced in the same species upon distinct roots. They proceed either solitary, or in a corymbus from the angles formed by the leaves and branches; or hang down in spikes and clusters at the end of the branches; each flower having a small scale or floral leaf placed under it. In most plants of this order the calyx is placed around or below the germen. The calyx is universally a perianthium, and generally monophyllous or of one piece, deeply divided into four or five segments, which are permanent, that is, accompany the germen to its maturity. The segments are often acute, and sometimes coloured. The corolla is generally monopetalous, and bell or funnel shaped; the figure, however, is not very constant, even in plants of the same genus. The limb, or upper part of the petal, is generally divided into four or five segments, which are sometimes rolled back, sometimes bent inwards. The limb too is sometimes slightly cut, sometimes divided almost to the bottom. The tube, or lower part of the petal, is cylindrical, and generally of the same length with the calyx. The number of stamina is from 4 to 20. These are generally erect, and attached to the lower part of the tube of the corolla. The antheræ are bifid or forked below, and being slightly attached to the filaments, are frequently inverted in such a manner as to exhibit the appearance of two horns at top. The germen or seed-bud, is generally roundish, and seated above the receptacle. The style is single, thread-shaped, of the same length with the corolla, and in a few genera permanent. The seed-vessel is either a capsule with five cells, a roundish berry, or an oblong four-cornered nut with two cells. -- The plants of this order are astringent.

19. *Hesperidæ*, (from the Hesperides, whose orchards are said to have produced golden apples). The plants of this order are of the shrub and tree kind, and mostly evergreen. The bark of the stalks is slender, and comes off in thin plates. The leaves are generally opposite, and covered with small transparent points. In some, the leaves are placed opposite at the bottom of the stalks, and alternate above. The buds are of a conic form, the flowers generally hermaphrodite; they proceed from the wings of the leaves either singly, or in clusters like ivy-berries. The calyx is placed above the seed-bud, and accompanies it to its maturity. The petals are three, four, or five in number, and stand upon the brims of the tube of the calyx. The seed-bud is large, oblong, and placed below the receptacle of the flower. The style is single, awl-shaped, of the length of the stamina, and terminated with a single stigma. The seed-vessel in some genera is a berry furnished with one or three cells; a capsule with four cells, or of the nature of a cherry, containing a stone. The seeds are generally numerous, small and oblong. The leaves and fruits are astringent, the berries ciculent.

20. *Rotacæ*, (from *rota*, a wheel), consisting of plants with one wheel-shaped petal without a tube. These resemble in quality those of the order of præciæ, to which they are in all respects very nearly allied; but very few of them can be said in strict propriety to possess the character specified in the title.

21. *Præciæ*, (from *preciosus* early). These consist of primrose, an early flowering plant, and some others which agree with it in habit and structure, though not always in the character or circumstance expressed in the title. These plants, which possess no striking uniform characters, are, in general, innocent in their quality; yet the root of sow-bread is dangerous, if taken internally.

22. *Caryophylleæ*. All the plants of this order are herbaceous, and mostly annual. Some of the creeping kinds do not rise above an inch, and the tallest exceed not seven or eight feet. The roots are branching, fibrous, and of a moderate length. The stems are cylindrical. The branches proceed from the wings or angles of the leaves, and are generally opposite, and as it were jointed at each knot. In some species of cerasium the branches are square. The leaves are generally placed opposite in pairs, so as to resemble a cross; and are slightly united at the bottom by their foot-stalks, which form a sort of glove round the stem. The hairs are simple, like silk. The flowers are hermaphrodite; but some have male and female flowers upon distinct roots. They either stand single on their foot-stalks, and proceed from the wings or angles of the leaves and branches, or are disposed in a spike, corymbus, umbel, or panicle. The calyx is permanent, and composed either of one piece with five indentments, or of four or five distinct leaves. The corolla generally consists of five petals, which have claws of the length of the calyx; and a spreading limb, sometimes entire, but oftener cleft or divided in two. The stamina are in number from 3 to 15, and of a moderate length. When their number is double the divisions of the calyx, they are attached alternately to the claws of the petals, those so attached being shorter than the rest; the remaining stamina are inserted into the common receptacle, and stand opposite to the segments of the calyx. In some genera of this order the number of stamina is found to vary, even in the different flowers of the same plant. The antheræ are short, hemispherical, marked with four longitudinal furrows, frequently divided or cleft below, most commonly erect; sometimes, however, *incumbent*, that is, fallen to the filaments by the sides. The pointal is composed of a single seed-bud, which is generally roundish, sometimes cornered. The styles are thread-shaped, of the length of the stamina, and crowned with a simple stigma, which is sleek or smooth externally, and slightly hollowed or vaulted within. The seed-vessel is a dry capsule, of an oval form of the length of the calyx, and consists of one or three cells. The plants of this order are innocent in their quality; they abound in a watery sort of plegm, and have bitter seed. With respect to their virtues, they are reckoned astringent, attenuating, and detesive.

23. *Tribulate*, (from *tres* three, and *lilum* an external mark on the seed); consisting of plants with three seeds, which are marked distinctly with an external cicatrix or scar, where they were fastened within to the fruit.

24. *Corydalis*, (from *κorymbos* a helmet); consisting of plants which have irregular flowers, somewhat resembling a helmet or hood. These plants are mostly herbaceous and perennial. The roots are tuberous or knobby. The stems are generally branching. The leaves are alternate, sometimes simple, but most commonly winged. The foot-stalk of the leaves is strait or narrow, except in *epimedium*, where it is large, and has a membranous edge or border. The flowers are universally hermaphrodite. They proceed either singly from the wings or angles of the leaves, or are collected in clusters at the end of the branches. The calyx consists of two, four, five, or six leaves, which are frequently coloured, and commonly fall off immediately before, or very soon after, the expansion of the petals. The corolla is generally irregular; of one, or many pieces; gaping; and furnished with a nectarium, which is very different in the different genera. The stamina are in number from two to six, and of a proportionate length, except in honey-flower, which has two shorter than the rest. The filaments are distinct, except in two genera, fumitory and *monniera*, which have two sets of strings or filaments united in a cylinder. The antheræ are universally distinct, except in *impatiens*, where they are formed into a cylinder divided at the base. The feed-bud is generally roundish, but sometimes angular or cornered. The style is commonly single, extremely short, slender, or thread-shaped, and crowned with a simple stigma. The feed-vessel is either a hollow blown-up berry, a capsule of one cell, a longish, or a roundish pod. The seeds are generally numerous and round.

25. *Putaminæ*, (from *putamen* a shell); consisting of a few genera of plants allied in habit, whose fleshy feed-vessel or fruit is frequently covered with a hard woody shell. Most of these plants are acrid and penetrating; and yield, by burning, a great quantity of fixed alkali. With respect to their virtues, they are powerful aperients. The Indians pretend that the fruit of a species of caper-bush, which they call *baduicca*, extinguishes the flames of love.

26. *Multifiliquæ*, (from *multus* many, and *siliqua* a pod); consisting of plants which have more feed-vessels than one. From the etymology of the term, one would naturally imagine that the feed-vessels in question were of that kind called by Linnæus *siliqua*, or pod; but the fact is, that not a single plant of this order bears pods; the greater part having many dry capsules, and the remainder being furnished properly with no feed-vessel, but bearing numerous distinct feeds. Plants of this order are mostly perennial herbs; the stems of some are erect; others creep upon the ground, and produce roots near the origin of each leaf; lastly, others climb, and attach themselves to the bodies in their neighbourhood, either by the footstalk of the leaves, or by tendrils and clasps which terminate the footstalk. The greatest height of those which rise erect, seldom exceeds eight feet. Those which climb rarely exceed 15 or 20 feet. The roots are generally fleshy. In some they are hand-shaped; in others finger-shaped, or cylindrical. In some species of hellebore and ranunculus they are divided into spherical knobs. Lastly, in some plants of this order, the roots are fibrous. The stems and young branches are cylindrical. The leaves,

which are of different forms, being sometimes simple and entire, sometimes hand-shaped or winged, are generally alternate. The footstalk, which is sometimes cylindrical, sometimes angular, is membranous, and very large at its origin, surrounding a great part of the stem from which it proceeds. The flowers are hermaphrodite. They proceed either singly from the wings of the leaves or termination of the branches, or terminate the branches in a spike, panicle, or head. The calyx in some is wanting; in others it is generally composed of five pieces, which fall off with the petals. The petals are in number from 4 to 15; generally equal, and sometimes disposed in two or three series; five is the prevailing number. The stamina are in number from 5 to 300, distinct, and attached generally in several rows or series to the receptacle. The feed-buds are generally numerous; the style is frequently wanting. In some the feed-vessel is wanting; in others it is composed of several dry capsules, each containing a single cell. The seeds are numerous, and frequently angular. Most of these plants are acrid, and many of them poisonous. In general, plants that have a great number of stamina are noxious in their quality. When burnt, these plants furnish a fixed alkali; by distillation there is drawn from them a kind of nitrous and aluminous substance. With respect to their virtues, they are caustic and purgative.

27. *Rhæadæ*, consisting of poppy, and a few genera which resemble it in habit and structure. These plants, upon being cut, emit plentifully a juice, which is white in poppy, and yellow in the others. With respect to their virtues, they seem to operate principally upon the nerves. Their juice is soporific and narcotic, their seeds less so, their roots aperient. Applied externally, they are slightly corrosive.

28. *Luridæ*, consisting of plants whose pale and ominous appearance seems to indicate something baleful and noxious in their natural quality. Most of these plants are herbaceous and perennial. Many of them are of the masked tribe of flowers; others resemble these in their general appearance, but differ from them essentially in the equality of their stamina. The roots are generally branched, sometimes tuberous. The stems and branches are cylindrical. The leaves are generally simple, and placed alternate. The flowers are hermaphrodite. They proceed either singly or in clusters from the angle formed by the leaves and branches. In some species of lycium, they terminate the branches. The calyx is generally of one piece deeply divided into five parts. The corolla consists of one petal, which is either bell, funnel, or wheel shaped. The stamina are four or five in number; and those either of equal lengths, as in the greater, or unequal. The feed-bud is placed above the receptacle of the flower. The style is single; and is terminated by a summit which is hemispherical, and frequently channelled or furrowed. The feed-vessel, in such as have equal stamina, is a berry; in the rest, it is generally a capsule. The seeds are numerous, and frequently kidney-shaped.—These plants in general are poisonous. They have an insipid taste, and a nauseous disagreeable smell.

29. *Campanacæ*, (from *campana* a bell); plants with bell-shaped flowers. The plants of this order are herbaceous and perennial. The roots are either spindle-shaped,

shaped, or branching and fibrous. The stems are round. The branches are generally alternate. The leaves are simple, alternate, and commonly attached to the branches by a semi-cylindric foot-stalk, which is furrowed above. The indentments are terminated by a small white tubercle or knob, which renders them conspicuous. The flowers are hermaphrodite; and proceed either solitary from the wings of the leaves, or are collected into a spike and head at the end of the flower-stalk. The calyx is universally a perianthium situated upon or round the germen, and generally composed of one leaf deeply divided into five segments. The corolla is monopetalous, and of the bell, funnel, or wheel shape. The tube, in flowers of the bell and wheel shape, is very short; in those of the funnel-shape, very long. In Greek valerian, the tube is shut with five valves, which are placed on its apex or top. The limb or upper part of the corolla is deeply divided into five segments, which spread, and are alternate with the divisions of the calyx. The corolla is generally permanent. The stamina are five in number, attached to the base of the tube of the corolla, alternate with its divisions, and opposite to those of the calyx. The filaments are distinct; very large at their origin; and frequently approach so as to form a sort of vault, which covers the summit of the germen. They are slender and awl-shaped above. The antheræ are very long; oval; marked with four longitudinal furrows, either distinct, or united in a cylinder. The pollen is composed of very small, spherical, white, shining, and transparent particles. The germen is roundish, and situated either wholly or in part under the flower. The style is generally single, and of the length of the stamina or corolla. The stigma is commonly single, but deeply divided. The seed-vessel is a roundish capsule, generally divided into three cells, and furnished externally with the same number of valves. The seeds are small, numerous, attached to a receptacle in the centre of the fruit, generally rounded, and sometimes cornered.—This order furnishes many excellent medicines. The plants abound with a white milky juice, which, upon the stalk being cut, flows out in great quantities.

30. *Contorta*, (from *con* together, and *torques* to twist); consisting of plants which have a single petal that is twisted or bent towards one side. This order furnishes trees, shrubs, and fat succulent plants, some of which retain their leaves during the winter. The herbaceous vegetables in this order are generally perennial. The roots are sometimes branching, but commonly fleshy, succulent, and garnished with fibres or strings like those of turnip. The stems are round and in some genera pulpy and succulent. The branches are sometimes placed alternate, and sometimes opposite. The buds are of a conic form, and naked or without scales. The leaves are sometimes alternate, sometimes placed opposite in pairs, and not seldom surround the stem in whorls. They are attached to the branches by a cylindrical foot-stalk, which is short, and frequently united to the foot-stalk of the opposite leaf. The defensive and offensive weapons in this order are a downy sort of pubescence, and simple, or forked prickles, which, in some genera, issue from the wings of the leaves. The flowers are hermaphrodite; and stand either singly upon their footstalks, or are collected into umbels and clusters. These bunches or collections of

flowers sometimes terminate the branches, sometimes proceed from the angles of the branches, and sometimes stand at the side of the wings without issuing from them. The flower-cup is composed of one leaf divided almost to the base in five unequal segments, which embrace each other, and are permanent, or accompany the seed-bud to its maturity. The corolla consists of one petal, which in the different genera is bell, salver, funnel, or wheel shaped. The limb, or upper spreading part of the petal, is generally divided into five equal parts, which are slightly bent or twisted to the left, and embrace or unfold each other like the petals of the mallow tribe. The tube is generally long and cylindrical; sometimes club-shaped, and often wanting. In several flowers of this order the petal is accompanied with that species of superfluity termed a *nectarium*. In the different genera, however, it assumes very different appearances. The stamina are five in number, short, equal, attached at the same height to the tube of the petal, alternate with its divisions, and opposite to those of the calyx. The antheræ are generally erect, and frequently approach so as to form a compact body in the middle of the flower. The seed-bud is either single or double. In some the style is wanting. The stigma is frequently double. The seed vessel in some genera is a pulpy fruit, of the berry and cherry kind; but most frequently that species termed by Linnæus *conocarpium*, and *folliculus*, which has one valve or external inclosure, opens lengthways on one side, and has not the seeds fastened to it. Two of these dry fruits, with a single cell, compose the seed-vessel of most plants of this order. The seeds are generally numerous, and in several genera crowned with a long pappus or downy wing like that of the compound flowers, by means of which they easily disperse and sow themselves.—The plants of this order being cut, emit a juice which is generally milky, and sometimes of a greenish white. From the circumstance of their abounding in this milky juice, the greater part are deemed poisonous; repeated observations having established this aphorism, That milky plants, except those of the plain compound flowers, are generally of a baneful destructive nature, and ought at least to be administered with caution. With respect to their sensible qualities, they are bitter; particularly the feed roots, and bark, in which resides their principal virtue.

31. *Veprecule*, (from *vepres* a briar or bramble), consisting of plants resembling the daphne, direa, giddia, &c. but which, however, do not constitute a true natural assemblage.

32. *Papilionaceæ*, plants that have papilionaceous flowers, *i. e.* somewhat resembling a butterfly in shape, of which number are all the leguminous plants. The plants of this order are of very different duration; some of them being herbaceous, and those either annual or perennial; others woody vegetables of the shrub and tree kind, a few of which rise to the height of 70 feet and upwards. The herbaceous plants of this order generally climb; for, being weak and as it were helpless of themselves, they are provided by nature with tendrils, and even sharp-pointed hooks, at their extremities, to fasten upon the neighbouring trees or rocks; or the stalks are endowed with a faculty of twisting themselves, for the purpose of support, around the bodies in their neighbourhood. The pea, vetch, and kid-

ney bean, afford familiar examples of this appearance. The shrubs and trees of this order are mostly armed with strong spines. The roots are very long, and furnished with fibres; but some genera have fleshy knobs or tubercles placed at proper intervals along the fibres. The stems are cylindrical, as likewise the young branches, which are placed alternately: those which climb, twist themselves from right to left, in a direction opposite to the apparent motion of the sun. The bark of the large trees is extremely thick and wrinkled, so as to resemble a net with long meshes; the wood is very hard in the middle, and commonly coloured or veined. The buds are hemispherical, without scales, and proceed from the branches horizontally a little above the angle which they form with the leaves. The leaves are alternate, and of different forms, being either simple, finger-shaped, or winged. This last form is very common; the lobes or lesser leaves are entire, and sometimes placed in pairs, but most commonly the winged leaf is terminated by an odd lobe. The winged or pinnated leaves of this order have a daily or periodical motion, depending upon the progress of the sun in his diurnal course. The common footstalk of the winged and compound leaves is marked on the upper surface with a cavity or furrow which runs through its whole length. The flowers are hermaphrodite; and proceed either from the wings of the leaves, or from the extremity of the branches. The calyx is a perianthium of one leaf, bell-shaped, bunching out at the bottom, and cut on its brim or margin into five irregular divisions or teeth; the lowermost of which, being the odd one, is longer than the rest: the other four stand in pairs, of which the uppermost is shortest, and stands farthest asunder. The bottom of the calyx is moistened with a sweet liquor like honey, so may be deemed the nectarium of these plants. The petals are four or five in number, very irregular, and from their figure and position bear an obvious resemblance to a butterfly expanding its wings for flight. These petals have been characterized by distinct names: the upper one, which is commonly the largest, is termed the *standard*, (*vesillum*); the two side petals, the wings, (*alæ*); and the lowermost, which is generally united at top, and divided at bottom, the *keel*, (*carina*). The stamina are generally ten: these are either totally distinct, or united by the filaments into one or two bundles involving the seed-bud. In the latter case, where there are two sets of united filaments, one of the sets is composed of 9 stamina, which are united into a crooked cylinder, that is cleft on one side thro' its whole length: along this cleft lies the tenth filament or stamen, which constitutes the second set, and is often so closely attached to the second bundle, that it cannot be separated without some difficulty. The antheræ are small, round, marked with four longitudinal furrows, and slightly attached to the filaments. In lupine, the antheræ are alternately round and oblong. The seed-bud is single, placed upon the receptacle of the flower, oblong, cylindrical, slightly compressed, of the length of the cylinder of the united stamina by which it is involved, and sometimes elevated by a slender footstalk which issues from the centre of the calyx. The style is single, slender, and generally crooked or bent. The stigma is commonly covered with a beautiful down, and placed immediately under the antheræ. The seed-vessel is that sort of pod termed a *legumen*, which is of an

oblong figure, more or less compressed, with two valves, and one, two, or more cavities. These cavities are often separated, when ripe, by a sort of joints. The seeds are generally few in number, round, smooth, and fleshy. Jointed pods have generally a single seed in each articulation. The seeds are all fastened along one suture, and not alternately to both, as in the other species of pod termed *siliqua*.—The plants of this family are, in general, mucilaginous. From the inner bark of most of them flows, either naturally or by incision, a clammy liquor, which dries and hardens like gum; the juice of others is sweet like sugar; some taste bitter, and are purgative, emetic, or even mortal. A species of eastern atragalus, with goats-rue leaves, is said to be remarkably caustic, and to burn the tongue excessively when chewed. In general, however, these plants are soft and clammy. With respect to their virtues, the plants of this order are highly emollient; some of them are vulnerary and astringent; and the root of anonis, or rest-harrow, is diuretic.

33. *Lomentaceæ*, (from *lomentum*, a colour used by painters). Many of these plants furnish beautiful tinctures, and some of them are much used in dyeing. They very much resemble the last order, differing only in the following particulars. 1. In all plants of this order, except milk-wort, the stamina are distinct. The flower is not shaped like a butterfly, but is less irregular, and frequently consists but of one petal. The leaves are sometimes simple, but most commonly winged. The seeds are commonly marked with a circular furrow on both sides. Like those of the leguminous tribe, the plants of this order are generally mucilaginous. From the inner bark of the greater number exudes, either naturally or by incision, a mucilaginous liquor, which sometimes dries upon the plant, and becomes a gummy substance.

34. *Cucurbitaceæ*, (from *cucurbita* a gourd); consisting of plants which resemble the gourd in external figure, habit, virtues, and sensible qualities.—The plants of this order, which generally climb, and have long diffused branches, are mostly herbaceous and perennial. The roots in the perennial plants of this order are shaped like those of the turnip; in the annuals they are branching and fibrous. The stems are cylindrical and succulent. The young branches have generally five corners. In some species of passion-flower they are square. The leaves are alternate, angular, and sometimes hand-shaped. They are attached to the branches by a foot-stalk, which is pretty long and cylindrical, without any furrow. From the wing or angle of each of the upper leaves proceeds a tendril, which is either simple or branching, and twists itself spirally round the different bodies in its neighbourhood, for the purpose of supporting and training of the branches. The lower leaves have no tendril. The flowers are either hermaphrodite or male and female. In this last, the male flowers are generally separated from the female upon the same root; and that either in the same wing or angle of the leaves, or in different angles. The flower-cup, in the female flowers, is placed upon the seed-bud; and generally consist of one bell-shaped leaf, that is deeply divided into five unequal segments, and, unlike the other plants which have the calyx seated upon the fruit, falls off with the petals and the other parts of the flower. The corolla consists of one petal, with

with five equal divisions, which adhere to the tube of the calyx, as if glued to it. A species of passion-flower, termed by Linnæus *passiflora suberosa*, wants the petals. The stamina are in number from one to five, short, and generally inserted into the calyx. The filaments are distinct; the antheræ of many genera are united in a cylinder. In the passion-flower they are slightly attached to the filaments, on which they turn like a vane or the needle of a compass. The seed-bud is single, and placed below the receptacle of the flower. The style is generally single, cylindrical, of the length of the calyx, and crowned with a triple stigma. The seed-vessel is generally pulpy, of the apple or berry kind, and consists of one, two, or three cells. The seeds are numerous, generally flat or compressed, and sometimes covered with that kind of proper coat called by Linnæus *arillus*.—The fruit of these plants is generally purgative and refreshing; that of some of them prove a very violent emetic when used too freely.

35. *Senticole*, (from *sentis* a briar or bramble); consisting of the rose, bramble, and other plants which resemble them in port and external structure. These plants are so nearly allied in form, habit, and structure, to those of the natural order *Pomaceæ*, that they ought never to have been separated from it. The leaves have a styptic taste; the fruits are acid and cooling. With respect to their virtues, the leaves are vulnerary and astringent, the roots are diuretic. The acid fruits, as strawberry and raspberry, are used with success in putrid and bilious fevers, as likewise in contagious and epidemic dysenteries, which prevail in summer and autumn, and are occasioned by a sudden transition from a hot to a cold air, or by the acrid humour which flows into the intestines.

36. *Pomaceæ*, (from *pomum* an apple); consisting of those which have a pulpy esculent fruit, of the apple, berry, or cherry kind. The plants of this order, which furnish many of our most esteemed fruits, are mostly of the shrub and tree kind. The roots are branched, fibrous, and in the greater part very long. The stems and branches are cylindrical. These last are placed alternate; and, when young, are, in some genera, angular. The bark is thick and wrinkled. The buds are of a conic form, placed in the angles of the leaves, and covered with scales which lie over each other like tiles. The leaves, which differ in form, being in some genera simple, in others winged, are, in the greater number, placed alternate. The footstalk of the leaves is furrowed above, and frequently accompanied by a number of knobs like glands. Most of these plants are furnished with two stipulæ at the origin of the young footstalks of the leaves. These, in some genera, are pretty large; in others, they are so small as scarce to be perceived; and in cocoa-plumb, in particular, they by their minuteness resemble hairs. The flowers are universally hermaphrodite, except in *spiræa aruncus*, in which male and female flowers are produced on distinct plants. In the greater number of genera they are produced in clusters or heads at the end of the branches. The calyx is of one piece, with five segments or divisions, which are permanent, and placed above the seed-bud in some; in the rest, they either fall off with the flower, or wither upon the stalk. The petals are five in number, and are inserted into the tube of the calyx. The stamina are generally 20 and upwards, and attached like the petals

to the margin of the tube of the calyx. The antheræ are short, and slightly attached to the filaments. The seed-bud is single; and in those genera which have the calyx permanent, it is placed below the receptacle of the flower. The seed-vessel is a pulpy fruit of the apple, berry, or cherry kind. Those of the apple kind are divided internally into a number of cavities or cells. The seeds are numerous.—The pulpy fruits of this order are acid, esculent, and of great efficacy in putrid and bilious fevers.

37. *Columniferæ*, (from *columna* a pillar, and *fero* to bear); consisting of plants whose stamina and pistil have the appearance of a column or pillar in the centre of the flower. This order furnishes a choice collection of herbs both annual and perennial, shrubs, and trees. These are very different in size and height, from the creeping mallows, and low shrubby tea-tree, to the fleshy limes, and the more lofty silk cotton-trees, which by some modern writers are affirmed to be so large as not to be fathomed by 16 men, and so tall that an arrow cannot reach their top. The shrubs and trees of this order are deciduous, pretty thick, of a beautiful appearance, with an erect stem, which is formed by its branches and foliage into a round head. The roots are extremely long, branch but little, and either run perpendicularly downwards, or extend themselves horizontally below the surface. The stems are cylindrical. The young branches, though commonly of the same figure, are sometimes angular. The bark is thick and pliant. The wood, in general, very soft and light. The buds are of a conic form, naked, or without scales; and situated either at the extremity of the branches, or in the angle formed by the branch and leaf. The leaves are alternate, simple, divided into several lobes, and frequently hand or finger shaped. The ribs or nerves on the back of the leaf, in some genera of this order, are provided near their origin with a number of hollow furrows or glands, which, being filled with a clammy honey-like liquor, have been considered as so many vessels of secretion. The footstalk of the leaves is cylindrical, swelled at its origin, and appears jointed at its junction with the branch. The flowers are universally hermaphrodite, except in *hizgeleria*, and a species of Virginian marshmallow, called by Linnæus *nappa dioica*: the former of which bears male and female, the latter male and hermaphrodite, flowers on different roots. In many plants of this order, the flowers generally open about nine in the morning, and remain expanded till one in the afternoon. The flowers either terminate the branches, proceed from the angles of the leaves, or are disposed either singly or in a corymbus along the branches or stem. In most of these genera the calyx is single, but in others frequently double. In these last the inner calyx is always of one piece, generally divided into five segments; the outer consists either of one leaf, of three distinct leaves, or of many. The calyx, when single, is sometimes composed of one leaf which is permanent, or of several distinct leaves which are generally coloured, and fall off with the petals. In plants that have a double calyx, both flower-cups are generally permanent. The petals in this order are from four to nine; five is the prevailing number. The stamina, which are in number from 5 to 20 and upwards, are generally inserted into the common receptacle of the calyx, or into the pistillum or seed-bud. The filaments are either dis-

finct, 'or united in a cylinder, which, proceeding from the receptacle of the calyx, surrounds the seed-bud, and attaches itself to the base of the petals, with which it slightly unites. The antheræ are frequently roundish, and placed erect on the filament; most commonly, however, they are oblong or kidney-shaped, and slightly attached by the middle, or sides, to the filaments, on which they turn like a vane or needle. This last is particularly the characteristic of all the mallow tribe. The seed-bud is generally roundish or conic; and sometimes, as in the tea-tree, angular. The seed-vessel is generally a capsule; sometimes a pulpy fruit of the herry or cherry kind. In some, it is a woody or membranous capsule, divided into as many cells internally as there were partitions in the seed-bud. The seeds are generally solitary, sometimes angular, and sometimes kidney-shaped.—These plants are mucilaginous and lubricating.

38. *Trilocææ* (from *trius*, three, and *ovum*, a grain); consisting of plants with a single three-cornered capsule, having three cells or internal divisions, each containing a single seed. The single seed-vessel of these plants is of a singular form, and resembles three capsules, which adhere to one common footstalk as a centre, but are divided externally into three pretty deep partitions. This family is not completely natural. It must be observed, however, that the character expressed in the title is a striking one; and that though the plants which possess it are not connected by such numerous relations as to form a true natural assemblage, yet they are by that circumstance distinguished from all other plants with as great, nay greater facility, than by any artificial character yet known. But all the genera of this order have not the striking character just mentioned.

39. *Siliquosæ*, (from *siliqua* a pod); consisting of plants which have a pod for their seed-vessel. This order chiefly furnishes biennial and perennial herbs of an irregular figure. The roots are long, branched, crooked, and fibrous. In some they are succulent and fleshy, in others jointed. The stems and young branches are cylindrical. The leaves, which differ in point of form, being sometimes simple, sometimes winged, are generally placed alternate. The flowers are hermaphrodite, and in the greater number disposed in a spike at the extremity of the branches. The flower-cup is composed of four leaves, which are oblong, hollow, blunt, bunched at the base, and fall with the flower. These leaves are sometimes erect, and sometimes spread horizontally. The petals, which are four in number, spread at top, and are disposed like a cross: the claws or lower part of the petals are erect, flat, awl-shaped, and somewhat longer than the calyx. The upper part widens outwards. The stamina are six in number; two of which are of the length of the calyx, and the remaining four somewhat longer, but shorter than the petals. The antheræ are of an oblong figure, pointed, thicker at the base, and erect. Betwixt the stamina, in plants of this order, are generally lodged one, two, or four, round greenish knots, which in some genera are so small as to elude the sight. These glands, called by Linnæus *glandule nectariferæ*, and used very improperly by that author as an essential character in discriminating the genera, seem to be prominences of the receptacle of the flower, occasioned

by the stamina being deeply lodged in its substance. The seed-bud is single, and stands upon the receptacle of the flower. The style, which is either cylindrical or flat like a scale, is of the length of the four longer stamina in some genera; in others it is very short, or even wanting. It accompanies the seed-bud to its maturity. The stigma is blunt, and sometimes deeply divided into two parts. The seed-vessel is either a long pod, or a short and round one. Either sort has two valves or external openings, and in a great many genera the same number of internal cavities or cells, the partition of which projects at the top beyond the valves. The seeds are roundish, small, and attached alternately by a slender thread to both sutures or joinings of the valves. These plants have a watery, sharp, lixivial taste; and are charged with a fixed alkaline salt, which is drawn from them by burning, and being distilled without any addition produces a volatile alkali. Most of them have a stinking smell. With respect to their virtues, they are diuretic, attenuating, detergent, and antiscorbutic. These qualities, however, are most eminently possessed by the live plants; when dried, they either entirely disappear, or are greatly diminished. Applied externally, these plants are useful in diseases of the skin, as the itch, leprosy, &c.

40. *Personatæ*, (from *persona*, a masque); consisting of a number of plants whose flowers are furnished with an irregular, gaping, or grinning petal, in figure somewhat resembling the snout of an animal. This order furnishes both herbaceous and woody vegetables of the shrub and tree kind. The roots are generally fibrous and branched. The stems and branches are cylindrical when young, except in some species of figwort, in which they are square. The leaves are simple, generally placed opposite in pairs at the bottom of the branches, but in many genera stand alternate towards the top. The flowers are universally hermaphrodite; they proceed either singly or in clusters from the wings of the leaves, or terminate the branches in a spike, panicle, or head. The calyx is of one leaf, which is cut into two, three, four, or five segments, or divisions, that are permanent. The corolla is composed of one irregular petal, with two lips, resembling, as was already observed, the head or snout of an animal. In some plants the stamina are two or four in number, and of an equal length; in others they are universally four in number, two of which are long and two short. The seed-bud is single, and placed above the receptacle of the flower. The style is single; thread-shaped; bent in the direction of the stamina; and crowned with a stigma, which is generally blunt, and sometimes divided into two. The seed-vessel is a capsule, generally divided internally into two cavities or cells, and externally into the same number of valves or inclosures. The seeds are numerous, and affixed to a receptacle in the middle of the capsule.—These plants possess nearly the same qualities with the lip-flowers, though in a less degree. With respect to their virtues, many of them are aperient, anodyne, purgative, and even emetic. The internal use of many of them is extremely pernicious; applied externally, they are anodyne, and powerful resolvents.

41. *Asperifoliæ*, rough-leaved plants. The greatest part of these are herbaceous and perennial. The roots are branching and fibrous; the stems and branches rounded;

rounded; the buds of a conic form, naked or without scales. The leaves are simple, alternate, commonly very rough to the touch, and in most of the herbaceous plants sessile or attached to the stem and branches without any foot-stalk. In the few trees, however, of this order, the leaves have a foot-stalk, the lower part of which, after the fall of the leaves, remains like a spine or thorn. The hairs are simple, and generally very rough to the touch. The flowers are in some genera solitary; but commonly collected into a spike or corymbus. They do not proceed from the angle formed by the stem or branch with the leaf, as in many plants; but from the side of the leaf, or from that part of the stem which is opposite to the leaf. They are almost universally hermaphrodite: in a few species of *cordia*, male and female flowers are produced upon different roots. The calyx is composed of one leaf, which is divided from three to ten equal or unequal parts. Those with four naked seeds have the calyx deeply divided into five parts which are permanent. The corolla is monopetalous, or composed of one petal, which in different plants is bell, funnel, salver, and wheel shaped. The divisions of the limb or upper part of the petal are generally five, alternate with those of the calyx; equal and regular, except in *echium*. The stamina are five in number, alternate with the divisions of the corolla. They are equal, attached to the tube of the corolla a little above its origin, and of the same height. The antheræ are in some genera *convivent*; that is, approach and form a compact body above the filaments. The pistillum is generally composed of a slender style of the same length with the stamina, and crowned with a simple stigma. It proceeds from a germen or seed-bud, which in some plants is undivided, but generally split into four. The seeds are generally four in number, and lodged in the bottom of the calyx.—Most of the rough-leaved plants are used in medicine: the flowers are esteemed cordial, the leaves and roots vulnerary and astringent; and the hard bony seeds are reckoned powerful promoters of urine. Externally, these plants are used for burnings and poisonous bites; they extirpate warts, and relieve disorders of the loins.

42. *Verticillate*, consisting of herbaceous vegetables, having four naked seeds, and the flowers placed in whorls round the stalk. The roots are branched and fibrous. The stems are round when old, but square when young; as are likewise the young branches, which stand opposite. The leaves are opposite, and in the greater number covered with transparent points. Those which are placed next the flower generally differ from the stem-leaves. In the greater number of plants of this kind, the leaves are supported upon a long cylindrical foot-stalk that is furrowed above. The flowers are universally hermaphrodite, except in a species of thyme mentioned by Mr Adanson, which appears to have male or barren flowers on one root, and female or fertile flowers on the other. They are disposed round the stem in whorls or small heads with short foot-stalks. The calyx is of one piece, that is generally cut into five unequal divisions, whose disposition sometimes represents two lips; the uppermost of which has commonly a less number of divisions: it accompanies the seeds, which it nourishes in its bosom, to their maturity. The petal is of the gaping or lip kind, and in the different ge-

nera is more or less irregular or unequal, either in its tube, or in the divisions of the lips; the number of which varies from two to five. These divisions frequently form two lips; of which the uppermost, termed the *crest* and the *helmet*, is sometimes entire, sometimes more or less deeply cut into two; the lowermost, termed the *beard*, generally into three. The stamina are two or four in number. In the greater part there are four stamina of unequal length, two of them being long and two short. These four unequal stamina are frequently dissimilar, and approach by pairs: they are inclined towards the back of the petal, and parallel; the two innermost being shortest, and attached somewhat lower than the two others to the tube of the flower. The seed-bud, which consists of four distinct ovaries, is placed upon the seat of the flower, and elevates from their centre a common style, which is slender, bent in the same manner as the filaments, which it somewhat exceeds in length, and terminated by a double stigma or summit, the divisions of which are unequal, and turned backwards. The seed-vessel in this order is wanting. The seeds are four in number, and lodged in the bottom of the calyx as in a matrix or seed-vessel. Each seed has two covers; the one external, of a cartilaginous or leathery substance; the other internal, membranaceous, of a very fine texture, and placed immediately above the radicle or embryo plant.—The plants of this order are fragrant, warm, penetrating, and accounted cordial and cephalic. Their chief virtue resides in the leaves.

43. *Dumose*, (from *dumus* a bush); consisting of a number of shrubby plants, which are thick set with irregular branches, and bushy. The plants of this order are all of the shrub and tree kind, thick and bushy, rising from 6 to 25, 30, and even 40 feet high. Many of them too, as ballard alaternus, holly, iron-wood, New-Jersey-tea, star-apple, viburnum, winter-berry, and some others, retain their beautiful leaves during the whole year. The roots are branched and fibrous. The stems are cylindric; the young branches sometimes angular. The buds are naked, that is, without scales, in the evergreen shrubs of this order; covered with scales in most of the others. The leaves, which in some genera are simple, in others compound, are placed alternate in some, and opposite in others. The flowers are mostly hermaphrodite. They proceed from the wings of the leaves either singly or in clusters; or they terminate the stem in that sort of flowering head called a *corymbus*. The calyx is generally very small, placed below or around the seed-bud; and consists of one leaf, with four, five, or six divisions, which are permanent. The thamnus has no calyx. The petals are in number from one to five. The stamina are either four, five, six, or ten. The seed-bud is generally roundish, and placed within the flower. The style is commonly single, and sometimes wanting. The stigma is either single or triple. The seed-vessel is generally a berry, sometimes a dry capsule; the seeds are generally single and egg-shaped. The berries, bark, and flowers of many of these plants are purgative, and act particularly on the lymph and bile.

44. *Sepiaria*, (from *sepes* a hedge); consisting of a beautiful collection of woody plants, some of which, from their size, elegance, and other circumstances, are very proper furniture for hedges. This order furnishes

woody plants both of the shrub and tree kind, most of which do not drop their leaves till nearly the time when the new leaves begin to appear.

45. *Umbellatæ*, (from *umbella* an umbel); consisting of plants whose flowers grow in umbels, with five petals that are often unequal, and two naked seeds that are joined at top and separated below. These plants are herbaceous, and chiefly perennial. The roots are either tuberous or spindle-shaped, and sometimes forked. The stems are cylindric, full of pitch, and frequently hollow. The branches are alternate. The leaves, which like the branches are put on alternately, are very different in point of form; being simple and entire in some; target-shaped, in a species of navel-wort; finger or hand shaped, in some others; and winged or pinnated with numerous minute divisions, as in the greater number. They are supported by a foot-stalk, which is very broad and membranous at its origin, and commonly embraces the whole contour of the stem and branches. The flowers are in general hermaphrodite. There are, however, some that have male or barren flowers in the same umbel. This is particularly the case with those umbelliferous plants which have the petals in the flowers of the circumference large and unequal. In these plants the flowers in the circumference only prove fertile; those in the centre, or disk, proving abortive. *Oenanthe* and *imperatoria*, on the contrary, have the flowers in the circumference abortive. In ginseng, hermaphrodite and male flowers are produced upon distinct plants. The flowers are disposed in an umbel, which is either simple or compound. The common calyx in this order is that sort termed very improperly by Linnæus *involucrum*, or the flower-cover; which in the greater number consists of one or more leaves placed under the partial or universal umbel, or both, for the purpose of support. The presence or absence of one or both of these covers affords excellent marks in discriminating the genera of this very similar order of plants. The proper calyx of each flower, in the aggregate, consists of five minute indentments placed upon the seed-bud, which it envelops, and accompanies to its maturity. The petals are five in number, and disposed upon the sides of the flower-cup in form of a rose. In the florets of the centre, the petals are generally pretty equal and small; in those of the circumference, they are frequently unequal and larger; in the greater number, they are heart-shaped, and cut almost to the middle in two. The stamina are five in number, placed opposite to the divisions of the flower-cup, and alternate with the petals. The seed-bud is universally placed under the seat of the flower, and supports two styles which are turned backwards, and crowned with simple summits which do not differ in appearance from the styles. The seed-vessel in this order is wanting. The seeds are two in number, which, when ripe, separate below, but remain closely attached at top. The plants of this order, which grow in dry places, are sudorific, stomachic, and warming. Their virtue resides chiefly in the seeds and leaves. Those which grow in marshy places are generally poisonous; but, notwithstanding the extremely warm and even caustic quality of most of these plants, many of them are employed in the kitchen, and in the œconomy of domestic affairs.

46. *Hederacæ*, (from *hedera* ivy); consisting of ivy

and a few other genera that seem nearly allied to it. This order furnishes both herbaceous and shrubby plants; most of which, particularly ivy and vine, have creeping branches, which attach themselves by roots or tendrils to the bodies in their neighbourhood. The roots are long, with few branches. The stems and young branches are cylindric. In some species of vine they are square. The leaves are alternate; sometimes simple, sometimes winged, in which the surface of the leaves is covered with points. The foot-stalk of the leaves is cylindrical, and without any furrow. The buds are of a conic form, and without any scales. The flowers are either hermaphrodite, male and female upon different roots, or hermaphrodite and male upon different roots. In some, they terminate the branches in an umbel; in others, they proceed in clusters from the side opposite to the leaves; and in some, they are produced along the branches. The calyx consists of one leaf divided into five parts, which are small and generally permanent. The petals in this order are generally five. The stamina are in number five; awl-shaped, erect, and generally of the length of the petals. *Cissus* has only four stamina, which are inserted into the nectarium, a sort of border surrounding the seed-bud. The antheræ are roundish, and sometimes, as in ivy, attached to the filaments by the sides. The seed-bud is sometimes round, sometimes shaped like a top or pear, and ends in one, two, or five awl-shaped styles, which are crowned with a simple stigma. The flowers of the vine have no style. The seed-vessel is of the berry kind, with one, two, or five styles. The seeds are from one to five in number; placed either in distinct cells, or dispersed through the pulp without any partition.

47. *Stellatæ*, (from *stella* a star); consisting of plants with two naked seeds, and leaves disposed round the stem in form of a radiant star. This order contains herbs, shrubs, and trees. The herbs, which are most numerous, are chiefly annual, and creep along the surface of the ground. The shrubs and trees are mostly evergreens, which rise erect, and are of an agreeable conic form.—These plants are opening; some of their seeds, particularly those of coffee, are bitter and cordial; some of them are used in dyeing, and others in medicine.

48. *Aggregate*, (from *aggregare*, to assemble or collect); comprehending those plants which have aggregate flowers, consisting of a number of florets or small flowers, each of which have a proper and common calyx.

49. *Compositæ*, consisting of plants with compound flowers. In this order Linnæus has constructed his first or primary divisions from the different sexes of the florets, which he terms *polygamy*; the subaltern divisions are constructed from the figure of the petals, the disposition of the flowers, the pappus or crown of the seed, the common receptacle, and other circumstances which characterize the subaltern divisions in other authors.

50. *Amentacæ*, (from *amentum* a catkin), plants bearing catkins; as *salix*, *populus*, *platanus*, &c.

51. *Coniferæ*, (from *conus* a cone, and *fero* to bear); consisting of plants, whose female flowers, placed at a distance from the male, either on the same or distinct roots, are formed into a cone. In this character, the only

only one expressed in the title, the plants in question seem to be nearly allied to the family of mosses: from which, however, they are easily distinguished by their habit, as well as by the structure of the small flowers, in which the stamina are united below into a cylinder, and distinct at top. The plants of this order are mostly of the shrub and tree kind, and retain their leaves all the year. The form of these plants is generally conic, and extremely beautiful, from the disposition of the branches, which cover the stems even to the roots, extending themselves horizontally and circularly like so many rays. The height of some genera of this order does not exceed half a foot, that of others approaches to a hundred. The roots are short, branching, not very fibrous, and extend horizontally. The stems and branches are cylindrical. The bark is thin, and split into slender scales. The wood, except that of the yew-tree, possesses little hardness. The buds are of a conic form, and naked, or without scales. The leaves are entire, small, and thick, frequently triangular, and generally pointed. Juniper has a prickly and thorny leaf. With respect to situation, they admit of great variety, being either alternate, opposite, placed in whorls round the stem, or collected into small bundles which proceed from a single point. They are placed on the branches without any sensible footstalk. The flowers in this order are universally male and female. In some genera, the male flowers are collected into a spike or cone at the end of the branches; in others, they proceed singly from the wings of the leaves, or termination of the branches. The female flowers are generally collected into a cone; but in yew-tree and shrubby horse-tail they are single, and terminate the branches. The calyx of the male flowers is a catkin; of the female, a cone. The petals of this order are wanting; except in the female flowers of juniper, which have three sharp, rigid, and permanent petals. The stamina are in number from 3 to 20 and upwards; united by their filaments into a cylinder or pillar, which rises out of the centre of the calyx. The antheræ are erect, distinct, of a roundish form, and divided into internal partitions or cells, which, in the different genera, are in number from two to ten. The seed-buds are generally numerous, and placed betwixt the scales of the cone, which serve for a calyx. From each seed-bud arises a very short cylindrical style, crowned with a simple stigma, of a conic form. These plants have probably no seed-vessel or fruit; the seeds being naked, and involved only by the scales of the calyx. In some genera, these scales are of a bony nature, and almost united; in others, they are of a substance like leather; in juniper, they are united, and become fleshy and succulent like a berry. The seeds in this order, being nourished, as in a seed-vessel, by the scales of the cone, or common calyx, differ in nothing from the germina or seed-buds.—Most of the cone-bearing plants are resinous, or gummy; and the gums proceeding from them have a bitter taste, but generally a very agreeable smell.

52. *Coadunatæ*, (from *coadunare*, to join or gather together); so termed from the general appearance of the seed-vessels, which are numerous, and being slightly attached below, form all together a single fruit in the shape of a sphere or cone; the parts of which, however, are easily separated from one another. This order, which consists of exotic plants, furnishes a beautiful and choice

collection of shrubs and trees, both evergreen and deciduous. The trees are often 60 feet high, and garnished from the bottom to the top with spreading branches and leaves of a bright green colour, which assume a very agreeable conic form. The roots are branching and fibrous. The stems are cylindrical, and the wood very hard. The buds are conic, flat, and generally without scales. The leaves are universally simple and alternate. The footstalk is cylindrical, without furrows, frequently swelled at its origin, and appears jointed at its insertion into the branch. The flowers are hermaphrodite, and are generally produced either along or at the end of the branches. The calyx generally consists of three oblong plain leaves, like petals, which fall off with the flower. The petals are in number from 6 to 18, oblong, concave, and frequently disposed in two or three series or rows, the outermost of which are largest. The stamina are numerous, short, and inserted into the common receptacle in some, and into the seed-bud in others. The filaments are very short and slender, some genera having scarce any at all. The antheræ are numerous, slender, and placed round the seed-bud. The pistillum generally consists of a number of seed-buds disposed in the form of a cone, and seated upon a receptacle which rises like a small pillar above the receptacle of the calyx. From each seed-bud generally arises a cylindrical style, which is very short. The stigma is commonly blunt. The seed-vessel is commonly a berry; but in magnolia it is an oval cone, consisting of a number of roundish capsules laid over each other like tiles. The fruits or seed-vessels, whether of the berry, capsule, or cherry kind, are equal in number to the seed-buds, and generally slightly attached below. The seeds are numerous, hard, roundish, and sometimes cornered. The plants of this order have a strong, agreeable, and aromatic smell; the fruits and seeds have a pungent taste like pepper; the bark and wood are bitter.

53. *Scabridæ*, (from *scaber* rough, rugged, or brittle); consisting of plants with rough leaves. There seems to be some impropriety in characterizing these plants by a name expressive of the roughness of their leaves, as that circumstance had previously furnished the classic character of the *Asperifoliæ*. The degree of roughness, however, is much greater in the plants which make the subject of the present article.—The plants of this order are in general of an astringent nature; their taste is bitter and styptic.

54. *Miscellanæ*, miscellaneous plants. This order consists of such genera as are not connected together by very numerous relations. They are, datisca, poterium, refeda, sanguiforba, lemna, pistia, coriaria, empetrum, achyranthes, amaranthus, celosia, gomphrena, irefine, phytolacca, nymphaea, sarracenia, cedrela, swietenia, corrigiola, luncum, telephium.

55. *Filices*, ferns; consisting of plants which bear their flower and fruit on the back of the leaf or stalk. These plants, in figure, approach the more perfect vegetables; being furnished, like them, with roots and leaves. The roots creep, and extend themselves horizontally under the earth, throwing out a number of very slender fibres on all sides. The stem is not to be distinguished from the common footstalk, or rather middle rib of the leaves: so that in strict propriety the greater number of ferns may be said to be *acaules*; that

is, to want the stem altogether. In some of them, however, the middle rib, or a stalk proceeding from the root, overtops the leaves, and forms a stem upon which the flowers are supported. The leaves proceed either singly, or in greater numbers from the extremities of the branches of the main root. They are winged or hand-shaped in all the genera except in adders-tongue, pepper-grass, and some species of spleen-wort. The flowers, whatever be their nature, are, in the greater number of genera, flattened, and as it were glued, to the back of the leaves; in others, they are supported upon a stem which rises above the leaves; but in some, are supported on a flower-stalk, as already mentioned. The stamina are placed apart from the seed-bud in a genus termed by Mr Adanson *palmi filix*; in the other ferns, where we have been able to discover the stamina, they are found within the same covers with the seed-bud. Most of the ferns have a heavy disagreeable smell; as to their virtues, they are opening and attenuating.

56. *Musci*, mosses. These plants resemble the pines, firs, and other evergreens of that class, in the form and disposition of their leaves, and manner of growth of the female flowers, which are generally formed into a cone. They frequently creep, and extend themselves like a carpet upon the ground, trees, and stones, being generally collected into bunches and tufts: the smallest are only one third of an inch in height, and the largest do not exceed five or six. Few of the mosses are annual; small as they are, the greater number are perennial and evergreens. Their growth is remarkably slow, as may be judged by the time that the antheræ take to ripen. This, reckoning from the first appearance of the antheræ to the dispersion of its powder or male dust, is generally four or six months. Although preserved dry for several years, these plants have the singular property of resuming their original verdure, upon being moistened. It would be worth while to determine whether they do not also resume their vegetative quality. The roots of plants of this order are fibrous, slender, branched, and short. The stems are cylindric and weak, as are also the branches; they creep upon the ground, and strike root on every side. The leaves are very small and undivided. They differ with respect to situation; being either alternate, opposite, or placed by fours round the stalk. They have no perceptible footstalk nor middle rib, and are seated immediately upon the stem. The flowers are universally male and female: in some, the male flowers are produced upon the same plants with the female, and stand before them; in others, they are produced sometimes on the same, and sometimes on distinct plants. The male flowers consist entirely of antheræ, and their covering; proceed either singly, or in clusters, from the extremity of the branches, or angles of the leaves; and are either seated immediately upon the branches, or supported by a long footstalk. The female flowers, which generally resemble capsules or cones, are all placed immediately upon the stem or branches, without any footstalk; and proceed singly either from the wings of the leaves, or summit of the

branches; when produced upon the same plant with the male, they are always placed under them. The female cones of the mosses greatly resemble those of the pines, and evergreen trees of that class; the scales which form them are true leaves, each containing in its wing or angle a single seed. When the seeds are ripe, the cones probably open for their disperson. When shut, they resemble buds, and have sometimes been ignorantly mistaken for such. The calyx, in this order, if it can be called such, is that appearance resembling a veil or monk's cawl, which in the male flowers covers or is suspended over the tops of the stamina like an extinguisher, and is termed by Linnæus *calyptra*. The petals are universally wanting. The mosses in general are almost tasteless, have few juices, and being once dried do not readily imbibe moisture from the air. Those which grow in water, being thrown into the fire, grow red, and are reduced to ashes without receiving or communicating any flame; on which account some superstitious people, the Siberians in particular, place water moss in their chimnies as a preservative against fire. Most of the mosses are purgative; some violently so, and even emetic. They are all of wonderful efficacy in preserving dry such bodies as are susceptible of moisture; and in retaining, for a long time, the humidity of young plants without exposing them to putrefaction. For this reason, such plants as are to be sent to any considerable distance, are generally wrapped up in them.

57. *Algæ*, flags; consisting of plants whose root, leaf, and stem, are all one. Under this description are comprehended all the sea-weeds, and some other aquatic plants.

58. *Fungi*, mushrooms. These plants are rarely branched, sometimes creeping, but most commonly erect. Such as are furnished with branches have them of a light spongy substance like cork. Mushrooms differ from the fuci, in that those which, like the fuci, have their seeds contained in capsules, are not branched, as that numerous class of sea-weeds are. The greatest part of mushrooms have no root; some, instead of roots, have a number of fibres, which, by their infuscations, frequently form a net with unequal meshes, some of which produce plants similar to their parent vegetable. The stamina in these plants are still undetermined. The seeds are spread over the surface of the plant, or placed in open holes or cavities, resembling the open capsules of some of the fuci. In mushrooms which are branched, the seeds are frequently visible by the naked eye, and always to be distinctly observed by the assistance of a good microscope. These plants are very astringent, and some of them are used for stopping violent hæmorrhages. As a vegetable food, they are at best suspicious: some of them are rank poison.

Dubii ordinis. Under this name Linnæus classes all the other genera which cannot be reduced to any of the abovementioned orders, and which are near 120 in number.

ALPHABETICAL INDEX of BOTANICAL TERMS.

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Botany
 ||
 Botargo.

BOTANY-BAY. See NEW HOLLAND.
 BOTANOMANCY, (from *βοτανη*, herb, and *μαντις*, divination), an ancient species of divination, by means of plants; especially sage and fig-leaves. The manner of performing it was thus: the persons who consulted wrote their own names and their questions on leaves, which they exposed to the wind; and as many of the letters as remained in their own places were taken up, and being joined together, contained an answer to the question.
 BOTARGO, a kind of sausage, made with the eggs and blood of the mullet, a large fish common in the Mediterranean. The best kind comes from Tunis in Barbary: It must be chosen dry and reddish. The people of Provence use a great deal of it, the common way of eating it being with olive oil and lemon juice.
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There is also a great consumption of it throughout the Levant.
 BOTE, (Sax.), signifies a recompence, satisfaction, or amends: hence comes *manbote*, compensation or amends for a man slain, &c. In king Ina's laws is declared what rate was ordained for expiation of this offence, according to the quality of the person slain. From hence likewise we have our common phrase, *to-boot*, i. e. *compensationis gratia*. There are *house-bote*, *plough-bote*, &c. privileges to tenants in cutting of wood, &c.
 BOTELESS, (*sine remedio*). In the charter of Hen. I. to Tho. archbishop of York, it is said, "that no judgment, or sum of money, shall acquit him that commits sacrilege; but he is in English called *boteless*, viz. without emendation." We retain the word still in common

Bot e,
 Boteless.

Both
||
Botticelli.

common speech: as, It is *bottleless* to attempt such a thing; that is, It is in vain to attempt it.

BOTH (John and Andrew), Flemish painters, and pupils of Bloemart. The union of these brothers was very singular; they were inseparable in their studies, travels, and paintings. John painted the landscape part of their pictures in the manner of Lorrain, and Andrew the figures and animals in the style of Bamboche. They both died in 1650. John's taste in landscape is elegant; his ideas are grand; his composition beautiful; and his execution rich and masterly in the highest degree. His light is not always well distributed; but his figures are excellent. It is to be regretted that we have not more of his works; for they are certainly, upon the whole, among the best landscapes we have.

BOTHNIA, a province of Sweden, at the end of the gulph of the same name. It is divided into two parts called *east* and *west Bothnia*, the former of which belongs to Finland. West Bothnia is full of mountains; the earth is sandy, and yet a scarcity of provisions is seldom known. Cattle and game are so common, salmon and a sort of herrings so plenty, and the trade of skins is so gainful, that the inhabitants can command what they want from their neighbours. There are only two towns worth mentioning, *viz.* Tornea and Uma. The inhabitants of this province are Protestants; and are a civil well-behaved people.

BOTRYS, **BOTRUS**, or *Bostra*, (anc. geog.) a town of Phoenicia, on the Mediterranean, built by Saturn, (a proof at least of antiquity); twelve miles to the north of Byblus, and twenty to the south of Tripolis. Now almost in ruins, and called *Boteron*, or *Boturn*, (Postellus). E. Long. 37. 30. Lat. 34. 6.

BOTT, among bone-lace weavers, a king of round cushion of light matter placed on the knee, whereon they work or weave their lace with bobbins, &c.

BOTT, in zoology. See **BOTRS**.

BOTTICELLI, (Sandro, or Alessandro), born at Florence in 1437, learned the rudiments of painting under Filippo Lippi. He executed several pictures for pope Sixtus IV. and others for the city of Florence: for these he received large sums of money, all of which he expended, and died at last in great distress, aged 78. He was not only a painter, but a man of letters. Baldini, according to the general report, communicated to him the secret of engraving, then newly discovered by Finiguerra their townsman. The famous edition of Dante's Poem of Hell, printed at Florence by Nicholo Lorenzo della Magna, A. D. 1481, and to which, according to some authors, Botticelli undertook to write notes, was evidently intended to have been ornamented with prints, one for each canto; and these prints (as many of them as were finished) were designed, if not engraved, by Botticelli. It is remarkable, that the two first plates only were printed upon the leaves of the book, and for want of a blank space at the head of the first canto, the plate belonging to it is placed at the bottom of the page. Blank spaces are left for all the rest; that as many of them as were finished might be pasted on. Mr Wilbraham possesses the finest copy of this book extant, in any private library; and the number of prints in it amounts to nineteen. The two first, as usual, are printed on the leaves; and the other seventeen, which follow regularly, are pasted on the blank spaces. And these ap-

parently were all that Botticelli ever executed. About the year 1460, it is said, that he engraved a set of plates, representing the *Prophets and Sibyls*. Basan tells us that he marked these plates with a *monogram* composed of an A and a B joined together.

BOTTLE, a small vessel proper to contain liquors, made of leather, glass, or stone. The word is formed from *butellus*, or *botellus*, used in barbarous Latin writers, for a lesser vessel of wine; being a diminutive of *bota*, which denoted a butt or cask of that liquor.

The ancient Jewish bottles were cags made of goats- or other wild beasts skins, with the hair on the inside, well sewed and pitebed together; an aperture in one of the animal's paws serving for the mouth of the vessel.

Glass bottles are better for cyder than those of stone. Foul glass-bottles are cured by rolling sand or small shot in them; multy bottles, by boiling them. See **GLASS**.

Bottles are chiefly made of thick coarse glass; though there are likewise bottles of boiled leather made and sold by the case-makers. Fine glass-bottles covered with straw or wicker, are called *flasks* or *bettees*. The quality of the glass has been sometimes found to affect the liquor in the bottle.

Dr Percival cautions against the practice of cleaning of wine-bottles with leaden shot. It frequently happens (he thinks), through inattention, that some of the little pellets are left behind; and when wine or beer is again poured into the bottles, this mineral poison will slowly dissolve, and impregnate those vinous liquors with its deleterious qualities. The sweetness which is sometimes perceived in red port wine may arise from this cause, when such an adulteration is neither designed nor suspected.—Potash is recommended for cleaning bottles: a small quantity in the water will clean two gross.

BOTTLING, the operation of putting up liquors in bottles corked, to keep, ripen, and improve. The writers on good husbandry give divers rules concerning the bottling of beer, cyder, and the like. The virtues of Spaw, Pyrmont, Scarborough, and other waters, depend on their being well bottled and corked, otherwise they lose both their taste and smell. To preserve them, it is necessary the bottles be filled up to the mouth, that all the air may be excluded, which is the great enemy of bottled liquors. The cork is also further secured by a cement. Some improve their bottled beer, by putting crystals of tartar and wine, or malt spirits; and others, by putting sugar boiled up with the essence of some herb, and cloves, into each bottle.

Cyder requires special precautions in the bottling; being more apt to fly, and burst the bottle, than other liquors. The best way to secure them, is to have the liquor thoroughly fine before it be bottled. For want of this, some leave the bottles open a while, or open them after two or three days bottling, to give them vent. If one bottle break, through fermentation, it is best to give them all vent, and cork them up again. Mean cyder is apter to break the bottles than rich. Some soak the corks in sealing water, to render them more pliant and serviceable. Another particular to be observed is, to lay the bottles so as that liquor may always keep the cork wet and swelled. Something also depends on the place where the bottles are set, which

Bottle.
Bottling.

Strutt's Dict.

ought to be such as exposes them as little as possible to the alterations and impressions of the air: the ground is better for this purpose than a frame; sand better than the bare ground, and a running water, or a spring often changed, best of all.

To hasten the ripening of bottled liquors, they are sometimes set in a warm place, or even exposed to the sun, when a few days will bring them to maturity.

BOTTOM, in a general sense, denotes the lowest part of a thing, in contradistinction to the top or uppermost part.

BOTTOM, in navigation, is used to denote as well the channel of rivers and harbours, as the body or hull of a ship. Thus, in the former sense, we say, a *gravelly bottom*, *clayey bottom*, *sandy bottom*, &c. and in the latter sense, a *British bottom*, a *Dutch bottom*, &c.—By statute, certain commodities imported in foreign bottoms pay a duty called *petty customs*, over and above what they are liable to if imported in British bottoms.

BOTTOMRY, in commerce, (a practice which originally arose from permitting the master of a ship in a foreign country to hypothecate the ship in order to raise money to refit), is in the nature of a mortgage of a ship; when the owner takes up money to enable him to carry on his voyage, and pledges the keel or bottom of the ship (*pars pro toto*) as a security for the repayment. In which case it is understood, that if the ship be lost, the lender loses also his whole money; but if it return in safety, then he shall receive back his principal, and also the premium or interest agreed upon, however it may exceed the legal rate of interest. And this is allowed to be a valid contract in all trading nations, for the benefit of commerce, and by reason of the extraordinary hazard run by the lender. And in this case, the ship and tackle, if brought home, are answerable (as well as the person of the borrower) for the money lent. But if the loan is not upon the vessel, but upon the goods and merchandize, which must necessarily be sold or exchanged in the course of the voyage, then only the borrower, personally, is bound to answer the contract; who therefore, in this case, is said to take up the money at *respondentia*. These terms are also applied to contracts for the repayment of money borrowed, not on the ship and goods only, but on the mere hazard of the voyage itself; when a man lends a merchant 1000*l.* to be employed in a beneficial trade, with condition to be repaid with extraordinary interest, in case such a voyage be safely performed: which kind of agreement is sometimes called *fxnus nauticum*, and sometimes *usura maritima*. But as this gave an opening for usurious and gaming contracts, especially upon long voyages, it was enacted by the statute 19 Geo. II. c. 37. that all monies lent on bottomry, or at *respondentia*, on vessels bound to or from the East Indies, shall be expressly lent only upon the ship, or upon the merchandize; that the lender shall have the benefit of salvage; and that if the borrower has not on board effects to the value of the sum borrowed, he shall be responsible to the lender for so much of the principal as hath not been laid out, with legal interest and all other charges, though the ship and merchandize be totally lost.

BOTTOMY. A cross bottomy, in heraldry, terminates at each end in three buds, knots, or buttons, re-

sembling, in some measure, the three-leaved grass; on which account Segoing, in his *Treſor Heraldique*, terms it *croix treflee*. It is the badge of the order of St Maurice. See *HERALDRY Plates*.

BOTTRIGARO (Hercule), a person eminently skilled in the science of music, though not a musician by profession. He was a man of rank in Bologna; and appears, from several letters to him that have been printed, to have had the title of *Count*. He published several controversial pieces on the subject of music. It seems that he entertained strong prejudices in favour of the ancient music; and that he attempted, as Vincencino and others had done, to introduce the chromatic genus into practice, but with no better success than had attended the endeavours of others. He corrected Gogavino's Latin version of Ptolemy in numberless instances; and that to so good a purpose, that Dr Wallis has in general conformed to it in that translation of the same author which he gave to the world many years after. He also translated into Italian *Boetius de Musica*, and as much of Plutarch and Macrobius as relates to music: besides this, he made annotations upon Aristoxenus, Franchinus, Spataro, Vicentino, Zarlino, and Galisei; and, in short, on almost every musical treatise he could lay his hands on, as appears by the copies which were once his own, and are now deposited in many libraries in Italy. Of Bottrigaro's works it is said, that they contain greater proofs of his learning and skill in music, than of his abilities as a writer, his style being remarkably inelegant: nevertheless, he affected the character of a poet; and there is extant a collection of poems by him, in 8vo, printed in 1557. Walther † represents him as an able mathematician, and a collector of rarities; and says that he was possessed of a cabinet, which the emperor Ferdinand II. had a great desire to purchase. He died in 1609.

BOTTS, in zoology, a species of worms which can be produced and nourished only in the intestines of a horse. It is there alone they can enjoy the proper temperature of heat, and receive the nourishment necessary for them. See *OESTRUS*.

Besides the long worms which have been observed in the bodies of horses, there are also short ones.—By these are to be understood what we call *botts*.

All authors, both ancient and modern, who have treated of the diseases of horses, have taken notice of these worms; but M. Vallisnieri is the first who has traced them to the last stage of their transformation, and has seen them change into a hairy kind of fly like the drone.

The flies from which these botts are produced inhabit the country, and do not come near houses, at least not near those of great towns; and therefore horses are never liable to have these worms (*i. e.* botts) in their bodies, if they have been kept in the house, especially in a town, during the summer and autumn.

It is in the former of these seasons, and perhaps too in the beginning of the latter, that the females of these flies apply themselves to the anus of horses, and endeavour to gain admittance, in order there to deposit their eggs, or perhaps their worms.

The precise instant of their entrance will scarce admit of an eye-witness, but by the mere chance; yet M. Vallisnieri says, that Dr Gaspari had attained this very uncommon sight. The Doctor (he tells us) was

Bottrigaro.
Botts.

† *Musical
Lexicon.*

Botts.

one day looking at his mares in the field; and from being very quiet, he observed, that on a sudden they became very restless, and ran about in great agitation, prancing, plunging, and kicking, with violent motions of their tails. He concluded, that these extraordinary effects were produced by some fly buzzing about them, and endeavouring to settle upon the anus of one of them; but the fly not being able to succeed, he observed it to go off with less noise than before, towards a mare that was feeding at a distance from the rest; and now the fly taking a more effectual method to obtain its design, passed under the tail of the mare, and so made its way to the anus. Here at first it occasioned only an itching, by which the intestine was protruded with an increasing aperture of the anus; the fly taking the advantage of this, penetrated further, and secured itself in the fold of the intestine:—this effected, it was in a situation proper for laying its eggs. Soon after this, the mare became very violent, running about, prancing, and kicking, and throwing herself on the ground; in short, was not quiet, nor returned to feeding, till after a quarter of an hour.

The fly then, we see, can find means of depositing its eggs, or perhaps its worms (*i. e.* botts), in the fundament of the horse; which once effected, it has done all that is necessary for them. If these bott worms are not hatched when first deposited in the horse, but are then only eggs, it will not be long before it happens, from the nutritive heat they there receive.

These bott-worms soon make their way into the intestines of the horse: they occupy such parts of this region as are to them most convenient; and sometimes (as we shall see presently) they penetrate even to the stomach. All the hazard they appear to be exposed to, is that of being carried away from the places they have fixed on by the excrement, which may seem likely to drive all before it. But nature has provided for all things; and when we shall have further described these bott worms, it will seem that they are able to maintain their situation, and to remain in the body of the horse, as long as they please.

There is a time when these bott-worms are of themselves desirous to leave this their habitation, it being no longer convenient for them after the purposes of their growth are answered. Their transformation to a fly must be performed out of the horse's body: and accordingly, when the time of their transformation draws near, they approach towards the anus of the horse; and then leave him of their own accord, or with the excrement, with which they then suffer themselves to be carried along.

According to Mr de Reaumur's observations, the bott worms have two unequal claws, by which they are enabled to remain in the intestines of the horse in opposition to all efforts of the excrement to force them out.—These claws are of a sort of anchor, differently disposed from those of common anchors, but contrived to produce the same effect. Besides these two claws, nature has given them a very great number of triangular spines or bristles, very sufficient to arm them against the coats of the intestines, and to resist the force employed to drive them towards the anus, provided the head be directed towards the stomach of the horse.

It will be asked, no doubt, if these bott worms are not dangerous to horses?—The mares which afforded

Botts.

Mr de Reaumur, for several years, those on which he made his observations, did not appear to be less in health than those which had none; but it may sometimes happen, that they are in so great a quantity in the body of the horse as to prove fatal to him. M. Vallisnieri supposes these bott-worms to have been the cause of an epidemical disease that destroyed a great many horses about Verona and Mantua in the year 1713. —The observations communicated to him by Dr Gaspari sufficiently confirm his supposition. This gentleman, upon dissecting some horses that died of this distemper, found in their stomachs a surprising quantity of short worms; of which to give us some idea, he compares them to the kernels of a pomegranate opened: each of these, by gnawing on the coat of the stomach, had made for itself a kind of cellule therein, each of which would easily contain a grain of Indian wheat. It is easy to imagine by this means the stomach must be reduced to a wretched condition; the outer membranes were inflamed, and the inner ones ulcerated and corrupted; a very small quantity of these worms were found in the small intestines, and only a few in the larger, to which last they were found affixed, but had not corroded them. It is only perhaps when these bott-worms are in great numbers, and thereby incommode each other in the intestines of the horse, that they make their way towards the stomach; and indeed a very few flies must be enough to overstock the inside of a horse, provided they should deposit all their eggs, and such should all be animated, M. Vallisnieri having counted 700 and odd in the body of one single fly.

When one of these botts has left the anus of the horse, it falls on the ground; and immediately seeks out for some place of safety, where it may retire, to prepare for the last stage of its transformation, by which it is to become a fly. And now by degrees the skin hardens and thickens; and at length forms a solid shell or cocoon, the form of which scarce differs from that of the worm. It is first of a pale red colour, which changes into chestnut; and at length, by the addition of gradual and successive shades of brown, the shell is rendered black. The worm, or bott, before it passes into a nymph, is of the form of an oblong ball; it remains in this form much longer than worms of the flesh-fly kind. M. de Reaumur met with worms that retained this figure five or six days; as yet, one can perceive no traces of the legs, wings, and head of the nymph. Hence he first learned, that those bott worms do not become nymphs immediately upon their first change; but that, in order to become flies, they must undergo one change more than caterpillars ordinarily do to become butterflies.—For the cure of horses troubled with botts, see FARRIERY, § xv.

BOTWAR, a town of Germany, in the circle of Suabia, and subject to the duke of Wirtemberg. E. Long. 9. 15. N. Lat. 49. 0.

BOTZENBURG, a town of Germany, in the duchy or Mecklenburg. It had a castle, which was destroyed by the Danes in 1202. It is seated on the Elbe, and the vessels that pass by are obliged to pay a considerable toll. E. Long. 10. 48. N. Lat. 53. 34.

BOVA, an episcopal town of Italy, in the kingdom of Naples, seated near the Apennine mountains. E. Long. 16. 15. N. Lat. 37. 15.

BOUCHAIN, a fortified town of the French Netherlands,

Bche, therlands, in the province of Hainault. It is divided into two parts by the river Scheld. It was taken by the French in 1676; and by the allies under the duke of Marlborough in 1711, which was the last military achievement of that great general; but the following year it was retaken by the French. E. Long. 3. 15. N. Lat. 50. 17.

BOUCHE OF COURT, the privilege of having meat and drink at court foot-free. The word is also written *bouge*, *bouge*, and *budge*; it is mere French, where it signifies *mouth*—The French still use the phrase, *Avoir bouche à la cour*; that is, *to have table or diet at court*. This privilege is sometimes only extended to bread, beer, and wine: it was a custom anciently in use, as well in the houses of noblemen as in the king's court. Thomas earl of Lancaster retained Sir John de Ewre, to serve him with ten men at arms in time of war, allowing them *bouge of court*, with livery of hay and oats, horse-shoes and nails. Sir Hugh Merrill had the same privilege for life, on condition of serving king Edward II.

BOUCHET (John), a French poet and historian flourished in the 16th century. The most considerable of his writings are the Annals of Aquitaine, and his *Chapelet des Princes*.

BOUDRY, a small town of Switzerland, in the province of Neuchâtel, and capital of a chatelainry of the same name. E. Long. 7. 5. N. Lat. 47. 11.

BOVEY-COAL, an inflammable fossil found in England, France, Italy, Switzerland, Germany, Ireland, &c. Its colour is brown or brownish black, and of a laminar structure. It is composed of wood, penetrated by petrol or bitumen; and frequently contains pyrites, alum, and vitriol.

BOUFLERS (Lewis Francis, duke of), a peer and marshal of France, was born in 1644. He distinguished himself by his valour and conduct in several sieges and battles, and had the command of the right wing when the French were defeated at the bloody battle of Malplaquet. He died at Fountainbleau in 1711.—Marshal Boufflers, his son, died at Genoa, after having delivered that republic.

BOUGEANT (William Hyacinth), a famous Jesuit, first taught humanity at Caen and Nevers, and afterwards settled at the college of Lewis the Great, where he employed himself in writing several works; the principal of which were, 1. A collection of physical observations, extracted from the best authors. 2. An history of the wars and negotiations which preceded the treaty of Westphalia. 3. The female doctor, a philosophical amusement on the language of beasts, &c. He died in 1743.

BOUGH, denotes much the same with **BRANCH**.—Green boughs anciently made part of the decoration of altars and temples, especially on festival occasions. Oak boughs were offered to Jupiter; those of laurel, to Apollo; of olive, to Minerva; myrtle, to Venus; ivy, to Bacchus; pine, to Pan; and cypress, to Pluto. Some make them the primitive food of mankind before acorns were invented.

BOUGIE. In the French language it signifies a wax candle, and is applied to a machine which (as the wax candle formerly was) is introduced into the urethra for removing obstructions there. Mons. Daran, a French surgeon, lately boasted of his introducing them

as an improvement in his art, and acquired considerable profit by making and selling them. Scultetus, about the middle of the 17th century, used bougies in diseases of the urethra, and Mons. Daran probably took the hint from him. Different compositions have been used, and generally mercury was a part of them. Riverius made a plaster as follows: ℞ ol. oliv. ℥ iv. ceræ citrin. lb ii. minii & ceruss. āā lb iss tereb. venet. & rez. alb. āā ℥ iii ss. Whether the bougies are made up of this or any other composition, they must be of different sizes, from the bigness of a knitting needle to that of a goose quill. They are made of linen rags, spread with a proper matter, and then rolled up as follows. Having spread any quantity of the linen rag with the composition that is chosen for the purpose, cut it into slips from six to ten inches long, and from half an inch to an inch broad: then dextrously roll them on a glazed tile into the form of a wax candle; and as the end of the bougie that is to be entered first into the urethra should be somewhat smaller than the rest, it would be as well to cut the slips a little tapering. It should also be observed, that when the bougies are rolled up, that side must be outward on which the plaster is spread.

Mons. Daran, and some others, attributed the action of their bougies to the composition they made use of in forming them. Mr Sharp apprehended, that as much of their efficacy was owing to the compression they made on the affected part, as to any other principle; and Mr Aiken very justly says, As it is evident that bougies of very different compositions succeed equally well in curing the same disorders in the urethra, it is plain that they do not act by means of any peculiar qualities in their composition, but by means of some property common to them all. This must be their mechanical form and texture, therefore their mode of action must be simple compression. The efficacy of mere compression in many cases of constriction is well known, from the use of sponge tents for widening parts that are straitened by cicatrices; and admitting obstructions in the urethra to be from a constriction formed by cicatrized ulcers, or a projection of the spongy substance of the urethra into the canal, we may easily conceive, that a gentle continued elastic compression will in time overcome the disease. We may also readily account for the inferior efficacy of metallic and whalebone bougies, from their not having the property of swelling with moisture, and therefore not making so equal a compression. As to bougies procuring a discharge of matter, there is no doubt but the mechanical stimulus of a foreign body in such a tender part, though free from disease, must produce it in some degree; and that this will be varied according to the chemically irritating quality of the composition, and the irritable state of the urethra: but it seems an absurdity to apply a topic, made uniform throughout, to the whole length of a canal, with a view of producing extraordinary effects upon a particular part of it, by means of some powerful quality in the ingredients. As to that part of the bougie which was in contact with the diseased part, being particularly covered with matter; this circumstance is probably owing to the greater irritation of that part of the urethra where the disorder is, than any other.

BOUHOURS (Dominic), a celebrated French critic, was born at Paris in 1628; and has been by some

Bougie,
Boulhours.

Motley,
N. ed. Dict.

Bouhours
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Bovium.

considered as a proper person to succeed Malherbe, who died about that time. He was entered into the society of Jesuits at the age of 16; and was appointed to read lectures upon polite literature in the college of Clermont at Paris, where he had studied: but he was so incessantly attacked with the headach, that he could not pursue the destined task. He afterwards undertook the education of two sons of the duke of Longueville, which he discharged with great applause. The duke had such a regard for Bouhours, that he would needs die in his arms; and the "Account of the pious and Christian death" of this great personage was the first work which Bouhours gave the public. He was sent to Dunkirk to the Popish refugees from England; and in the midst of his missionary occupations, found means to compose and publish books. Among these were, *Extrêtiens d' Aristote & d' Eugene*, or "Dialogues between Aristus and Eugenius;" a work of a critical nature, and concerning the French language. His book was printed no less than five times at Paris, twice at Gienoble, at Lyons, at Brussels, at Amsterdam, at Leyden, &c. and embroiled him in quarrels with a great number of censors, with Menage in particular, who, however, lived in friendship with our author before and after. The fame of this piece, and the pleasure he took in reading it, recommended Bouhours so effectually to the celebrated minister Colbert, that he trusted him with the education of his son the marquis of Segnelai. He wrote afterwards several other works; the chief of which are, 1. Remarks and doubts upon the French language. 2. Dialogues upon the art of thinking well in works of genius. 3. The life of St Ignatius. 4. The art of pleasing in conversation. 5. The life of St Francis Xavier, apostle of the Indies and of Japan. This last work was translated from the French into English by Mr Dryden, and published at London in the year 1688, with a dedication prefixed to James II.'s queen.

BOUILLON, a town of France in the duchy of the same name, and in the county of Luxemburg, with a fortified castle. The French took it in 1676; upon which it was given to the duke of Bouillon; but the king keeps the castle to himself, which is seated on a rock that is almost inaccessible. E. Long. 5. 20. N. Lat. 49. 45.

BOUILLON, in the manege, a lump or excrescence of flesh that grows either upon or just by the frush, inso-much that the frush shoots out, just like a lump of flesh, and makes the horse halt; and this is called *the frush blowing upon the frush*. Manege horses, that never wet their feet, are subject to these excrescences, which make them very lame. See FRUSH.

BOVINA AFFECTIO, a distemper of black cattle, caused by a worm lodged between the skin and the flesh, and perforating the same. This distemper is not mentioned by the ancient Greeks, and is but little known in Europe.

BOVINES, a small town of the Austrian Netherlands, in the province of Namur, seated on the river Maese or Meuse, in E. Long. 4. 50. N. Lat. 49. 45.

BOVINO, an episcopal town of Italy, in the Capitanata, seated at the foot of the Apennine mountains, in E. Long. 16. 15. N. Lat. 41. 17.

BOVIUM, (Itinerary); a town of the Silures, in Britain, fifteen miles to the south of Isca Silurum, or

Caer-leon, in Monmouthshire: Now called *Cowbridge*; according to Baudrand, *Bangor* in Carnarvonshire.

BOULAINVILLIERS (Henry de), Lord of St Saife, and an eminent French writer, was descended from a very ancient and noble family, and born at St Saife in 1658. His education was among the fathers of the oratory; where he discovered from his infancy those uncommon abilities for which he was afterwards distinguished. He applied himself principally to the study of history; and his performances in this way are numerous and considerable. He was the author of a history of the Arabians; Fourteen letters upon the ancient parliaments of France; a History of France to the reign of Charles VIII.; the State of France, with historical memoirs concerning the ancient government of that monarchy, to the time of Hugh Capet, "written (says Mr Montesquieu) with a simplicity and honest freedom worthy of that ancient family from which their author was descended." Mr Boulainvilliers died at Paris in 1722; and after his death was published his Life of Mahomet.

BOULANGER (Nicholas-Anthony), a very singular Frenchman, was born at Paris in 1722, and died there in 1759, aged only 37. During his education, he is said have come out of the college of Beauvais almost as ignorant as he entered into it; but, struggling hard against his unaptness to learn, he at length overcame it. At seventeen, he began to study mathematics and architecture; and in three or four years made such a progress, as to be useful to the baron of Thiers, whom he accompanied to the army in quality of engineer. Afterwards he had the supervision of the highways and bridges; and he executed several public works in Champagne, Burgundy, and Lorraine. The author of his life, in the *Dictionnaire des Hommes celebres*, writes, that in this province a terrible spirit discovered itself in him, which he himself did not suspect before; and this was, it seems, the spirit of "thinking philosophically." In cutting through mountains, directing and changing the courses of rivers, and in breaking up and turning over the strata of the earth, he saw a multitude of different substances, which (he thought) evinced the great antiquity of it, and a long series of revolutions which it must have undergone. From the revolutions in the globe, he passed to the changes that must have happened in the manners of men, in societies, in governments, in religion; and he formed many conjectures upon all these. To be farther satisfied, he wanted to know what, in the history of ages, had been said upon these particulars; and that he might be informed from the fountain-head, he learned first Latin and then Greek. Not yet content, he plunged into Hebrew, Syriac, Chaldaic, and Arabic; and acquired so immense an erudition, that, if he had lived, he would have been one of the most learned men in Europe: but death, as we have observed, prematurely took him off. His works are, 1. *Traité du Despotisme Oriental*, 2 vols 12mo; a very bold work; but not so bold and licentious as, 2. *L'Antiquité dévoilée*, 3 vols 12mo. This was posthumous. 3. He furnished to the *Encyclopedie* the articles *Deluge*, *Corvée*, and *Société*. 4. He left behind him in MS. a Dictionary, which may be regarded as a concordance in ancient and modern language. As a man, he is said to have been of a sweet, calm, and engaging

Boulainvilliers,
Boulangier

gaging temper; which, however, it is very difficult to reconcile with the dark, impetuous, ardent spirit, that appears to have actuated him as a writer.

BOULANGER (John), an engraver, who flourished towards the end of the last century, was a native of France. His first manner of engraving appears to have been copied, in some degree, from that of Francis de Poilly; but soon after he adopted one of his own, which, though not original, he however greatly improved: He finished the faces, hands, and all the naked parts of his figures, very neatly with dots instead of strokes, or strokes and dots. The effect is singular enough, and by no means unpleasing; only, in some few instances, he has opposed the coarse graving of his draperies, and back-ground, so violently to the neater work of the flesh, that the outline of the latter is thereby rendered hard, and the general appearance of it flat and chalky. This style of engraving has been carried to its greatest perfection in the present day, particularly in England. He did not draw the naked parts of his figures correctly, or with fine taste. His draperies are apt to be heavy, and the folds not well marked. However, his best prints possess much merit, and are deservedly held in great esteem.

BOULAY (Cæsar Egasse du), in Latin *Buleus*, was born at St Ellier, a village of Maine in France; and became professor of humanity at the college of Navarre, regisler, rector, and historiographer of the university of Paris. He died in 1678, after having published several works. The principal of them are, *A History of the University of Paris*, in Latin, 6 vols folio; and the *Treasure of Roman Antiquities*, in 1 vol. folio.

BOULCOLACA, among the modern Greeks, denotes the spectre of some wicked person who died excommunicated by the patriarch, reanimated by the devil, and causing great disturbance among the people; of which many strange stories are told. The word is Greek, and is sometimes written *βρουκολακος*, *broukolakos*; and supposed to be derived from *βυρρος*, or *βυρρα*, "mud", and *λακος*, a "ditch", on account of the filthiness of the sight.

BOULDER-WALL, a kind of wall built of round flints or pebbles, laid in strong mortar, and used where the sea has a beach cast up, or where there are plenty of flints.

BOULETTE, in the manege. A horse is called *beulette*, when the fetlock, or pastern-joint, bends forward, and out of its natural situation, whether through violent riding, or by reason of being too short-jointed, in which case the least fatigue will bring it.

BOULLOGNE (Bon de), a painter of some eminence, was born at Paris in 1649. From his father Louis de Boullogne he learned the first principles of the art; but went to Rome in order to perfect himself from the works of the best masters. He abode in Italy five years. He excelled in history and portrait. His talents for copying the pictures of the great Italian painters were so very extraordinary, that he frequently deceived the greatest judges. He died at Paris in 1717, aged 68.

BOULLOGNE (Louis de), born at Paris in 1654, was the younger brother of the preceding; and like him learned from his father the first principles of painting, and afterwards went to Rome to complete his studies. His works, on his return, were so much

esteemed, that Louis XIV. honoured him with the order of St Michael, and, after the death of Antony Coypell, appointed him his principal painter. He chiefly excelled in historical and allegorical subjects. He died at Paris in 1734, aged 80 years.

BOULLONNE (Lewis), painter to the French king, and professor of the academy of painting, distinguished himself by his art; and died at Paris in 1674, aged 65. There are three of his pictures in the church of Notre Dame.—He left two sons who were admired for their skill in painting. The elder, who is well known under the name of *Bon Boulionne*, was first instructed by his father; after which he went to perfect himself in Italy, and for that purpose the king allowed him a pension: at his return, he was made professor of the academy of painting. Lewis XIV. employed him in adorning several of his palaces; and there are a great number of his pictures at Paris. His talents for copying the pictures of the great Italian masters were so very extraordinary, that he frequently deceived the greatest judges. He died in 1717.—*Lewis Boulionne* his brother, after being also instructed by his father, gained the prize of painting at 18 years of age; upon which he obtained the king's pension. He set out for Italy at his brother's return, and acquired great skill in designing and colouring. At his return to Paris he was much employed; and at length became director of the academy of painting, knight of the order of St Michael, and first painter to the king. Louis XIV. allowed him several pensions, and raised him and his posterity to the rank of nobility. He embellished the church of the Invalids, the chapel of Versailles, &c. and died at Paris in 1733.

BOULOGNE, a large and handsome town of Picardy in France, and capital of the Boulognois, with a harbour, and a bishop's see. It is divided into two towns; the higher, and the lower. The former is strong both by nature and art; and the latter is only surrounded with a single wall. The harbour has a mole for the safety of the ships, which at the same time prevents it from being choaked up. The lower town is inhabited by merchants, and has three large streets, one of which leads to the high town, and the other two run in a line on the side of the river. Many of the English and Scots reside here, who, from a rebellion, or any other cause, are obliged to fly from their native country. E. Long. 1. 42. N. Lat. 50. 42.

BOULOGNOIS, a territory of France, in the north part of Picardy, about 30 miles in length and 20 in breadth. The chief town is Boulogne, and the chief trade is in pit-coal and butter.

BOULTER (Dr Hugh), was born in or near London, of reputable and wealthy parents. He was educated at Merchant-taylor's school; and, before the Revolution, was from thence admitted to a commoner of Christ-church in Oxford. Some time after, he was chosen a demy of Magdalen college, at the same election with Mr Addison and Dr Wilcox. From the merit and learning of the persons elected, this was commonly called by Dr Hough, president of the college, the *golden election*. He afterwards became fellow of the same college; in which station he continued in the university till he was invited to London by Sir Charles Hodges, principal secretary of state, in the year 1700, who made him his chaplain, and recommended him to Dr

Boulogne
Boulter.

Filkington.

Boulter
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Bouluke.

Tenison archbishop of Canterbury; but his first preferments were owing to the earl of Sunderland, by whose interest and influence he was promoted to the parsonage of St Olave in Southwark, and the archdeaconry of Surry. Here he continued discharging very faithfully and diligently every part of his pastoral office, till he was recommended to attend George I. as his chaplain, when he went to Hanover in 1719. He had the honour to teach prince Frederic the English language; and by his conduct he so won the king's favour, that he promoted him to the deanery of Christ-church, and the bishopric of Bristol, in the same year. As he was visiting his diocese five years afterwards, he received a letter from the secretary of state, acquainting him that his majesty had nominated him to the archbishopric of Armagh and primacy of Ireland. This honour he would gladly have declined; and desired the secretary to use his good offices with his majesty to excuse him from accepting it. Ireland happened to be at this juncture in a great flame, occasioned by Wood's ruinous project; and the ministry thought that the bishop would greatly contribute to quench it by his judgment, moderation, and address. The king therefore laid his absolute commands upon him: to which he submitted, but with some reluctance. As soon as he had taken possession of the primacy, he began to consider that country, in which his lot was cast for life, as his own; and to promote its true interest with the greatest zeal and assiduity. Accordingly, in innumerable instances, he exerted himself in the noblest acts of beneficence and public spirit. In seasons of the greatest scarcity, he was more than once instrumental in preventing a famine which threatened that nation. On one of these occasions he distributed vast quantities of corn throughout the kingdom, for which the House of Commons passed a vote of public thanks; and at another time 2500 persons were fed at the poor-house in Dublin, every morning, and as many every evening, for a considerable time together, mostly at the primate's expence. When schemes were proposed for the advantage of the country, he encouraged and promoted them not only with his counsel but his purse. He had great compassion for the poor clergy of his diocese, who were disabled from giving their children a proper education; and he maintained several of the children of such in the university. He erected four houses at Drogheda for the reception of clergymen's widows, and purchased an estate for the endowment of them. His charities for augmenting small livings and buying glebes amounted to upwards of 30,000*l.* besides what he devised by will for the like purposes in England. In short, the instances he gave of his generosity and benevolence of heart, his virtue, his piety, and his wisdom, are almost innumerable, and the history of his life is his noblest panegyric. This excellent prelate died at London, on the 2d of June 1742, and was interred in Westminster-abbey, where a beautiful monument of finely polished marble is erected to his memory.

BOULTINE, a term which workmen use for a moulding, the convexity of which is just one-fourth of a circle; being the member just below the plinth in the Tuscan and Doric capital.

BOULUKE, in the military orders of the Turks, a body of the janizaries, with an officer in the place of a colonel at their head, sent upon some particular

enterprise; they are selected out of the body for this, and, as soon as the business is over, are received again into their former companies.

BOUM (anc. geog.), a town in Ethiopia beyond Egypt, on the west side of the Nile.

BOUM SOLIS STABULA (anc. geog.), the territory of Mylæ, so called: A peninsula on the east coast of Sicily, to the north of Syracuse; remarkable for its fertility and rich pastures (Theophrastus): and hence arose the fable of the oxen of the sun feeding there (Scholiast on Apollonius). Pliny and Seneca say, that something like dung is thrown out on the coast of Mylæ and Messana, which gave rise to the fable of the oxen of the sun being stalled there; and at this day the inhabitants affirm the same thing (Cluverius).

BOUNCE, in ichthyology, the English name of a species of squalus. See **SQUALUS**.

BOUND, in dancing, a spring from one foot to the other; by which it differs from a hop, where the spring is from one foot to the same. It also differs from a half coupee, as in the latter the body always bears on the floor, either on one foot or the other; whereas, in the bound, it is thrown quite from the floor.

BOUND-Bailiffs, are sheriffs officers for executing of process. The sheriffs being answerable for their misdemeanors, the bailiffs are usually bound in a bond for the due execution of their office; and thence are called *bound-bailiffs*, which the common people have corrupted into a much more homely appellation.

BOUNDS OF LANDS. See **ABUTTALS**.

BOUNTY, in commerce, a premium paid by government to the exporters of certain British commodities, as sail-cloth, gold and silver lace, silk-stockings, fish, corn, &c. The happy influence which bounties have on trade and manufactures is well known: nor can there be a more convincing proof of the good intentions of the government under which we live, than the great care that is taken to give all possible encouragement to those who shall establish or improve any hazardous branch of trade.

All undertakings, in respect either to mercantile enterprises, or in the establishment of manufactures, are weak and feeble in their beginnings; and if unsuccessful, either sink entirely, or at least are seldom revived in the same age. Accidents of this nature are not only destructive to private persons, but exceedingly detrimental to the public interest. On this principle, more especially since trade, for which Providence designed us, hath been attended to, such attempts have been thought deserving, and have been favoured with, public support. This in former times usually flowed from the crown, in the form of letters-patent, charters, or other grants of privileges, which, however requisite they might be, were notwithstanding very frequently objects of censure. If such as obtained them failed in their endeavours, they were reputed *projectors*; if, on the other hand, they succeeded, they were considered as *monopolizers*. Corporations, which imply the uniting certain individuals into a body, that they may thereby become more useful to the community, are created by the crown. Many of these were formed for promoting trade; and, according to the old system of our government, were necessary and useful. On the same principle, privileges were granted to private persons,

Bount
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Bounty

Campbell
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Survey of
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sons, on a suggestion, that what was immediately of use to them would terminate in public utility. These also did good in bringing in many arts and manufactures; though, in some cases, tending to private interest more than public emolument, they were liable to legal correction. In later times, and in concerns of moment, a much better method has been adopted, as often as it hath been found practicable, by rejecting private or particular interest, and proposing the designed advantages to such as should perform the stipulations on which they are granted. These bounties, as they are paid by the public, so they are solely calculated for the benefit of the public. They are sometimes given to encourage industry and application in raising a necessary commodity; which was intended by the bounty on exporting corn. The intention of this bounty was to encourage agriculture; and the consequence hath been, that we now grow more than twice as much as we did at the establishment of the bounty; we even consume twice as much bread as we then grew; yet in A. D. 1697, we exported a fifteenth part of what we grew, of late years a twenty-ninth part only. The bounty on this twenty-ninth part amounted to somewhat more than L. 50,000, and the produce to more than L. 400,000. It is evident that all this is so much clear gain to the nation. But this is far from being all that we have annually gained. For if our cultivation is doubled, as indeed it is, then the rent of lands, the subsistence of working hands, the profits of the tradesmen supplying them with utensils, clothes, the value of horses employed, &c. must all be taken into the account. Besides this we must add the freight (amounting to half the bounty), to make the idea of the advantages complete.

Sometimes bounties are given with a view to promote manufactures, as in the case of those made of silk. Many laws are to be found in our statute-books in favour of the silk manufacture, made with great wisdom and propriety, for the encouragement and support of many thousands of industrious persons employed therein. By statute 8 Geo. I. cap. 15. § 1. a bounty was given on the due exportation of ribbons and stuffs, of silk only, of three shillings upon a pound weight; silks, and ribbons of silk, mixed with gold and silver, four shillings a pound; on silk gloves, silk stockings, silk fringes, silk laces, and sewing silk, one shilling and threepence a pound; on stuffs of silk and grogram yarn, eightpence a pound; on silks mixed with wool or cotton, one shilling; on stuffs of silk mixed with worsted, sixpence a pound, for three years: and, from experience of their utility, these were continued by subsequent statutes.

Sometimes bounties are given to support a new manufacture against foreigners already in possession of it, as in making linen and sail-cloth. The promoting of the manufacture of British sail-cloth was undoubtedly a very important national object, as the consumption was very large, and of consequence the purchase of it from foreigners an heavy expence on the public. Many methods were therefore devised, and countenanced by law, both here and in Ireland, for introducing and encouraging our own in preference to that of strangers, more especially in the royal navy. By stat. 12 Anne, cap. 16. § 2. a bounty was given of one penny per ell on all that was exported for a term, and continued by subsequent statutes. By 4 Geo. II. cap. 27. § 4. an

additional bounty of another penny an ell is granted. These bounties were to be paid out of an additional duty on imported sail-cloth. By the same statute every ship built in Britain, or in the plantations, is, under the penalty of L. 50, to be furnished with a complete suit of sails of British manufacture. The amount of these bounties mark the progress of the manufacture, which is also assailed by the fund on which the payment is assigned.

These assistances, however, are never bestowed but on mature deliberation, in virtue of strong proofs, and with a moral certainty of a national benefit. The great intention of bounties is to place the British trader on such ground as to render his commerce beneficial to his country. In order to this, some profit must accrue to himself, otherwise he would not embark therein; but this, whatever it be, must prove inconsiderable in comparison of what results to the public. For if, by the help of such a bounty, one or many traders export to the value of 1000, 10,000, or 100,000 pounds worth of commodities or manufactures, whatever his or their profit or loss (for the latter, through avidity and overloading the market, sometimes happens) may be, the nation gains the L. 1000, L. 10,000, or L. 100,000; which was the object of the legislature in granting the bounty. Upon this consideration, that the entire produce of what is exported accrues to the nation, the legislature, when an alteration of circumstances required it, have made no scruple of augmenting a bounty; as in the case of refined sugar exported, from three to nine shillings per hundred weight. In like manner, the original bounty of one pound per ton in favour of vessels employed in the whale-fishing hath been doubled, and many new regulations made, in order to render this fishery more advantageous to the public. As a bounty is given on malt when allowed to be exported, so an equivalent of 30 shillings per ton hath been granted on all British made malt-spirits when exported, which is a common benefit to land, manufacture, and commerce.

It is indeed true, that on whatever account, or to whatever amount, this reward is given, the public seem to pay, and private persons seem to receive. But these private persons receive it as the hire from the public, for performing a service which otherwise they would not perform, the benefit of which accrues to the public, and who can therefore very well afford to pay that reward in reality, which, as we have stated it, she only seems to do. For, looking a little closer, we cannot help observing, that the bounty is paid to individuals, who, as such, make a part of the public. But the commodities or manufactures exported are sold to foreigners; and the whole produce of them, be it what it will, comes into the purse of the public. By attending to this self-evident doctrine, every reasonable and public-spirited man will be easily reconciled to bounties; and the three following considerations will be sufficient to obviate the most common objections that have been made to the practice of giving them. 1. That no bounty can be desired but on the plea of national utility, which always deserves notice, and cannot be mistaken. It must likewise be alleged and proved, that this is the only means whereby the national benefit can be attained. 2. The sums issued on this account not only show the clear expence of the bounty, but also indicate the profit gained by the public; for as the one

Bounty
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Bourbon.

cannot exist without the other, that amount must be the incontestable index of both. 3. It must be remembered (and of this too some instances might be given), that if bounties should be improperly bestowed, they will of course prove ineffectual, and after a few fruitless trials will remain unclaimed, and consequently produce no expence. There is indeed another objection which hath been made against the giving of bounties. This is grounded on the frauds to which they are supposed to be liable; and particularly the relanding of the goods on which the bounty hath been paid, and thereby deceiving and cheating the public. But whoever peruses the laws made on this head, and attentively considers the numerous precautions taken to fix every circumstance relative to the obtaining the bounty, the checks on the shipping of goods, the securities taken for their due exportation, the certificates required to ascertain their being actually delivered and sold in a foreign market, must be convinced, that to discharge all those securities, in case of an intended fraud, is a thing very difficult, if not impossible.

To these remarks we may add, that bounties are usually granted only for a limited time, and then expire; are always liable to be suspended; and of course can never be the cause of any great national loss. There is no doubt that, exclusive of frauds, the immoderate thirst of gain may tempt interested men to aim at converting what was calculated for public benefit to its detriment, for their own private advantage. Thus, on a prospect of short crops in other countries, men may take measures within the letter, but directly against the spirit, of the law, to send so much of our corn abroad as to endanger a famine at home. For this the wisdom of parliament provides, not barely by suspending the bounty, but by prohibiting exportation and opening the ports for foreign supplies. We cannot with any shadow of justice ascribe scarcity to the bounty on the exportation. If this was the case, suspensions would be frequent, whereas there have been but five in a course of 70 years. If the bounty had any share, the larger the exportation, the greater would be the scarcity. In A. D. 1750 we exported more than one fifth of our growth of wheat, which was notwithstanding but at four shillings per bushel; whereas a century before, A. D. 1650, when we had neither bounty nor exportation, wheat was at nine shillings and sixpence per bushel. The causes of scarcity are unkindly seasons; which though human policy cannot prevent, yet their sad effects have been evidently lessened by our increased growth, since the taking place of bounty and exportation.

Queen Anne's BOUNTY, for augmenting poor livings under L. 50 *per annum*, consists of the produce of the first-fruits and tenths, after the charges and pensions payable out of the same are defrayed. A corporation for management of the same was settled, &c. in 1704. See AUGMENTATION.

BOURBON, or MASCARENHAS, (isle of), an island in the Indian ocean, lying to the east of Madagascar, in E. Long. 58. 30. S. Lat. 21. 23. This island has no port, and is in some places inaccessible. Its length and breadth have not been well determined; but the circumference, according to the account of a person who resided there some time, is about 57 leagues. It is for the most part mountainous, but in some places

there are very beautiful and fertile plains. In the south part of the island there is a burning mountain, which has thrown out vast quantities of bitumen, sulphur, and other combustible materials; neither does it cease throwing them out still, so that the country about it is useless, and is called by the inhabitants *payz brule*, that is, burnt land. The shore is high and rocky all round; but though on this account it hath no ports, there are several good roads, particularly one on the west, and another on the north-east. As to its form, this island is irregular, so that it is difficult to judge from the maps whether it is round or long. The air is equally pleasant and wholesome, inasmuch that the people live to a great age without feeling either infirmities or diseases. This is occasioned by the hurricanes, of which they have one or two every year. These purge and cleanse the air, so as to render it highly salubrious; the certainty of which is thus distinguished, that when they fail of making their annual visits, as sometimes they do, diseases and death find an entrance into the island, which otherwise would soon be overstocked with inhabitants. The climate is hot, but not to such a degree as might be expected from its situation, the breezes from the mountains being constant and very refreshing. The tops of these mountains are in winter covered with snow; which, melting in the summer, furnishes abundance of rivers and rivulets, with which the country is plentifully watered: so that the soil, though not very deep, is wonderfully fruitful, producing Turkey corn and rice twice a-year, and the latter in great abundance. Most sorts of cattle are found here, good in their kind, and are very cheap; wild goats and wild hogs are found in the woods and on the tops of the mountains; here also are vast quantities of wild fowl of different kinds, fish, and land tortoises, affording at once the most delicate and wholesome food. As to fruits, they have bananas, oranges, citrons, tamarinds, and other kinds; neither does it want valuable commodities, particularly ebony, cotton, white pepper, gum benzoin, aloes, and tobacco; all excellent in their kind, when compared with those of other countries. This island is also happy in its deficiencies; for no animals that are venomous are to be found therein, and only two sorts that are disagreeable to the sight, *viz.* spiders of the size of a pigeon's egg, which weave nets of a surprising strength, reckoned by some capable of being treated so as to become as valuable as silk; and bats of a most enormous size, which are not only skinned and eaten, but esteemed also the greatest delicacy that they have.

The island of Bourbon was discovered by the Portuguese in 1545, as appears by a date inscribed by them upon a pillar when they first landed; but when the French settled in Madagascar, this island was totally desolate. Three Frenchmen being banished thither, and left there for three years, made such a report of it at their return as surprised their countrymen. They lived most of that time upon pork; and though they were in a manner naked, yet they affirmed that they never had the least pain or sickness whatever. This tempted one Anthony Taureau to go over thither in 1654, accompanied by seven French and six negroes, who carried with them the cattle from which the island has been stocked ever since. The first thing they did was to erect the arms of France, by order of Mr

Falkourt

Bourbon.

Bourbon. Falcourt who was governor of Madagascar, and to bestow upon the island a new name. Then they set up huts, and laid out gardens, in which they cultivated melons, different sorts of roots, and tobacco; but just as the last became ripe, the whole plantation was destroyed by a hurricane. The French, however, went to work again; and by having some acquaintance with the climate, succeeded better, and added aloes to the rest of their plantations: but receiving no succour from Madagascar, and being tired of living by themselves in the isle of Bourbon, they very readily embraced the offer of an English captain, and in the year 1658 embarked for Madras. When the last great blow was given to the French at Madagascar by the natives, who surpris'd and cut them off in one night, there escap'd as many men, as with their wives, who were natives, fill'd two canoes; and these being driven by the wind on the isle of Bourbon, were the next set of people who inhabited it. This last colony, for want of an opportunity to remove, were constrained to cultivate this new country of theirs, and to remain in it. It was not long before a further flock of inhabitants arriv'd. A pirate that had been committing depredations in the Indies, returning to Europe, ran ashore and was split to pieces upon the rocks, so that the crew were forced to join themselves to the former inhabitants; and as they had on board their vessel a great many Indian women whom they had made prisoners, they lived with them, and in process of time had a numerous posterity. As East India ships touch'd frequently here, when too late to double the Cape, many of the sailors, for the sake of the women, desert'd at the time of their departure, and staying behind became planters in the isle of Bourbon. As the place grew more populous, the people naturally became more civiliz'd, and desirous of living in a more commodious manner; which induc'd them to build small vessels, that in these they might sometimes make a trip to Madagascar, in order to purchase slaves, whom they employ'd in their plantations to cultivate aloes, tobacco, and other things, with which they drove a small trade, when ships of any nation anchor'd in their roads for the sake of refreshments. In this situation they were, when the French East India company put in their claim; and assuming the property of the island, sent thither five or six families and a governor. At first the inhabitants expect'd to reap some benefit from their new masters; but finding very little, and thinking the governor took too much upon him, they revolted at the instigation of a priest, seiz'd their governor and put him into a dungeon, where he died of hunger and grief. For this some of the ringleaders were punish'd, a kind of fort was erected, some guns placed on it, and the French flag kept flying; but in other respects, so little care was taken, that, till within these 40 years, the island was in no state of defence.

The number of inhabitants, in the year 1717, was comput'd at 2000; viz. 900 free, and 1100 slaves. Amongst these people the usual distinction of whites and blacks entirely fails: for even the free are of different colours; and a French writer assures us, that he saw in a church one family, consisting of five generations, of all complexions. The eldest was a female, 108 years of age, of a brown black, like the Indians of Madagascar; her daughter, a mulatto; her grand-daughter, a mestizo; her

great-grand-daughter, of a dusky yellow; her daughter, again, of an olive colour; and the daughter of this last, as fair as any English girl of the same age. These people are, generally speaking, of a gentle quiet disposition; very industrious; and submissive enough to authority, provided it is exercised with a tolerable degree of equity and decency; for otherwise the whole of them are apt to rise in rebellion at once; and the slaves have so little reason to complain of their masters, that they are always on the same side. The island is divided into four quarters. The first is that of St Paul, which is the largest and best peopled: their houses are built at the foot of a steep mountain, on both sides of a fresh water lake. As for the plantations, they are on the top of a mountain, which they ascend by a very rough and troublesome passage. On the summit there is a spacious plain, a great part of which is divided into plantations of rice, tobacco, corn, sugar, and fruits. The quarter of St Dennis lies seven leagues from that of St Paul, towards the east; and there the governor resides. It is not so well peopled as the former; but the country is more pleasant, and the situation better. At two leagues distance, proceeding along the sea coast, is the quarter of St Mary's, which is but thinly peopled. The last and most fertile quarter is that of St Susannah, which is at the distance of four leagues from St Dennis. The road between these two quarters is tolerable, though part of it has been cut with much difficulty through a wood: but the passage from St Dennis to St Paul is only by sea.

When the present company of India became, by their perpetual establishment, possess'd of the island of Bourbon, they began to improve it exceedingly: raising new forts and batteries, so as to render it in a manner inaccessible; and importing coffee-trees from Arabia, which have succeeded so well, that it is believ'd they produce an eighth, according to some a sixth, part as much coffee as is rais'd in the kingdom of Yemen in Arabia, and it is likewise held next in goodness to that. — In 1763, the population amount'd to 4627 white people, and 15149 blacks; the cattle consist'd of 8702 beesves, 4084 sheep, 7405 goats, and 7619 hogs. Upon an extent of 125,909 acres of cultivat'd land, they gather'd as much cassava as would feed their slaves, 1,135,000 pounds weight of corn, 844,100 pounds of rice, 2,879,100 pounds of maize, and 2,535,100 pounds of coffee; which last the company bought up at about 3 d. per pound.

In 1748, Admiral Boscawen appear'd before this island with a British fleet; but found it so well fortified both by nature and art, that he was oblig'd, after some cannonading to very little purpose, to pursue his voyage.

BOURBON (Nicholas), a famous Latin poet in the 16th century, was a native of Vandure near Langres, and the son of a wealthy man who was master of several forges. Margaret de Valois appointed him preceptor to her daughter Jane d'Albret of Navarre, the mother of king Henry IV. At length he retir'd to Conde, where he had a benefice, and died about the year 1550. He wrote eight books of Epigrams; and a poem on the forge, which he has intitled *Ferraria*. He had great knowledge of antiquity and of the Greek language. Erasmus praises his epigrams.

BOURBON (Nicholas), a celebrated Greek and Latin poet,

Bourbon
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Bourchier.

poet, was nephew of the preceding. He taught rhetoric in several colleges of Paris; and the cardinal de Perron caused him to be nominated professor of eloquence in the Royal College: he was also canon of Langres, and one of the 40 of the French academy. At length he retired to the fathers of the oratory, where he died in 1644, aged 70. He is esteemed one of the greatest Latin poets France has produced. His poems were printed at Paris in 1630.

BOURBON-Lancy, a town of France, in the duchy of Burgundy, and in the Autunnois. It is remarkable for its castle and baths; and there is a large marble pavement, called the *great bath*, which is a work of the Romans. It is seated near the river Loire, in E. Long. 3. 46. N. Lat. 46. 37.

BOURBON L'Archambaul, a small town of France, remarkable for its baths, which are exceedingly hot. E. Long. 3. 28. N. Lat. 46. 35.

Family of BOURBON are the reigning princes in the kingdom of France. Henry IV. in 1589, though of the 10th generation, was the nearest heir; and succeeded Henry III. (the last of the Valois race), whose brother Francis II. married Mary Queen of Scots, and both died without issue. Louis XVI. is the 5th king of this family in succession. This family also mounted the throne of Spain in 1700, by Philip V. grandson to Louis XIV. which was the occasion of the long and bloody war that ended in the peace of Utrecht. A branch of the Spanish family likewise mounted the throne of the two Sicilies in 1734. These three branches entered into a treaty offensive and defensive in 1761, which goes by the name of the *family compact*.

BOURBONE-LE-BAINS, a town of France in Champagne, and in the Bassigni, famous for its hot baths. E. Long. 5. 45. N. Lat. 47. 54.

BOURBONNOIS, a province of France, with the title of a duchy; bounded on the north, by Nivernois and Berry; on the west, by Berry and a small part of upper Marche; on the south by Auvergne; and on the east, by Burgundy and Forez. It abounds in corn, fruits, pastures, wood, game, and wine. Its principal town is Moulins; and the rivers are the Loire, the Allier, and the Chur.

BOURBOURG, a town in French Flanders, whose fortifications are demolished. It is seated on a canal that goes to Dunkirk, in E. Long. 2. 15. N. Lat. 50. 55.

BOURCHIER (John), lord Bemars, grandson and heir of a lord of the same name, who was descended from Thomas of Woodstock, duke of Gloucester, and had been knight of the Garter, and constable of Windsor-castle, under Edward IV. Our lord John was created a knight of the Bath, at the marriage of the duke of York second son of Edward IV. and was first known by quelling an insurrection in Cornwall and Devonshire, raised by Michael Joseph, a blacksmith, in 1495, which recommended him to the favour of Henry VII. He was captain of the pioneers at the siege of Therouanne, under Henry VIII. by whom he was made chancellor of the exchequer for life, lieutenant of Calais and the Marches, appointed to conduct the lady Mary the king's sister into France on her marriage with Louis XII. and had the extraordinary happiness of continuing in favour with Henry VIII. for the space of 18 years. He died at Calais in 1532, aged 63. He translated, by king Henry's command, Froissart's Chro-

nicle; which was printed in 1523, by Richard Pinson, the scholar of Caxton, and the first on the list of English printers. His other works were a whimsical medley of translations from French, Spanish, and Italian novels, which seem to have been the mode then, as they were afterwards in the reign of Charles II. These were, The life of Sir Arthur, an Armorican knight; The famous exploits of Sir Hugh Bourdeaux; Marcus Aurelius; and, The cattle of love. He composed also a book, of the duties of the inhabitants of Calais; and a comedy entitled *Ite in Vineam*, which is mentioned in none of our catalogues of English plays. Anthony Wood says it was actually acted at Calais after vespers.

BOURDALOUE (Lewis), a celebrated preacher among the Jesuits, and one of the greatest orators France has produced, was born at Bourges, on the 20th of August 1632. After having preached at Provence, he, in 1699, went to Paris; and there met with such applause, that the king resolved to hear him: on which he was sent for to court, and frequently preached before Louis XIV. He assuaged the sick, visited the prisoners and hospitals, and was very liberal in giving alms. He died at Paris on the 13th of May 1704. The best edition of his sermons is in octavo.

BOURDEAUX, an ancient, large, handsome, and rich town of France, capital of Guienne, an archbishop's see; has an university and an academy of arts and sciences. It is built in the form of a bow, of which the river Garonne is the string. This river is bordered by a large quay, and the water rises four yards at full tide, for which reason the largest vessels can come up to it very readily. The castle called the *Trumpet* is seated at the entrance of the quay, and the river runs round its walls. Most of the great streets lead to the quay. The town has 12 gates; and near another castle are fine walks under several rows of trees. The ancient city of Bourdeaux, though considerable in point of size, was ill built, badly paved, dangerous, without police or any of those municipal regulations indispensably requisite to render a city splendid or elegant. It has entirely changed its appearance within these last thirty years. The public edifices are very noble, and all the streets newly built are regular and handsome. The quays are four miles in length, and the river itself is considerably broader than the Thames at London bridge. On the opposite, a range of hills, covered with woods, vineyards, churches, and villas, extends beyond the view. Almost in the centre of the town is a fine equestrian statue in bronze erected to the late king in 1743, with the following inscription:

Ludovico quindecimo,

Sæpe victori, semper pacificatori;

Suos omnes, quam latè regnum patet,

Paterno pectore gerenti;

Suorum in annis penitus habitanti.

The beauty of the river Garonne, and the fertility of the adjoining country, were probably the causes which induced the Romans to lay the foundations of this city. The ruins of a very large amphitheatre yet remain, constructed under the emperor Gallienus; it is of brick, as are most of the edifices of that period, when the empire was verging to its fall, and the arts began rapidly to decline. During the irruptions of the barbarous nations, and particularly in those which the Normans repeatedly made, Bourdeaux was ravaged, burnt, and almost

Bourdaloue
Bourdeaux

Bordeaux most entirely destroyed. It only began to recover again under Henry II. of England, who having united it to the crown by his marriage with Eleanor of Aquitaine, rebuilt it, and made it a principal object of his policy, to restore the city again to the lustre from which it had fallen. The Black Prince received all Gaienne, Gascony, and many inferior provinces in full sovereignty from his father Edward III. he brought his royal captive, John king of France, to this city, after the battle of Poitiers in 1356; and held his court and residence here during eleven years. His exalted character, his uninterrupted series of good fortune, his victories, his modesty, his affability, and his munificence, drew strangers to Bourdeaux from every part of Europe; but all this splendor soon disappeared. He lived to experience the ingratitude of Pedro the Cruel, to whom he had restored the kingdom of Castile; he became a prey to distempers in the vigour of life; he saw his dominions reunited again in many of their branches to the crown of France, by Charles V.; he lost his eldest son Edward, a prince of the highest expectations; and at length, overcome with sorrow at this last affliction, he quitted Bourdeaux, and re-embarked for England, there to expire a memorable example of the hasty revolution of human greatness! In 1453, Charles VII. king of France, re-entered the city, and subjected the whole province of Guienne, which had been near three centuries under the English government. Conscious of the importance of such a conquest, he ordered the Chateau Trompette to be built to defend the passage of the river; and Louis the XIV. afterwards employed the celebrated Vauban to erect a new fortress, in the modern style of military architecture, on the same spot.—Madame de Maintenon, whom fortune seemed to have chosen as the object of her extreme rigour and extreme bounty, was removed from the prisons of Niort in Poictou where she was born, with her father the Baron d'Aubigné, to this castle, where she used to play with the daughter of the turnkey, in the greatest indigence. Bourdeaux presents few remains of antiquity. The cathedral appears to be very old, and has suffered considerably from the effects of time. The unfortunate duke of Guienne, brother to Louis the XI. who was poisoned in 1473, lies buried before the high altar. The adjacent country, more peculiarly the *Pays de Medoc*, which produces the finest clarets, is exceedingly pleasant, and at the season of the vintage, forms one of the most delicious landscapes in the world. W. Long. 0. 39. N. Lat. 44. 50.

BOURDELOT (John), a learned French critic, who lived at the close of the 16th and beginning of the 17th centuries. He distinguished himself by writing notes on Lucian, Petronius, and Heliodorus; by an Universal History; Commentaries on Juvenal; a Treatise on the Etymology of French words; and by some other works which were never published.—There was also an abbe Bourdelot, his sister's son, who changed his name from Peter Michon to oblige his uncle. He was a celebrated physician at Paris, who gained great reputation by a Treatise on the Viper, and other works. He died in 1685.

BOURDINES, a town of the Austrian Netherlands, in the province of Namur. E. Long. 5. 0. N. Lat. 50. 35.

BOURDON (Sebastian), a famous painter, born at Montpellier, in 1619. He studied seven years at Rome; and acquired such reputation, that at his return to France he had the honour of being the first who was made rector of the academy of painting at Paris. He succeeded better in his landscapes than in his history-painting. His pieces are seldom finished; and those that are so, are not always the finest. He once laid a wager with a friend, that he should paint 12 heads after the life, and as big as the life, in one day. He won it; and these are said not to be the worst things he ever did. His most considerable pieces are, The gallery of M. de Bretonvilliers, in the isle of Notre Dame; and, The seven works of mercy, which he etched by himself. But the most esteemed of all his performances is, The martyrdom of St Peter, drawn for the church of Notre Dame: It is kept as one of the choicest rarities of that cathedral. Bourdon was a Calvinist; much valued and respected, however, in a Popish country, because his life and manners were good. We have also by this master a great number of etchings; which are executed in a bold, masterly style, and much more finished than those we generally meet with from the point of the painter. They are justly held in the highest estimation by the generality of collectors. He died in 1673, aged 54.

BOURDONEY, in heraldry, the same with **POMEY**.

BOURG, the capital of the island of Cayenne, a French colony on the coast of Guiana, in South America; in W. Long. 52. 0. N. Lat. 5. 0.

Bourg-en-Bresse, a town of France, and capital of Bresse, in the province of Burgundy. It is seated on the river *Reposse*, almost in the centre of Bresse, in E. Long. 4. 19. N. Lat. 46. 13.

Bourg-sur-Mer, a sea-port town of France in Guienne, and in the Bourdelois, with a tolerable good harbour: seated at the confluence of the rivers *Dordogne* and *Garonne*, in W. Long. 3. 35. N. Lat. 45. 0.

BOURGES, an ancient and large town of France, the capital of Berry, an archbishop's see, and a famous university. The archbishop assumes the title of *Patriarch of the Aquitains*, and enjoys the rights of primacy with regard to Albi. It is seated between two small rivers, the *Evry* and the *Orron*, upon a hill that has a gentle descent down to these rivers, by which it is almost surrounded, for there is but one avenue to it by land, which is that of Port Bourbonnoux. It stands upon a great deal of ground; but one part of it is without houses; and the rest is but thinly peopled with gentlemen, students, and ecclesiastics, the whole number of souls amounting only to about 1800. They have no manner of trade but for their own necessities. It is divided into the old and new town. The walls of the old are almost entire, and the new town is almost as large as the old. There are several churches, convents, and nunneries. The parish church, dedicated to St Stephen, is a fine old Gothic structure: it is seated on the highest part of the city, and on each side of the front are two handsome high towers. The new one, which is built in the room of one which fell down, is almost 200 feet high. Bourbon square is the largest in the city, where there was formerly an amphitheatre, and now a market. There is a fine walk from St Michael's-gate into the fields, and three alleys, formed by four ranks of trees, the middlemost of which is spacious; besides which, there is a very long mall. The university is famous

Bourdon
Bourges.

Bourget
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Bourgogne.

mous for the study of the law. This city stands almost in the centre of France. E. Long. 2. 30. N. Lat. 47. 10.

BOURGET (Dom. John), an ingenious French antiquary, was born at the village of Beaumains near Falaise, in the diocese of Seez, in 1724. He was educated at the grammar-school at Caen, whence he was removed to that university, and pursued his studies with great diligence and success till 1745, when he became a Benedictine monk of the abbey of St Martin de Seez. Some time after this, he was appointed prior claustral of the said abbey, and continued six years in that office, when he was nominated prior of Tiron en Perche: whence being translated to the abbey of St Stephen at Caen, in the capacity of sub-prior, he managed the temporalities of that religious house during two years, as he did their spiritualities for one year longer; after which, according to the custom of the house, he resigned his office. His superiors, sensible of his merit and learning, removed him thence to the abbey of Bec, where he resided till 1764. He was elected an honorary member of the Society of Antiquaries of London, Jan. 10. 1765; in which year he returned to the abbey of St Stephen at Caen, where he continued to the time of his death. These honourable offices, to which he was promoted on account of his great abilities, enabled him not only to pursue his favourite study of the history and antiquities of some of the principal Benedictine abbeys in Normandy, but likewise gave him access to all their charters, deeds, register-books, &c. &c. These he examined with great care, and left behind him in MS. large and accurate accounts of the abbeys of St Peter de Jumieges, St Stephen, and the Holy Trinity at Caen (founded by William the Conqueror and his queen Matilda), and a very particular history of the abbey of Bec. These were all written in French. The "History of the Royal Abbey of Bec" (which he presented to Dr Ducarel in 1764) is only an abstract of his larger work. This ancient abbey (which hath produced several archbishops of Canterbury and other illustrious prelates of this kingdom) is frequently mentioned by our old historians. The death of our worthy Benedictine (which happened on new-year's day 1776) was occasioned by his unfortunate neglect of a hurt he got in his leg by falling down two or three steps in going from the hall to the cloister of the abbey of St Stephen at Caen, being deceived by the ambiguous light of a glimmering lamp that was placed in that passage. He lived universally esteemed, and died sincerely regretted by all those who were acquainted with him; and was buried in the church of the said abbey, Jan. 3. 1776.

BOURGET, a town of Savoy, subject to the king of Sardinia, seated at the southern extremity of a lake of the same name. E. Long. 5. 55. N. Lat. 45. 45.

BOURGOGNE, or **BURGUNDY**, as we call it; a considerable province of France with the title of a duchy. It is 130 miles in length, and 75 in breadth. It is bounded on the east, by the Frauche Compte; on the west, by Bourbonnois and Nivernois; on the south, by Lyonnois; and on the north by Champagne. It is very fertile in corn and fruit, and produces excellent wine. It is watered by the rivers Seine, Dêhune, Bre-

bince, Armançon, Ouche, Souzon, Tille, and Saone. There are four mineral springs at Apoinny, Primeau, Bourbon-Lancy, and St Reine. The first are obscure, and the two last in high reputation. In the canton of Bresse, there are two subterranean lakes which often overflow in times of the greatest drought, and lay a large tract of ground under water: one of them has no apparent spring or opening; and yet in a dry season, it throws out water enough to overflow the meadow-land near it. The grottos or caves of Arcy are seated about 18 miles from Auxere, and over them is soil about 10 feet deep. The entrance into these cavities is 200 paces long, but narrow. There are arches which form several vaults, from whence drop clear water, which turns into a brilliant hard stone. Twenty paces from the entrance is a lake, which seems to be formed by that part of the water that will not petrify. The highest of these vaults is not above eight feet. About 80 paces from the entrance there is a kind of hall, with a coffee-coloured ceiling, wherein there are a thousand odd figures, which have a very agreeable effect. Dijon is the capital town.

BOURGUIGNONS, or **BURGUNDIANS**, one of the northern nations who over-ran the Roman empire, and settled in Gaul. They were of a great stature, and very warlike; for which reason the emperor Valentinian the Great engaged them in his service against the Germans. They lived in tents which were close to each other, that they might the more readily unite in arms on any unforeseen attack. These conjunctions of tents they called *burghs*; and they were to them what towns are to us. Sidorius Apollinaris tells us, that they wore long hair, took great pleasure in singing, and were fond of praise for their vocal talents. He adds, that they ate great quantities; and anointed their hair with butter, deeming that unction very ornamental. Their crown was at first elective, and the authority of their kings expired with their success. They were not only accountable for their own misconduct, but likewise for the calamities of nature, and the caprice of fortune. They were deposed if they had lost a battle; if they succeeded ill in any enterprise; or if, in short, any great event had not corresponded with the hopes of the public. They were not more favourably treated in case of a bad harvest or vintage, or if any epidemical distemper had ravaged the state. At first they were governed by many kings, and *hendlin* was the title of the royal dignity. But in latter times they were subjected to one sovereign; and they grew humane and civilized, especially when Christianity was propagated in their country. Before that epocha, their religion was much the same with that of the other northern nations. They had many priests, the chief of whom was distinguished by the name of *sinistrus*. He was perpetual, and they paid him great respect and veneration.

BOURIGNON (Antonietta), a famous enthusiastic preacher and pretended prophetess, was born at Lisle in 1616. At her birth she was so deformed, that it was debated some days in the family whether it was not proper to stifle her as a monster: but her deformity diminishing, she was spared; and afterwards obtained such a degree of beauty, that she had her admirers. From her childhood to her old age she had an extraordinary turn of mind. She set up for a reformer, and published a great number of books filled with very singular no-

Bourguig-
nons
||
Bourignor

Foreign tions; the most remarkable of which are intitled *The light of the World*, and *The testimony of Truth*. She was an enemy to reason and common sense, which she maintained ought to give place to the illumination of divine faith; and asserted, that whenever any one was born again by embracing her doctrine, she felt the pains and throes of a woman in labour. Of her pretended visions and revelations we shall give one instance as a sample. In one of her ecstasies she saw Adam in the same form in which he appeared before his fall, and the manner in which he was capable of procreating other men, since he himself possessed in himself the principles of both sexes*. Nay she pretended it was told her that he had carried this procreating faculty so far as to produce the human nature of Jesus Christ. "The first man (says she), whom Adam brought forth without any concurrent assistance in his glorified state, was chosen by God to be the throne of the Divinity; the organ and instrument by which God would communicate himself externally to men: This is Christ the first born united to human nature, both God and man." Besides these and such like extravagancies, she had other forbidding qualities: her temper was morose and peevish, and she was extremely avaricious and greedy of amassing riches. She dressed like an hermit, and travelled to France, Holland, England, and Scotland. In the last she made a strong party, and some thousand sectarists, known by the name of *Bourignists*. She died at Faneker in the province of Frise, October 30th, 1630. Her works have been printed in 18 vols octavo.

BOURN, a town of Lincolnshire in England, seated in E. Long. 1. 17. N. Lat. 52. 40. It is a pretty large place, has a good market for corn and provisions, and is noted for the coronation of king Edmund.

BOURNE, or BURN, an appellation anciently given to all little brooks or rivulets, and still used in the same sense in Scotland and in the north of England.

BOURO, an island in the East Indian ocean, between the Moluccas and Celebes. It is well cultivated; and is now subject to the Dutch, who have built a fortress here. Some mountains in it are exceeding high, and the sea on one side is uncommonly deep. It produces nutmegs and cloves, as well as cocoa and banana trees; besides many vegetables introduced by the Dutch. It is about 50 miles in circumference. E. Long. 129°. S. Lat. 4. 30.

BOUTANT, or ARCH-BOUTANT, in architecture, an arch, or part of an arch, abutting against the reins of a vault to prevent its giving way.

A Pillar *BOUTANT*, is a large chain or pile of stone, made to support a wall, terrace, or vault.

BOUTE, in the manege. A horse is called *boute*, when his legs are in a straight line from the knee to the coronet: short-jointed horses are apt to be *boute*, and on the other hand long-jointed horses are not.

BOUTS-RIMES, a popular term in the French poetry; signifying certain rhymes, disposed in order, and given to a poet together with a subject, to be filled up with verses ending in the same words, and the same order. The invention of the bouts-rimes is owing to one Du Lot, a poet, in the year 1649. In fixing the bouts, it is usual to choose such as seem the remotest, and have the least connection.

Some good authors fancy that these rhymes are of all others the easiest, that they assist the invention, and furnish the most new thoughts of all others. Sarrasin has a poem on the defeat of the bouts-rimes. The academy of Lanternists at Tholouse have contributed towards keeping in countenance the bouts-rimes, by proposing each year a set of fourteen, to be filled up on the glories of the grand monarch: the victorious sonnet to be rewarded with a fine medal.—An instance hereof may be given in the following one, filled up by P. Commire.

Tout est grand dans le roi, l'aspect seul de son buste
Rend nos fiens ennemis plus froids que des glaçons.
Et Guillaume n'attend que le tens des moissons,
Pour se voir succomber sous un bras si robuste.
Qu'on ne nous vante plus les miracles d' Auguste;
Louis de bien regner lui seroit des leçons:
Horace en vain l'egale aux dieux dans ses chansons:
Moins que mon heros il etoit sage et juste, &c.

BOUTON, an island in the East Indian ocean, about 12 miles distant from the south-east part of the island of Macassar, or Celebes. The inhabitants are small, but well shaped, and of a dark olive complexion. The principal town is Callasjung, which is about a mile from the sea, on the top of a small hill, and round it a stone wall. The houses are not built upon the ground, but on posts. The religion of the inhabitants is Mahometanism. E. Long. 122. 30. S. Lat. 4. 30.

BOUVILLON, a city of Luxemburg in the Austrian Netherlands, situated in E. Long. 5. c. N. Lat. 49. 55.

BOW (*Arcus*), a weapon of offence made of wood, horn, or other elastic matter, which, after being strongly bent, by means of a string fastened to its two ends, in returning to its natural state throws out an arrow with great force. It is also called the *long-bow*, by way of distinction from the cross-bow or arbalest.

The bow is the most ancient, and the most universal of all weapons. It has been found to obtain among the most barbarous and remote people, and who had the least communication with the rest of mankind.

The use of the bow and arrow was first abolished in France under Louis XI. in 1481, and in their place was introduced the Swiss arms, that is, the halbard, pike, and broad-sword. The long-bow was formerly in great vogue in England; most of our victories in France were acquired by it; and many laws were made to regulate and encourage its use. The parliament under Henry VIII. complain "of the disuse of the long-bow, heretofore the safe-guard and defence of this kingdom, and the dread and terror of its enemies." 33 Hen. VIII. cap. 6.

The art of using bows is called *archery*, and those practised therein, *archers*, or *bowmen*. See ARCHERY.

The strength of a bow may be calculated on this principle, that its spring, *i. e.* the power whereby it restores itself to its natural position, is always proportionate to the distance or space it is removed therefrom.

The most barbarous nations often excel in the sale of the particular things which they have the greatest necessity for in the common offices of life. The Laplanders, who support themselves almost entirely by hunting, have an art of making bows, which we, in these improved parts of the world, have never arrived at.

Their

Bouton
 ||
 Bow.

Bow.

Their bow is made of two pieces of tough and strong wood, shaved down to the same size, and flatted on each side; the two flat sides of the pieces are brought closely and evenly together, and then joined by means of a glue made of the skins of pearch, which they have in great plenty, and of which they make a glue superior in strength to any which we have. The two pieces, when once united in this manner, will never separate, and the bow is of much more force to expel the arrow, than it could possibly have been under the same dimensions if made of only one piece.

Among the ancients, the bow-string, called *τριχαστις*, was made of horses hair, and hence also called *ιππεια*; though Homer's bow-strings are frequently made of hides cut into small thongs; whence *τοξα ισουα*. The uppermost part of the bow, to which the string was fastened, was called *κορυνν*, being commonly made of gold, and the last thing towards finishing the bow. The Grecian bows were frequently beautified with gold or silver; whence we have mention of *aurci arcus*; and Apollo is called *Αργυροτοξος*. But the matter of which they were ordinarily composed, seems to have been wood; though they were anciently, Scythian-like, made of horn, as appears from that of Pandarus in Homer, *Iliad. J. v. 105*.

The invention of the bow is usually ascribed to Apollo, and was communicated to the primitive inhabitants of Crete, who are said to have been the first of mortals who understood the use of bows and arrows. And hence, even in latter ages, the Cretan bows were famous, and preferred by the Greeks to all others. Some, however, rather choose to honour Perfes, the son of Perseus, with the invention of the bow; while others ascribe it to Scythes, son of Jupiter, and progenitor to the Scythians, who were excellent at this art, and by many reputed the first masters of it. From them it was derived to the Grecians, some of whose ancient nobility were instructed by the Scythians in the use of the bow, which in those days passed for a most princely education. It was first introduced into the Roman army in the second Punic war.

The Indians still retain the bow. In the repository of the Royal Society we see a West Indian bow two yards long.

The Scythian bow was famous for its incurvation, which distinguished it from the bows of Greece and other nations; being so great as to form an half-moon or semicircle: whence the shepherd in Athenæus, being to describe the letters in Theseus's name, and expressing each of them by some apposite resemblance, compares the third to the Scythian bow; meaning not the more modern character *Σ*, but the ancient *Ϛ*, which is semicircular, and bears the third place in *ΘΗΕΥΚ*.

Cross-Bow, is also called *arbalest* or *arbalist*: which word is derived from *arbalista*, i. e. *arcubalista*, "a bow with a sling." The arbalist consists of a steel-bow, set in a shaft of wood, furnished with a string and a trigger; and is bent with a piece of iron fitted for that purpose. It serves to throw bullets, large arrows, darts, &c. The ancients had large machines for throwing many arrows at once, called *arbalists* or *ballistæ*.

Bow, is also an instrument used at sea, for taking the sun's altitude; consisting of a large arch of 90° gra-

uated, a skank or staff, a side vane, a sight vane, and an horizon vane. It is now out of use.

Bow, among builders, a beam of wood or brass, with three long screws that direct a lathe of wood or steel to any arch; chiefly used in drawing draughts of ships and projections of the sphere, or wherever it is requisite to draw large arches.

Bow, in music, a small machine, which, being drawn over the strings of a musical instrument, makes it resound. It is composed of a small stick, to which are fastened 80 or 100 horse-hairs, and a screw which serves to give these hairs a proper tension. In order that the bow may touch the strings briskly, it is usual to rub the hairs with rosin. The ancients do not appear to have been acquainted with bows of hair: in lieu hereof they touched their instruments with a plectrum; over which our bows have great advantage, for giving long and short sounds, and other modifications which a plectrum cannot produce.

Bow, among artificers, an instrument so called from its figure; in use among gunsmiths, locksmiths, watch-makers, &c. for making a drill go. Among turners it is the name of that pole fixed to the ceiling, to which they fasten the cord that whirls round the piece to be turned.

Bow, a town of Devonshire in Wales, situated in W. Long. 4. 0. N. Lat. 50. 45.

Bows of a Saddle, are two pieces of wood laid archwise to receive the upper part of a horse's back, to give the saddle its due form, and to keep it tight.

The fore-bow which sustains the pommel, is composed of the withers, the breasts, the points or toes, and the corking.

The hind-bow bears the troussequin or quilted roll. The bows are covered with sinews, that is with bull's pizzles beaten, and so run all over the bows to make them stronger. Then they are strengthened with bands of iron to keep them tight; and on the lower side are nailed on the saddle straps, with which they make fast the girths.

Bow, Epaule, in ship-building, the rounding part of a ship's side forward, beginning at the place where the planks arch inwards; and terminated where they close, at the stem or prow. It is proved by a variety of experiments, that a ship with a narrow bow is much better calculated for sailing swiftly, than one with a broad bow; but is not so well fitted for a high sea, into which she always pitches or plunges her fore-part very deep, for want of sufficient breadth to repel the volume of water which she so easily divides in her fall. The former of these is called by seamen a *lean*, and the other a *bluff* bow. "The bow which meets with the least resistance in a direct course, not only meets with the least resistance in oblique courses, but also has the additional property of driving the least to leeward; which is a double advantage gained by forming the bow so as to give it that figure which will be least resisted in moving through any medium*."

On the Bow, in navigation, an arch of the horizon comprehended between some distant object and that point of the compass which is right a-head, or to which the ship's stem is directed. This phrase is equally applicable when the object is beheld from the ship, or discovered by trigonometrical calculation: As, we saw a fleet

Bow.

Bow
||
Bower.

fleet at day-break bearing three points on the starboard-bow: that is, three points from that part of the horizon which is right a-head, towards the right-hand. See the article BEARING.

Bow-dye, a kind of scarlet red, superior to madder; but inferior to the true scarlet grain for fixedness and duration. It was brought into England, and first practised at the village of Bow, near London, by Kephler, a Dutchman, in the year 1643.

Bow-grace, in the sea-language, a frame or composition of old ropes or junks of cables, used to be laid out at the bows, stems, and sides of ships, to preserve them from great flakes of ice, chiefly when they sail in high north or south latitudes.

Bow-net, or *Bow-wheel*, an engine for catching fish, chiefly lobsters and craw-fish, made of two round wicker baskets, pointed at the end, one of which is thrust into the other; at the mouth is a little rim, four or five inches broad, somewhat bent inwards. It is also used for catching sparrows.

Bow-Legged, or *Bandy legged*. Some children are bow-legged from their birth; others become so from setting them on their feet too early. The tibia of some is crooked; the knees of others are distorted; from a fault in the ankle, the feet of some are turned inwards. These are called *viri*; and in others, who are called *valgi*, they are turned outwards. The best method of preventing these disorders in weakly children is to exercise them duly, but not violently, by dancing or tossing them about in one's arms; and not setting them much upon their feet, at least not without properly supporting them: if the disorder attends at the birth, or increases after it is begun, apply emollients, then apply boots of strong leather, wood, &c. so as gradually to dispose the crooked legs to a proper form; or other instruments may be used instead of boots, which, when not too costly, are usually to be preferred. Slighter instances of these disorders yield to careful nursing, without instruments.

Bow-Line, or *Bowling*, a rope fastened near the middle of the leech, or perpendicular edge of the square sails, by three or four subordinate parts called *bridles*. It is only used when the wind is so unfavourable that the sails must be all braced sideways, or close-hauled to the wind: in this situation the bow-lines are employed to keep the weather or windward edges of the principal sails tight, forward, and steady, without which they would always be shivering, and rendered incapable of service. To *check* the bow-line is to slacken it, when the wind becomes large.

Bow-Pieces, are the pieces of ordnance at the bow of a ship.

Rain-Bow. See *Rain-Bow*.

Bow-Bearer, an inferior officer of the forest, who is sworn to make inquisition of all trespasses against vert or venison, and to attach offenders.

BOWELS, in anatomy, the same with intestines. See ANATOMY, n^o 93.

BOWER, in gardening, a place under covert of trees, differing only from an arbour, as being round or square, and made with a kind of dome or ceiling at top; whereas the arbour is always built long and arched.

BOWER, in the sea-language, the name of an anchor

carried at the bow of a ship. There are generally two bowers, called *first* and *second*, *great* and *little*, or *best* and *small* bower. See ANCHOR.

BOWESS, or BOWET, in falconry; a young hawk, when she draws any thing out of her nest, and covets to clamber on the boughs.

BOWL, denotes either a ball of wood, for the use of bowling; or a vessel of capacity, wherein to hold liquors.

BOWLDER-STONES, small stones, of a roundish figure, and no determinate lize, found on the sea-shore, and on banks or rather channels of rivers.

BOWLING, the art of playing at bowls.—This game is practised either in open places, as bares and bowling-greens, or in close bowling-alleys.

The skill of bowling depends much on a knowledge of the ground, and the right choice of a bowl suitable to it: for close alleys, the flat bowl; for green swards plain and level, the bowl as round as a ball is preferred.

The terms used in bowling are, to *bow wide*, which is when the bias does not hold, or is not strong enough; *narrow*, when it is too strong, or holds too much; *finely bowled*, is when the ground is well chosen, and the bowl passes near the block, even though it goes much beyond it; *bowling through*, or *a yard over*, is done in order to move the block; an *over bowl*, that which goes beyond it; a *bowl laid at hand*, is that put down within the gamester's reach, to be in the way of the next bowler, and hinder his having the advantage of the best ground; *bowling at length*, neither bowling through nor short; a *dead length*, a just or exact one; *throwing* or *flinging*, is discharging a bowl with a strength purposely too great for a length, in order to carry off either the block or some near bowl; *bowl-room*, or *missing-wood*, is when a bowl has free passage, without striking on any other; *get off*, is when a bowl being narrow, is wanted to be wider; *bowl best at block*, that nearest the block; *drawing a cast or bowl*, is to win it by bowling nearer, without stirring either the bowl or block; a bowl is said to *rub*, when it meets with some obstacle in the ground, which retards its motion, and weakens its force; *it is gone*, when far beyond the block. *Block* signifies a little bowl laid for a mark, also called a *jack*. *Mark*, is a proper bowling distance, not under so many yards; and being at least a yard and a half from the edge of the green. *Ground*, a bag or handkerchief laid down to mark where a bowl is to go. *Lead*, the advantage of throwing the block, and bowling first. *Cast*, is one best bowl at an end. *End*, a hit, or when all the bowls are out. *The game*, or *up*, is five casts or best bowls.

Bowling-Green, in gardening, a kind of parterre in a grove, laid with fine turf, requiring to be frequently mowed, laid out in compartments of divers figures, with dwarf trees and other decorations. Bowling-greens are of English origin, but have been adopted by the French and Italians, who have them only for ornament; being unacquainted with or not fancying the exercise, on account of which they were first made in England.

Bowling-Bridles, are the ropes by which the bow-line is fastened to the leech of the sail.

BOWSE, in the sea-language, signifies as much as

Bowels
||
Bowse.

Bow-sprit,
Bowyer.

to hale or pull. Thus *bow-sing upon a tack*, is haling upon a tack. *Bowse away*, that is, Pull away all together.

BOWSPRIT, or **BOLTSPRIT**, a kind of mast, resting slopewise on the head of the main stern, and having its lower end fastened to the partners of the fore-mast, and farther supported by the fore-stay. It carries the sprit-sail, sprit-top-sail, and jack-staff; and its length is usually the same with that of the fore-mast.

BOWYER (William), the most learned printer of his age, was born at White Friars in London. December 17. 1699. His father, whose name also was William, had been eminent in the same profession; and his maternal grandfather (Icabod Dawks) was employed in printing the celebrated Polyglott bible of bishop Walton. At a proper age, he was placed for grammatical education under the care of Mr Ambrose Bonwicke, a nonjuring clergyman of known piety and learning, who then lived at Headly, near Leatherhead in Surry. Here Mr Bowyer made great advances in literature, and a firm attachment commenced betwixt him and his master. On the 30th of January 1713, the whole property of the elder Mr Bowyer was destroyed by fire; on which occasion Mr Bonwicke generously undertook the education of his pupil for one year. In 1716, young Mr Bowyer was admitted a sizar at St John's college, Cambridge, where Dr Robert Jenkin was at that time master. He continued at the college of Cambridge under the tuition of the reverend Dr John Newcome till June 1722, during which period he probably took his degree of Bachelor of Arts; and it appears that he was desirous of obtaining a fellowship, though it is not certain that he ever stood a candidate for that honour. Soon after this he had an opportunity of repaying the kindness which Mr Bonwicke had shown him, by officiating some time after his death in the capacity of a schoolmaster for the benefit of his family.

Mr Bowyer now entered into the printing-business along with his father. One of the first books which received the benefit of his correction was the complete edition of S Iden in three volumes folio by Dr David Wilkins. This edition was begun in 1722, and finished in 1725; and Mr Bowyer's great attention to it appeared in his drawing up an epitome of Selden *de Synedrjjs*, as he read the proof-sheets. In 1727, he drew up an excellent sketch of William Baxter's Glossary of the Roman Antiquities. This was called "A view of a book intitled *Reliquie Baxterianæ*. In a letter to a friend." A single sheet 8vo. By this first public proof of Mr Bowyer's abilities, Dr Wotton and Mr Clarke were highly pleased; but as it was never published, and very few copies printed, it is very seldom found with the glossary. In 1727 Mr Bowyer lost his mother; on which occasion he received a letter of consolation from Mr Chishull the learned editor of the *Antiquitates Asiaticæ*. In October 1728 he married Miss Ann Prudom, his mother's niece, a very accomplished lady, by whom he had two sons, William and Thomas; the former of whom died an infant, and the latter survived his father. In 1729 Mr Bowyer published a curious treatise, intitled, "A Pattern for young Students in the University; set forth in the Life of Ambrose Bonwicke, some time scholar of St John's College, Cambridge:" but though this treatise

Bowyer.

was generally ascribed to Mr Bowyer, it was in reality the production of Mr Ambrose Bonwicke the elder. About this time it appears, that Mr Bowyer had written a pamphlet against the Separatists, though neither the title nor the occasion of it are now remembered. The same year, through the friendship of the Right Hon. Arthur Onslow, he was appointed printer of the Votes of the House of Commons; which office he held, under three successive speakers, for near fifty years. In 1731 Mr Bowyer published, and, it is believed, translated Voltaire's Life of Charles XII. This year also his wife died; on which occasion his friends Mr Clarke and Mr Chishul wrote him very affectionate and Christian letters. He remained a widower till 1747, when he married a very benevolent and worthy woman, Mrs Elizabeth Bill, by whom he had no children. In 1733 he published a piece in two sheets 4to, intitled, "The Beau and the Academic;" being a translation from a Latin poem recited that year at the Sheldonian theatre; and in 1736 he was admitted into the Society of Antiquarians, where he became an active and useful member. In 1737 Mr Bowyer lost his father; and on this occasion Mr Clarke again addressed to him a letter of consolation. In 1742 our author published a translation of Trapp's Latin Lectures on Poetry, in which he was assisted by Mr Clarke, though the latter had a contemptible opinion of the performance.

In 1749, Mr Bowyer, along with Dr Burton, was virulently attacked by Dr King in a piece intitled *Elgium sanæ inserviens Jacci Etonensis sive Gigantis*: or, "The praises of Jack Eaton, commonly called *Jack the Giant*."—This abuse was probably occasioned by Mr Bowyer's having hinted in conversation some doubts concerning the Doctor's skill in Latin. Our author drew up some strictures in his own defence, which he intended to insert at the conclusion of a preface to Montefquieu's Reflections; but by Dr Clarke's advice they were omitted. In 1750, a prefatory critical dissertation and some notes were annexed by our author to Kuster's Treatise *De usu verborum medicorum*; a new edition of which, with farther improvements, appeared in 1773. He wrote likewise about the same time a Latin preface to Leedes's *Veteres poetæ citati*, &c.—Being soon after employed to print an edition of Col. Bladen's translation of Cæsar's Commentaries, that work received considerable improvements from Mr Bowyer's hands, with the addition of such notes in it as are signed TYPOCR. In the subsequent editions of this work, though printed by another person during our author's lifetime, the same signature, though contrary to decorum, and even to justice, was still retained. In 1751, he wrote a long preface to Montefquieu's "Reflections on the rise and fall of the Roman Empire;" translated the dialogue between Sylla and Socrates; made several corrections to the work from the Baron's "Spirit of Laws;" and improved it with his own notes. A new edition, with many new notes, was printed in 1759. In 1751 he also published the first translation that ever was made of Rousseau's paradoxical oration, which gained the prize at the academy of Dijon in 1750; and which first announced that singular genius to the attention and admiration of Europe. On the publication of the third edition of Lord Orrery's "Remarks on the Life and Writings of Dr Swift," in

1752, Mr Bowyer wrote and printed, but never published, "Two Letters from Dr Bentley in the Shades below, to Lord Orrery in a Land of thick darkness." The notes signed B, in the ninth quarto volume of Swift's works, are extracted from these Letters. In 1753, he endeavoured to allay the ferment occasioned by the Jew bill; with which view he published, in quarto, "Remarks on the speech made in common-council, on the bill for permitting persons professing the Jewish religion to be naturalized, so far as prophecies are supposed to be affected by it." This little tract was written with spirit, and well received by those who were superior to narrow prejudices. Its design was to show, that whatever political reasons might be alleged against the bill, Christianity was in no danger of being prejudiced by the intended protection promised to the Jews. The same year some of Mr Bowyer's notes were annexed to Bishop Claton's translation of "A Journal from grand Cairo to mount Sinai and back again."—In 1754, Mr Bowyer, with a view of lessening his fatigue, entered into partnership with a relation; but some disagreement arising, the connexion was dissolved in three years. On the death of Mr Richardson in 1761, Mr Bowyer succeeded him as printer to the Royal Society, through the favour of the late Earl of Macclesfield; and, under the friendship of five successive presidents, enjoyed that office till his death.

In 1763, Mr Bowyer published an excellent edition of the Greek Testament, in two vols 12mo. It appeared under the following title: *Novum Testamentum Græcum; ad fidem Græcorum solum Codicum MSS. nunc primum impressum, ad stipulante Joanne Jacobo Wettsteinio, juxta Seditiones Jo. Alberti Bengelii divisum; et nova interpretatione sæpius illustratum. Accessere in altero volumine, Emendationes conjecturales virorum doctorum undecunque collectæ.* This sold with great rapidity: the Conjectural Emendations were well received by the learned, and are thought to be a valuable work. The president and fellows of Harvard college in Cambridge expressed their approbation of this edition in very high terms. In a letter to Mr Bowyer, written in the year 1767, "This work (say they), though small in bulk, we esteem as a rich treasure of sacred learning, and of more value than many large volumes of the commentators." A second edition of the Conjectures on the New Testament, with very considerable enlargements, was separately published, in one vol. 8vo, in 1772. Bishop Warburton having censured a passage in the former edition, Mr Bowyer sent him a copy of this book, with a conciliatory letter. Dr Warburton's Divine Legation had received very considerable advantage from Mr Bowyer's corrections; and this even in an edition which was necessarily given to another press. In 1761 he was employed to print his Lordship's Doctrine of Grace. A second edition being soon wanted, and Mr Bowyer not having been intrusted with the care of it, he prepared a series of letters to the bishop in his own defence; of which, together with a few he had formerly received from that great writer, he afterwards printed twelve copies, of which ten have since been destroyed. However, there is the best authority for asserting, that notwithstanding any little altercations which happened, Dr Warburton always retained a sincere regard for our au-

thor. In 1765, at the request of Thomas Hollis, Esq; Mr Bowyer wrote a short Latin preface to Dr Wallis's *Grammatica Lingue Anglicane*. He wrote also a larger English preface for the same work, which, however, still remains unprinted. In 1766 he entered into partnership with Mr Nichols, who had been trained by him to the profession, and had for several years assisted him in the management of his business. The same year, Mr Bowyer wrote an excellent Latin preface to *Joannis Harduini, Jesuitæ, ad Censuram Scriptorum veterum Prolegomena. Juxta autographum*. In 1767 he was appointed to print the Journals of the House of Lords and the Rolls of Parliament. This year he printed Mr Cark's excellent and learned work on "The Connection of the Roman, Saxon, and English Coins;" and wrote some notes upon it, which are interspersed throughout the volume with those of the author. Part of the Dissertation on the Roman sesterce was likewise Mr Bowyer's production; and the index, which is an uncommonly good one, was drawn up by him entirely.

In January 1771 Mr Bowyer lost his second wife, and again received a letter of consolation from his old friend Mr Clarke, who had sent him one almost forty years before on a similar occasion. In the Philosophical Transactions for this year was printed a very ingenious "Inquiry into the Value of the ancient Greek and Roman Money," by the late Matthew Raper, Esq. But his opinions not coinciding with those of Mr Bowyer, he printed a small pamphlet, intitled, "Remarks, occasioned by a late Dissertation on the Greek and Roman money." In 1773 three little tracts were published by him, under the title of "Select Discourses. 1. Of the correspondence of the Hebrew months with the Julian, from the Latin of Professor Michaelis. 2. Of the Sabbatical years, from the same. 3. Of the years of jubilee, from an anonymous writer in Masson's *Histoire Critique de la Republique des Lettres*." In 1774 he corrected a new edition of Schrevelius's Greek Lexicon; to which he has added a number of words, distinguished by an asterisk, which he himself had collected in the course of his studies. Considerable additions, still in manuscript, were made by him to the lexicons of Hederic and Buxtorf, the Latin ones of Faber and Littleton, and the English Dictionary of Bailey; and he left behind him many other proofs of his critical skill in the learned languages. In 1774 was published, "The Origin of printing, in two Essays. 1. The substance of Dr Middleton's Dissertation on the Origin of Printing in England. 2. Mr Meerman's Account of the Invention of the Art at Haerlem, and its progress to Mentz, with occasional Remarks, and an Appendix." The original idea of this valuable tract was Mr Bowyer's, but it was completed by Mr Nichols.

Although our author, during the last ten years of his life, had been afflicted with the palsy and stone, he not only preserved a remarkable cheerfulness of temper, but was enabled to support the labour of almost incessant reading; and he regularly corrected the learned works, especially the Greek books, which came from his press. This he continued to do till within a few weeks of his death, which happened in November 1777, when he had nearly completed his 78th year.

Bowyers
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Boxing.

For more than half a century Mr Bowyer was unrivalled as a learned printer; and many of the most masterly productions of this kingdom have come from his press. To his literary and professional abilities he added an excellent moral character; and he was particularly distinguished by his inflexible probity, and an uncommon alacrity in relieving the necessitous.

BOWYERS, artificers whose business is to make bows; in which sense, bowyers stand distinguished from fletchers, who made arrows.

The bowyers company in London was incorporated in 1620: and consists of a master, two wardens, twelve assistants, and 30 on the livery. See ARCHERY.

BOX, in its most common acceptation, denotes a small chest or coffer for holding things.

Dice-Box, a narrow deep cornet, channelled within, wherein the dice are shaken and thrown. This answers to what the Romans called *fritillus*; whence, *crepitorum fritilli*; and, in Seneca, *resonante fritillo*. The same author uses also *concudere fritillum*, figuratively, for playing.— Besides the *fritillus*, the Romans, for greater security, had another kind of dice-box called *pyrgus*, πυργος, and sometimes *turricula*. It was placed immoveable in the middle of the table, being perforated or open at both ends, and likewise channelled within; over the top was placed a kind of funnel, into which the dice were cast out upon the *fritillus*; whence descending, they fell through the bottom on the table; by which all practising on them with the fingers was effectually prevented. For want of some contrivance of this kind, our sharpers have opportunities of playing divers tricks with the box, as palming, topping, slabbing, &c.

Box, is also used for an uncertain quantity or measure: thus a box of quicksilver contains from one to two hundred weight; a box of prunellas only 14 pounds; a box of rings for keys, two gross, &c.

Box-Tree, in botany. See BUXUS.

African-Box. See MYRSINE.

BOXERS, a kind of *athleta*, who combat or contend for victory with their fists. Boxers amount to the same with what among the Romans were called *pugiles*. The ancient boxers battled with great force and fury, insomuch as to dash out each others teeth, break bones, and often kill each other. The strange disfigurements these boxers underwent were such that they frequently could not be known, and rendered them the subject of many railleries. In the Greek anthology there are four epigrams of the poet Lucilius, and one of Lucian, wherein their disfigurements are pleasantly enough exposed. See BOXING.

BOXHORNIUS (Marc Zuerius), a learned critic born at Bergen-op-Zoom in 1612, was professor of eloquence at Leyden, and at length of politics and history in the room of Heinsius. He published, 1. *Theatrum urbium Hollandiæ*. 2. *Scriptores historiæ Augustæ, cum notis*. 3. *Poetæ satyrici minores, cum comment.* 4. Notes on Justin, Tacitus; and a great number of other works. He died in 1653, aged 41.

BOXING, the exercise of fighting with the fists, either naked or with a stone or leaden ball grasped in them: in which sense, boxing coincides with the *pugilatus* of the Romans, and what on our amphitheatres is sometimes called trial of manhood. When the champions had *σπαρτα*, or balls, whether of lead or

stone, it was properly denominated *σπαρταμαχία*. The ancient boxing differed from the *pugna cæstruum*, in which the combatants had leathern thongs on their hands, and balls to offend their antagonists; though this distinction is frequently overlooked, and fighting with the *cæstrus* ranked as a part of the business of *pugiles*. We may distinguish three species of boxing; *viz.* where both the head and hands were naked; where the hands were armed and the head naked; and where the head was covered with a kind of cap called *amphotides*, and the hands also furnished with the *cæstrus*.

Boxing is an ancient exercise, having been in use in the heroic ages. Those who prepared themselves for it, used all the means that could be contrived to render themselves fat and fleshy, that they might be better able to endure blows: whence corpulent men or women were usually called *pugiles*, according to Terence: *Siqua est habitior paulo, pugilam esse aiunt*.

In modern times this art has been in a manner appropriated by the English. About half a century ago it formed as regular an exhibition as we now see at any of the places of public amusement, the theatres alone excepted. It was encouraged by the first ranks of the nobility, patronised by the first subject in the realm, and tolerated by the magistrates. Before the establishment of Broughton's amphitheatre, a Booth was erected at Tottenham Court, in which the proprietor, Mr George Taylor, invited the professors of the art to display their skill, and the public to be present at its exhibition. The bruisers then had the reward due to their prowess, in a division of the entrance-money, which sometimes was 100, or 150*l.* The general mode of sharing was for two thirds to go to the winning champion, while the remaining third was the right of the loser; though sometimes by an express agreement of the parties, the conqueror and the vanquished shared alike. The nobility and gentry having complained of the inconveniences sustained at Taylor's Booth, prevailed on Mr Broughton, who was then rising into note as the first bruiser in London, to build a place better adapted for such exhibitions. This was accordingly done in 1742, principally by subscription, behind Oxford-road. The building was called Broughton's New Amphitheatre; and, besides the stage for the combatants, had seats corresponding to the boxes, pit, and galleries, much in the same manner with those at Astley's. After a course of years, however, these exhibitions became gradually less patronised and frequented, owing probably to the refinement of our manners. Lately, indeed, they seemed to be revived, and for some time considerably engaged the attention of the public; but a fatal issue which attended one of them, brought the practice again into disrepute. One of the combatants was killed on the spot. His royal highness the Prince of Wales was present, and declared that he would have some settlement made on the nearest relation of the deceased, but that on account of the dreadful example he had then witnessed he would never more either see or patronise another stage-fight.

BOXING, among sailors, is used to denote the rehearsing the several points of the compass in their proper order.

BOXING is also used for the tapping of a tree to make

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hude make it yield its juice. The boxing of maple is performed by making an hole with an ax or chissel into the side of the tree about a foot from the ground; out of it flows a liquor of which sugar is made.

BOXTÉHUDE, a town of Germany, in the circle of Lower Saxony, subject to the Danes. It is seated on the rivulet Esse, which falls into the Elbe, in E. Long. 9. 35. N. Lat. 53. 40.

BOXTÉL, a town in Dutch Brabant, with sluices, seated on the river Bommel. E. Long. 5. 15. N. Lat. 51. 30.

BOYAR, a term used for a grandee of Russia and Transylvania. Beeman says, that the boyars are the upper nobility; and adds, that the Czar of Muscovy, in his diplomas, names the boyars before the waywodes. See **WAYWODE**.

BOYAU, in fortification, a ditch covered with a parapet, which serves as a communication between two trenches. It runs parallel to the works of the body of the place; and serves as a line of contravallation, not only to hinder the sallies of the besieged, but also to secure the manners. But when it is a particular cut that runs from the trenches to cover some spot of ground, it is drawn so as not to be enfiladed or scoured by the shot from the town.

BOYD (Mark Alexander), an extraordinary genius, was son of Robert Boyd, who was eldest son of Adam Boyd of Pinkhill, brother to Lord Boyd. He was born in Galloway on the 13th of January 1562, and came into the world with teeth. He learned the rudiments of the Latin and Greek languages at Glasgow under two grammarians; but was of so high and untractable a spirit, that they despaired of ever making him a scholar. Having quarrelled with his masters, he beat them both, burnt his books, and forswore learning. While he was yet a youth, he followed the court, and did his utmost to push his interest there; but the fervour of his temper soon precipitated him into quarrels, from which he came off with honour and safety, though frequently at the hazard of his life. He, with the approbation of his friends, went to serve in the French army, and carried his little patrimony with him, which he soon dissipated at play. He was shortly after roused by that emulation which is natural to great minds, and applied himself to letters with unremitting ardour, till he became one of the most consummate scholars of his age. He is said to have translated Cæsar's Commentaries into Greek in the style of Herodotus, and to have written many Latin poems which were little inferior to the first productions of the Augustan age. He also left several manuscripts on philological, political, and historical subjects, in Latin and French, which languages were as familiar to him as his native tongue. He could with facility dictate to three amanuenses at the same time, in different languages, and on different subjects. He was also one of the best Scottish poets of the age. To all this we must add, that his personal beauty and accomplishments were equal to his mental superiority. He died at Pinkhill in Scotland, in 1601. The following works, which are all that have been printed, were published in *Delicia Poetarum Sæcularum*; Amstel. 1637, 12mo. 1. *Epigrammata*, lib. ii. 2. *Heroidum Epistolæ* XIV. lib. i. 3. *Hymni* XIV.

BOYER (Abel), a well-known glossographer and historiographer, born at Calres in France, in 1664.

Upon the revocation of the edict of Nantz, he went first to Geneva, then to Franeker, where he finished his studies; and came finally to England, where he applied himself so closely to the study of the English language, and made so great a proficiency therein, that he became an author of considerable note in it, being employed in the writing of several periodical and political works. He was for many years concerned in, and had the principal management of, a newspaper called the *Post-boy*. He likewise published a monthly work, intitled, the *Political state of Great Britain*. He wrote a life of queen Anne in folio, which is esteemed a very good chronicle of that period of the English history. But what has rendered him the most known, and established his name to the latest posterity, are the excellent Dictionary and Grammar of the French language, which he compiled, and which have been and still are reckoned the best in their kind. He also wrote, or rather translated from the French of M. de Racine, the tragedy of Iphigenia, which he published under the title of *The Victim*. It was performed with success at the theatre of Drury-lane, and is far from being a bad play. Nor can there perhaps be a stronger instance of the abilities of its author, than success in such an attempt; since writing with any degree of correctness or elegance, even in prose, in a language which we were not born to the speaking of, is an excellence not very frequently attained; but to proceed so far in the perfection of it as to be even sufferable in poetry, and more especially in that of the Drama, in which the diction and manner of expression require a peculiar dignity and force, and in a language so difficult to attain the perfect command of as the English, is what has been very seldom accomplished. He died in 1729.

BOYER, in navigation, a kind of Flemish sloop, or small vessel of burden, having a boltsprit, a castle at each end, and a tall mast; chiefly fit for the navigation of rivers, and in many of its parts resembling a smack.

BOYES, idolatrous priests among the savages of Florida. Every priest attends a particular idol, and the natives address themselves to the priest of that idol to which they intend to pay their devotion. The idol is invoked in hymns, and his usual offering is the smoke of tobacco.

BOYLE (Richard), one of the greatest statesmen of the last century, and generally stiled the *Great earl of Corke*, was the youngest son of Mr Roger Boyle, and was born at Canterbury, on the 3d of October, 1566. He studied at Bennet college, Cambridge; afterwards became a student in the Middle Temple. Having lost his father and mother, and being unable to support himself in the prosecution of his studies, he became clerk to Sir Richard Manhood, one of the chief barons of the exchequer; but finding that by his employment he could not raise his fortune, he went to Ireland in 1588, with fewer pounds in his pocket than he afterwards acquired thousands a-year. He was then about 22, had a graceful person, and many accomplishments, which enabled him to render himself useful to several of the principal persons employed in the government, by drawing up for them memorials, cases, and answers. In 1595, he married Joan the daughter and coheir of William Ansley, who had fallen in love with him; and she dying in labour of her first child, who was born dead, in 1599, left him an estate of 500*l.* a-year in land. In

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consequence of various services, and the great abilities he displayed, he gradually rose to the highest offices, and even to the dignity of the peerage of Ireland; to which he was raised by king James I. on the 29th of September 1616, by the style and title of *baron of Youghall*, in the county of Cork: four years after, he was created viscount Dangarvan and earl of Cork; and in 1631 was made lord treasurer of Ireland, an honour that was made hereditary to his family. He particularly distinguished himself by the noble stand he made, when the fatal rebellion broke out in that kingdom, in the reign of Charles I.; and in his old age acted with as much bravery and military skill, as if he had been trained from his infancy to the profession of arms. He turned the castle of Lismore, his capital seat, into a fortress capable of demanding respect from the Irish. He immediately armed and disciplined his servants and Protestant tenants; and by their assistance, and a small army raised and maintained at his own expence, which he put under the command of his four sons, defended the province of Munster, and in the space of a year took several strong castles, and killed upwards of 3000 of the enemy: during which time he paid his forces regularly; and when all his money was gone, like a true patriot, converted his plate into coin. This great man died on the 15th of September, 1634.

BOYLE (Richard), earl of Burlington and Cork, son to the former, was a nobleman of unblemished loyalty in rebellious times, and of untainted integrity in times of the greatest corruption. He was born at Youghall, October 20th, 1612, while his father was in the beginning of his prosperity, and only Sir Richard Boyle. He distinguished himself by his loyalty to king Charles I. He not only commanded troops, but raised and for a long time paid them, and continued to wait upon the king as long as any one place held out for him in England, and then was forced to compound for his estate. He contributed all in his power to the Restoration; on which king Charles II. raised him to the dignity of earl of Burlington, or Biddlington, in the county of York, in the year 1663. He died Jan. 15, 1697-8, in the 86th year of his age.

BOYLE (Roger), earl of Orrery, younger brother of the former, and the fifth son of Richard, styled the *Great earl of Cork*, was born April 25, 1621; and by the credit of his father with the lord deputy Faulkland, raised to the dignity and title of *baron Broghill*, when only seven years old. He was educated at the college of Dublin, where he soon distinguished himself as an early and promising genius. He afterwards made the tour of France and Italy; and at his return assisted his father in opposing the rebellious Irish, in which he behaved with all the spirit of a young, and all the discretion of an old, officer. Upon the murder of the king, he retired to Marston in Somersetshire, and hid himself in the privacy of a close retirement; but being at length ashamed to sit the tame spectator of all the mischief that appeared round him, he resolved to attempt something in favour of the king; and under the pretence of going to the Spa for the recovery of his health, he determined to cross the seas, and apply himself to king Charles II. for a commission to raise what forces he could in Ireland, in order to restore his majesty, and recover his crown. To this purpose, he prevailed on the earl of Warwick to procure a licence for his

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going to the Spa; and having raised a considerable sum of money, came up to London to prosecute his voyage: but he had not been long in town when he received a message from Cromwell, who was then general of the parliament's forces, that he intended to wait upon him. The lord Broghill was surprised at this message, having never had the least acquaintance with Cromwell; and desired the gentleman to let the general know, that he would wait upon his excellency. But while he was waiting the return of the messenger, Cromwell entered the room; and after mutual civilities had passed between them, told him in few words, that the committee of state were apprised of his design of going over and applying to Charles Stuart for a commission to raise forces in Ireland; and that they were determined to make an example of him, if he himself had not diverted them from that resolution. The lord Broghill interrupted him, by assuring him that the intelligence which the committee had received was false, and that he neither was in a capacity nor had any inclination to raise disturbances in Ireland: but Cromwell, instead of making any reply, drew some papers out of his pocket, which were the copies of several letters which the lord Broghill had sent to those persons in whom he most confided, and put them into his hands. The lord Broghill, upon the perusal of these papers, finding it to no purpose to dissemble any longer, asked his excellency's pardon for what he had said, returned him his humble thanks for his protection against the committee, and intreated his direction how to behave in such a delicate conjuncture. Cromwell told him, that though till this time he had been a stranger to his person, he was not so to his merit and character: he had heard how gallantly his lordship had behaved in the Irish wars; and therefore, since he was named *lord lieutenant of Ireland*, and the reducing that kingdom was now become his province, he had obtained leave of the committee to offer his lordship the command of a general officer, if he would serve in that war; and he should have no oaths or engagements imposed upon him, nor be obliged to draw his sword against any but the Irish rebels.

The lord Broghill was infinitely surprised at so generous and unexpected an offer. He saw himself at liberty, by all the rules of honour, to serve against the Irish, whose rebellion and barbarities were equally detested by the royal party and the parliament: He desired, however, some time to consider of what had been proposed to him. But Cromwell briskly told him, that he must come to some resolution that very instant: that he himself was returning to the committee, who were still sitting; and if his lordship rejected their offer, they had determined to send him to the tower. Upon this, the lord Broghill, finding that his liberty and life were in the utmost danger, gave his word and honour that he would faithfully serve him against the Irish rebels: on which Cromwell once more assured him, that the conditions which he had made with him should be punctually observed; and then ordered him to repair to Bristol, adding, that he himself would soon follow him into Ireland. Lord Broghill, therefore, having settled the business of his command, went over into that country; where, by his conduct and intrepidity, he performed many important services, and fully justified the opinion Cromwell had conceived of him.

him. By his own interest he now raised a gallant troop of horse, consisting chiefly of gentlemen attached to him by personal friendship; which corps was soon increased to a complete regiment of 1500 men. These he led into the field against the Irish rebels; and was speedily joined by Cromwell, who placed the highest confidence in his new ally, and found him of the greatest consequence to the interest of the commonwealth.

Among other considerable exploits performed by lord Broghill, the following deserves to be particularly mentioned. Whilst Cromwell laid siege to Clonwell, Broghill being detached to disperse a body of 5000 men who had assembled to relieve the place, he, with 2000 horse and dragoons, came up with the enemy at Macrooms on the 10th of May 1650; and, without waiting for the arrival of his foot, immediately attacked and routed them, making their general prisoner. Then proceeding to the castle of Carrigdroghid, he sent a summons to the garrison to surrender before the arrival of his battering cannon, otherwise they were to expect no quarter. His own army was surpris'd at this summons, as knowing he had not one piece of heavy cannon: but Broghill had ordered the trunks of several large trees to be drawn at a distance by his baggage horses; which the besieged perceiving, and judging from the slowness of the motion that the guns must be of a vast bore, immediately capitulated. He afterwards relieved Cromwell himself at Clonwell, where that great commander happened to be so dangerously situated, that he confessed, nothing but the seasonable relief afforded him by lord Broghill could have saved him from destruction. When Ireton sat down before Limeric, he gave Broghill 600 foot and 400 horse, with orders to prevent lord Muskerry's joining the pope's nuncio, who had got together a body of 8000 men, and was determined to attempt the relief of Limeric. Muskerry was at the head of 1000 horse and dragoons, and about 2000 foot: notwithstanding which, lord Broghill fell resolutely upon him. The Irish, having the advantage of the ground and numbers, would have conquer'd, but for a stratagem of lord Broghill. In the heat of the action he desired those about him to repeat what he said; and then cried out as loud as he could, "They run, they run." The first line of the Irish looked round to see if their rear broke; and the rear seeing the faces of their friends, and hearing the shouts of the enemy, imagined that the first line was routed, and fled. The taking of Limeric, which put an end to the war in Ireland, was the consequence of this defeat.

When Cromwell became protector, he sent for lord Broghill, merely to take his advice occasionally. And we are told, that, not long after his coming to England, he formed a project for engaging Cromwell to restore the old constitution. The basis of the scheme was to be a match between the king (Charles II.) and the protector's daughter. As his lordship maintained a secret correspondence with the exiled monarch and his friends, it was imagined that he was beforehand pretty sure that Charles was not averse to the scheme, or he would not have ventured to have propos'd it seriously to Cromwell; who at first seem'd to think it not unfeasible. He soon changed his mind, however, and told Broghill that he thought his project impracticable: "For (said he) Charles can never forgive me the death

of his father." In fine, the business came to nothing, although his lordship had engag'd Cromwell's wife and daughter in the scheme; but he never durst let the protector know that he had previously treated with Charles about it.

On the death of the protector, lord Broghill continued attached to his son Richard, till, when he saw that the honesty and good-nature of that worthy man would infallibly render him a prey to his many enemies, he did not think it advisable to sink with a man that he could not save. The dark clouds of anarchy seem'd now to be hovering over the British island. Lord Broghill saw the storm gathering, and he deem'd it prudent to retire to his command in Ireland, where he shortly after had the satisfaction of seeing things take a turn extremely favourable to the design he had long been well wisher to, *viz.* that of the king's restoration. In this great event lord Broghill was not a little instrumental; and, in consideration of his eminent services in this respect, Charles created him Earl of Orrery by letters-patent bearing date September 5. 1660. He was soon after made one of the lords justices of Ireland; and his conduct, while at the head of affairs in that kingdom, was such as greatly added to the general esteem in which his character was held before.

His lordship's active and toilsome course of life at length brought upon him some diseases and infirmities which gave him much pain and uneasiness; and a fever which fell into his feet, joined to the gout with which he was often afflicted, abated much of that vigour which he had shown in the early part of his life: but his industry and application were still the same, and bent to the same purposes; as appears from his letters, which show at once a capacity, and an attention to business, which do honour to that age, and may serve as an example to this.

Notwithstanding his infirmities, on the king's desiring to see his lordship in England, he went over in 1665. He found the court in some disorder; where his majesty was on the point of removing the great earl of Clarendon, lord high chancellor; and there was also a great misunderstanding between the two royal brothers. Lord Orrery undertook to reconcile the king with the duke of York; which he effected by prevailing on the latter to ask his majesty's pardon for some steps he had taken in support of the lord chancellor.

On his return to Ireland, he found himself call'd to a new scene of action. The Dutch war was then at its height; and the French, in confederacy with the Hollanders, were endeavouring to stir up the ashes of rebellion in Ireland. The duke de Beaufort, admiral of France, had formed a scheme for a descent upon Ireland; but this was rendered abortive by the extraordinary diligence, military skill, and prudent measures, of lord Orrery.

But in midst of all his labours, a dispute arose, founded on a mutual jealousy of each other's greatness, betwixt him and his old friend the duke of Ormond, then lord lieutenant; the bad effects of which were soon felt by both disputants, who resorted to England to defend their respective interests and pretensions, both having been attacked by secret enemies who suggested many things to their prejudice. This quarrel, though of a private beginning, became at last of a public nature; and producing first an attempt to frame an impeachment

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peachment against the duke of Ormond, occasioned in the end, by way of revenge, an actual impeachment against the earl of Orrery. He defended himself, however, so well against a charge of high crimes, and even of treason itself, that the prosecution came to nothing. He nevertheless lost his public employments; but not the king's favour: he still came frequently to court, and sometimes to council. After this revolution in his affairs, he made several voyages to and from Ireland; was often consulted by his majesty on affairs of the utmost consequence; and on all occasions gave his opinion and advice with the freedom of an honest plain-dealing man and a sincere friend; which the king always found him, and respected him accordingly.

In 1678, being attacked more cruelly than ever by his old enemy the gout, he made his last voyage to England for advice in the medical way. But his disorder was beyond the power of medicine; and having in his last illness given the strongest proofs of Christian patience, manly courage, and rational fortitude, he breathed his last on the 16th of October 1679, in the 59th year of his age. His lordship wrote, 1. A work intitled *The art of war*. 2. *Parthenissa*, a romance, in one volume folio. 3. Several poems. 4. Dramatic pieces, two volumes. 5. *State-tracts*, in one volume folio, &c. Mr Walpole, speaking of this nobleman, says, he never made a bad figure but as a poet. As a soldier, his bravery was distinguished, his stratagems remarkable. As a statesman, it is sufficient to say, that he had the confidence of Cromwell. As a man, he was grateful, and would have supported the son of his friend: but, like Cicero and Richelieu, he could not be content without being a poet; though he was ill qualified, his writings of that kind being flat and trivial.

BOYLE (Robert), one of the greatest philosophers as well as best men that our own or indeed any other nation has produced, was the seventh son and the 14th child of Richard earl of Cork, and born at Lismore in the province of Munster in Ireland, January 25. 1626-7. Before he went to school, he was taught to write a very fair hand, and to speak French and Latin, by one of the earl's chaplains, and a Frenchman that he kept in the house. In the year 1635, his father sent him over to England, in order to be educated at Eaton school, under Sir Henry Wotton, who was the earl of Cork's old friend and acquaintance. Here he soon discovered a force of understanding which promised great things, and a disposition to cultivate and improve it to the utmost. While he remained at Eaton, there were several very extraordinary accidents that befel him, of which he has given us an account; and three of which were very near proving fatal to him. The first was, the sudden fall of the chamber where he was lodged, when himself was in bed; when, besides the danger he run of being crushed to pieces, he had certainly been choaked with the dust during the time he lay under the rubbish, if he had not had presence of mind enough to have wrapped his head up in the sheet, which gave him an opportunity of breathing without hazard. A little after this, he had been crushed to pieces by a starting horse that rose up suddenly, and threw himself backwards, if he had not happily disengaged his feet from the stirrups, and cast himself from his back before he fell. A third accident proceeded from the carelessness of an apothecary's servant,

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who, by mistaking the phials, brought him a strong vomit instead of a cooling julep.

He remained at Eaton, upon the whole, between three and four years; and then his father carried him to his own seat at Stalbridge in Dorsetshire, where he remained for some time under the care of one of his chaplains who was the parson of the place. In 1638, he attended his father to London; and remained with him at the Savoy, till his brother Mr Francis Boyle espoused Mrs Elizabeth Killigrew; and then, towards the end of October, within four days after the marriage, the two brothers, Francis and Robert, were sent abroad upon their travels, under the care of Mr Marcombes. They embarked at Rye in Sussex, and from thence proceeded to Dieppe in Normandy: then they travelled by land to Rowen, so to Paris, and from thence to Lyons; from which city they continued their journey to Geneva, where his governor had a family: and there the two gentlemen pursued their studies without interruption. Mr Boyle, during his stay here, resumed his acquaintance with the mathematics, or at least with the elements of that science, of which he had before gained some knowledge. For he tells us in his own memoirs, that while he was at Eaton, and afflicted with an ague, before he was ten years old, by way of diverting his melancholy, they made him read *Amadis de Gaul*, and other romantic books, which produced such a restlessness in him, that he was obliged to apply himself to the extraction of the square and cube roots, and to the more laborious operations of algebra, in order to fix and settle the volatile operations of his fancy.

In September 1641, he quitted Geneva, after having spent 21 months in that city; and passing through Switzerland and the country of the Grisons, entered Lombardy. Then, taking his rout through Bergamo, Brescia, and Verona, he arrived at Venice; where having made a short stay, he returned to the continent, and spent the winter at Florence. Here he employed his spare hours in reading the modern history in Italian, and the works of the celebrated astronomer Galileo, who died in a village near this city during Mr Boyle's residence in it. It was at Florence that he acquired the Italian language; which he understood perfectly, though he never spoke it so fluently as the French. Of this indeed he was such a master, that as occasion required he passed for a native of that country in more places than one during his travels.

About the end of March 1642, he began his journey from Florence to Rome, which took up but five days. He surveyed the numerous curiosities of that city; among which, he tells us, "he had the fortune to see Pope Urban VIII. at chapel, with the cardinals, who, severally appearing mighty princes, in that assembly looked like a company of common friars." He visited the adjacent villages which had any thing curious or antique belonging to them; and had probably made a longer stay, had not the heats disagreed with his brother. He returned to Florence; from thence to Leghorn; and so by sea to Genoa: then passing through the county of Nice, he crossed the sea to Antibes, where he fell into danger from refusing to honour the crucifix: from thence he went to Marseilles by land. He was in that city, in May 1642, when he received his father's letters, which informed him that the rebel-

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Boyle. lion had broken out in Ireland, and how difficultly he had procured the L. 250 then remitted to them in order to help them home. They never received this money; and were obliged to go to Geneva with their governor Marcombes, who supplied them with as much at least as carried them thither. They continued there a considerable time, without either advice or supplies from England; upon which Marcombes was obliged to take up some jewels upon his own credit, which were afterwards disposed of with as little loss as might be; and with the money thus raised, they continued their journey for England, where they arrived in the year 1644. On their arrival, Mr Boyle found his father dead; and though the earl had made an ample provision for him, by leaving him his manor of Stalbridge in England, as well as other considerable estates in Ireland, yet it was some time before he could receive any money. However, he procured protections for his estates in both kingdoms from the powers then in being; from which he also obtained leave to go over to France for a short space, probably to settle accounts with his governor Mr Marcombes.

In March 1646, he retired to his manor at Stalbridge, where he resided for the most part till May 1650. He made excursions sometimes to London, sometimes to Oxford; and in February 1647, he went over to Holland: but he made no considerable stay any where. During his retirement at Stalbridge, he applied himself with incredible industry to studies of various kinds, to those of natural philosophy and chemistry in particular. He omitted no opportunity of obtaining the acquaintance of persons distinguished for parts and learning; to whom he was in every respect a ready, useful, generous assistant, and with whom he held a constant correspondence. He was also one of the first members of that small but learned body of men which, when all academical studies were interrupted by the civil wars, secreted themselves about the year 1645; and held private meetings, first in London, afterwards at Oxford, for the sake of canvassing subjects of natural knowledge upon that plan of experiment which Lord Bacon had delineated. They styled themselves then *The philosophic college*; and, after the Restoration, when they were incorporated and distinguished openly, they took the name of the *Royal Society*.

In the summer of 1654, he put in execution a design he had formed for some time of residing at Oxford, where he chose to live in the house of one Mr Crosse, an apothecary, rather than in a college, for the sake of his health, and because he had more room to make experiments. Oxford was indeed the only place at that time in England where Mr Boyle could have lived with much satisfaction; for here he found himself surrounded with a number of learned friends, such as Wilkins, Wallis, Ward, Willis, Wren, &c. suited exactly to his taste, and who had resorted thither for the same reasons that he had done, the philosophical society being now removed from London to Oxford. It was during his residence here that he improved that admirable engine the air-pump; and by numerous experiments was enabled to discover several qualities of the air, so as to lay a foundation for a complete theory. He was not, however, satisfied with this; but laboured incessantly in collecting and digesting, chiefly from his own experiments, the materials requisite for this purpose. He

Boyle. declared against the philosophy of Aristotle, as having in it more words than things; promising much, and performing little; and giving the inventions of men for indubitable proofs, instead of building upon observation and experiment. He was so zealous for, and so careful about, this true method of learning by experiment, that though the Cartesian philosophy then made a great noise in the world, yet he would never be persuaded to read the works of Des Cartes, for fear he should be amused and led away by plausible accounts of things founded on conjecture, and merely hypothetical. But philosophy, and inquiries into nature, though they engaged his attention deeply, did not occupy it entirely; since we find that he still continued to pursue critical and theological studies. In these he had the assistance of some great men, particularly Dr Edward Pocock, Mr Thomas Hyde, and Mr Samuel Clarke, all of great eminence for their skill in the oriental languages. He had also a strict intimacy with Dr Thomas Barlow, at that time head keeper of the Bodleian library, and afterwards bishop of Lincoln, a man of various and extensive learning. In the year 1659, Mr Boyle, being acquainted with the unhappy circumstances of the learned Sanderfon, afterwards bishop of Lincoln, who had lost all his preferments on account of his attachment to the royal party, conferred upon him an honorary stipend of 50l. a-year. This stipend was given as an encouragement to that excellent master of reasoning to apply himself to the writing of "*Cases of Conscience*:" and accordingly he printed his lectures *De obligatione conscientie*, which he read at Oxford in 1647, and dedicated them to his friend and patron.

Upon the restoration of Charles II. Mr Boyle was treated with great civility and respect by the king, as well as by the two great ministers the lord treasurer Southampton and the lord chancellor Clarendon. He was solicited by the latter to enter into holy orders, not only out of regard to him and his family, but chiefly with a view to serve the church itself; for Mr Boyle's noble family, his distinguished learning, and, above all, his unblemished reputation, induced Lord Clarendon to think that any ecclesiastical preferments he might attain would be worthily discharged, so as to do honour to the clergy, and service to the established communion. Mr Boyle considered all this with due attention: but, to balance these, he reflected, that, in the situation of life in which he was, whatever he wrote with respect to religion would have so much the greater weight as coming from a layman; since he well knew that the irreligious fortified themselves against all that the clergy could offer, by supposing, and saying, that it was their trade, and that they were paid for it. He considered likewise, that, in point of fortune and character, he needed no accessions; and indeed he never had any appetite for either. He chose, therefore, to pursue his philosophical studies in such a manner as might be most effectual for the support of religion; and began to communicate to the world the fruits of these studies.

The first of these was printed at Oxford in 1650, in 8vo, under the title of, 1. *New experiments, physico-mechanical, touching the spring of the air and its effects.* 2. *Scraptic love; or some motives and incentives to the love of God, pathetically discoursed of in a*

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letter to a friend. 3. Certain physiological essays and other tracts, 1661, 4to. 4. Sceptical chemist, 1662, 8vo: a very curious and excellent work, reprinted about the year 1679, 8vo, with the addition of divers experiments and notes about the producibleness of chemical principles.

In the year 1663, the royal society being incorporated by king Charles II. Mr Boyle was appointed one of the council; and as he might be justly reckoned among the founders of that learned body, so he continued one of the most useful and industrious of its members during the whole course of his life. In June 1663, he published, 5. Considerations touching the usefulness of experimental natural philosophy, 4to. 6. Experiments and considerations upon colours; to which was added a letter, containing, Observations on a diamond that shines in the dark, 1663, 8vo. This treatise is full of curious and useful remarks on the hitherto unexplained doctrine of light and colours; in which he shows great judgment, accuracy, and penetration; and may be said to have led the way to that mighty genius the great Sir Isaac Newton, who has since set that point in the clearest and most convincing light. 7. Considerations on the style of the Holy Scriptures, 1663, 8vo. It was an extract from a larger work, intitled, *An essay on scripture*; which was afterwards published by Sir Peter Pett, a friend of Mr Boyle's.

In 1664, he was elected into the company of the royal mines; and was all this year taken up in the prosecution of various good designs, which probably was the reason why he did not send abroad any treatises either of religion or philosophy. The year following, came forth, 8. Occasional reflections upon several subjects; whereto is prefixed a discourse about such kind of thoughts, 1665, 8vo. This piece is addressed to *Sophronia*, under whose name he concealed that of his beloved sister the viscountess of Ranelagh. The thoughts themselves are on a vast variety of subjects, written many years before; some indeed upon trivial occasions, but all with great accuracy of language, much wit, more learning, and in a wonderful strain of moral and pious reflection. Yet this exposed him to the only severe censure that ever was passed upon him; and that too from no less a man than the celebrated Dean Swift, who, to ridicule these discourses, wrote *A pious meditation upon a broomstick, in the style of the honourable Mr Boyle*. But as his noble relation the late Lord Orrery has said, "To what a height must the spirit of sarcasm arise in an author, who could prevail on himself to ridicule so good a man as Mr Boyle? The sword of wit, like the scythe of time, cuts down friend and foe, and attacks every object that lies in its way. But, sharp and irresistible as the edge of it may be, Mr Boyle will always remain invulnerable."

The same year, he published an important work, intitled, 9. New experiments and observations upon cold, 1665, 8vo. In the year 1666, he published, 10. Hydrostatical paradoxes made out by new experiments, for the most part physical and easy, in 8vo. 11. The origin of forms and qualities, according to the copulcular philosophy, illustrated by considerations and experiments. This treatise did great honour to Mr Boyle, whether we consider the quickness of his wit, the depth of his judgment, or his indefatigable pains in searching after truth. We must not forget to observe,

that, both in this and the former year, he communicated to his friend Mr Oldenburgh, who was secretary to the royal society, several curious and excellent short treatises of his own, upon a great variety of subjects, and others transmitted to him by his learned friends both at home and abroad, which are printed and preserved in the Philosophical Transactions.

In the year 1668, Mr Boyle resolved to settle in London for life; and removed for that purpose to the house of his sister, the lady Ranelagh, in Pall-Mall. This was to the infinite benefit of the learned in general, and particularly to the advantage of the royal society, to whom he gave great and continual assistance, as the several pieces communicated to them from time to time, and printed in their Transactions, do abundantly testify. Those who applied to him, either to desire his help, or to communicate to him any new discoveries in science, he had his set hours for receiving; otherwise, it is easy to conceive that he would have had very little of his time for himself. But, besides these, he kept a very extensive correspondence with persons of the greatest figure, and most famous for learning, in all parts of Europe. In the year 1669, he published, 12. A continuation of new experiments touching the weight and spring of the air; to which is added, A discourse of the atmospheres of consistent bodies: and the same year he revised and made many additions to several of his former tracts, some of which were now translated into Latin, in order to gratify the curious abroad. 13. Tracts about the cosmical qualities of things; cosmical suspensions; the temperature of the subterraneous regions; the bottom of the sea: to which is prefixed an introduction to the history of particular qualities. This book occasioned much speculation, as it seemed to contain a vast treasure of knowledge which had never been communicated to the world before; and this too grounded upon actual experiments, and arguments justly drawn from them, instead of that notional and conjectural philosophy which in the beginning of the 17th century had been so much in fashion.

In the year 1671, he published, 14. Considerations on the usefulness of experimental and natural philosophy; the second part, 4to. And, 15. A collection of tracts upon several useful and important points of practical philosophy, 4to. Both of which works were received as new and valuable gifts to the learned world. 16. An essay about the origin and virtues of gems, 1672, 8vo. 17. A collection of tracts upon the relation between flame and air; and several other useful and curious subjects: besides furnishing, in this and the former year, a great number of short dissertations upon a vast variety of topics, addressed to the royal society, and inserted in their Transactions. 18. Essays on the strange subtilty, great efficacy, and determinate nature, of effluvia; to which were added a variety of experiments on other subjects; 1673, 8vo. 19. A collection of tracts upon the saltness of the sea, the moisture of the air, the natural and preternatural state of bodies; to which is prefixed a dialogue concerning cold; 1674, 8vo. 20. The excellency of theology compared with philosophy, 1673, 8vo. This discourse was written in the year 1665, while Mr Boyle, to avoid the great plague which then raged in London, was forced to go from place to place in the country, and had little or no opportunity of consulting his books. It contains a

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great number of curious and useful, as well as just and natural, observations. 21. A collection of tracts containing suspensions about hidden qualities of the air; with an appendix touching celestial magnets; animadversions upon Mr Hobbes's problem about a vacuum; a discourse of the cause of attraction and fusion; 1674, 8vo. 22. Some considerations about the reconcileableness of reason and religion. By T. E. a layman. To which is annexed a discourse about the possibility of the resurrection. By Mr Boyle. 1675, 8vo. The reader must be informed, that both these pieces were of his writing; only he thought fit to mark the former with the final letters of his name. Among other papers that he communicated this year to the royal society, there were two connected into one discourse: the first was intitled, An experimental discourse of quicksilver growing hot with gold; the other related to the same subject; and both of them contained discoveries of the utmost importance.

In the year 1676, he published, 23. Experiments and notes about the mechanical origin or production of particular qualities, in several discourses on a great variety of subjects, and among the rest on electricity. In 1678, he communicated to Mr Hook a short memorial of some observations made upon an artificial substance that shines without any preceding illustration; which that gentleman thought fit to publish in his *Lectioes Cutlerianæ*. 24. Historical account of a degradation of gold made by an anti-elixir. This made a great noise both at home and abroad, and is looked upon as one of the most remarkable pieces that ever fell from his pen; since the facts contained in it would have been esteemed incredible, if they had been related by a man of less integrity and piety than Mr Boyle. The regard which the great Newton had for Mr Boyle, appears from a very curious letter, which the former wrote to him, at the latter end of this year, for the sake of laying before him his sentiments of that ethereal medium, which he afterwards considered in his Optics as the cause of gravitation. This letter is to be found in the life of our author by the reverend Dr Birch.

In the year 1680, Mr Boyle published, 25. The aerial noctiluca; or some new phenomena, and a process of a factitious self-shining substance, 8vo. This year the royal society, as a proof of the just sense of his great worth, and of the constant and particular services which through a course of many years he had done them, made choice of him for their president; but he being extremely, and, as he says, peculiarly tender in point of oaths, declined the honour done him, by a letter addressed to "his much respected friend Mr Robert Hooke, professor of mathematics at Gresham College." 26. Discourse of things above reason; inquiring, whether a philosopher should admit any such; 1681, 8vo. 27. New experiments and observations upon the icy noctiluca: to which is added a chemical paradox, grounded upon new experiments, making it probable that chemical principles are transmutable, so that out of one of them others may be produced: 1682, 8vo. 28. A continuation of new experiments, physico-mechanical, touching the spring and weight of the air, and their effects, 1682, 8vo. In 1683, he published nothing but a short letter to Dr Beale, in relation to the making of fresh water out of salt. In 1684, he pub-

lished two very considerable works, viz. 29. Memoirs for the natural history of human blood, especially the spirit of that liquor, 8vo; and, 30. Experiments and considerations about the porosity of bodies, 8vo.

In 1685, Mr Boyle obliged the world with, 31. Short memoirs for the natural experimental history of mineral waters, with directions as to the several methods of trying them; including abundance of new and useful remarks, as well as several curious experiments. 32. An essay on the great effects of even languid and unheeded motion; whereunto is annexed an experimental discourse of some hitherto little regarded causes of the salubrity and insalubrity of the air, and its effects. None of his treatises, it is said, were ever received with greater or more general applause than this. 33. Of the reconcileableness of specific medicines to the corpulcular philosophy; to which is annexed a discourse about the advantages of the use of simple medicines; 8vo. Besides these philosophical tracts, he gave the world, the same year, an excellent theological one, 34. Of the high veneration man's intellect owes to God, peculiarly for his wisdom and power, 8vo.

At the entrance of the succeeding year, came abroad his, 35. Free inquiry into the vulgarly received notion of nature; a piece which was then, and will always be, greatly admired by those who have a true zeal and relish for pure religion and philosophy. In 1687, he published, 36. The martyrdom of Theodora and Didymia; a work he had drawn up in his youth. 37. A disquisition about the final causes of natural things; wherein it is inquired, whether, and (if at all) with what caution, a naturalist should admit them; with an appendix about vitiated light; 1680, 8vo. In the month of May this year, our author, though very unwilling, was constrained to make his complaint to the public, of some inconveniences under which he had long laboured; and this he did by an advertisement, about "the loss of many of his writings addressed to J. W. to be communicated to those of his friends that are virtuosi; which may serve as a kind of preface to most of his mutilated and unfinished writings." He complains in this advertisement of the treatment he had met with from plagiarists both at home and abroad; and though it might have been difficult in any other man to have done so without incurring the imputation of self-conceit and vanity, yet Mr Boyle's manner is such as only to raise in us a higher esteem and admiration of him. This advertisement is inserted at length in his life by Birch.

He began now to find that his health and strength, notwithstanding all his care and caution, gradually declined, as he observes in a letter to Mr Le Clerc, dated May 30th, 1689; which put him upon using every possible method of husbanding his remaining time for the benefit of the learned. It was with this view that he no longer communicated particular discourses, or new discoveries, to the royal society; because this could not be done without withdrawing his thoughts from tasks which he thought of still greater importance. It was the more readily to attend to these, that he resigned his post of governor of the corporation for propagating the gospel in New-England; nay, he went so far as to signify to the world that he could no longer receive visits as usual, in an advertisement which begins in the following manner: "Mr Boyle finds himself obliged

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obliged to intimate to those of his friends and acquaintance, that are wont to do him the honour and favour of visiting him, 1. That he has by some unlucky accidents, namely, by his servant's breaking a bottle of oil of vitriol over a chest which contained his papers, had many of his writings corroded here and there, or otherwise so maimed, that, without he himself fill up the lacunæ out of his memory or invention, they will not be intelligible. 2. That his age and sickness have for a good while admonished him to put his scattered and partly defaced writings into some kind of order, that they may not remain quite useles. And, 3. That his skilful and friendly physician, Sir Edmund King, seconded by Mr Boyle's best friends, has pressingly advised him against speaking daily with so many persons as are wont to visit him, representing it as what cannot but waste his spirits, &c. He ordered likewise a board to be placed over his door, with an inscription signifying when he did, and when he did not, receive visits."

Among the other great works, which by this means he gained time to finish, there is great reason to believe, that one was a collection of elaborate processes in chemistry; concerning which he wrote a letter to a friend, which is still extant; wherein we read, that "he left it as a kind of hermetic legacy to the studious disciples of that art." Besides these papers committed to the care of one whom he esteemed his friend, he left very many behind him at his death, relating to chemistry; which, as appears by a letter directed to one of his executors, he desired might be inspected by three physicians whom he named, and that some of the most valuable might be preserved.

In the mean time, Mr Boyle published some other works before his death; as, 38. *Medicina Hydrostatica*; or, Hydrostatics applied to the materia medica, showing how, by the weight that divers bodies used in physic have in water, one may discover whether they be genuine or adulterated. To which is subjoined a previous hydrostatical way of estimating ores. 1690, 8vo. 39. The Christian virtuoso; showing, that, by being addicted to experimental philosophy, a man is rather assisted than indisposed to be a good Christian. To which are subjoined, 1. A discourse about the distinction that represents some things as above reason, but not contrary to reason. 2. The first chapters of a discourse intitled *Greatness of mind promoted by Christianity*. The last work which he published himself, was in the spring of 1691; and is intitled, 40. *Experimenta et Observationes Physicæ*: wherein are briefly treated of several subjects relating to natural philosophy in an experimental way. To which is added a small collection of strange reports. 8vo.

About the entrance of the summer, he began to feel such an alteration in his health as induced him to think of settling his affairs; and accordingly, on the 18th of July, he signed and sealed his last will, to which he afterwards added several codicils. In October, his distempers increased; and on the last day of December 1691, he departed this life, in the 65th year of his age. He was buried in St Martin's church in the Fields, Westminster, on the 7th of January following; and his funeral sermon was preached by Dr Gilbert Burnet, bishop of Salisbury. The bishop made choice upon this occasion of a text very apposite to the subject; namely,

"For God giveth to a man that is good in his fight, wisdom, knowledge, and joy*." After explaining the meaning of the words, he applied the doctrine to the honourable person deceased; of whom, he tells us, he was the better able to give a character from the many happy hours he had spent in conversation with him, in the course of 29 years. He gives a large account of Mr Boyle's sincere and unaffected piety; and more especially of his zeal for the Christian religion, without having any narrow notions concerning it, or mistaking, as so many do, a bigotted heat in favour of a particular sect, for that zeal which is an ornament of a true Christian. He mentions, as a proof of this, his noble foundation for lectures in defence of the gospel against infidels of all sorts; the effects of which have been so conspicuous in the many volumes of excellent discourses which have been published in consequence of that noble and pious foundation. He was at the charge of the translation and impression of the New Testament into the Malayan tongue, which he sent over all the East Indies. He gave a noble reward to him that translated Grotius's incomparable book "Of the truth of the Christian religion" into Arabic; and was at the charge of a whole impression, which he took care should be dispersed in all the countries where that language was understood. He was resolved to have carried on the impression of the New Testament in the Turkish language; but the company thought it became them to be the doers of it, and so suffered him only to give a large share towards it. He was at 700*l.* charge in the edition of the Irish bible, which he ordered to be distributed in Ireland; and he contributed liberally to the impression of the Welsh bible. He gave, during his life, 300*l.* to advance the design of propagating the Christian religion in America; and as soon as he heard that the East India company were entertaining propositions for the like design in the east, he sent 100*l.* for a beginning, as an example, but intended to carry it much farther when it should be set on foot to purpose.

In other respects his charities were so bountiful and extensive, that they amounted, as this prelate tells us, from his own knowledge, to upwards of 1000*l.* a-year. But as our limits will not allow us to follow the bishop in the copious and eloquent account he has given of this great man's abilities, we must therefore content ourselves with adding the short eulogium by the celebrated physician, philosopher, and chemist, Dr Herman Boerhaave; who, after having declared lord Bacon to be the father of experimental philosophy, asserts, that "Mr Boyle, the ornament of his age and country, succeeded to the genius and inquiries of the great chancellor Verulam. Which (says he) of all Mr Boyle's writings shall I recommend? All of them. To him we owe the secrets of fire, air, water, animals, vegetables, fossils: so that from his works may be deduced the whole system of natural knowledge." The reader perhaps may here be pleased to know, that Mr Boyle was born the same year in which lord Bacon died.

As to the person of this great man, we are told, that he was tall, but slender; and his countenance pale and emaciated. His constitution was so tender and delicate, that he had divers sorts of cloaks to put on when he went abroad, according to the temperature

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* Eccl. xi. 26.

Boyle. of the air; and in this he governed himself by his thermometer. He escaped indeed the small-pox; but for almost forty years he laboured under such feebleness of body, and such lowness of strength and spirits, that it was astonishing how he could read, meditate, make experiments, and write, as he did. He had likewise a weakness in his eyes; which made him very tender of them, and extremely apprehensive of such distempers as might affect them. He imagined likewise, that if sickness should confine him to his bed, it might raise the pains of the stone to a degree which might be above his strength to support; so that he feared his last minutes should be too hard for him. This was the ground of all the caution and apprehension with which he was observed to live; but as to life itself, he had that just indifference for it which became a philosopher and a Christian. However, his sight began to grow dim not above four hours before he died; and when death came upon him, he had not been above three hours in bed, before it made an end of him, with so little pain that the flame appeared to go out merely for want of oil to maintain it.

Mr Boyle was never married; but Mr Evelyn was assured, that he courted the beautiful and ingenious daughter of Cary earl of Monmouth, and that to this passion was owing his "Seraphic Love." In the memorandum of Mr Boyle's life set down by bishop Burnet, it is remarked that he abstained from marriage, at first out of policy, afterwards more philosophically; and we find by a letter of Dr John Wallis to him, dated at Oxford, July 17th, 1669, that he had an overture made him with respect to the lady Mary Hastings, sister to the earl of Huntingdon: But it does not appear from any of his papers, that he had ever entertained the least thoughts of that kind; nay, there is a letter of his, wrote when he was young, to the lady Barrymore his niece, who had informed him of a report that he was actually married, which almost shows that he never did. The letter is written with great politeness, and in the true spirit of gallantry; and is a clear proof, that though Mr Boyle did not choose to marry, yet it was no misanthropic cynical humour which restrained him from it. It is impossible to entertain the reader better than by presenting him with that part of it which concerns the point in question. "It is high time for me to hasten the payment of the thanks I owe your ladyship for the joy you are pleased to wish me, and of which that wish possibly gives me more than the occasion of it would. You have certainly reason, madam, to suspend your belief of a marriage, celebrated by no priest but Fame, and made unknown to the supposed bridegroom. I may possibly ere long give you a fit of the spleen upon this theme; but at present it were incongruous to blend such pure raillery, as I ever prate of matrimony and amours with, among things I am so serious in as those this scribble presents you. I shall therefore only tell you, that the little gentleman and I are still at the old defiance. You have carried away too many of the perfections of your sex to leave enough in this country for reducing so stubborn a heart as mine; whose conquest were a task of so much difficulty, and so little worth it, that the latter property is always likely to deter any that hath beauty and merit enough to overcome the former. But though this untamed heart be thus insensible to the thing itself called *Love*; it is yet very acce-

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We shall conclude this account of Mr Boyle with the mention of his posthumous works, which are as follow. 1. "The general History of the air designed and begun." 2. "General heads for the natural history of a country, great or small; drawn out for the use of travellers and navigators." 3. "A paper of the honourable Robert Boyle's, deposited with the secretaries of the Royal Society, October 14th, 1680, and opened since his death; being an account of his making the phosphorus, September 30th, 1680," Printed in the Philosophical Transactions. 4. "An account of a way of examining waters, as to freshness or saltness." 5. "A free discourse against customary swearing, and a dissuasive from cursing," 1695, 8vo. 6. "Medicinal experiments, or a collection of choice remedies, chiefly simple and easily prepared, useful in families, and fit for the service of the country people. The third and last volume, published from the author's original manuscript; whereunto is added several useful notes explanatory of the same." 1698, 12mo. Beautiful editions of all his works have been printed at London, in 5 volumes folio, and 6 volumes 4to.

BOYLE (Charles) earl of Orrery in Ireland, and baron of Mafston in the county of Somerset, was the second son of Roger the second earl of Orrery, and was born in August 1679. He was educated at Christ-church in Oxford, and soon distinguished himself by his learning and abilities. Like the first earl of Orrery, he was an author, a soldier, and a statesman. He translated the life of Lyfander from the Greek of Plutarch; and published a new edition of the epistles of Phalaris, which engaged him in a literary dispute, in which he defended the genuineness of these epistles against Dr Bentley. He was three times member for the town of Huntingdon; but his elder brother, Lionel earl of Orrery, dying on the 23d of August 1703, without issue, he succeeded to that title; and, entering into the Queen's service, had a regiment given him, when he behaved with such bravery, that in 1709 he was raised to the rank of major-general, and sworn one of her majesty's privy council. At the famous battle of the wood, he gave the strongest proofs of his intrepid courage, remaining at the head of his regiment in the warmest part of the action, till the victory was complete, which, as it was one of the most glorious, so it was the dearest bought, of any of that war. His lordship had the honour of being appointed the Queen's envoy to the states of Brabant and Flanders; and having honourably discharged that trust, was raised to the dignity of a British Peer, by the title of lord Boyle, baron of Mafston in Somersetshire. He enjoyed several other additional honours in the reign of King George I.; but having the misfortune to fall under the suspicion of the government, his lordship was committed to the tower: he was, however, at length, admitted to bail; and nothing being found that could be esteemed a sufficient ground for a prosecution, he was discharged. His lordship died August 28th 1731, in the 66th.

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66th year of his age. To his tutor, Mr Atterbury, he probably owed a good part of that fine relish he had for the writings of the ancients. He made these his constant study, and expressed a high contempt, says Budgell, for the greater part of our modern wits and authors. He was delighted with the company of two sorts of persons; either such as were really geniuses of the first rank, who had fine understandings, strong judgments, and true tastes; or such as had a few foibles, and an eye of ridicule in them, which served to make him laugh. He would rally these in so agreeable, and yet in so tender a manner, that, though it diverted himself and others, it was never offensive to the person rallied. The instrument which was invented by him, and bears his name, representing the solar system according to the sentiments of the new astronomers, is an undeniable proof of his mechanic genius. His lordship had also a turn for medicine; which led him not only to buy and read whatever was published on that subject, but also to employ his friends to send him accounts of herbs and drugs in foreign countries.

BOYLE (John), earl of Cork and Orrery, a nobleman distinguished by his learning and genius, was the only son of Charles earl of Orrery, and was born on the 2d of January, 1707. He was educated at Christ-church college in Oxford: but, as he himself declares, early disappointments, indifferent health, and many untoward accidents, rendered him fond of retirement, and of improving his talents for polite literature and poetry; of which last art he gave several excellent specimens. He also wrote a Translation of Pliny the Younger's letters, with various notes, for the service of his eldest son the lord Boyle, in two volumes, 4to. This was first published in 1751. The year following, he published the Life of Dean Swift, in several letters, addressed to his second son Hamilton Boyle; and afterwards printed Memoirs of Robert Cary earl of Monmouth, a manuscript presented to him by a relation, with explanatory notes. He died in 1762.

BOYLE'S Lectures, a course of eight sermons or lectures preached annually, set on foot by the honourable Robert Boyle, Esq; by a codicil annexed to his will in 1691; whose design, as expressed by the institutor, is, to prove the truth of the Christian religion against infidels, without descending to any controversies among Christians; and to answer new difficulties, scruples, &c. For the support of this lecture he assigned the rent of his house in Crooked-lane to some learned divine within the bills of mortality, to be elected for a term not exceeding three years, by the late Archbishop Tennison and others. But the fund proving precarious, the salary was ill paid: to remedy which inconveniences, the said archbishop procured a yearly stipend of L. 50 for ever, to be paid quarterly, charged on a farm in the parish of Brill in the county of Bucks. To this appointment we are indebted for many elaborate defences both of natural and revealed religion.

BOYNE, a river in Ireland, which rises in Queen's county in the province of Leinster, and runs north-east by Tim and Cavan, falling at last into the Irish channel a little below Drogheda. It is memorable for a battle fought on its banks between James II. and King William III. in which the former was defeated.

BOYSE, BOYS, or BOIS (John), one of the trans-

lators of the Bible in the reign of James I. was son of William Bois, rector of West Stowe, near St Edmundsbury, Suffolk, and born at Nettlestead in Suffolk on the 3d of January 1560. He was taught the first rudiments of learning by his father; and his capacity was such, that at the age of five years he read the Bible in Hebrew. He went afterwards to Hadley school; and at 14 was admitted of St John's college, Cambridge, where he distinguished himself by his skill in Greek. Happening to have the small-pox when he was elected fellow, he, to preserve his seniority, caused himself to be carried in blankets to be admitted. He applied himself for some time to the study of medicine; but, fancying himself affected with every disease he read of, he quitted that science. He was ten years chief Greek lecturer in his college, and read every day. He voluntarily read a Greek lecture for some years at four in the morning, in his own chamber, which was frequented by many of the fellows. On the death of his father, he succeeded him in the rectory of West Stowe. At the age of 35, he married the daughter of Mr Holt, rector of Boxworth in Cambridgeshire; whom he succeeded in that living, October 13. 1596. On his quitting the university, the college gave him L. 100. His young wife, who was bequeathed to him with the living, which was an adwoson, proving a bad economist, and he himself being wholly addicted to his studies, he soon became so much involved in debt, that he was obliged to sell his choice collection of books, consisting of almost every Greek author then extant. When a new translation of the Bible was by King James I. directed to be made, Mr Bois was elected one of the Cambridge translators. He performed not only his own, but also the part assigned to another, with great reputation; though with no profit, for he had no allowance but his commons. He was also one of the six who met at Stationers Hall to revise the whole; which task they went through in nine months, having each from the company of stationers, during that time, 30s. a-week. He afterwards assisted Sir Henry Saville in publishing the works of St Chryostom. In 1615, Dr Laneolot Andrews, bishop of Ely, bestowed on him, unasked, a prebend in his church. He died on the 14th of January 1643, in the 84th year of his age. He left a great many manuscripts behind him, particularly a Commentary on almost all the books of the New Testament.—When he was a young student at Cambridge, he received from the learned Dr Whitaker three rules for avoiding those distempers which usually attend a sedentary life, to which he adhered with equal constancy and success. The first was, To study always standing; the second, Never to study in a window; and the third, Never to go to bed with his feet cold.

BOYSE (Joseph), a late eminent dissenting minister in Dublin, much respected not only for learning and abilities, but his extensive humanity and undissembled piety. During his ministerial charge at Dublin, he published many sermons which compose several folio volumes, a few poems, and other tracts; but what chiefly distinguished him as a writer, was the controversy he carried on with Dr King, archbishop of Dublin, and author of the *Origin of Evil*, concerning the office of a scriptural bishop. This controverted point was managed on both sides with great force of argument and calmness

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calmness of temper. The bishop asserted, that the episcopal right of jurisdiction had its foundation in the New Testament: Mr Boyse, consistent with his principles, denied that any ecclesiastical superiority appeared there, with the greatest candour and good manners. He was father to

Boyse (Samuel), the poet, a man remarkable for the fineness of his genius, the lowness of his manners, and the wretchedness of his life. He was born in 1708, and received the rudiments of his education in a private school in Dublin. When he was but 18 years old, his father, who probably intended him for the ministry, sent him to the university of Glasgow, that he might finish his education there. He had not been a year at the university, when he fell in love with the daughter of a tradesman in that city, and was imprudent enough to interrupt his education by marrying her before he had entered into his 20th year. The natural extravagance of his temper soon exposed him to want; and as he had now the additional charge of a wife, his reduced circumstances obliged him to quit the university, and go over with his wife (who also carried a sister with her) to Dublin, where they relied on the old gentleman for support. Young Boyse was of all men the furthest removed from a gentleman; he had no graces of person, and fewer still of conversation. Never were three people of more libertine characters than young Boyse, his wife, and sister-in-law; yet the two ladies wore such a mask of decency before the old gentleman, that his fondness was never abated. The estate his father possessed in Yorkshire was sold to discharge his debts; and when the old man lay in his last sickness, he was entirely supported by presents from his congregation, and buried at their expence. We have no further account of Mr Boyse, till we find him soon after his father's death at Edinburgh. At this place his poetical genius raised him many friends, and some patrons of very great eminence. He published a volume of poems in 1731, to which are subjoined *The Tablature of Cebes*, and *A letter upon liberty*, inserted in the *Dublin journal* 1726; and by these he obtained a very great reputation. They are addressed to the countess of Eglinton. This amiable lady was the patroness of all men of wit, and greatly distinguished Mr Boyse while he resided in that country. Upon the death of the viscountess Stormont, Mr Boyse wrote an elegy, which was very much applauded by her ladyship's relations. This elegy he intitled *The tears of the muses*, as the deceased lady was a woman of the most refined taste in the sciences, and a great admirer of poetry. The lord Stormont was so much pleased with this mark of esteem paid to the memory of his lady, that he ordered a very handsome present to be given to Mr Boyse by his attorney at Edinburgh. The notice which lady Eglinton and the lord Stormont took of our poet, recommended him likewise to the patronage of the duchess of Gordon; who was so desirous to raise him above necessity, that she employed her interest in procuring the promise of a place for him. She gave him a letter, which he was next day to deliver to one of the commissioners of the customs at Edinburgh. It happened that he was then some miles distant from the city; and the morning on which he was to have rode to town with her grace's letter of recommendation proved to be rainy. This slender circumstance was enough to discourage Boyse, who never

looked beyond the present moment: he declined going to town on account of the rainy weather; and while he let slip the opportunity, the place was bestowed upon another, which the commissioner declared he kept for some time vacant in expectation of seeing a person recommended by the duchess of Gordon. Boyse at last having defeated all the kind intentions of his patrons towards him, fell into contempt and poverty, which obliged him to quit Edinburgh. He communicated his design of going to London to the duchess of Gordon; who, having still a very high opinion of his poetical abilities, gave him a letter of recommendation to Mr Pope, and obtained another for him to Sir Peter King the lord chancellor of England. Lord Stormont recommended him to the solicitor-general his brother, and many other persons of the first fashion. Upon receiving these letters, he, with great caution, quitted Edinburgh, regretted by none but his creditors. Upon his arrival in London, he went to Twickenham, in order to deliver the duchess of Gordon's letter to Mr Pope; but that gentleman not being at home, Mr Boyse never gave himself the trouble to repeat his visit. He wrote poems; but those, though excellent in their kind, were lost to the world, by being introduced with no advantage. He had so strong a propensity to groveling, that his acquaintance were generally of such a cast as could be of no service to him; and those in higher life he addressed by letters, not having sufficient confidence or politeness to converse familiarly with them. Thus unfit to support himself in the world, he was exposed to variety of distresses, from which he could invent no means of extricating himself but by writing mendicant letters. It will appear amazing, that this man, of so abject a spirit, was voluptuous and luxurious: he had no taste for any thing elegant, and yet was to the last degree expensive. Can it be believed, that often when he had received but a guinea in consequence of a supplicating letter, he would go into a tavern, order a supper to be prepared, drink of the richest wines, and spend all the money that had just been given him in charity, without having any one to participate the regale with him, and while his wife and child were starving at home?

It was about the year 1740, that Mr Boyse, reduced to the last extremity of human wretchedness, had not a shirt, a coat, or any kind of apparel, to put on; the sheets in which he lay were carried to the pawn-broker's, and he was obliged to be confined to his bed with no other covering than a blanket. He had little support but what he got by writing letters to his friends in the most abject style; but was perhaps ashamed to let this instance of his distress be known, which probably was the occasion of his remaining six weeks in that situation. During this time he had some employment in writing verses for the Magazines; and whoever had seen him in his study, must have thought the object singular enough: he sat up in bed with the blanket wrapt about him, through which he had cut a hole large enough to admit his arm, and, placing the paper upon his knee, scribbled in the best manner he could the verses he was obliged to make: whatever he got by those, or any other of his begging letters, was but just sufficient for the preservation of life. And perhaps he would have remained much longer in this distressful state, had not a compassionate gentleman, upon hearing this circumstance related, ordered his

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clothes to be taken out of pawn, and enabled him to appear again abroad.

About the year 1745, Mr Boyle's wife died. He was then at Reading, and pretended much concern when he heard of her death. His business at Reading was to compile a Review of the most material transactions at home and abroad during the last war: in which he has included a short account of the late rebellion. Upon his return from Reading, his behaviour was more decent than it had ever been before; and there were some hopes that a reformation, though late, would be wrought upon him. He was employed by a bookseller to translate *Fenelon on the existence of God*; during which time he married a second wife, a woman in low circumstances, but well enough adapted to his taste. He began now to live with more regard to his character, and supported a better appearance than usual; but while his circumstances were mending, and his irregular appetites losing ground, his health visibly declined. He had the satisfaction, while in this lingering illness, to observe a poem of his, intitled *The Deity*, recommended by two eminent writers, the ingenious Mr Fielding, and the reverend Mr James Hervey author of *The Meditations*.

Mr Boyle's mind was often religiously disposed; he frequently talked upon that subject, and probably suffered a great deal from the remorse of his conscience. The early impressions of his good education were never entirely obliterated; and his whole life was a continued struggle between his will and reason, as he was always violating his duty to the one, while he fell under the subjection of the other. It was in consequence of this war in his mind, that he wrote a beautiful poem called *The Recantation*. In May 1749, he died in obscure lodgings near Shoe-lane; but in sentiments, there is the greatest reason to believe, very different from those in which he had spent the greatest part of his life. An old acquaintance of his endeavoured to collect money to defray the expences of his funeral, so that the scandal of being buried by the parish might be avoided: but in vain; the remains of this son of the muses were, with very little ceremony, hurried away by the parish-officers.

Never was a life spent with less grace than that of Mr Boyle, and never were such distinguished abilities given to less purpose. His genius was not confined to poetry only: he had a taste for painting, music, and heraldry; with the latter of which he was very well acquainted. His poetical pieces, if collected, would make six moderate volumes. Many of them are scattered in *The Gentleman's Magazine*, marked with the letter *Z*, and *Alceus*. Two volumes were published in London. An ode of his in the manner of Spenser, intitled *The Olive*, was addressed to Sir Robert Walpole, which procured him a present of ten guineas. He translated a poem from the High Dutch of Van Haren, in praise of peace, upon the conclusion of that made at Aix-la-Chapelle; but the poem which procured him the greatest reputation was that upon the attributes of the Deity. He was employed by Mr Ogle to translate some of Chaucer's tales into modern English, which he performed with great spirit, and received at the rate of three pence a line for his trouble. Mr Ogle published a complete edition of that old poet's *Canterbury Tales* *modernized*; and Mr Boyle's name is put to such tales

as were done by him. In 1743, Mr Boyle published, without his name, an ode on the battle of Dettingen, intitled *Albion's Triumph*.

Bozolo
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Brabejun

BOZOLO, a town of Italy, in the duchy of Mantua, capital of a territory of the same name, and subject to the house of Austria. E. L. 10. 25. N. L. 45. 9.

B QUADRO, QUADRATO, or *Durale*, in music, called by the French *b quarre*, from its figure \natural . This is what we call B *natural* or *sharp*, in distinction to B *mol* or *flat*. See FLAT and SHARP.

If the flat \flat be placed before a note in the thorough bass, it intimates, that its third is to be minor; and if placed with any cypher over a note in the bass, as $\flat 6$, or $\flat 5$, &c. it denotes, that the fifth or sixth thereto are to be flat. But if the quadro \natural be placed over any note, or with a cypher, in the thorough bass, it has the contrary effect; for thereby the note or interval thereto is raised to its natural order.

BRABANCONES, in middle-age writers, a kind of Netherland soldiery, infamous for rapine, being little better than commissioned banditti, who hired themselves to fight for any that could pay them best. The word is variously written by the historians of those days; all given them from the country of Brabant, which was the chief nursery of those troops. They are also frequently confounded with the *Routiers*, *Routuriers*, *Ruptarii*, *Ruterarii*, *Corteraux*, &c.

BRABANT, a large province of the Netherlands, with the title of a duchy. It is bounded on the north by the province of Holland and the duchy of Guelderland; on the east, by the same duchy and the bishopric of Liege; on the south, by the province of Namur and Hainhalt; and on the west, by Zealand. It is divided into Dutch Brabant and Austrian Brabant; watered by several rivers, of which the Scheld, the Rupper, and the Dommel, are the chief. The soil is very fertile; and it contains 26 fortified towns, of which Brussels is the capital.

BRABEJUM, the AFRICAN ALMOND: A genus of the monoecia order, belonging to the polygamia class of plants. In the male the corolla is four-parted; there are four stamina inverted in the throat; the style is bifid and abortive: The female has a four-parted corolla, revolved upwards, with four stamina, one pistil with two stigmas; the fruit is a roundish drupa with a globular seed. Of this genus there is but one species, viz. the stellatifolium, which is a native of the Cape of Good Hope. In Europe it seldom grows above eight or nine feet high, but in its native soil is a tree of a middling growth. It rises with an upright stem, which is soft, and full of pith within, and covered with a brown bark. The leaves come out all round the branches at each joint: they are indented at their edges, standing on very short foot-stalks. The flowers are produced towards the end of their shoots, which are of a pale colour inclining to white. This may be propagated, though with difficulty, by layers made in April; but they are often two years before they produce roots strong enough to be taken from the plants. When the branches are laid down, it will be proper to slit them at the point (as is practised in laying carnations), which will promote their taking root. In winter, the plants should have a good greenhouse; but in summer they should be placed abroad in a sheltered situation.

BRABEUTES, or **BRABEUTA**, in antiquity, an officer among the Greeks, who presided at the public games, and decided controversies that happened among the antagonists in the gymnistical exercises. The number of brabeutæ was not fixed; sometimes there was only one, but more commonly they amounted to nine or ten.

BRACCIANO, a town of St Peter's patrimony, about 12 miles north of Rome, situated on the west side of a lake to which it gives name. E. Long. 13°. N. Lat. 42°.

BRACCIOLINI (Francis), an Italian poet, a native of Posioia, and the friend of Pope Urban VIII. died about the year 1644, aged 80. He wrote, 1. An epic poem, intitled, The cross reconquered, under the emperor Heraclius. 2. An heroic poem, intitled, The mockery of the Pagan gods. 3. The election of Pope Urban VIII. in 23 books.

BRACE is commonly taken for a couple or pair, and applied by huntsmen to several beasts of game, as a brace of bucks, foxes, hares, &c.

BRACE, or *Brasse*, is also a foreign measure, answering to our fathom. See **FATHOM**.

BRACE, in architecture, a piece of timber framed in with bevil joints, the use of which is to keep the building from swerving either way. When the brace is framed into the kingstiles or principal rafters, it is by some called a *strut*.

BRACE, in writing or printing, a crooked line inclosing a passage, as in a triplet.

BRACES, in the sea-language, are ropes belonging to all the yards of a ship, except the mizen, two to each yard, reeved through blocks that are fastened to pennants, seized to the yard-arms. Their use is either to square or traverse the yards. Hence to brace the yard, is to bring it to either side. All braces come astward on; as, the main brace comes to the poop, the main-top-sail brace comes to the mizen-top and thence to the main shrouds, the fore and fore-top-sail braces come down by the main and main-top-sail stays, and so of the rest. But the mizen-bowline serves to brace to the yard, and the cross-jack braces are brought forwards to the main shrouds, when the ship sails close by a wind.

BRACES of a Coach, thick straps of leather on which it hangs.

BRACELET, an ornament worn on the wrist, much used among the ancients: it was made of different materials, and in different fashions, according to the age and quality of the wearer. The word is French, *bracelet*; which Menage derives further from *braccellum*, a diminutive of *bracile*, a word occurring in writers of the Justinian age; all formed from the Latin *brachium*, *arm*. It amounts to the same with what was called by the ancients, *armilla*, *brachiale*, *ocubus*; in the middle age, *hoga*, *bauga*, *armispatta*.

Bracelets are much worn by the savages of Africa, who are so excessively fond of them, as to give the richest commodities, and even their fathers, wives, and children, in exchange for those made of no richer materials than shells, glass-beads, and the like.

They form also, in modern civilized countries, a very common part of the ornaments of the ladies.

BRACHIEUS, the name of a muscle. See **ANATOMY**, *Table of the Muscles*.

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Coraco-BRACHIALIS. See **ANATOMY**, *ibid*.

BRACHIUM, or **ARM**. See **ANATOMY**, n° 48, &c.

BRACHMINS, or **BRACHMANS**, a branch of the ancient Gymnosophists, or philosophers of India, remarkable for the severity of their lives and manners. See the article **GYMNOSOPHISTS**.

Some say they derive their name from the patriarch Abraham, whom they call in their language *Brachm*, or *Brama*. Others deduce it from the name of their god *Brachma*; which some again take to be the same with Abraham: whence Pottel calls them *Abrachmanes*. F. Thomassin derives the word from the Hebrew *barach*, to *fly* or *escape*; because the Brachmans retire into the country and live in deserts. The same author gives us another derivation, *viz.* from the Hebrew *barach*, (*benedicere*, *orare*), to bless or pray; in regard this is their principal occupation.—The Greeks ascribe to them the doctrine of the immortality of the soul, and certain notions concerning the nature of the Supreme Being and future rewards and punishments. To this species of knowledge the Brachmans added an infinite number of religious observances, which were adopted by Pythagoras in his school; such as fasting, prayer, silence, and contemplation. They were looked upon as the friends of the gods, because they affected to pay them so much regard; and as the protectors of mankind, because they paid them no regard at all. No bounds were therefore set to the respect and gratitude that were shown them: princes themselves did not scruple to consult these recluses upon any critical conjuncture, from a supposition, no doubt, that they were inspired; since it was impossible to imagine that they had the advantages of experience. We can scarcely, however, deny, that there might be among them some men of real virtue, whose minds resisted the pure and ingenious delights of study and science; and who, by nobly raising their thoughts to the contemplation of the First Being, must have had more powerful incitements to render themselves worthy of his care, and none to justify them in deceiving and tyrannizing over their fellow-creatures.

There appear still some remains of the ancient brachmans in the east, under the denomination of Bramins. See **BRAMINS**.

BRACHYGRAPHY, the art of short-hand-writing. See **SHORT-HAND**.

BRACHYLOGY, (from *βραχυς* and *λογος* “expression”), in rhetoric, the expressing any thing in the most concise manner. This, so far as consistent with perspicuity, is a virtue and beauty of style; but if obscurity be the consequence, which is often the case, it becomes a blemish and inexcusable defect—Quintilian gives an instance of brachylogy from Sallust: *Mithridates corpore ingenti perinde armatus*; “Mithridates, as it were, armed with the hugeness of his stature.”

BRACHYPERA, a term used by Willoughby, to denote those hawks which have their wings so short as not to reach to the end of the tail. Of this kind are the goshawk, sparrow hawk, &c.

BRACHYPYRENTA, in the history of fossils, a genus of septaria, with a short roundish nucleus. See **SEPTARIA**.

BRACHYTELOSTYLA, in natural history, the name by which Dr Hill calls those crystals which are composed of a short hexangular column terminated at each end by an hexangular pyramid. See **CRYSTAL**.

Brachialis

Brachy-
losty a.

Bracket
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Bracton.

BRACKET, among carpenters, &c. a kind of wooden stay, serving to support shelves and the like.

BRACKETS, in a ship, the small knees, serving to support the galleries, and commonly carved. Also the timbers that support the gratings in the head are called *brackets*.

BRACKETS, in gunnery, are the checks of the carriage of a mortar: they are made of strong planks of wood, of almost a semicircular figure, and bound round with thick iron plates; they are fixed to the beds by four bolts, which are called *bed-bolts*; they rise up on each side of the mortar, and serve to keep her at any elevation, by means of some strong iron bolts, called *bracket-bolts*, which go through these checks or brackets.

BRACKLAU, a strong town in Poland, capital of a palatinate of the same name. The houses are built of wood. It was taken by the Turks in 1672, but retaken three years afterwards. It is seated on the river Bog, in E. Long. 29. 20. N. Lat. 48. 5.

BRACKLAW, a palatinate of that name, which is the eastern part of Podolia; it is also called *Lower Podolia*, and is of greater extent than Upper Podolia, but is more desolate, on account of the neighbourhood of the Tartars.

BRACKLEY, a borough-town in Northamptonshire, in England, seated on the edge of the county, next Buckinghamshire, on a branch of the river Ouse. It is an ancient and large corporation-town, containing two parish-churches; is governed by a mayor and aldermen; and sends two members to parliament. It had formerly a college, which is turned into a free school. W. Long. 1. 15. N. Lat. 52. 0.

BRACTEA, in natural history, denotes a spangle, or thin flake of any substance.

BRACTEA, in botany, a thin leaf or plate of any *folium florale*, ranged by Linnaeus among the *folia* of plants. These floral leaves differ in shape and colour from the other *folia* of the plant; are generally situated on the pedunculus, and often so near the corolla as to be easily mistaken for the *calyx*; than which, however, the *bractea* are generally more permanent. Examples of the floral leaves are seen in the *tilia*, *fumaria bulbosa*, *lavendula*, and *horminum*.

BRACKTEARIA, in natural history, a genus of tales, composed of small plates in form of spangles, each plate either being very thin, or fissile into very thin ones.

Of this genus there are a great many species, called, from their different colours, *mica aurea*, or gold-glimmer; and *mica argentea*, silver-glimmer, or cats-silver, &c.

BRACTON (Henry), lord chief justice of England in the reign of Henry III. was probably a native of Devonshire. He was educated at Oxford, where he took the degree of doctor of laws, and was made one of the itinerant judges about the year 1244. Ten years after, he became chief justice, and had the earl of Derby's house in London assigned him for his town residence, during the minority of that nobleman. He is said to have filled this important office with singular reputation during 20 years. When he died is not known; probably it was in the reign of Edward I. He wrote *De legibus et consuetudinibus Angliae*, which

is one of the most ancient, and also most methodical books on our laws. His method is copied from Justinian. This work was printed at London in 1569, folio; and in 1640, 4to. The first is very incorrect.

BRAD, a town of Sclavonia, seated on the north side of the river Save, in E. Long. 18. 40. N. Lat. 45. 20.

BRADFELD, a town of Essex in England, in E. Long. 0. 30. N. Lat. 51. 14.

BRADFORD, a town of Wiltshire in England, seated in W. Long. 2. 40. N. Lat. 51. 20.

BRADFORD (John), a divine, and martyr to the reformation, was born in the former part of the reign of Henry VIII. at Manchester in Lancashire. Being a remarkable penman and accountant, he became secretary to Sir John Harrington, who was several times employed by king Henry, and his successor Edward VI. as paymaster to the troops abroad. Bradford at this time was a gay man, and to support his extravagance made free with the king's money; but being at last unable to support the reflection of his guilt, he determined to make restitution, and actually repaid the money. Quitting his employment of secretary, about the year 1547, he took chambers in the inner temple, and for some time studied the law; but finding in himself an inclination to preach the gospel, in the following year he removed to Catharine-hall in Cambridge, where he applied with such uncommon assiduity to the study of divinity, that in a much shorter time than usual he was admitted to the degree of master of arts, and soon after made fellow of Pembroke-hall. Bishop Ridley, who, in 1550, was translated to the see of London, charmed with Bradford's application and zeal, now sent for him to the metropolis, ordained and appointed him his chaplain. In 1553, he was also made chaplain to Edward VI. during which time he became one of the most popular preachers in the kingdom. Such a reformer was too dangerous to be suffered in the succeeding reign. Mary was hardly in possession of the crown, before Bradford's persecutions began. He was first confined in the tower for sedition, where he continued a year and an half; during which time he wrote several epistles that were dispersed in various parts of the kingdom. He was afterwards removed to other prisons, and at last brought to his trial before that infernal court of inquisition in which Gardiner sat as chief inquisitor, where he defended his principles to the last, in contempt of their utmost power. They condemned him to the flames; and he was accordingly burnt alive in Smithfield, on July 1. 1555. His works are, 1. Seventy-two letters, written to various people, whilst the author was in prison; printed in Bishop Coverdale's collection. 2. Ten letters, printed in Fox's acts and monuments. 3. Complaint of verity, 1559, 8vo. 4. Three examinations before the commissioners, and his private talk with the priests, with the original of his life, 1561, octavo. 5. Two notable sermons, 1574, octavo, 1631. 6. Godly meditations and prayers 1614, 24to. 7. Treatise of repentance, 1622. With several translations and other pieces.

BRADFORTH, a town in the west of Yorkshire, seated on a branch of the river Aire, in W. Long. 1. 35. N. Lat. 53. 40.

BRADLEY (Dr James), a famous English astronomer,

Brad
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Bradley

Bradley. nomer, was the third son of William and Jane Bradley, and was born at Sherborne in Dorsetshire in the year 1692.

He was fitted for the university at North Leach by Mr Egles, and Mr Brice, who kept a boarding school there; and from North Leach he was sent to Oxford. His friends intended him for the church, and his studies were regulated with that view; and as soon as he was of sufficient age to receive holy orders, the bishop of Hereford, who had conceived a great esteem for him, gave him the living of Bridflow, and soon after he was inducted to that of Welfrie in Pembrokeshire. But notwithstanding these advantages, from which he might promise himself still farther advancement in the church, he at length resigned his livings, that he might be wholly at liberty to pursue his favourite study the mathematics, and particularly astronomy. He was nephew to Mr Pound, a gentleman who is well known in the learned world by many excellent observations, and who would have enriched it with more, if the journals of his voyages had not been burnt at Pulo Condor, when the place was set on fire, and the English who were settled there cruelly massacred, Mr Pound himself very narrowly escaping with his life. With this gentleman, Mr Bradley passed all the time that he could spare from the duties of his function; and perhaps he sometimes trespassed upon them; he was then sufficiently acquainted with the mathematics to improve by Mr Pound's conversation; yet it does not appear that, in this study, he had any preceptor but his genius, or any assistant but his labour.

It may be easily imagined, that the example and conversation of Mr Pound did not render Bradley more fond of his profession than he was before; he continued, however, as yet to fulfil the duties of it, though at this time he had made such observations as laid the foundation of those discoveries which afterwards distinguished him as one of the greatest astronomers of his age. Though these observations were made as it were by stealth, they gained him at first the notice, and then the friendship, of the lord chancellor Macclesfield, Mr Newton afterwards Sir Isaac, Mr Halley, and many other members of the royal society, into which he was soon elected a member. About the same time, the chair of Savilian professor of astronomy became vacant by the death of the celebrated Dr Kiel; and Mr Bradley was elected to succeed him on the 31st of October 1721, being then just 29 years old; and his colleague was Mr Halley, who was professor of geometry on the same foundation. Bradley, upon his being elected into this professorship, gave up both his livings, and with great joy quitted a situation in which his duty was directly opposite to his inclination. From this time, he applied himself wholly to the study of his favourite science; and in the year 1727 he published his theory of the aberration of the fixed stars, which is allowed to be one of the most useful and ingenious discoveries of modern astronomy. Three years after this discovery, by which Mr Bradley acquired very great reputation, he was appointed lecturer in astronomy and physics, at the museum at Oxford.

He pursued his studies with equal application and delight; and in the course of his observations, which were innumerable, he discovered that the inclination of the earth's axis upon the plane of the ecliptic was not

always the same, but that it varied backwards and forwards some seconds, and that the period of these variations was nine years. This period seemed altogether unaccountable, as it could not be supposed to have any thing in common with the revolution of the earth, which is performed in one year. Mr Bradley, however, discovered the cause of this phenomenon in the Newtonian system of attraction. He published this discovery in 1737, so that in the space of about ten years he communicated to the world two of the finest discoveries in modern astronomy, which will for ever make a memorable epocha in the history of that science.

Mr Bradley always preserved the esteem and friendship of Mr Halley; who, being worn out by age and infirmities, thought he could do nothing farther for the service of astronomy, than procure for Mr Bradley the place of regius professor of astronomy at Greenwich, which he had possessed himself many years with the greatest reputation. With this view, he wrote many letters, which have been since found among Mr Bradley's papers, desiring his permission to apply for a grant of the reversion of it to him, and even offering to resign in his favour, if it should be thought necessary: but before Mr Halley could bring this kind project to bear, he died. Mr Bradley, however, obtained the place afterwards, by the favour and interest of my lord Macclesfield, who was afterwards president of the royal society. As soon as the appointment of Mr Bradley to this place was known, the university of Oxford sent him a diploma creating him doctor of divinity. The appointment of astronomer at Greenwich placed Mr Bradley in his proper element, and he pursued his observations with unwearied diligence. However numerous the collection of astronomical instruments at the observatory at Greenwich, it was impossible that such an observer as Dr Bradley should not desire to increase them, as well to answer those particular views, as in general to make observations with greater exactness. In the year 1748, therefore, he took the opportunity of the annual visit made by the royal society to the observatory, in order to examine the instruments and receive the professor's observations for the year, to represent so strongly the necessity of repairing the old instruments, and purchasing new, that the society thought proper to represent it to his majesty, and his majesty gave them £.1000 for that purpose. This sum was laid out under the direction of Dr Bradley, who, with the assistance of the late celebrated Mr Graham and Mr Bird, furnished the observatory with as complete a collection of astronomical instruments, as the most skilful and diligent observer could desire. Dr Bradley, furnished with such assistance, pursued his observations with new assiduity, an incredible number of which were found after his death, and put into the hands of the royal society.

It has been already observed, that when Dr Bradley was elected to the professor's chair at Oxford, he gave up his two livings, which were at such a distance, that he could not possibly fulfil the duties of them himself; but it happened that after he was settled at Greenwich, the living of that parish became vacant, which is very considerable, and which was offered to him, as he was upon the spot to perform the duty, and had the claim of uncommon merit to the reward. This

Bradley. living, however, Dr Bradley, very greatly to his honour, refused, fearing the duties of the astronomer would too much interfere with those of the divine. His majesty, however, hearing of the refusal, was so pleased with it, that he granted him a pension of 250 l. a year in consideration of his great abilities and knowledge in astronomy and other branches of the mathematics, which had procured so much advantage to the commerce and navigation of Great Britain, as is particularly mentioned in the grant which is dated the 15th of February 1752. Dr Bradley, about the same time, was admitted into the council of the royal society. In the year 1748, he was admitted a member of the royal academy of sciences and belles lettres of Berlin, upon the death of M. Crevier, first physician to his catholic majesty; in the year 1752, a member of the imperial academy at Petersburg; and in 1757, of that instituted at Bologna.

Dr Bradley was still indefatigable in his observations, and whatever honour he received became an incitement to obtain new distinction; his corporeal abilities, however, at length declined, though his intellectual suffered no abatement. In the year 1760, he became extremely weak and infirm; and towards the end of June 1762, he was attacked with a total suppression of urine, caused by an inflammation of the reins, which on the 12th of July following put an end to his life, in the 70th year of his age. He was buried at Mitchin-Hampton, in Gloucestershire, in the same grave with his mother and his wife. In the year 1744, he married Susannah Peach, the daughter of a gentleman of that name in Gloucestershire, by whom he had only one daughter.

As to his character, he was remarkable for a placid and gentle modesty, very uncommon in persons of an active temper and robust constitution. It was still more remarkable, that, with this untroubled equanimity of temper, he was compassionate and liberal in the highest degree. Although he was a good speaker, and possessed the rare but happy art of expressing his ideas with the utmost precision and perspicuity, yet no man was a greater lover of silence, for he never spoke but when he thought it absolutely necessary. He did indeed think it necessary to speak when he had a fair opportunity to communicate any useful knowledge in his own way; and he encouraged those that attended his lectures to ask him questions, by the exactness with which he answered, and the care he took to adapt himself to every capacity. He was not more inclined to write than to speak, for he has published very little: he had a natural diffidence, which made him always afraid that his works should injure his character; and therefore suppressed many, which probably were well worthy of the public attention. He was even known, as it were, in spite of himself; and, in spite of himself, he was known much, and consequently much esteemed. He was acquainted with many of the first persons in this kingdom, persons eminent as well for their rank as their abilities: he was honoured by all men of learning in general; and there was not an astronomer of any eminence in the world with whom he had not a literary correspondence. Upon the whole, it may be said of Dr Bradley, that no man cultivated great talents with more success, or had a better claim to be ranked among the greatest astronomers of his age.

BRADNINCH, a town of Devonshire, once a considerable place, but some time ago totally destroyed by fire. W. Long. 3. 35. N. Lat. 50. 45.

Bradninch
||
Brady.

BRADS, among artificers, a kind of nails used in building, which have no spreading heads as other nails have. They are distinguished by iron-mongers by five names; as *joiner's brads*, *flooring-brads*, *batten-brads*, *bill-brads*, or *quarter-heads*, &c. Joiner's-brads are for hard wainscot; batten-brads are for soft wainscot; bill brads are used when a floor is laid in haste, or for shallow joists subject to warp. See NAIL.

BRADSHAW (Henry), a Benedictine monk, was born at Chester, about the middle of the 15th century. Discovering an early propensity to religion and literature, he was received while a boy into the monastery of St Werberg in that city; and having there imbibed the rudiments of his education, he was afterwards sent to Gloucester college, in the suburbs of Oxford, where for a time he studied theology with the novices of his order, and then returned to his convent at Chester; here, in the latter part of his life, he applied himself chiefly to the study of history, and wrote several books. He died in the year 1513, the fifth of Henry VIII. His poetry is not inferior to that of any of his contemporaries. His works are, 1. *De antiquitate et magnificentia urbis Cestriae*. 2. *Chronicon*. 3. The life of the glorious virgin of St Werberg. Printed Lond. 1521, 4to, in verse. The life of St Werberg makes only part of this work; for it contains also a description of the kingdom of Mercia, life of St Etheldred, the life of St Sexburg, the foundation and history of Chester, and the chronicles of some kings. Possibly this work may include the two first. Bishop Tanner says, that he wrote a chronicle in English verse, extracted from Bede, Malmesbury, Geraldus, and others. Probably this is the chronicle above mentioned.

BRADWARDIN (Thomas), archbishop of Canterbury, was born at Hartfield in Suffex, about the close of the 13th century. He was educated at Merton College, Oxford, where he took the degree of doctor of divinity; and acquired the reputation of a profound scholar, a skilful mathematician, and consummate divine. Authors are not agreed as to his first preferments. Pits says he was professor of divinity at Oxford. They agree, however, in asserting, that from being chancellor of the diocese of London, he became a courtier and confessor to Edward III. whom he constantly attended during his war with France, assisting that victorious prince with his advice, animating the troops, and fervently praying for their success. After his return from the war, he was made prebendary of Lincoln, and afterwards archbishop of Canterbury. He died at Lambeth in the year 1349, forty days after his consecration; and was buried in St Anselm's chapel, near the south wall. His works are, 1. *De causa Dei*, printed London, 1618, published by J. H. Savil. 2. *De geometria speculativa*, &c. Paris, 1495, 1512, 1530. 3. *De arithmetica practica*, Paris, 1502, 1512. 4. *De proportionibus*, Paris, 1495. Venice, 1505, folio. 5. *De quadratura circuli*, Paris, 1495, folio.

BRADY (Robert), born in Norfolk in 1643, was master of Caius college, Cambridge, regius professor there, and twice representative of that university in parliament. In 1685, he was made keeper of the records in the tower, and was physician in ordinary to James II.

He

brady,
Bdypus.

He wrote, An introduction to the Old English history ; An history of England, from the time of the Romans to the end of the reign of Richard II. ; and, A treatise on English boroughs. He died in 1700.

BRADY (Nicholas), an excellent divine and poet, born at Bandon, in the county of Cork, October 28th 1659. He studied at Westminster-school, and afterwards at Oxford and Dublin college. He was a zealous promoter of the Revolution ; and, in 1690, when the troubles broke out in Ireland, by his interest with M^cCarty, king James's general, he thrice prevented the burning of the town of Bandon. Having quitted several preferments in Ireland, he settled in London, where he was successively promoted to several livings ; and at the time of his death was rector of Clapham, minister of Richmond, and chaplain to the Duke of Ormond's troop of horse-guards. He wrote part of the new version of the Psalms, now sung in many churches in England and Ireland ; the *Æneids* of Virgil, in 4 vols. ; and 3 vols of sermons. He died May 20th 1726.

Plate.
X. fig. 6.

BRADYPUS, or SLOTH, a genus of quadrupeds, belonging to the order of bruta. The characters are these : They have no fore-teeth in either jaw ; the dog-teeth are blunt, solitary, and longer than the grinders ; they have five grinders on each side. The body is covered with hair. There are only two species of bradypus, viz.

1. The tridactylus, or American sloth, has a short tail, and only three toes on each foot. It is about the size of a fox. The body is covered over with hair of a grey colour ; the face is naked ; the throat is yellowish ; the fore-feet are longer than the hind-feet ; the claws, which are three on each foot, are compressed, and very strong ; and they have no mammæ on the breast ; they have no external ears, but only two winding holes. It is the most sluggish and most slow of all animals, and seems to move with the utmost pain. Its food is fruit, or the leaves of trees. If it cannot find fruit on the ground, it looks out for a tree well loaded, and with great pain climbs up : to save the trouble of descending, it flings off the fruit ; and, forming itself into a ball, drops from the branches, continues at the foot till it has devoured all, nor ever stirs till compelled by hunger. It never drinks, and is terrified at rain.

The following wonderful account of this animal, from Kircher's *Musurgia*, is quoted by Mr Stillingfleet in his miscellaneous tracts. "The description (says Kircher) I had from father Torus, who resided in America, who had animals of this kind in his possession, and made many experiments in relation to their nature and qualities. Its figure is extraordinary ; it is about the bigness of a cat, of very ugly countenance, and has claws extended like fingers. The hinder part of the head and neck are covered with hair. It sweeps the ground with its fat belly, never rises upon its feet, and moves so slowly, that it would scarce go the length of a bow-shot in 15 days, though constantly moving, and it is therefore called the *sloth*. It lives generally upon tops of trees, and employs two days to crawl up, and as many to get down again. Nature has doubly guarded this animal against its enemies. First, by giving it such strength in its feet, that whatever it seizes, it holds so fast, that it never can be freed from its claws, but must there die of hunger. Secondly, in giving it such a mo-

ving aspect, when it looks at any man who should be tempted to hurt it, that it is impossible not to be touched with compassion ; besides, that at the same time it sheds tears, and upon the whole persuades one, that a creature so defenceless, and of so unhappy a body, ought not to be tormented. To make an experiment of this, the above-mentioned father procured one of these animals to be brought to our college at Cathagena. He put a long pole under its feet, which it seized upon very firmly, and would not let go again. The animal therefore thus voluntarily suspended, was placed between two beams along with the pole, and there it remained without meat, drink, or sleep, 40 days ; its eyes being always fixed on people that looked at it, who were so touched, that they could not forbear pitying it. At last being taken down, they let loose a dog on it, which after a little while the sloth seized with his feet, and held him four days, till he died of hunger. This was taken from the mouth of the father. They add (continues Kircher), that this creature makes no noise but at night, but that very extraordinary. For by interruptions, that last about the length of a sigh or semi-pause, it goes through the six vulgar intervals of music, Ut, re, mi, fa, sol, la, La, sol, fa, mi, re, ut, ascending and descending, and these perfectly in tune. So that the Spaniards, when they first got possession of this coast, and heard these notes, imagined that some people brought up to our music were singing. This animal is called by the natives *haut* ; certainly because, going through these musical intervals, it repeats, Ha, ha, ha, ha, ha, &c." To this account Linnaeus seems, in his *Systema Naturæ*, to give credit. For he says, in his short way of description, among other things, "It utters an ascending hexachord : its noise is horrible ; its tears are piteous." He quotes Musgrave, Clusius, Gesner, &c.

2. The didactylus has two toes on each foot, and no tail : The head is round ; the ears are large ; and it has two mammæ on the breast : The body is covered with ash-coloured hair. It is a native of Ceylon.

BRAE-MAR, a mountainous territory of Scotland, in the shire of Aberdeen, where the last earl of Mar began to raise a rebellion in 1715. It is 27 miles north-west of Aberdeen.

BRAE-Murray, a mountainous and woody tract of land, lying in the shires of Elgin and Nairn in Scotland.

BRAG, an ingenious and pleasant game at cards, where as many may partake as the cards will supply ; the eldest hand dealing three to each person at one time, and turning up the last card all round. This done, each gamester puts down three stakes, one for each card.—The first stake is won by the best card turned up in the dealing round ; beginning from the ace, king, queen, knave, and so downwards. When cards of the same value are turned up to two or more of the gamesters, the eldest hand gains ; but it is to be observed, that the ace of diamonds wins, to whatever hand it be turned up.—The second stake is won by what is called the *brag*, which consists in one of the gamesters challenging the rest to produce cards equal to his : Now it is to be observed, that a pair of aces is the best brag, a pair of kings the next, and so on ; and a pair of any sort wins the stake from the most valuable single card. In this part consists the great diversion of the game ;

Brac,
Brag.

Braga
||
Brahe.

for, by the artful management of the looks, gestures, and voice, it frequently happens, that a pair of fives, treys, or even duces, out-brags a much higher pair, and even some pairs royal, to the no small merriment of the company. The knave of clubs is here a principal favourite, making a pair with any other card in hand, and with any other two cards a pair royal.—The third stake is won by the person who first makes up the cards in his hand one and thirty; each dignified card going for ten, and drawing from the pack, as usual in this game.

BRAGA, the capital of the province of Entre-minhoduro, in Portugal, situated on the river Cavado, in W. Long. 8. 40. N. Lat. 41. 20.

BRAGANZA, a city of Portugal, and capital of a duchy of the same name. It is seated on an eminence, by a brook called *Ferrenca*; and is divided into two parts, the old city, and the town. The former is upon an eminence, and fortified with a double wall. That part next the town has five bastions, but no ditch; the citadel is on the opposite side joined to the wall. The town is in a plain, and defended by a fort with four bastions. It is seated near the river Sabor on the frontiers of Galicia, in W. Long. 6. 15. N. Lat. 41. 27.

BRAGGOT, a kind of drink made of malt, honey, and spices, much used in Wales.

BRAHE (Tycho), a celebrated astronomer, descended of an illustrious family originally of Sweden but settled at Denmark, was born December 14th 1546, at Knudstorp in the county of Schonen. He was taught Latin when seven years old, and studied five years under private tutors. His father dying, his uncle sent him, in April 1559, to study philosophy and rhetoric at Copenhagen. The great eclipse of the sun on the 21st of August 1560, happening at the precise time the astronomers had foretold, he began to look upon astronomy as something divine; and purchasing the tables of Stadius, gained some notion of the theory of the planets. In 1562, he was sent by his uncle to Leipzig to study law; but astronomy wholly engrossed his thoughts, and in purchasing books on that science he employed all his pocket-money. Having procured a small celestial globe, he was wont to wait till his tutor was gone to bed, in order to examine the constellations and learn their names; and when the sky was clear, he spent whole nights in viewing the stars. In 1565, a difference arising between Brahe and a Danish nobleman, they fought, and the former had part of his nose cut off; which defect he so artfully supplied with one made of gold and silver, that it was not perceivable. It was about this time that he began to apply to chemistry, proposing nothing less than to obtain the philosopher's stone. In 1571, he returned to Denmark; and was favoured by his mother's brother, Steno Belle, a lover of learning, with a convenient place at his castle of Herritzvad near Knudstorp, for making his observations, and building a laboratory. His marrying a country girl, beneath his rank, occasioned such a violent quarrel between him and his relations, that the king was obliged to interpose to reconcile them. In 1574, by his majesty's command, he read lectures upon the theory of the comets at Copenhagen. The year following he began his travels through Germany, and proceeded as far as Venice: he then resolved to remove his family, and settle at Basil; but Frederic II. king

of Denmark being informed of his design, and unwilling to lose a man that was capable of being such an ornament to his country, promised to enable him to pursue his studies, to bestow upon him for life the island of Huen in the sound, to erect an observatory and laboratory there, and to defray all the expences necessary for carrying on his designs. Tycho Brahe readily embraced this proposal; and accordingly the first stone of the observatory was laid August 8. 1576. The king also gave him a pension of 2000 crowns out of his treasury, a fee in Norway, and a canony of Roschild, which brought him in 1000 more. James VI. of Scotland, afterwards raised to the crown of England, going to Denmark in order to marry the princess Anne, paid a visit to our author in his retirement at Uraniburg, made him several presents, and with his own hand wrote a copy of verses in his praise: but, soon after the death of king Frederic, he was deprived of his pension, fee, and canony; upon which, finding himself incapable of bearing the expences of his observatory, he went to Copenhagen, whither he brought some of his instruments, and continued his astronomical observations in that city, till Valkendorf, chamberlain to the household of Charles IV. commanded him by the king's order to discontinue them. He then removed his family to Roslock, and afterwards to Holstein, in order to solicit Henry Ranzou to introduce him to the emperor; and that gentleman complying with his request, he was received by the emperor at Prague with the utmost civility and respect. That prince gave him a magnificent house, till he could procure one for him more fit for astronomical observations; assigned him a pension of 3000 crowns; and promised, upon the first opportunity, a fee for him and his descendants: but he did not long enjoy this happy situation; for, upon the 24th of October 1601, he died of a retention of urine, in the 55th year of his age, and was interred in a very magnificent manner in the principal church at Prague, where a noble monument was erected to him.—His skill in astronomy is universally known, and he is famed for being the inventor of a new system, which he endeavoured, though without success, to establish upon the ruins of that of Copernicus. He was very credulous with regard to judicial astrology and presages. If he met an old woman when he went out of doors, or an hare upon the road on a journey, he used to turn back immediately, being persuaded that it was a bad omen. When he lived at Uraniburg, he had at his house a madman, whom he placed at his feet at table, and fed himself. As he imagined that every thing spoken by mad persons presaged something, he carefully observed all that this man said; and because it sometimes proved true, he imagined it might always be depended on. A mere trifle put him in a passion; and against persons of the first rank, with whom it was his duty to keep on good terms, he openly discovered his resentment. He was very apt to rally others, but highly provoked if the same liberty was taken with himself. His principal works are, 1. *Progymnasmata astronomicæ*. 2. *De mundi ætherei recentioribus phænomenis*. 3. *Epistolarum astronomicarum liber*.

BRAHMA. See BRAMA.

BRAIDALBIN, a district of Perthshire in Scotland, stretching 32 miles from east to west, and 13 where broadest from south to north; is a mountainous country,

Brahma.
Braidalbin.

country, lying among the Grampian hills, supposed to be the country anciently known by the name of *Albanii*; whence the Highlanders to this day call themselves *Albinich*. It is bounded on the west by Lochaber, Lorn, and Knapdale; on the north and east, by part of Lochaber and part of Athol; and on the south by Strathern and Monteith. It produces plenty of game and black cattle; is inhabited by Highlanders said to be the most ferocious in all Scotland; and gives the title of earl to a branch of the Campbell family, which is possessed of a noble and magnificent seat in this division. Much flax is cultivated here. Some years ago, when premiums were given for the greatest crops, from 70 to 120 hogsheads of lintseed were annually sown, each peck yielding two stones of dressed flax; and when the yarn sold highest, L. 2000 worth has been sold out of the country. Oats and potatoes are the other crops. Oats yield from four to six fold at the most, oftener less; bear, from eight to ten, at an average six. The corn raised seldom suffices the number of inhabitants, so they are often obliged to have recourse to importation. From their potatoes some have distilled a very strong spirit, which has been found cheaper than what is distilled from any grain. Starch is also made from them; and, in some places, bread. *Corcur*, or the lichen *omphalides*, is an article of commerce; great quantities have been scraped from the rocks, and exported for the use of the dyers, at the price of 1s. or 16d. per stone. A good many sheep are reared here, and much wool is sent out of the country. There are few horses raised in this country: such as feed on the tops of the higher hills are often afflicted with a distemper that commonly proves fatal, if a remedy is not applied within 24 hours. It attacks them in the months of July and August, usually after a fall of rain, or before the dew rises in the morning. An universal swelling spreads over the body: the remedy is exercise, eating, or any method that promotes urine and perspiration. The common people attribute this evil to a certain animal that scatters its poison over the grass; but, more probably, it arises from some noxious vegetable hitherto unobserved. Before the year 1745, lord Braidalbin was obliged to keep a constant guard for the protection of his vassals' cattle, or to retain spies among the thievish clans, having too much spirit to submit to pay an infamous tax, called *black-meal*, to the plundering chieftains as the price of their safety.

BRAIL, or **BRAILS**, in a ship, are small ropes made use of to furl the sails across: they belong only to the two courses and the mizen-sail; they are reeved through the blocks, seized on each side the ties, and come down before the sail, being at the very skirt thereof fastened to the cringles; their use is, when the sail is furled across, to hale up its bunt, that it may the more easily be taken up or let fall. Hale up the brails, or brail up the sail; that is, hale up the sail, in order to be furled or bound close to the yard.

BRAILOW, a town of Poland, in the province of Podolia, seated on the river Bog, in E. Long. 29. 00. N. Lat. 43. 50.

BRAIN, in anatomy, is that large, soft, whitish mass, inclosed in the cranium or skull; wherein all the organs of sense terminate, and the soul is supposed principally to reside. See ANATOMY, n^o 17, 129, 136.

BRAI: *le Comte*, a town of the Austrian Netherlands, in the province of Hainault. E. Long. 4. 11. N. Lat. 50. 35.

BRAIN TREE, a large town of Essex in England, situated in E. Long. 0. 35. N. Lat. 51. 50.

BRAKE, denotes female fern, or the place where it grows.—Also a sharp bit or snaffle for horses; and a baker's kneading-trough.—Also an instrument with teeth to bruise flax or hemp. See *FLAX-DRESSING*.

BRAKEL, a town of Germany, in the circle of Westphalia, and in the bishopric of Paderborn, seated on the rivulet Brught, in E. Long. 9. 8. N. Lat. 51. 46.

BRAMA, or **BRUMA**, a pagan deity of the East Indies. He is the first person of a kind of trinity in their theology; is the great progenitor of mankind; and has created as many worlds as there are considerable parts in his body. See the articles **BRACHMANS**, **BRAMINS**, and **INDOSTAN**.

BRAMA, in ichthyology, the trivial name of a species of cyprinus. See **CYPRINUS**.

BRAMANT, a town of Savoy, in the valley of Maurich, seated on the river Arck, in E. Long. 4. 15. N. Lat. 45. 0.

BRAMBER, a town of Suffex in England, formerly of some account, but has neither market nor fair; however, it sends two members to parliament. W. Long. 0. 15. N. Lat. 50. 50.

BRAMBLE, in botany, the English name of the **RUBUS**.

BRAMBIE-Net, otherwise called *hallier*, is a net to catch birds in of several sizes: the great meshes must be four inches square; those of the least size are three inches square; and those of the biggest, five. In the depth they should not be above three or four inches: but as for the length, they may be enlarged at pleasure; the shortest being 18 feet long.

BRAMBLE, or *Brambling*, in ornithology, the trivial name of a species of **FRINGILLA**.

BRAMER (Leonard), history-painter, was born at Delft in 1596; but learned the art of painting in the school of Rembrandt, and imitated the manner of his master in small. In the 18th year of his age he went to Rome for his improvement; but although he continued in Italy for some years, and acquired somewhat in his style rather more graceful than Rembrandt, yet he could never divest himself of the Flemish gout. He had a fine taste of design; his expression is generally good, and in some of his compositions truly noble. His pencil is delicate, and his colouring very peculiar in the tints, being also remarkably thin in many parts, so as barely to cover the panel; yet, by great skill in the management of the chiaro-scuro, his colouring is bright, bold, and full of lustre; particularly in the vases, which he was fond of introducing in every subject that could admit them, as he knew how to give them a rich and fine relief. He had accustomed himself to paint with a very thin body of colour, especially in the browns and shadowy parts, in order to give his pictures a greater transparency. At Venice, Naples, Florence, Mantua, and other cities of Italy, as well as at Rome, he left many proofs of his extraordinary merit, which rendered his name deservedly famous; and his works are rarely to be met with out of Italy, where he painted most; but wherever they

Brain
||
Bramer.

*Pillingtons
Dist.*

Bramhall,
Bramins

are to be purchased they are bought at considerable prices, if they are entire and undamaged. One of the most capital pictures of Brammer is the *Raising of Lazarus*, in which there is a charming opposition of light and shadow; and another is the *Descent of St Peter*: They are both painted in his best manner; they are bright, transparent, and finely penciled, and are still preserved at Rome. Likewise at the palace of Ryfwick there are several valuable paintings by this master; in which the invention and execution are highly commendable. But none of his works can be more admired than a small picture on copper representing the story of Pyramus and Thisbe.

BRAMHALL (Dr John), archbishop of Armagh, was born of an ancient family at Pontefract in Yorkshire, about the year 1593. He was invited over to Ireland by the lord deputy Wentworth: and soon after obtained the arch-deaconry of Meath, the best in that kingdom. In 1634, he was made bishop of Londonderry, which see he improved very much; but the greatest service he did to the church of Ireland was by getting, with the deputy's assistance, several acts passed for abolishing fee-farms, recovering inappropriations, &c. by which and by other means he regained to the church in the space of four years L. 31,000 or L. 40,000 a-year. In the convocation he prevailed upon the church of Ireland to unite in the same faith with the church of England, by adopting the 39 articles of that church; and would willingly have introduced the English canons, but could only prevail on their accepting such as they deemed proper. Articles of treason were exhibited against him in the Irish parliament; and at the treaty of Uxbridge in 1644, the English parliament made it a preliminary article, that Bishop Bramhall, with Archbishop Laud, and others, should be excepted from the general pardon. He went abroad; but on the restoration was appointed archbishop of Armagh, primate and metropolitan of all Ireland, and was chosen speaker of the House of Lords. He died in 1663; and was the author of several works, which are collected in one vol. folio.

BRAMINS, the name of the priests among the idolatrous Indians; the successors of the ancient Brachmans. See the title BRACHMANS.

Their name is formed from *Brama*, their particular deity. They are found in Siam, Malabar, China, Comorandel, and most other eastern nations anywise civilized; but their chief seat is in Indostan †, or the Mogul's country. They have a language peculiar to themselves, which they call *Shanscrit*; in which they have several ancient books, written, as is alleged, by their great prophet Brahina; as the *shastram*, which is their bible; and *porane*, a history which they esteem sacred, and pretend to have been dictated by God himself.

There are several orders of Bramins. Those who mix in society are for the most part very corrupt in their morals: they believe that the water of the Ganges will wash away all their crimes; and, as they are not subject to any civil jurisdiction, live without either restraint or virtue, excepting that character of compassion and charity which is so commonly found in the mild climate of India. The others, who live abstracted from the world, are either weak-minded men or enthusiasts; and abandon themselves to laziness, superstition, and the dreams of metaphysics. We find in their dis-

putes the very same ideas that occur in the writings of our most celebrated metaphysicians; such as, substance, accident, priority, posteriority, immutability, indivisibility, &c.

Their religion, which was anciently of the allegorical and moral kind, hath degenerated into a heap of extravagant and obscene superstitions, owing to their having realized those fictions which were intended merely as so many symbols and emblems. Were it possible to obtain a sight of their sacred books, the only remains there are of the Indian antiquities, we might in some measure be enabled to remove the veil that envelopes those numerous mysteries; but the following story will show how little reason there is to hope that we shall ever be intrusted with such a communication.

The emperor Mahmoud Akbar had an inclination to make himself acquainted with the principles of all the religious sects throughout his extensive provinces. Having discarded the superstitious notions with which he had been prepossessed by his education in the Mahometan faith, he resolved to judge for himself. It was easy for him to be acquainted with the nature of those systems that are formed upon the plan of making profelytes; but he found himself disappointed in his design when he came to treat with the Indians, who will not admit any person whatever to the participation of their mysteries. Neither the authority nor promises of Akbar could prevail with the Bramins to disclose the tenets of their religion; he was therefore obliged to have recourse to artifice. The stratagem he made use of was to cause a boy, of the name of Feizi, to be committed to the care of these priests, as a poor orphan of the sacerdotal line, who alone could be initiated into the sacred rites of their theology. Feizi, having received the proper instructions for the part he was to act, was conveyed privately to Benares, the seat of knowledge in Indostan; he was received into the house of a learned Bramin, who educated him with the same care as if he had been his own son. After the youth had spent ten years in study, Akbar was desirous of recalling him: but he was struck with the charms of the daughter of his preceptor. The women of the sacerdotal tribe are looked upon as the greatest beauties in Indostan. The old Bramin laid no restraint upon that growing passion of the two lovers: he was fond of Feizi, who had gained his affection by his address and docility; and offered him his daughter in marriage. The young man, divided between love and gratitude, resolved to conceal the fraud no longer; and falling at the feet of the Bramin, discovered the imposture, and asked pardon for his offence. The priest, without reproaching him in the least, seized a poniard which hung at his girdle, and was going to plunge it in his breast, if Feizi had not prevented him by taking hold of his arm. The young man used every means to pacify him, and declared himself ready to do any thing to expiate his treachery. The Bramin, bursting into tears, promised to pardon him on condition that he should swear never to translate the *Bedas* or sacred volumes, or disclose to any person whatever the symbol of the Bramin creed. Feizi readily promised all that the Bramin required: how far he kept his word is not known; but the sacred books of the Indians have never been translated by him, or any one else, to this day. As the

Bramins.

Raynal's
Hist. of the
Indians.† See *Indo-
Cun.*

ins. Bramins are the only persons who understand the language of the sacred book, their comments on the text are the same as those that have ever been made on religious books; all the maxims which fancy, interest, passion, or false zeal can suggest, are to be found in these volumes. See the articles SHAFRAH and VEDAM.

They own a supreme God, who created Brama, and gave him a power to create the world. They have also their subaltern deities, their pagods or temples, and idols, whom they tan to defend from flies, dancing before them. They also hold a feast in honour of the sun, considered as the source of light and heat, whereby all nature is fecundified.

Their pagods or temples consist of three parts. The first is a vaulted roof, supported on stone columns: it lies open, and all persons, without distinction, are allowed to enter into it. It is adorned with symbolical figures, made of wood, as elephants, oxen, and horses. The second part is open in the day-time, and shut at night. It is filled with grotesque and monstrous figures, as men with many heads and arms. The third, which is a kind of chancel, is kept always shut, with a very strong gate. In this is placed the statue of the deity to whom the pagod is dedicated. A great number of lamps burn day and night before the idol. The Bramins, before they go into the pagod, pull off their shoes, and leave them at the door.

The Bramins of Siam and Coromandel maintain that the earth will be destroyed by fire; and the former assert that another will arise out of its ashes, in which there shall be no sea, nor any change of seasons, but an eternal spring; and the latter maintain a plurality of worlds, which are alternately destroyed and renewed.

Robert de Nobili, an Italian Jesuit, and one of the Indian missionaries, in the beginning of the 17th century, in order to secure success to his mission, assumed the title and appearance of a Bramin, and at length persuaded the credulous people that he was in reality a member of that venerable order. He forged asced in the ancient Indian characters, showing that the Bramins of Rome were older than those of India, and that the Jesuits of Rome descended in a direct line from the god Brahma. He farther declared on oath, that he derived his origin from this Indian deity. By this imposture he profelyted twelve eminent Bramins, whose influence proved very favourable to his mission. After his death, the Portuguese Jesuits carried on the imposture with very considerable success. These missions, however, were suspended and abandoned in consequence of a papal mandate, issued out in the year 1744, by Benedict XIV. who declared his disapprobation of the artifices that had been used in the conversion of the Indians. See further under the article OBSERVATORY.

BRAMPPOUR, or BRAMPORE, a city of Asia, in the dominions of the Great Mogul, and capital of Candish. It formerly stood on as much ground as London; but is now greatly decayed, and chiefly inhabited by Banians. The streets are numerous, but narrow, with low thatched houses made of earth, though a few are covered with varnished tiles. In rainy weather many of the streets are overflowed. In the marketplace is the statue of an elephant in red stone, as big as

the life. On the other side of the river they have built a new town, which is in a better situation. A great trade is carried on in this town, and throughout all the province, where there is made a prodigious quantity of cotton-cloths, as cotton is in greater plenty here than in any other place of the empire. E. Long. 77. 25. N. Lat. 21. 10.

BRAMPTON, a town of Cumberland in England, seated not far from the Piets wall, and on the river Irthlin. It is a very ancient place, but at present is very small. W. Long. 2. 40. N. Lat. 54. 50.

BRAN, the skins or husks of corn, especially wheat ground, separated from the flour by a sieve or boulder. It contains, besides, a portion of the farinaceous matter; this is less glutinous than the finer flour, and is supposed to have a detergent quality; infusions of bran are not unfrequently employed in this intention externally, and sometimes likewise taken inwardly.

Among the ancients, bran was used as an erotic, to excite love. Bran boiled, purges scurf, dandruff, and cleanses the hands in lieu of soap. The dyers reckon it among the not-colouring drugs; and use it for making what they call the *four waters*, with which they prepare their several dyes. Bran is also used as a medicine for horses. See FARRIERY, § 1. 6.

BRANCH, in botany, an arm of a tree, or a part which, sprouting out from the trunk, helps to form the head or crown thereof. Branches do not spring out of the mere surface of the trunk, but are profoundly rooted therein, so as not only to penetrate the cortical, but also the woody substance, and even the pith. The constituent parts therefore of a *branch* are the same as of the trunk, viz. skin, bark, wood, and pith. See the article PLANTS.

BRANCHES of a Bridle, in the manege, are two pieces of iron bended, which, in the interval between the one and the other, bear the bit-mouth, the cross-chains, and the curb; so that on one end they answer to the head-stall, and on the other to the reins, in order to keep the horse's head in subjection. With regard to their form and structure, branches are either straight, in form of a pistol, for young horses to form their mouth; or after the constable of France's fashion, proper for a horse that carries his head well. Some are in form of a gigot or leg, which will prevent horses from carrying too low: Some are in form of a bent knee, contrived for horses that arm themselves against the operation of the bit; and others after the French fashion, which is hardly above $\frac{1}{2}$ of an inch at the sevile hole, and kneed $1\frac{1}{2}$ inch at the jarret or ham.

It is to be observed, 1. That the farther the branch is from the horse's neck, the more effect it will have. 2. That short branches, *ceteris paribus*, are ruder, and their effects more sudden, than those of longer. 3. That the branch is to be proportioned to the length of a horse's neck; and one may sooner err in choosing one too short than too long.

BRANCHES of Ogives, in architecture, are the arches of Gothic vaults. These arches, traversing from one angle to another diagonal wise, form a cross between the other arches, which make the sides of the square, of which the arches are diagonals.

BRANCH-Stand, with falconers, a term used to signify the making a hawk leap from tree to tree, till the dog springs the game.

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BRANCHER, among sportsmen, a young hawk, newly taken out of the nest, that can hop from bough to bough.

BRANCHIÆ, or **GILLS**, in the anatomy of fishes, the parts corresponding to the lungs of land-animals. All fishes except the cetaceous ones, and the pteromyzium, which have lungs, are furnished with these organs of respiration. See *COMPARATIVE Anatomy*.

BRANCHIDÆ, in Grecian antiquity, priests of the temple of Apollo, which was at Didymus in Ionia, a province of lesser Asia, towards the Ægean sea, upon the frontiers of Caria. They opened to Xerxes the temple of Apollo, the riches whereof he took away. After which, thinking it unsafe to stay in Greece, they fled to Sogdiana, on the other side of the Caspian sea, upon the frontiers of Persia, where they built a city, called by their own name: but they did not escape the punishment of their crime; for Alexander the Great having conquered Darius king of Persia, and being informed of their treachery, put them all to the sword, and razed their city, thus punishing the impiety of the fathers in their posterity.

BRANCHIOSTEGI, in *Ichthyology*, a term used to express one of the general classes of fishes; the characters of which are, that the rays of the fins are of a bony substance; but these fish have no bones or ossicula at the branchiæ, as the malacopterygious and acanthopterygious fishes all have.

BRANCHON, a town of the Austrian Netherlands, in the province of Namur, seated on the river Mehaigne. E. Long. 4. 40. N. Lat. 50. 32.

BRAND-SUNDAY, *Dimanche des Brandons*, in French ecclesiastical writers, denotes the first Sunday in Lent; which is thus called on account of an ancient practice in the Lyonnais, where the peasants, in the night of this day, walked about their orchards, gardens, &c. with torches lighted, or fire-brands in their hands; in which plight they visited every tree, and addressing themselves to them one after another, threatened that if they did not bear fruit well the ensuing season, they should be cut down to the ground and burnt. This is evidently a relic of paganism; the like of which was practised by the ancient idolaters in the month of February; hence called *Februarius, à februando*.

BRANDEIS, a town of Bohemia, seated on the river Elbe. E. Long. 14. 25. N. Lat. 50. 15.

BRANDENBURG (Marquisate of), a large country of Germany, having Mecklenburgh and Pomerania on the north; Poland, on the east; Silesia, with the Lusatas, the electorate of Saxony, Anhalt, and duchy of Magdeburg, on the south; and part of the same duchy, and that of Lunenburg, on the west. Its greatest length is near 200 miles, and its greatest breadth near 100. Its northern situation makes it very cold for seven or eight months in winter. The soil in general is far from being fruitful, a great part of it consisting of sand; yet there are several fruitful spots in it; and the whole, under the last and present reign, has been greatly improved, and much better peopled. In some parts there is great plenty of potatoes and turnips; in others of buck-wheat, millet, and flax; in others of tobacco, woad, and other herbs for dyeing. All sorts of colour earths, together with alum, salt-

petre, amber, iron, stone, and medicinal springs, are found in it. Abundance of cattle, especially sheep, are bred here; and the woods not only supply the inhabitants with fuel, but with timber, charcoal, tar, and wood-ashes, both for domestic uses and for exportation. The culture of silk also is carried on in this country with great success. The principal rivers by which it is watered are the Elbe, the Oder, the Prignitz, the Havel, the Warte, and the Spree. Some of the rivers and lakes abound in fish, and are united by canals, for the benefit of navigation. They reckon in the whole Mark 120 towns, above 2500 villages, and about 800,000 inhabitants. The states here consist of the nobility and towns, whose assembly-house is in the Spandau-street at Berlin, and who still enjoy some small remains of their ancient privileges. The hereditary offices of the marquisate are a marshal, chamberlain, cup-bearer, purveyor, sewer, treasurer, and ranger. The king of Prussia, who is also elector of Brandenburg, with his whole court, are Calvinists; but the religion of most of the inhabitants is Lutheranism. The churches of both persuasions are well endowed, and the laity jointly employed by the government. The Roman-catholics are also tolerated here. In short, every inhabitant enjoys full liberty of conscience. A great variety of manufactures, most of which were introduced by the French refugees, are carried on in the marquisate, especially at Berlin and Potsdam; where are also excellent painters, statuaries, and engravers. By means of these manufactures, fabrics, and arts, not only large sums are kept in the country, but also imported from other parts, to which considerable quantities of the manufactures, and natural productions, are exported. For the education of youth, and the advancement of learning, besides Latin schools in several places, and gymnasia, there is an university at Frankfort on the Oder, and an academy of sciences at Berlin.

The Brandenburg family is of great antiquity. Some historians say it was founded by the Slavonians, who gave it the name of *Brandier*, which signifies the "Guards of the Forests;" and the Germans called it *Brandburgh*. Henry I. surnamed the Fowler, fortified this place in the year 923, to serve as a rampart against the Huns, a warlike nation, who were extremely troublesome by their frequent incursions. He bestowed the government on Sifro, Count of Ringelheim, with the title of Margrave or Marquis, which signifies Protector of the Marches or Frontiers, in 923. It descended to Geron, Margrave of Lusatia; which, in succession of time, passed into the families of Staden, Ascania, Bellenstadt, and that of Bavaria, till the Emperor Sigismund, with the consent of the states of the empire in 1416, gave perpetual investiture to Frederick VI. of Nuremberg; who also, the following year, received from the Emperor, at the diet of Constance, the investiture of the country of Brandenburg as Frederick I. having had previously conferred upon him the dignity of elector and arch-chamberlain of the holy Roman empire.

Brandenburg remained long in subjection to Poland; and the investiture of Prussia was granted by the Polish kings to each succeeding margrave. Frederick-William, having concluded a treaty with the king of Poland, was acknowledged to be sovereign of Ducal Prussia

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Prussia by an assembly of the states at Königsberg A. D. 1663. By the treaty of Vienna the Emperor confirmed this title; and Frederick, the son of Frederick-William, was proclaimed king of Prussia Jan. 18. 1701. He was succeeded by his son, who performed the greatest services to his country, and prepared the materials of the future grandeur of the late sovereign, Frederick III. who began his reign on the 31st of May 1740, at the age of 28. See PRUSSIA.

Among the electors he possesses the seventh place. As arch-chamberlain, he carries the sceptre before the emperor at his coronation, and brings him water in a silver basin to wash with. In the college of princes of the empire, he has five voices. His assessment, as elector, is 60 horse and 277 foot, or 1828 florins in lieu of them. To the chamber of Wetzlar, his quota is 81 rix-dollars, 58 kruitzers, each term. As to the orders of the knights of the Black Eagle, and of Merit, it is sufficient here to observe, that the former was instituted by Frederic I. at his coronation, and the other by the present king. For the government of this country and the administration of justice, there are several supreme colleges and tribunals; particularly for the departments of war, foreign affairs, and the finances, there are distinct boards. Here is a supreme ecclesiastical council and consistory for the Lutherans; a supreme directory of the Calvinist church; a supreme medicinal college; a supreme mine-office; a college or board of trade, &c. Those of the French nation, settled in this country, are allowed particular courts of their own. The amount of the yearly revenues of the Mark, arising from the domains, protection-money paid by the Jews, tolls, land-tax, mines, forests, duties on stamp-paper, salt, and variety of other imposts and excises, is computed at about 2,500,000 crowns; but the money is said to be much inferior in goodness to that of Saxony and the dominions of Hanover. During the late continental war it was extremely debased. Some estimate the whole number of the inhabitants of the royal and electoral dominions at 5,000,000, and the revenues at about 2,000,000 sterling. Upwards of 100,000 men are kept on foot in time of peace, which are said to cost more than half of the royal revenue. These troops are under strict discipline, very expert at their exercise, always in readiness to march, and always complete. Each regiment has a particular canton or district allotted it for its quarters and raising recruits. The infantry are clothed in blue, and the horse and dragoons in white; and both are required to hear sermon twice a-day when in quarters or garrisons. In time of peace they are allowed, for several months in the year, to hire themselves out, or to follow their business either as burghers or peasants, in the canton where they are quartered; but they are not allowed to marry. A considerable part of these troops are stationed in the Mark, particularly at Berlin and Potsdam. The corps of hussars alone amounts to about 10,000 men. The Mark of Brandenburg is divided, in general, into the electoral and new Marks. The former is again subdivided into the old Mark, the Pregnitz, the middle Mark, and the Ucker Mark. The old Mark, which lies on the west side of the Elbe, between that river and Lunenburg, is about 50 miles in length, and 30 in breadth.

BRANDENBURG, a city of Germany, and capital of the marquisate of that name, situated on the river Havel, in E. Long. 13. N. Lat. 52. 25. It is divided into the old and new town, and was anciently the see of a bishop. The mountain in the neighbourhood called *Marienberg*, is planted with vines. Here is a small colony of French Calvinists, with a manufacture of cloth, fustian, and canvas; and a pretty good trade is carried on by the Havel. The fort here looks like a suburb, and contains a riding-school, with the cathedral church. The greatest part also of the members of the chapter which still subsists, and is composed of a Lutheran provost, dean, senior, sub-senior, and three other canons, reside in it. They are distinguished by a cross of gold enamelled with violet, terminating in eight points; and have a considerable estate. Near the town is a large lake.

BRANDEUM, in ecclesiastical writers, a linen cloth or veil put over the tombs of the apostles St Peter and St Paul, and left there for some time; by which it is supposed to acquire a degree of sanctity, so as to be worshipped as a relic; and for that purpose frequently sent by the pope to some prince. In this sense, Brandeum amounts to the same with what was otherwise called *sanctuarium*, *fudarium*, *orarium*, and *velum*. The use of brandea was introduced as a means of diffusing and propagating the virtues and influences of relics, without moving, or any way impairing, the substance of them; the translation of relics in early days being forbidden.

BRANDING, in the face or hand, denotes a punishment inflicted by law on various offences, by burning with a hot iron, after the offender hath been once admitted to benefit of clergy.

BRANDON, a town of Suffolk in England, seated on a little river Ouse, over which it has a bridge, and a ferry at a mile's distance: whence it is divided into Brandon, and Brandon-ferry; which last has the most business, because commodities are brought thither from the isle of Ely. This place gives the British title of duke to the family of Hamilton in Scotland. E. Long. 0. 55. N. Lat. 52. 30.

BRANDRITH, denotes a trevet or other iron stand, whereon to set a vessel over the fire.

BRANDRITH, among builders, denotes a fence or rail about the mouth of a well.

BRANDY (Gerard), a learned divine of the reformed religion, was born at Amsterdam in 1626, and was successively minister in several places of the Netherlands. He wrote some works which are esteemed, particularly *The History of the reformation of the Netherlands*, 4 vols 4to; and *The life of admiral Ruyter*; both written in the Flemish tongue. He died at Rotterdam in 1685.

BRANDY, a spirituous and inflammable liquor, extracted from wine and other liquors by distillation. See DISTILLATION.

Wine-brandy, made in France, is esteemed the best in Europe. They make it wherever they make wine, and for that purpose use wine that is pricked rather than good wine. The chief brandies for foreign trade, and those accounted best, are the brandies of Bourdeaux, Rochelle, Cogniac, Charenton, the isle of Rhe, Orleans, the county of Blaisois, Poictou, Touraine, Anjou, Nantz, Burgundy, and Champaign.

Brank
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Brasil.

BRANK, an instrument used in some parts of Scotland, and in Staffordshire, for correcting scolding women. It is a sort of head-piece, which opens and incloses the head of the impatient, while an iron, sharp as a chissel, enters the mouth, and subdues the more dreadful weapon within. Thus harnessed, the offender is led in triumph through the streets. Dr Plott, in his History of Staffordshire, has favoured the world with a minute description and figure of the instrument †, which is there called a *scolding-bridle*; and tells us, he looks upon it "as much to be preferred to the ducking-stool, which not only endangers the health of the party, but also gives the tongue liberty betwixt every dip; to neither of which this is at all liable."

† P. 389,
Tab xxvii.

BRANLIN, in ichthyology, a species of salmon, with several transverse black streaks, resembling the impression of so many fingers.

BRANNODUNUM (Notitiæ), with a garrison of the Equites Dalmatæ; a town of Britain, on the Sinus Metaris: now Brancester, in Norfolk, on the Washes.

BRANOGENIUM, or BRANONIUM, a town of the Coritani, a people in the heart of Britain: from the distances of the Itinerary, Camden supposes it to be Worcester.

BRANSKA, a town of Transilvania, situated on the river Marish. E. Long. 23. 15. N. Lat. 46. 0.

BRASIDAS, a celebrated general of the Lacedæmonians, about 424 years before the birth of Christ. He defeated the Athenians by land and sea, took many places, and rendered his country formidable to all the neighbouring states. He conquered the Athenians on their attempting to surprise Amphipolis, but died of the wounds he received in that battle. See ATTICA and LACEDEMON.

BRASIDA, an anniversary solemnity at Sparta, in memory of Brasidas, a Lacedæmonian captain, famous for his achievements at Methone, Pylos, and Amphipolis. It was celebrated with sacrifices and games, wherein none were permitted to contend but free-born Spartans. Whoever neglected to be present at the solemnity was fined.

BRASIL, a large country of South America, being the easternmost part of that continent, lying between the equinoctial line and the tropic of Capricorn. It is about 1560 miles in length, and 1000 in breadth; but, measuring along the coast, it is 2000 miles long, and is bordered with mountains that open from time to time, and form good harbours where vessels may lie in safety. It was accidentally discovered by the Portuguese in 1500. Emanuel king of Portugal had equipped a squadron of 13 sail, carrying 1200 soldiers and sailors destined for the East Indies, under the conduct of Peter Alvarez Cabral. This admiral, quitting Lisbon on the 9th of March 1500, struck out to sea to avoid the coast of Guinea, and steered his course southward, that he might the more easily turn the Cape of Good Hope, which projects a good way into the ocean. On the 24th of April, he got sight of the continent of South America, which he judged to be a large island at some distance from the coast of Africa. Coasting along for some time, he ventured to send a boat on shore; and was astonished to observe the inhabitants entirely different from the Africans in features, hair, and complexion. It was found, however, impracticable to seize upon any of the Indians, who retired

with great celerity to the mountains on the approach of the Portuguese; yet, as the sailors had discovered a good harbour, the admiral thought proper to come to an anchor, and called the bay *Puerto Seguro*. Next day he sent another boat on shore, and had the good fortune to lay hold on two of the natives, whom he clothed and treated kindly, and then dismissed, to make a proper report to their countrymen. The stratagem had the desired effect. The Indians, having heard the relation of the prisoners, immediately crowded to the shore, singing, dancing, and sounding horns of different kinds; which induced Cabral to land, and take solemn possession in the name of his Portuguese majesty.

As soon as the court of Lisbon had ordered a survey to be taken of the harbours, bays, rivers, and coasts of Brasil, and was convinced that the country afforded neither gold nor silver, they held it in such contempt, that they sent thither none but condemned criminals and abandoned women. Two ships were sent every year from Portugal, to carry the refuse of the kingdom to this new world, and to bring home parrots and woods for the dyers and cabinet-makers. Ginger was afterwards added; but soon after prohibited, lest it should interfere with the sale of the same article from India.

In 1548, the Jews, many of whom had taken refuge in Portugal, beginning to be persecuted by the inquisition, were stripped of their possessions, and banished to Brasil. Here, however, they were not entirely forsaken. Many of them found kind relations and faithful friends; others, who were known to be men of probity and understanding, obtained money in advance from merchants of different nations with whom they had formerly had transactions. By the assistance of some enterprising men, they were enabled to cultivate sugar-canes, which they first procured from the island of Madeira. Sugar, which till then had been used only in medicine, became an article of luxury. Princes and great men were all eager to procure themselves this new species of indulgence. This circumstance proved favourable to Brasil, and enabled it to extend its sugar plantations. The court of Lisbon, notwithstanding its prejudices, began to be sensible, that a colony might be beneficial to the mother-country, without producing gold or silver; and this settlement, which had been wholly left to the capricious management of the colonists, was now thought to deserve some kind of attention; and accordingly Thomas de Souza was sent thither, in 1549, to regulate and superintend it.

This able governor began by reducing these men, who had always lived in a state of anarchy, into proper subordination, and bringing their scattered plantations closer together; after which he applied himself to acquire some information respecting the natives, with whom he knew he must be incessantly engaged either in traffic or war. This it was no easy matter to accomplish. Brasil was full of small nations, some of which inhabited the forests, and others lived in the plains and along the rivers. Some had settled habitations; but the greater number of them led a roving life, and most of them had no intercourse with each other. It is not to be supposed that such a people would be at all disposed to submit to the yoke which the Portuguese wanted to put upon them on their arrival. At first they only declined all intercourse with these strangers; but finding themselves pursued in order

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to be made slaves, and to be employed in the labours of the field, they took the resolution to murder and devour all the Europeans they could seize upon. The friends and relations of the savages that were taken prisoners, also ventured to make frequent attempts to rescue them, and were sometimes successful; so that the Portuguese were forced to attend to the double employments of labour and war.

Souza did not bring a sufficient number of forces to change the situation of affairs. Indeed, by building San Salvador, he gave a centre to the colony; but the honour of settling, extending, and making it really useful to the mother-country, was reserved for the Jesuits who attended him. These men, who for their arts of insinuation and address have been equalled by none, dispersed themselves among the Indians. When any of the missionaries were murdered, they were immediately replaced by others; and seeming to be inspired only with sentiments of peace and charity, the Indians, in process of time, grew not only familiar but passionately fond of them. As the missionaries were too few in number to transact all the business themselves, they frequently deputed some of the most intelligent Indians in their stead. These men having distributed hatchets, knives, and looking-glasses, among the savages they met with, represented the Portuguese as a harmless, humane, and good sort of people.

The prosperity of the colony of Brasil, which was visible to all Europe, excited the envy of the French, Spaniards, and Dutch successively. The latter, indeed, bid fairest for the conquest of the whole. Their admiral Henry Lonk arrived, in the beginning of the year 1630, with 46 men of war, on the coast of Fernambucca, one of the largest and best fortified captainships of these parts. He reduced it after several obstinate engagements, in which he was always victorious. The troops he left behind subdued the captainships of Temaraca, Pareiba, and Rio Grande, in the years 1633, 1634, and 1635. These, as well as Fernambucca, furnished annually a large quantity of sugar, a great deal of wood for dyeing, and other commodities. The Hollanders were so elated with the acquisition of this wealth, which flowed to Amsterdam instead of Lisbon, that they determined to conquer all the Brasils, and entrusted Maurice of Nassau with the conduct of this enterprize. That general reached the place of his destination in the beginning of the year 1637. He found the soldiers so well disciplined, the commanders such experienced men, and so much readines in all to engage, that he directly took the field. He was successively opposed by Albuquerque, Banjola, Lewis Rocca de Borgia, and the Brasilian Cameron, the idol of his people, passionately fond of the Portuguese, brave, active, cunning, and who wanted no qualification necessary for a general, but to have learned the art of war under able commanders. These several chiefs exerted their utmost efforts to defend the possessions that were under their protection; but their endeavours proved ineffectual. The Dutch seized upon the captainships of Siara, Seregippe, and the greater part of that of Bahia. Seven of the 15 provinces which composed the colony had already submitted to them, and they flattered themselves that one or two campaigns would make them masters of the rest of their enemies possessions in that part of America; when they were suddenly checked by the

revolution happening on the banishment of Phillip IV. and placing the Duke of Braganza on the throne. After this, the Portuguese recovering their spirits, soon drove the Dutch out of Brasil, and have continued masters of it ever since.

The country of Brasil is divided into the following provinces, viz. Paria, Maragnano, Siara, Rio Grande, Pareiba, Tamarica, Fernambucca, Seregippe, Bahia, Porto Seguro, Esperito Santo, Rio de Janeiro, Angra, St Vincent, and Del Rey. See these articles.

The first aspect of the country from the sea is rather unfavourable, as it appears high, rough, and unequal; but, on a more narrow inspection, nothing can be more delightful, the eminences being covered with woods, and the valleys and savannahs with the most refreshing verdure. In so vast a tract of land, it cannot be imagined that the climate will be found at all equal, or the seasons uniform. The northern provinces are subject to heavy rains and variable winds, like other countries under the same parallels. Tornados, storms, and the utmost fury of the elements, wreak their vengeance here; while the southerly regions are blessed with all the comforts which a fine fertile soil and temperate climate can afford. In some of the provinces, the heat of the climate is thought to prove favourable to the generation of a great variety of poisonous reptiles; some of which, as the *libya*, or *roebuck* snake, are said to extend to the length of 30 feet, and to be two or three yards in circumference. The rattlesnake, and other reptiles of the same kind, grow likewise to an enormous size; and the serpent called *ibibaboka* is affirmed to be seven yards long, and half a yard in circumference, possessed too of a poison instantaneously fatal to the human race. Here also are scorpions, ant-bears, tygers or maddilloes, porcupines, janoveras, and an animal called *tupirasson*, which is the production of a bull and an ass, having a great resemblance to both. No country on earth affords a greater number of beautiful birds, nor variety of the most exquisite fruits; but the chief commodities are Brasil-wood, ebony, dyeing woods, ambergris, rosin, balsams, indigo, sweetmeats, sugar, tobacco, gold, diamonds, beautiful pebbles, crystal, emeralds, jasper, and other precious stones; in all which the Portuguese carry on such an amazing trade, as may justly be reputed the support, and indeed the vital fountain, of the mother-country. The gold and diamond mines are but a recent discovery: they were first opened in the year 1681; and have since yielded above five millions Sterling annually, of which but a fifth belongs to the crown. So plentiful are diamonds in this country, that the court of Portugal hath found it necessary to restrain their importation, to prevent too great a diminution of their value. They are neither so hard nor so clear as those of the East Indies, nor do they sparkle so much, but they are whiter. The Brasilian diamonds are sold ten per cent. cheaper than the Oriental ones, supposing the weights to be equal. The largest diamond in the world was sent from Brasil to the king of Portugal. It weighs 1680 carats, or 12½ ounces; and has been valued at L. 56,787,500. Some skilful lapidaries, however, are of opinion that this supposed diamond is only a topaz; in which case a very great abatement must be made in its value. The crown-revenue arising from this colony amounts to two millions Sterling in gold, if we may credit some late writers, besides the duties and

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customs on merchandise imported from that quarter. This indeed is more than a fifth of the precious metal produced by the mines; but, every other consequent advantage considered, it probably does not much exceed the truth. The excessive confluence of people to the Brasil colonies, as well from other countries as from Portugal, not only enlarges the imports of gold, but, what is of infinitely more importance to Europe in general, the exportation of the manufactures of this hemisphere; of which the principal are the following. Great Britain sends woollen manufactures; such as fine broad medley cloths, fine Spanish cloths, scarlet and black cloths; serges, duroys, druggets, sagathies, shalloons, camblets, and Norwich stuffs; black Colchester bays; says, and perpetuanas called *long ells*; hats, stockings, and gloves. Holland, Germany, and France, chiefly export fine hollands, bone-lace, and fine thread; silk manufactures, pepper, lead, block tin, and other articles, are also sent from different countries. Besides the particulars already specified, England likewise trades with Portugal, for the use of the Brasils, in copper and brass, wrought and unwrought pewter, and all kinds of hardware: all which articles have so enlarged the Portuguese trade, that, instead of 12 ships usually employed in the Brasil commerce, there are now never fewer than 100 sail of large vessels constantly going and returning to those colonies. To all this may be added the vast slave-trade carried on with the coast of Africa for the use of the Brasil colonies; which, we may believe, employs a great number of shipping, from the multitude of slaves that are annually transported. Indeed the commerce of Brasil alone is sufficient to raise Portugal to a considerable height of naval power, as it maintains a constant nursery of seamen: yet a certain infatuation in the policy of the country has prevented that effect even amidst all these extraordinary advantages. All the ships in this trade, being under the direction of the government, have their appointed seasons of going and returning, under convoy of a certain number of men of war: nor can a single ship clear out or go, except with the fleet, but by a special licence from the king, which is seldom granted; though it is easily determined, that such restrictions can prove no way beneficial to the general commerce, though possibly the crown-revenue may be better guarded thereby. The fleets sail in the following order, and at the following stated periods: That to Rio de Janeiro sets sail in January; the fleet to Bahia, or the bay of All Saints, in February; and the third fleet, to Fernambucca, in the month of March.

BRASIL-Wood, or *Brazil-wood*, an American wood of a red colour, and very heavy. It is denominated variously, according to the places from whence it is brought: Thus we have brasil of Fernambucca, Japan, Lamou, &c. For its description, &c. see *CASALPINA*.

BRASILETTO, the same with Brasil-wood.

BRASLAW, a considerable town of Poland, in Lithuania, and palatinate of Wilna, with a castle. It is seated on a small lake, in E. Long. 17. 5. N. Lat. 55. 45.

BRASS, or, as the French call it, *yellow copper*, is a fictitious metal, made of copper and zinc, or lapis calaminaris. See *CHEMISTRY-Index*.

The first formation of brass, as we are assured by scripture, was prior to the flood, and discovered even

in the seventh generation from Adam†. But the use of it was not, as is generally believed, and the Arundelian marbles assert, previous to the knowledge of iron. They were both first known in the same generation, and first wrought by the same discoverer. And the knowledge of them must have been equally carried over the world afterwards, with the spreading of the colonies of the Noachidæ. An acquaintance with the one or the other was absolutely necessary to the existence of the colonists; the clearing away of the woods about their settlements, and the erection of houses for their habitation.

The ancient Britons, though acquainted from the remotest periods with the use of both these metals, remained long ignorant that they were to be obtained in the island. Before this discovery they imported all their iron and brass from the continent. And when they had at length detected the former in their own hills, and had ceased to introduce it, they continued to receive the latter. Their want of the metal remained, and no mines of it were opened in the island. In the earliest ages, whose manners have been delineated by history, we find the weapons of their warriors invariably framed of this fictitious metal; and the most authentic of all the profane records of antiquity, the Arundelian marbles, for that reason, mistakenly date the first discovery of iron a couple of centuries below the Trojan war. Every military nation, as such, is naturally studious of brightness in its arms; and the Britons, particularly, gloried in the neatness of theirs. For this reason the nations of the world still fabricated their arms of brass, even long after the Arundelian æra for the discovery of iron; and the Britons continued to import it from the continent, though they had found iron to be a native of the country, and could have supplied themselves with a sufficient quantity of it.

Mr Whittaker† supposes, that when the Britons derived their iron and brass from the continent, they purchased the latter at an easier expence than the former. The Gauls had many large brass works carried on in the kingdom, but seem to have had few iron forges within it. And this would naturally induce the Belgæ to be less diligent in their inquiry after the veins of copper and calamine at home, than for the courses of iron ore; though the one was equally discoverable in the island as the other, and lay equally within the Belgic regions of it. Brass being thus cheaper than iron, they necessarily formed with it some domestic as well as military implements. Such were common among the Gauls; and such were familiar to the Britons, either imported into the island, as some actually were, or manufactured within it, as others also assuredly were. The Britons had certainly brass founderies erected among them, and minted money, and fabricated weapons of brass.

In this condition of the works, the Romans entered the island. And seeing so great a demand among the natives for this article, they would speedily instruct them to discover the materials of it among themselves. This must unavoidably have resulted from the conquest of the Romans. The power of surprising their new subjects with so unexpected a discovery would naturally stimulate the pride of the Roman intellect; and the desire of obliging themselves with so cheap a supply of that useful metal, stationary as they were in that kingdom, would also equally actuate the selfishness of the

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† Gen. iv.

† Hist. of Manufactures

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the Roman heart. The veins of copper and calamine would be easily found out by an experienced inquirer after them; and the former metal is therefore distinguished among the Welsh, only by the Roman appellation of *cyprum*, *koppr* or copper. And many founderies of brass appear to have been established in the island. Some had been erected before, one perhaps within the confines of every kingdom, and probably in the vicinity of every capital. One at least would be necessary, in order to supply the armoury of the principality: and one perhaps was sufficient for most of the British states. But several appear now to have been settled in every kingdom, and one perhaps near every stationary town. Two have been discovered in the single county of Essex, and within a narrow portion of it at Fildes and Danbury. And a third was placed upon Easterly Moor in Yorkshire, 12 miles to the north-west of York, and in the neighbourhood of Ilurium or Aldborough.

Corinthian Brass, famous in antiquity, is a mixture of gold, silver, and copper. L. Mummius having sacked and burnt the city of Corinth, 146 years before Christ, it is said this metal was formed from the immense quantities of gold, silver, and copper, wherewith that city abounded, thus melted and run together by the violence of the conflagration.

BRASS, in the glass trade.—Thrice-calcined brass is a preparation which serves the glassmen to give many very beautiful colours to their metal. The manner of preparing it is this: Place thin plates of brass on tiles on the leet of the furnace near the oehis; let it stand to be calcined there for four days, and it will become a black powder sticking together in lumps. Powder this, sift it fine, and recalcine it four or five days more; it will not then stick together, but remain a loose powder, of a russet colour. This is to be calcined a third time in the same manner; but great care must be taken in the third calcination, that it be not overdone nor underdone; the way to be certain when it is right is, to try it several times in glass while melting. If it makes it, when well purified, to swell, boil, and rise, it is properly calcined; if not, it requires longer time. This makes, according to the different proportions in which it is used, a sea-green, an emerald-green, or a turcoise colour.

Brass, by long calcination alone, and without any mixture, affords a fine blue or green colour for glass; but they have a method of calcining it also with powdered brimstone, so as to make it afford a red, a yellow, or a chalcidony colour, according to the quantity and other variations in the using it. The method of making the calcination is this: Cut thin plates of brass into small pieces with sheers, and lay them stratum super stratum, with alternate beds of powdered sulphur, in a crucible; calcine this for 24 hours in a strong fire; then powder and sift the whole; and finally, expose this powder upon tiles for 12 days to a reverberating furnace; at the end of this time, powder it fine, and keep it for use. The glass makers have also a method of procuring a red powder from brass, by a more simple calcination, which serves them for many colours. The method of preparing it is this: They put small and thin plates of brass into the arches of the glass furnaces, and leave them there till they are sufficiently calcined, which the heat in that place, let being enough to melt

them, does in great perfection. The calcined matter powdered, is of a dusky red, and requires no farther preparation.

BRASS-COLOUR, one prepared by the braziers and colour-men to imitate brass. There are two sorts of it; the red brass or bronze, and the yellow or gilt brass: the latter is made only of copper-silings, the smallest and brightest that can be found; with the former they mix some red ochre, finely pulverized; they are both used with varnish.—In order to make a fine brass that will not take any rust or verdigris, it must be dried with a chafing-dish of coals as soon as it is applied.—The finest brass-colour is made with powder brass imported from Germany, diluted into a varnish, made and used after the following manner: The varnish is composed of one pound four ounces of spirit of wine, two ounces of gum-lac, and two ounces of sandarac; these two last drugs are pulverized separately, and afterwards put to dissolve in spirit of wine, taking care to fill the bottle but half full. The varnish being made, you mix such quantity as you please of it with the pulverized brass, and apply it with a small brush to what you would brass over. But you must not mix too much at once, because the varnish being very apt to dry, you would not have time to employ it all soon enough; it is therefore better to make the mixture at several times. After this manner they brass over figures of plaster, which look as well as if they were of cast brass.

BRASS-LEAF is made of copper, beaten out into very thin plates, and afterwards rendered yellow. The German artists, particularly those of Nuremberg and Augsborg, are said to possess the best method of giving to these thin plates of copper a fine yellow colour like gold, by simply exposing them to the fumes of zinc, without any real mixture of it with the metal. These plates are cut into little pieces, and then beaten out fine like leaves of gold; after which they are put into books of coarse paper, and sold at a low price for the vulgar kinds of gilding. The parings or shreds of these very thin yellow leaves being well ground on a marble plate, are reduced to a powder similar to gold; which serves to cover, by means of gum-water or some other glutinous fluid, the surface of various mouldings or pieces of curious workmanship, giving them the appearance of real bronze, and even of fine gold, at a very trifling expence, because the gold colour of this metallic powder may be easily raised and improved by stirring it on a wide earthen basin over a slow fire.

BRASS-LUMPS, a common name given by miners to the globular pyrites. See PYRITES.

BRASSAW, or **CRONSTADT**, a strong town of Transilvania in Burezland; seated on the river Buxel, in E. Long. 22. 35. N. Lat. 46. 30.

BRASSE, in ichthyology, a species of PERCA.

BRASSICA, CABBAGE: A genus of the siliquosa order, belonging to the tetradynamia class of plants; and in the natural method ranking under the 39th order, *Siliquosa*. The calyx is erect and converging; the seeds are globular; the gland between the shorter stamina and the pistillum, and between the longer ones and the calyx. There are 12 species. 1. The orientalis, with heart-shaped smooth leaves embracing the stem, and four-cornered capsules. 2. The campestris, with a slender root and stem, the leaves being uniform, heart-shaped, and sessile. 3. The arvensis, with scalloped

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Brassica. leaves embracing the stem; the highest heart-shaped, and most entire. 4. The alpina, with the radical leaves egg-shaped, and erect petals. 5. The napus, with the root-stem spindle shaped. 6. The rassa, with the radical stem growing orbicular, depressed, and fleshy. 7. The oleracea, with the radical stem growing columnar and fleshy. 8. The chinensis, with very entire oval leaves; the floral leaves lanceolated and embracing the stem; the calyxes longer than the claw of the petals. 9. The violacea, with lanceolated, egg-shaped, smooth, undivided, and dentated.

In these species the style is obtuse; in the following ensiform. 10. The crucialtrum, with runcinate leaves, a hispid stem, and polished capsules. 11. The crucea, with lyrated leaves, shaggy stem, and smooth capsules. 12. The vesicaria, with runcinate leaves, and hispid capsules covered with a tumid calyx.

Culture, &c. The second sort never varies. It grows naturally on the sea-shore near Dover. It hath a perennial branching stalk, in which it differs from all the other species. In very severe winters, when the other sorts are destroyed, this is a necessary plant, for the most severe frosts do not injure it. The flower-stalks grow from the end of the branches, and spread out horizontally; but those which arise from the centre of the plants grow erect, and seldom put out branches. The cauliflower has been much more improved in Britain than in any other part of Europe. In France they rarely have cauliflowers till Michaelmas, and Holland is generally supplied with them from Britain. In many parts of Germany there were none of them cultivated till within a few years past, and most parts of Europe are supplied with seeds from Britain. The eighth sort, which is generally known by the title of *rape* or *cole seed*, is much cultivated in the isle of Ely, and some other parts of England, for its seed, from which rape-oil is drawn; and it hath also been cultivated of late years, in other places, for feeding of cattle, to great advantage. The cole seed, when cultivated for feeding of cattle, should be sown about the middle of June. The ground for this should be prepared for it in the same manner as for turnips. The quantity of seeds for an acre of land is from six to eight pounds; and as the price of the seed is not great, so it is better to allow eight pounds; for if the plants are too close in any part, they may be easily thinned when the ground is hoed, which must be performed in the same manner as is practised for turnips, with this difference only, of leaving these much nearer together; for as they have fibrous roots and slender stalks, so they do not require near so much room. These plants should have a second hoeing about five or six weeks after the first, which, if well performed in dry weather, will entirely destroy the weeds, so they will require no farther culture. Where there is not an immediate want of food, these plants had better be kept as a reserve for hard weather, or spring seed, when there may be a scarcity of other green food. If the heads are cut off, and the stalks left in the ground, they will shoot again early in the spring, and produce a good second crop in April; which may be either fed off, or permitted to run to seeds, as is the practice where this is cultivated for the seeds: but if the first is fed down, there should be care taken that the cattle do not destroy their stems, or pull them out of the ground. As this plant is so hardy as not to be de-

Brassica. destroyed by frost, so it is of great service in hard winters for feeding of ewes; for when the ground is so hard frozen as that turnips cannot be taken up, these plants may be cut off for a constant supply. This will afford late food after the turnips are run to seed; and if it is afterwards permitted to stand for seed, one acre will produce as much as, at a moderate computation, will sell for five pounds, clear of charges. Partridges, pheasants, turkeys, and most other fowl, are very fond of this plant; so that wherever it is cultivated, if there are any birds in the neighbourhood, they will constantly lie among these plants. The seeds of this plant are sown in gardens for winter and spring fallads, this being one of the small fallad herbs.

The common white, red, flat, and long-sided cabbages are chiefly cultivated for autumn and winter use; the seeds of these sorts must be sown the beginning or middle of April, in beds of good fresh earth; and when the young plants have about eight leaves, they should be pricked out into shady borders, about three or four inches square, that they may acquire strength, and to prevent their growing long shanked. About the middle of June you must transplant them out, where they are to remain. If they are planted for a full crop in a clear spot of ground, the distance from row to row should be three feet and a half, and in the rows two feet and a half asunder: if the season should prove dry when they are transplanted out, you must water them every other evening until they have taken fresh root; and afterwards, as the plants advance in height, you should draw the earth about their stems with a hoe, which will keep the earth moist about their roots, and greatly strengthen the plants. These cabbages will some of them be fit for use soon after Michaelmas, and will continue until the end of February, if they are not destroyed by bad weather; to prevent which, the gardeners near London pull up their cabbages in November, and trench their ground up in ridges, laying their cabbages against their ridges as close as possible on one side, burying their stems in the ground: in this manner they let them remain till after Christmas, when they cut them for the market; and although the outer part of the cabbage be decayed (as is often the case in very wet or hard winters), yet, if the cabbages were large and hard when laid, the inside will remain sound.

The Russian cabbage was formerly in much greater esteem than at present, it being now only to be found in particular gentlemen's gardens, who cultivate it for their own use. This must be sown late in the spring of the year, and managed as those before directed, with this difference only, that these must be sooner planted out, and must have an open clear spot of ground, and require much less distance every way, for it is but a very small hard cabbage. This sort will not continue long before they will break and run up to seed.

The early and sugar-loaf cabbages are commonly sown for summer use, and are what the gardeners about London commonly call *Michaelmas cabbages*. The season for sowing of these is about the end of July, or beginning of August, in an open spot of ground; and when the plants have got eight leaves, you must prick them into beds at about three or four inches distance every way, that the plants may grow strong and short shanked; and toward the end of October you should plant them out: the distance that these require is, three feet

feet row from row, and two feet and a half asunder in the rows. The ground must be kept clean from weeds, and the earth drawn up about your cabbage plants. In May, if your plants were of the early kind, they will turn in their leaves for cabbaging; at which time, the gardeners near London, in order to obtain them a little sooner, tie in their leaves close with a slender oster-twig to blanch their middle; by which means, they have them at least a fortnight sooner than they could have if they were left untied.

The early cabbage being the first, we should choose to plant the fewer of them, and a greater quantity of the sugar-loaf kind, which comes after them; for the early kind will not supply the kitchen long, generally cabbaging apace when they begin, and as soon grow hard and buril open; but the sugar-loaf kind is longer before it comes, and is as slow in its cabbaging; and being of an hollow kind, will continue for a good long time. The sugar-loaf kind may be planted out in February, and will succeed as well as if planted earlier; with this difference only, that they will be later before they cabbage. You should also reserve some plants of the early kind in some well-sheltered spot of ground, to supply your plantation, in case of a defect; for in mild winters many of the plants are apt to run to seed, especially when their seeds are sown too early, and in severe winters they are often destroyed.

The Savoy cabbages are propagated for winter use, as being generally esteemed the better when pinched by the frost: these must be sown about the end of April, and treated after the manner as was directed for the common white cabbage; with this difference, that these may be planted at a closer distance than those; two feet and a half square will be sufficient. These are always much better when planted in an open situation, which is clear from trees and hedges; for in close places they are very subject to be eaten almost up by caterpillars and other vermin, especially if the autumn prove dry.

The broccoli may also be treated in the same manner, but need not be planted above one foot asunder in the rows, and the rows two feet distance; these are never eaten till the frost hath rendered them tender; for otherwise they are tough and bitter.

The seeds of the broccoli (of which there are several kinds, viz. the Roman or purple, the Neapolitan or white, and the black broccoli, with some others, but the Roman is preferred to them all), should be sown about the latter end of May, or beginning of June, and when the plants are grown to have eight leaves, transplant them into beds (as was directed for the common cabbage); and toward the latter end of July they will be fit to plant out, which should be done into some well-sheltered spot of ground, but not under the drip of trees: the distance these require is about a foot and a half in the rows, and two feet row from row. The soil in which they should be planted ought to be rather light than heavy: if your plants succeed well (as there will be little reason to doubt, unless the winter prove extremely hard), they will begin to show their small heads, which are somewhat like a cauliflower, but of a purple colour, about the end of December, and will continue eatable till the middle of April. The brown or black broccoli is by many persons greatly esteemed, though it doth not deserve a place in the kitchen-garden where the Roman broccoli can be obtained, which is much

sweeter, and will continue longer in season: indeed, the brown sort is much hardier, so that it will thrive in the coldest situations, where the Roman broccoli is sometimes destroyed in very hard winters. The brown sort should be sown in the middle of May, and managed as hath been directed for the common cabbage, and should be planted at the same distance, which is about two feet and a half asunder. This will grow very tall, so should have the earth drawn up to their stems as they advance in height. This doth not form heads so perfect as the Roman broccoli; the stems and hearts of the plants are the parts which are eaten. The Roman broccoli (if well managed) will have large heads, which appear in the centre of the plants like clusters of buds. These heads should be cut before they run up to seed, with about four or five inches of the stem; the skin of these stems should be stripped off before they are boiled. After the first heads are cut off, there will be a great number of side-shoots produced from the stems, which will have small heads to them, but are full as well flavoured as the large. The Naples broccoli hath white heads very like those of the cauliflower, and eats so like it as not to be distinguished from it.—Besides this first crop of broccoli (which is usually sown in the end of May), it will be proper to sow another crop the beginning of July, which will come in to supply the table the latter end of March and the beginning of April; and being very young, will be extremely tender and sweet.

In order to save good seeds of this kind of broccoli, you should reserve a few of the largest heads of the first crop, which should be let remain to run up to seed, and all the under shoots should be constantly stripped off, leaving only the main stem to flower and seed. If this be duly observed, and no other sort of cabbage permitted to seed near them, the seeds will be as good as those procured from abroad, and the sort may be preserved in perfection many years.

The turnip-rooted cabbage was formerly more cultivated in Britain than at present; for since other sorts have been introduced which are much better flavoured, this sort has been neglected. There are some persons who esteem this kind for soups, but it is too strong for most palates; and is seldom good but in hard winters, which will render it tender and less strong. At the end of June the plants should be transplanted out where they are to remain, allowing them two feet distance every way, observing to water them until they have taken root; and as their stems advance, the earth should be drawn up to them with a hoe, which will preserve a moisture about their roots, and prevent their stems from drying and growing woody, so that the plants will grow more freely; but it should not be drawn very high, for as it is the globular part of the stalk which is eaten, so that should not be covered. In winter they will be fit for use, when they should be cut off, and the stalks pulled out of the ground and thrown away, being good for nothing after the stems are cut off. As food for cattle, however, the cultivation of this species deserves particular attention. See AGRICULTURE, n^o 170.

The curled colewort or Siberian broccoli is now more generally esteemed than the former, being extremely hardy, so is never injured by cold, but is always sweeter in severe winters than in mild seasons. This

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may be propagated by sowing of the seeds the beginning of July; and when the plants are strong enough for transplanting, they should be planted in rows about a foot and a half asunder, and ten inches distance in the rows. These will be fit for use after Christmas, and continue good until April, so that they are very useful in a family.

The musk cabbage. This may be propagated in the same manner as the common cabbage, and should be allowed the same distance: it will be fit for use in October, November, and December; but, if the winter proves hard, these will be destroyed much sooner than the common sort.

The common colewort or Dorsetshire kale, is now almost lost near London, where their markets are usually supplied with cabbage plants instead of them. The best method to cultivate this plant in the fields is, to sow the seeds about the beginning of July, choosing a moist season, which will bring up the plants in about ten days or a fortnight; the quantity of seed for an acre of land is nine pounds: when the plants have got five or six leaves they should be hoed, as is practised for turnips, cutting down all the weeds from amongst the plants, and also thinning the plants where they are too thick; but they should be kept thicker than turnips, because they are more in danger of being destroyed by the fly: this work should be performed in dry weather, that the weeds may be killed. About six weeks after the plants should have a second hoeing, which, if carefully performed in dry weather, will entirely destroy the weeds, and make the ground clean, so that they will require no farther culture: in the spring they may be either drawn up and carried out to feed the cattle, or they may be turned in to feed upon them as they stand; but the former method is to be preferred, because there will be little waste; whereas, when the cattle are turned in amongst the plants, they will tread down and destroy more than they eat, especially if they are not fenced off by hurdles.

The two last sorts of cabbages are varieties fit for a botanic garden, but are plants of no use. They are annual plants, and perish when they have perfected their seeds.

The best method to save the seeds of all the sorts of cabbages is, about the end of November you should make choice of some of your best cabbages, which you should pull up, and carry to some shed or other covered place, where you should hang them up for three or four days by their stalks, that the water may drain from between their leaves; then plant them in some border near a hedge or pale, quite down to the middle of the cabbage, leaving only the upper part of the cabbage above ground, observing to raise the earth above it, so that it may stand a little above the level of the ground; especially if the ground is wet, they will require to be raised pretty much above the surface. If the winter should prove very hard, you must lay a little straw or pease-haulm lightly upon them, to secure them from the frost, taking it off as often as the weather proves mild, lest by keeping them too close they should rot. In the spring of the year these cabbages will shoot out strongly, and divide into a great number of small branches: you must therefore support their stems, to prevent their being broken off by the wind; and if the weather should be very hot and dry when they are in

flower, you should refresh them with water once a week all over the branches, which will greatly promote their seeding; and preserve them from mildew. When the pods begin to change brown, you will do well to cut off the extreme part of every shoot with the pods, which will strengthen your seeds; for it is generally observed, that those seeds which grow near the top of the shoots, are very subject to run to seed before they cabbage; so that by this there will be no loss, but a great advantage. When your seeds begin to ripen, you must be particularly careful that the birds do not destroy it, for they are very fond of these seeds. The best method to prevent this, is to get a quantity of birdlime, and dawb over a parcel of slender twigs, which should be fastened at each end to stronger sticks, and placed near the upper part of the seed in different places, so that the birds may alight upon them, by which means they will be fastened thereto; where you must let them remain, if they cannot get off themselves: and although there should not above two or three birds be caught, yet it will sufficiently terrify the rest, that they will not come to that place again for a considerable time after.

When your seed is fully ripe, you must cut it off; and after drying, thresh it out, and preserve it in bags for use.

But in planting of cabbages for seed, it will be proper never to plant more than one sort in a place, or near one another: for example, never plant red and white cabbages near each other, nor Savoy with white or red cabbages; for they will, by the commixture of their effluvia, produce a mixture of kinds: and it is said to be owing to this neglect, that the gardeners rarely save any good red cabbage seed in Britain, but are obliged to procure fresh seeds from abroad; as supposing the soil or climate of Britain alters them from red to white, and of a mixed kind betwixt both; whereas, if they should plant red cabbages by themselves for seeds, and not suffer any other to be near them, they might continue the kind as good in Britain as in any other part of the world.

Cauliflowers have of late years been so far improved in Britain, as to exceed in goodness and magnitude what are produced in most parts of Europe, and by the skill of the gardener are continued for several months together; but the most common season for the great crop is in May, June, and July. Having procured a parcel of good seed, you must sow it about the 21st of August, upon an old cucumber or melon-bed, sifting a little earth over the seeds, about a quarter of an inch thick; and if the weather should prove extremely hot and dry, you should shade the beds with mats, to prevent the earth from drying too fast, and give it gentle waterings as you may see occasion. In about a month's time after sowing, your plants will be fit to prick out: you should therefore put some fresh earth upon your cucumber or melon beds; or where these are not to be had, some beds should be made with a little new dung, which should be trodden down close, to prevent the worms from getting through it; but it should not be hot dung, which would be hurtful to the plants at this season, especially if it proves hot; into this bed you should prick your young plants at about two inches square, observing to shade and water them at first planting; but do not water them too much after they are growing,

Brassica.

growing, nor suffer them to receive too much rain if the season should prove wet, which would be apt to make them black shanked, as the gardeners term it, which is no less than a rotteness in their stems, and is the destruction of the plants so affected. In this bed they should continue till about the 30th of October, when they must be removed into the place where they are to remain during the winter season; which, for the first sowing, is commonly under bell or hand glasses, to have early cauliflowers, and these should be of an early kind: but in order to have a succession during the season, you should be provided with another more late kind, which should be sown four or five days after the other, and managed as was directed for them. In order to have very early cauliflowers, you should make choice of a good rich spot of ground that is well defended from the north, east, and west winds, with hedges, pales, or walls; but the first are to be preferred, if made with reeds, because the winds will fall dead in these, and not reverberate as by pales or walls. This ground should be well trenched, burying therein a good quantity of rotten dung; then level your ground, and if it be naturally a wet soil, you should raise it up in beds about two feet and a half, or three feet broad, and four inches above the level of the ground; but if your ground is moderately dry, you need not raise it at all: then plant your plants, allowing about two feet six inches distance from glass to glass in the rows, always putting two good plants under each glass, which may be at about four inches from each other; and if you design them for a full crop, they may be three feet and a half row from row: but if you intend to make ridges for cucumbers between the rows of cauliflower plants (as is generally practised by the gardeners near London), you must then make your rows about eight feet asunder; and the ground between the rows of cauliflowers may be planted with cabbage plants, to be drawn off for coleworts in the spring. When you have planted your plants, if the ground is very dry, you should give them a little water, and then set your glasses over them, which may remain quite close down over them till they have taken root, which will be in about a week or ten days time, unless there should be a kindly shower of rain; in which case you may set off the glasses, that the plants may receive the benefit of it; and in about ten days after planting, you should be provided with a parcel of forked sticks or bricks, with which you should raise your glasses about three or four inches on the side toward the south, that your plants may have free air: in this manner your glasses should remain over the plants night and day, unless in frosty weather, when you should set them down as close as possible; or if the weather should prove very warm, which many times happens in November, and sometimes in December, in this case you should keep your glasses off in the day time, and put them on only in the night, lest, by keeping the glasses over them too much, you should draw them into flower at that season; which is many times the case in mild winters, especially if unskillfully managed. Toward the latter end of February, if the weather proves mild, you should prepare another good spot of ground to remove some of the plants into from under the glasses, which should be well dunged and trenched (as before): then set off your glasses; and, after making choice of one of the

most promising plants under each glass, which should remain, take away the other plant, by raising it up with a trowel, &c. so as to preserve as much earth to the root as possible; but take care not to disturb or prejudice the roots of the plants which remain. Then plant the plants which you have taken out at the distance before directed, viz. if for a full crop, three feet and a half, row from row; but if for ridges of cucumbers between them, eight feet, and two feet four inches distance in the rows: then, with a small hoe, draw the earth up to the stems of the plants which were left under the glasses, taking great care not to let the earth fall into their hearts; and set your glasses over them again, raising your props an inch or two higher than before, to give them more air, observing to take them off whenever there may be some gentle showers, which will greatly refresh the plants.

In a little time after, if you find your plants grow so fast as to fill the glasses with their leaves, you should then slightly dig about the plants, and raise the ground about them in a bed broad enough for the glasses to stand, about four inches high, which will give your plants a great deal of room, by raising the glasses so much higher when they are set over them; and by this means they might be kept covered until April, which otherwise they could not, without prejudice to the leaves of the plants; and this is a great advantage to them, for many times we have returns of severe frosts at the latter end of March, which prove very hurtful to these plants, if exposed thereto, especially after having been nursed up under glasses.

After you have finished your beds, you may set your glasses over your plants again, observing to raise your props pretty high, especially if the weather be mild, that they may have free air to strengthen them; and in mild soft weather set off your glasses, as also in gentle showers of rain; and now you must begin to harden them by degrees to endure the open air; however, it is advisable to let your glasses remain over them as long as possible, if the nights should be frosty, which will greatly forward your plants; but you must not let your glasses remain upon them in very hot sun-shine, especially if their leaves press against the sides of the glasses; for it hath often been observed in such cases, that the moisture which hath risen from the ground, together with the perspiration of the plants, which by the glasses remaining over them hath been detained upon the leaves of the plants, when the sun hath shone hot upon the sides of the glasses, have acquired such a powerful heat from the beams thereof, as to scald all their larger leaves, to the no small prejudice of the plants: nay, sometimes large quantities of plants have been so affected therewith, as never to be worth any thing after.

If your plants have succeeded well, toward the end of April some of them will begin to fruit: you must therefore look over them carefully every other day, and when you see the flower plainly appear, you must break down some of the inner leaves over it to guard it from the sun, which would make the flower yellow and unsightly if exposed thereto; and when you find your flower at its full bigness (which you may know by its outside parting as if it would run), you must then draw it out of the ground, and not cut them off, leaving the stalk in the ground, as is by some practised;

Brassica.

Brassica.

and if they are designed for present use, you may cut them out of their leaves; but if designed to keep, you should preserve their leaves about them, and put them into a cool place; the best time for pulling them is in a morning, before the sun hath exhales the moisture; for cauliflowers pulled in the heat of the day, lose that firmness which they naturally have, and become tough.

But to return to our second crop (the plants being raised and managed as was directed for the early crop, until the end of October), you must then prepare some beds, either to be covered with glass-frames, or arched over with hoops, to be covered with mats, &c. These beds should have some dung laid at the bottom, about six inches or a foot thick, according to the size of your plants; for if they are small, the bed should be thicker of dung to bring them forward, and so *vice versa*; this dung should be beat down close with a fork, in order to prevent the worms from finding their way through it; then lay some good fresh earth about four or five inches thick thereon, in which you should plant your plants about two inches and a half square, observing to shade and water them until they have taken new root; but you must not keep your coverings close, for the warmth of the dung will occasion a large damp in the bed, which, if pent in, will greatly injure the plants. When your plants have taken root, you must give them as much free open air as possible, by keeping the glasses off in the day-time as much as the weather will permit; and in the night, or at such times as the glasses require to be kept on, raise them up with props to let in fresh air, unless in frosty weather; at which time the glasses should be covered with mats, straw, pease-haulm, &c. but this is not to be done but in very hard frosts; you must also observe to guard them against great rain, which in winter time is very hurtful to them, but in mild weather, if the glasses are kept on, they should be propped to admit fresh air; and if the under leaves grow yellow and decay, be sure to pick them off: for if the weather should prove very bad in winter, so that you should be obliged to keep them close covered for two or three days together, as it sometimes happens, these decayed leaves will render the inclosed air very noxious; and the plants perspiring pretty much at that time, are often destroyed in vast quantities.

In the beginning of February, if the weather be mild, you must begin to harden your plants by degrees, that they may be prepared for transplantation: the ground where you intend to plant your cauliflowers out (which should be quite open from trees, &c. and rather moist than dry), having been well dunged and dug, should be sown with radishes a week or fortnight before you intend to plant out your cauliflowers; the sowing of radishes is particularly mentioned, because if there are not some radishes amongst them, and the month of May should prove hot and dry, as it sometimes happens, the fly will seize your cauliflowers, and eat their leaves full of holes, to their prejudice, and sometimes their destruction; whereas, if there are radishes upon the spot, the flies will take to them, and never meddle with the cauliflowers so long as they last: indeed, the gardeners near London mix spinach with their radish-feed, and so have a double crop; which is an advantage where ground is dear, or where persons are straitened for room; otherwise it is very well to have only one crop

amongst the cauliflowers, that the ground may be cleared in time.

Brassica.

Your ground being ready and the season good, about the middle of February you may begin to plant out your cauliflowers: the distance which is generally allowed by the gardeners near London (who plant other crops between their cauliflowers to succeed them, as cucumbers for pickling, and winter cabbages) is every other row four feet and a half apart, and the intermediate rows two feet and a half, and two feet two inches distance in the rows; so that in the latter end of May or beginning of June (when the radishes and spinach are cleared off), they put in feeds of cucumbers for pickling, in the middle of the wide rows, at three feet and a half apart; and in the narrow rows plant cabbages for winter use, at two feet two inches distance, so that these stand each of them exactly in the middle of the square between four cauliflower plants; and these after the cauliflowers are gone off, will have full room to grow, and the crop be hereby continued in a succession through the whole season.

There are many people who are very fond of watering cauliflower plants in summer; but the gardeners near London have almost wholly laid aside this practice, as finding a deal of trouble and charge to little purpose; for if the ground be so very dry as not to produce tolerable good cauliflowers without water, it seldom happens that watering of them makes them much better; and when once they have been watered, if it is not constantly continued, it had been much better for them if they never had any; as also, if it be given them in the middle of the day, it rather helps to scald them: so that, upon the whole, if care be taken to keep the earth drawn up to their stems, and clear them from every thing that grows near them, that they may have free open air, you will find that they will succeed better without than with water, where any of these cautions are not strictly observed.

But in order to have a third crop of cauliflowers, you should make a slender hot-bed in February, in which you should sow the feeds, covering them a quarter of an inch thick with light mould, and covering the bed with glass-frames. When the plants are come up, and have gotten four or five leaves, you should prepare another hot-bed to prick them into, which may be about two inches square; and in the beginning of April harden them by degrees, to fit them for transplanting, which should be done the middle of that month, at the distance directed for the second crop, and must be managed accordingly: these (if the soil is moist where they are planted, or the season cool and moist) will produce good cauliflowers about a month after the second crop is gone, whereby their season will be greatly prolonged.

There is also a fourth crop of cauliflowers, which is raised by sowing the seed about the 23d of May; and being transplanted, as hath been before directed, will produce good cauliflowers in a kindly season and good soil after Michaelmas, and continue through October and November, and, if the season permit, often a great part of December.

All the species of cabbage are supposed to be hard of digestion, to afford little nourishment, and to produce flatulencies, though probably on no very good foundation. They tend strongly to putrefaction, and

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run into this state sooner than almost any other vegetable; when putrefied, their smell is likewise the most offensive, greatly resembling that of putrefied animal substances. A decoction of them is said to loosen the belly. Of all these plants cauliflower is reckoned the easiest of digestion. The white is the most fetid, and the red most emollient or laxative; a decoction of this last is recommended for softening acrimonious humours in some disorders of the breast, and in hoarseness. The red cabbage is chiefly used for pickling. In some countries they bury the white cabbage when full grown in the autumn, and thus preserve it all winter. The Germans cut them to pieces, and, along with some aromatic herbs and salt, press them close down in a tub where they soon ferment, and are eaten under the name of *Sour-craut*. See that article.

BRASSICAVIT, or **BRACHICAVIT**, in the manege, is a horse whose fore-legs are naturally bended archwise: being so called by way of distinction from an arched horse, whose legs are bowed by hard labour.

BRAULS, Indian cloths with blue and white stripes. They are otherwise called *turbants*, because they serve to cover those ornaments of the head, particularly on the coast of Africa.

BRAUN (George), in Latin *Braunius*, archdeacon of Dortmund, and dean of Notre Dame in Gradibus, at Colonge. He published a Latin oration against the priests guilty of fornication; he also wrote the life of Jesus Christ, that of the Holy Virgin, and a controversial treatise against the Protestants; but his chief work is the *Theatrum Urbium*, in several volumes folio.

BRAUNA, a town of Germany, in Bavaria, seated on the river Inn. It has a strong fortress: notwithstanding, it was taken by the Austrians in 1743. E. Long. 13. 3. N. Lat. 48. 10.

BRAUNSBURG, a town of Poland, in Regal Prussia, with a very commodious harbour, and belonging to the king of Prussia. It is seated near the Baltic sea, in E. Long. 20. 0. N. Lat. 54. 15.

BRAUNSFELD, a town of Germany, in the circle of the Upper Rhine, and country of Solmes, with a handsome palace or castle. E. Long. 8. 32. N. Lat. 50. 22.

BRAVO, one of the Cape de Verd islands on the coast of Africa, remarkable for its excellent wines, and inhabited by Portuguese. The land is very high, and consists of mountains which look like pyramids. It abounds in Indian corn, gourds, water-melons, potatoes, horses, asses, and hogs. There is also plenty of fish on the coast, and the island produces salt-petre. W. Long. 25. 35. N. Lat. 14. 0.

BRAVO, a town of Africa, on the coast of Ajan, with a pretty good harbour. It is an independent place, and is about 80 miles distant from Magadoxo. E. Long. 41. 35. N. Lat. 1. 0.

BRAURONIA, in Grecian antiquity, a festival in honour of Diana, surnamed *Brauronia*, from its having been observed at Brauron, an Athenian borough. This festival was celebrated once in five years, being managed by ten men, called in Greek [*ieropretai*]. The victim offered in sacrifice was a goat, and it was customary for certain men to sing one of Homer's Iliads. The most remarkable persons at this solemnity were young virgins, habited in yellow gowns, and conse-

crated to Diana. It was unlawful for any of them to be above ten or under five years of age.

BRAWN, the flesh of a boar soured or pickled: for which end the boar should be old: because the older he is, the more horny will the brawn be.—The method of preparing brawn is as follows: The boar being killed, it is the slices only, without the legs, that are made brawn; the bones of which are to be taken out, and then the flesh sprinkled with salt, and laid in a tray, that the blood may drain off: Then it is to be salted a little, and rolled up as hard as possible. The length of the collar of brawn should be as much as one side of the boar will bear, so that when rolled up it will be nine or ten inches diameter.

The collar being thus rolled up, is to be boiled in a copper, or large kettle, till it is so tender, that you can run a straw through it; then let it by till it is thorough cold, and put it into the following pickle. To every gallon of water, put a handful or two of salt, and as much wheat-bran: Boil them together, then drain the bran as clear as you can from the liquor; and when the liquor is quite cold, put the brawn into it.

BRAY (Sir Reginald), a celebrated architect and politician, was the second son of Sir Richard Bray, one of the privy council to king Henry VI. Sir Reginald was instrumental in the advancement of king Henry VII. to the throne of England; and was greatly in the favours of that prince, who bestowed honours and wealth upon him. His skill in architecture appears from Henry VII.'s chapel at Westminster, and the chapel of St George at Windsor, as he had a principal concern and direction in the building of the former, and the finishing and bringing to perfection the latter, to which he was also a liberal benefactor. In the middle of the south aisle of the above chapel is a spacious chapel built by him, and still called by his name. He died in 1501; and was interred in the above chapel, probably under the stone where lies Dr Waterland; for, on opening the vault for that gentleman, who died in 1740, a leaden coffin of ancient form was found, which, by other appearances, was judged to be that of Sir Reginald, and was, by order of the dean, immediately arched over.

BRAY (Dr Thomas), an eminent, learned, and pious divine, was born at Marton, in Shropshire, in the year 1656, and educated at Oxford. He was at length presented to the vicarage of Over-Whitacre, in Warwickshire; and in 1690, to the rectory of Sheldon, where he composed his *Catechetical Lectures*; which procured him such reputation, that Dr Compton, bishop of London, pitched upon him as a proper person to model the infant church of Maryland, and establish it upon a solid foundation, and for that purpose he was invested with the office of commissary. He now engaged in several noble undertakings. He procured sums to be raised for purchasing small libraries for the use of the poor ministers in the several parts of our plantations: and the better to promote this design, he published two books; one intitled *Bibliotheca parochialis*, or a scheme of such theological and other heads as seem requisite to be perused or occasionally consulted by the clergy, together with a catalogue of books which may be profitably read on each of those points; the other, Apostolical charity, its nature and excellency considered.

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He endeavoured to get a fund established for the propagation of the gospel, especially among the uncultivated Indians; and by his means a patent was obtained for erecting the corporation called *The society for the propagation of the gospel*. He, by his industry, procured relief for prisoners; and formed the plan for the society for the reformation of manners, charity-schools, &c. He wrote, 1. his *Martyrology*, or *Papal usurpation*, in one volume folio; 2. *Directorium missionarium*; and other works. This excellent man died in 1730, aged 73.

BRAY, a port town of Ireland, in the county of Wicklow, and province of Leinster, seated on St George's channel, eight miles south of Dublin. W. Long. 6. 16. N. Lat. 53. 8.

Bray sur Seine, a town of France, in Champagne, and in Senonois, on the confines of Brie. E. Long. 2. 15. N. Lat. 48. 35.

BRAYLE, among sportsmen, a piece of leather slit to put upon the hawk's wing, to tie it up.

BRAZED, in heraldry, a term serving to describe three cheverons, one clasping another.

BRAZEN, something consisting of brass, or formed out of it. See **BRASS**.

BRAZEN Age. See **AGE**.

BRAZEN Dish, among miners, is the standard by which the other dishes are gauged, and is kept in the king's hall.

BRAZEN SEA, in Jewish antiquity, one of the sacred utensils in the temple of Solomon. It was cast in the plain of Jordan, and removed from thence into the inner court of the temple: where it was placed upon 12 oxen, three of which looked towards each quarter of the world. It was ten cubits from the one brim to the other, five cubits in height, and 30 cubits in circumference, and contained 3000 baths. The brim of it was perfectly round, and so it continued in the two upper cubits; but below the brim, in the three lower cubits, it was square. It was a hand-breadth thick, and the brim was wrought like the brim of a cup, with flowers of lilies. About the body of this huge vessel there were two borders of engravings, being the heads of oxen in demi-relief; out of which some suppose the water issued, and that they were made as cocks and conveyances for that purpose.—This brazen or molten sea, was designed for the priests to wash themselves in, before they performed the service of the temple. The supply of water was through a pipe out of the well Etam; though some are of opinion, that it was constantly supplied with water by the Gibeonites.

BRAZIER, an artificer who makes and deals in all kinds of brass ware. This trade, as exercised in Britain, may be reckoned a branch of the smithery, though they seldom keep forges, except for brazing or folding, and tinning the insides of their vessels, which they work up chiefly out of copper and brass prepared rough to their hands. They consist of a working part, and a shop-keeping part, which latter many carry on to a great extent, dealing as well in all sorts of iron and steel, as copper and brass goods for household furniture; and lately have fallen much into selling what is called *French plate*, made of a sort of white metal, silvered and polished to such a degree that the eye cannot soon distinguish it from real silver.

BRAZIL. See **BRASIL**.

Brazing
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Bread.

BRAZING, the folding or joining two pieces of iron together by means of thin plates of brass, melted between the pieces that are to be joined. If the work be very fine, as when two leaves of a broken saw are to be brazed together, they cover it with pulverized borax, melted with water, that it may incorporate with the brass powder, which is added to it: The piece is then exposed to the fire without touching the coals, and heated till the brass is seen to run.

BRAZING is also the joining two pieces of iron together by heating them hot, the one upon the other, which is used for large pieces by farriers, &c.

BRAZZA, a town and island on the coast of Dalmatia, in the gulph of Venice, opposite to Spalatto, and subject to Venice. E. Long. 28. 0. N. Lat. 43. 0.

BREACH, in a general sense, denotes a break or rupture in some part of a fence or inclosure, whether owing to time or violence.—Inundations, or overflowings of lands, are frequently owing to breaches in the dikes or sea-banks. Dagenham breach is famous; it was made in 1707, by a failure of the Thames wall in a very high tide. The force wherewith it burst in upon the neighbouring level tore up a large channel or passage for water 100 yards wide, and in some places 20 feet deep, by which a multitude of subterraneous trees that had been buried many ages before were laid bare.

BREACH, in fortification, a gape made in any part of the works of a town by the cannon or mines of the besiegers, in order to make an attack upon the place. To make the attack more difficult, the besieged sow the breach with crow-feet, or lop it with *chevaux de frize*.—A practicable breach, is that where the men may mount and make a lodgment, and ought to be 15 or 20 fathoms wide. The besiegers make their way to it, by covering themselves with gabions, earth-bags, &c.

BREACH, in a legal sense, is where a person breaks through the condition of a bond or covenant; on an action upon which, the breach must be assigned: And this assignment must not be general, but particular, as, in an action of covenant for not repairing houses, it ought to be assigned particularly what is the want of reparation; and in such certain manner, that the defendant may take an issue.

BREAD, a mass of dough kneaded and baked in an oven. See **BAKER**, **BAKING**, and **BARM**.

The grains of all vegetables are almost entirely composed of substances very proper for the nourishment of animals; and amongst grains those which contain a farinaceous matter are the most agreeable and most nutritive. *Macquet's Chem. Diet.*

Man, who appears to be designed by nature to eat of all substances which are capable of nourishing him, and still more of vegetables than animals, has, from time immemorial, and in all parts of the earth, used farinaceous grains as the principal basis of his food: but as these grains cannot be without difficulty eaten by men in their natural state, this active and intelligent animal has gradually found means not only to extract the farinaceous part, that is, the only nutritive part of these grains, but also to prepare it so that it becomes a very agreeable and wholesome aliment, such as the bread we now generally eat.

Nothing appears so easy at first sight as to grind corn,

Bread. corn, to make a paste with the flour and water, and to bake this paste in an oven. They who are accustomed to enjoy the advantages of the finest human inventions, without reflecting on the labour it has cost to complete them, think all these operations common and trivial. However, it appears very certain, that for a long time men no otherwise prepared their corn than by boiling and forming compact viscous cakes, not very agreeable to the taste, and of difficult digestion, before they were able to make bread of good taste and quality, as we have now. It was necessary to invent and complete ingenious machines for grinding corn, and separating the pure flour with little trouble and labour; and that inquiries, or rather some happy chance, which some observing person availed himself of, should discover, that flour, mixed with a certain quantity of water, is susceptible of a fermentation which almost entirely destroys its viscosity, heightens its taste, and renders it proper to make a light bread, very agreeable to the taste, and of easy digestion.

This essential operation, on which the good quality of bread depends, is entirely of the province of chemistry. It would add to the honour of the ancient cultivators of chemistry, to attribute to them so useful and important a discovery; but, unhappily, it is too probable that they had no share in it. The ancient chemists were engaged in other pursuits than that of bread and other common objects. They hoped to make gold; and what is bread in comparison with gold?

However that be, to the fortunate invention of raising the paste before baking we owe the perfection of the art of making bread. This operation consists in keeping some paste or dough, till by a peculiar spirituous fermentation it swells, rarefies, and acquires a smell and taste quick, pungent, spirituous, somewhat sour, and rather disagreeable. This fermented dough is well worked with some fresh dough, which is by that mixture and moderate heat disposed to a similar but less advanced fermentation than that above mentioned. By this fermentation the dough is attenuated, and divided; air is introduced into it, which, being incapable of disengaging itself from the tenacious and solid paste, forms in it small cavities, raises and swells it: hence the small quantity of fermented paste which disposes the rest to ferment, is called *leaven* from the French word *lever*, signifying to raise.

When the dough is thus raised, it is in a proper state to be put into the oven; where, while it is baked, it dilates itself still more by the rarefaction of the air, and of the spirituous substance it contains, and it forms a bread full of eyes or cavities, consequently light, and entirely different from the heavy, compact, viscous, and indigested masses made by baking unfermented dough.

The invention of beer, or wine of grains, furnishes a new matter useful in the making of bread. This matter is the froth which forms upon the surface of these liquors during fermentation. When it is mixed with dough, it raises it better and more quickly than ordinary leaven. It is called *yeast* or *barm*. By means of this, the finest lightest bread is made. It often happens, that bread made with leaven dough has a sourish and not agreeable taste; which may proceed

from too great a quantity of leaven, or from leaven in which the fermentation has advanced too far. This inconvenience does not happen to bread made with yeast; because the fermentation of this substance is not too far advanced, or because more attention is given to that finer bread.

It may be asked, Why, since dough is capable of fermenting spontaneously and singly, as we see from the leaven, a substance is added to dispose it to ferment? The true reason is, That all the parts of a fermenting substance do not ferment at the same time, nor to the same degree; so that some parts of this substance have finished their fermentation, while others have not yet begun. The fermentable liquors which contain much sugar, as hydromel, and must of wines, give proofs of this truth; for, after these liquors have become very vinous, they have still very distinctly a saccharine taste: but all saccharine matter is still susceptible of fermentation: and, in fact, if vinous hydromel, or must, or even new beer, be distilled, so that all their ardent spirit shall be separated, and the residuums diluted with water, we shall see a second fermentation take place, and a new quantity of ardent spirit formed.

The same thing precisely happens to dough, and still more sensibly, from its viscosity and want of fluidity; so that if it be left to ferment alone, and without the help of leaven, as the fermentation proceeds very slowly and successively, the parts which ferment first will have become sour and vapid before all the rest be sufficiently attenuated and changed, by which the bread will acquire a disagreeable taste.

A mixture of a small quantity of leaven with dough effectually prevents this inconvenience; because the effect of this leaven, and of all fermenting substances, is to dispose to a similar fermentation all matters capable of it, with which it is mixed; or rather, by means of leaven, the fermentation of all the parts of such substances is effected more nearly at the same time.

Bread well raised and baked differs from unfermented bread, not only in being less compact, lighter, and of a more agreeable taste, but also in being more easily miscible with water, with which it does not form a viscous mass, which circumstance is of great importance in digestion.

It is observable, that without bread, or somewhat of this form, no nation seems to live. Thus the Laplanders, having no corn of their own, make a sort of bread of their dried fishes, and of the inner rind of the pine, which seems to be used, not so much for their nourishment, as for supplying a dry food. For this mankind seem to have an universal appetite, rejecting bland, slippery, and mucilaginous foods. This is not commonly accounted for, but seems to depend on very simple principles. The preparation of our food depends on the mixture of the animal fluids in every stage. Among others the saliva is necessary, which requires dry food as a necessary stimulus to draw it forth, as bland, slippery, fluid aliments are too inert, and make too short stay in the mouth, to produce this effect, or to cause a sufficient degree of mastication to emulge that liquor. For this reason we commonly use dry bread along with animal food, which otherwise would be too quickly swallowed. For blending the oil and water of our food nothing is so fit as bread, assisted by a previous mastication. In what purpose, bread is of like necessity

Ereal. **city** in the stomach, as it is proper that a substance of solid consistence should be long retained there. Now the animal fluids must be mixed with our aliments, in order to change the acescency it undergoes. But liquid foods would not attain this end, whereas the solid stimulates and emulges the glands of the stomach. The bread then appears to be exceedingly proper, being bulky without too much solidity, and firm without difficulty of solution.

Suppl to
Chambers's
Dict.

Among the ancients we meet with various denominations of bread; as, 1. *Panis filigineus*, called also *mundus*, *athleticus*, *ifungia*, *coliphus*, and *robys*, answering to our white bread; being made of the purest flour of the best wheat, and only used by the richer sort. 2. *Panis secundus* or *secundarius*, called also *snilaceus* or *snilagineus*, the next in purity; being made of fine flower, only all the bran not sifted out. 3. *Autopyrus*, called also *syncomistus* and *confusaneus*, made of the whole substance of the wheat, without either retrenching the finer flour or coarser bran; answering to our household bread. 4. *Cacabaceus*, apparently the same with what was otherwise denominated *fordidus*, as being given to dogs; *fursuraceus*, *fursureus*, or *fursurativus*, because made in great part of bran; and, in the middle age, *bissus*, on account of its brownness; sometimes also *leibo*. There were other sorts of bread, denominated from the manner in which they were made, or the uses they were applied to; as, 1. The *militaris*, which was prepared by the soldiers and officers in camp with their own hands; for which purpose some had hand-mills, others pounded the corn in a mortar, and baked it on the coals. 2. *Clibanites*, that baked in an oven, by way of contradistinction from that baked on the hearth or under the embers. 3. That called *subcineritius*, or *sub cinere coctus*; sometimes also *reversatus*, because it was to be turned in the baking. 4. *Nauticus*, answering to our sea-biscuit, and denominated accordingly *bis coctus*, because baked several times over to make it keep the longer. Other kinds of bread were denominated from their qualities and accidents; as, 1. The *panis ficcus*, that which had been long baked; such as were the *bis coctus*, naval and buccellated bread. 2. *Madidus*, a sort made of rye or bear, sometimes also made of fine flower, wherewith they smeared their faces, by way of a cosmetic, to render them smooth. 3. *Acidus*, or sour bread, which was acidulated with vinegar. 4. *Azymus*, that unleavened or unfermented.

The French have also a great variety of breads; as queen's bread, alamode bread, bread de Segovie, de Gentillay, quality-bread, &c. all prepared in peculiar manners by the bakers of Paris. The bread de Gonesse excels all others, on account of the waters at Gonesse, a town three leagues from Paris. It is light, and full of eyes, which are the marks of its goodness. *Pain de menage*, is that which each family bakes for itself. Spice-bread, *pain d'epice*, denotes bread baked and iced over with the scum taken off sugar in refining houses; it is sometimes also made with honey and other sorts of seasoning, and answers to what the ancients call *panis melilitus*.

Among us, bread is chiefly divided into white, wheaten, and household; differing only in degrees of purity. In the first, all the bran is separated; in the second, only the coarser; in the third, none at all: so

N^o 54.

that fine bread is made only of flour; wheaten bread, of flour and a mixture of the finer bran; and household, of the whole substance of the grain, without taking out either the coarse bran or fine flower. We also meet with sannel bread, manchet, or roll bread, and French bread: which are only so many denominations of the finest and whitest bread, made of the purest flour; except that in ill-roll bread there is an addition of milk; and in French bread, of eggs and butter also. In Lancashire, and several of the northern counties of England, they have several sorts of oaten bread; as, 1. The bannock, which is an oat-cake, kneaded only with water, and baked on the embers. 2. Clap-bread, which is made into thin hard cakes. 3. Bitchine's bread, which is made of thin batter, and made into thin soft oat-cakes. 4. Riddle-cakes, which are thick and four, have but little leaven, and are kneaded stiff. And, 5. Jannock, which is oaten bread made up into loaves. Add to these, *pease-bread*, much used in many parts of Scotland; being bread consisting either wholly of the flour of pease, or of this and oat-meal mixed: the dough, sometimes leavened, sometimes made only with water, is formed either into bannocks or cakes, and baked over the embers; or into what they call *baps*, i. e. a kind of flattish rolls, and baked in the oven. In the statute of assize of bread and ale, 51 Hen. III. mention is made of wattel-bread, cocket-bread, and bread of treet; which answer to the three kinds of bread now in use, called *white*, *wheaten*, and *household* bread. In religious houses, they heretofore distinguished bread by the names Esquires bread, *panis armigerorum*; monks bread, *panis conventualis*; boys bread, *panis puerorum*; and servants bread, *panis famulorum*, called also *panis seroientalis*. A like distribution obtained in the households of nobles and princes; where, however, we find some other denominations; as messengers bread, *panis nunciatus*, that given to messengers as a reward of their labour; court-bread, *panis curialis*, that allowed by the lord for the maintenance of his household; eleemosynary bread, that distributed to the poor by way of alms.

It is for the interest of the community that the food of the poor should be as various as possible, that, in time of dearth and scarcity of the ordinary kinds, they may not be without ready and cheap resources. To the discovery of such resources several benevolent philosophers having successfully turned their inquiries; we shall lay before the reader the result of their experiments.

1. **BREAD of Potatoes***. Potatoes, previously deprived of their skin, cut into thin slices, and put between paper, will dry in a heat somewhat less than 35° of Reaumur's thermometer; and, when thus dried, they will preserve their white colour. By this process they par M Parlose about two thirds of their weight, and they may then be reduced to a fine powder. A little of this powder thrown upon the fire sends out a smoke, accompanied with a smell resembling burnt bread. As this smell is perceived from all farinaceous vegetables when treated in the same manner, Mr Parmentier thinks it may be considered as the characteristic of the presence of an *amylaceous* † matter. This smell does not, however, he † See the observes, arise from the amylaceous or fibrous part separately, but from both taken together. The powder of potatoes, but obtained in the manner described above, has the smell and taste of wheat; and, like it, is devoured

Bread.

* From
Examen
Chymique des
Pommes de
Terre, &c
mentier, a-
poch. major
del hotel des
invalides
Paris.

† See the
note infra.

Bread. voured by rats and mice : but, even when most finely powdered, it has not the feel or brightness of the flour of wheat; although, on a chemical analysis, it yields the same products. It is also nutritious, and keeps well for a long time.

Finding so great a similarity between the meal of wheat and what may be called the meal of potatoes, Mr Parmentier next endeavoured to make bread of them when mixed in different proportions. His trials were made with one fourth, one third, one half, and two thirds, of the potato meal, the remainder being flour from wheat. These proportions, with the addition of a little salt and yeast, yielded bread which was well tasted, but which had fermented little, was brown, and covered with hard brown crusts. Bread made from the meal of potatoes alone, with the addition of salt and yeast, was eatable, but very heavy, unfermented, and exceedingly brown. This bread, from the meal of potatoes alone, was apt to crumble into powder. To give it more adhesion, he mixed with the meal a decoction of bran, or a mixture of honey and water; either of which made it lighter and more fermented: it obtained also a crust of a golden colour, became well tasted, and sufficiently adhesive. Mr Parmentier obtained bread also, well fermented, and of a good colour and taste, from a mixture of raw potato-pulp with meal of wheat, or potato-meal, with the addition of yeast and salt.

Potatoes, when used for making bread, are not readily disposed to ferment; without which, bread is very insipid, and not easily digested. But Mr Parmentier found, from a variety of experiments, that good bread might be made from equal quantities of flour and potato-meal. He concludes, therefore, with recommending the mixture of potatoes, in times of scarcity, with the flour of wheat, instead of employing rye, barley, or oats, as has frequently been done.

When grain is altogether wanting, he recommends the use of bread made from a mixture of the amylaceous powder of potatoes and of their pulp, this mixture being fermented with leaven or with honey. The meal of this root, when diluted with hot water, acquires a tenacious and gluey consistence. However fair the meal of potatoes may be, it always gives a grey colour to the bread made by mixing it with the flour of wheat: but a mixture of the pulp of potatoes with the flour of wheat does not produce brown-coloured bread.

Mr Parmentier made bread, very much like that of wheat, by a mixture of the following four substances, viz. four ounces of amylaceous powder of potatoes, one dram of mucilage extracted from barley, one dram of

the bran of rye, and a dram and a half of glutinous matter dried and powdered.

2. *BREAD from different Vegetables not commonly in Use* *. Although horse-chestnut has not hitherto been employed, yet it is certain that wholesome bread, without any bitterness, may be obtained from it. Mr Parmentier advises, that the fruit, after the skin is taken off, and the juice pressed from it, be made into a paste. This mass must be diluted in water, and then strained through a sieve. A milky-coloured liquor is thus separated, which, on standing, deposits a fine powder. This, being dried, is without either smell or taste, and very fit for aliment; the mass from which it is procured retaining the bitterness of the fruit.

The roots of the bryona, when treated in the same manner, yielded a similar white powder. By the same treatment also, fine, white, insipid, inodorous powders may be procured from the roots of the iris, gladiolus, ranunculus, fumaria, arum, dracunculus, mandragora, calchicum, filipendula, and helleborus; plants which grow spontaneously, and in great abundance.

Of acorns bread has frequently been made; and to this day, in some countries, they are in common use. The method of preparation which Mr Parmentier recommends is, that they be deprived of their cover by boiling, then dried and powdered, and afterwards baked in the same manner as the flour of wheat. When fully ripe, and made into a paste, they were deprived of their astringency by merely pressing their juice from them. The mass remaining after the pressure, when dried, was easily reduced to a fine powder by no means disagreeable.

The gramen caninum arvense, in its appearance, approaches to corn; and some naturalists have considered it as the original species from which all our grain is produced. Its roots are sweet-tasted, and have long been employed in making ptisans. In the preparation of them for bread, it is only necessary that the roots should be cleansed, cut small, dried, and pounded. This powder, Mr Parmentier observes, does not dissolve in cold water or spirits; but it does in boiling water, which it renders thick and cloudy, and, upon cooling, the whole mass obtains a gelatinous consistence. Upon a chemical analysis, it yields an acid empyreumatic oil, which possesses a singular odour, resembling that which is perceived on burning the plant. The spongy residuum, calcined in the air, gives a fixed alkali. These properties incontestably prove, that it contains an amylaceous (A) matter similar to that of grain, which appears to be the nutritive part of vegetables. This amylaceous

Bread. From Memoire sur les vegetaux qui pourroient suppléer en temps de disette a ceux que l'on employe communément a la nourriture des hommes, &c. par M. Parmentier.

(A) M. Beccari of the Bolognian academy has discovered in the flour of wheat two distinct substances. The one he terms an animal or glutinous matter; the other, an amylaceous matter or vegetable paste.

The gluten has been supposed to be the nutritive part of corn, from its not dissolving unless in vegetable acids; from its assuming a spongy form in boiling water; from its supposed analogy to the animal lymph; and, lastly, from the similitude which the products it affords, on a chemical analysis, bear to those obtained from animal substances. M. Parmentier, however, from various experiments, was led to conclude, with the celebrated Model of Petersburg, that the gluten or animal matter of Beccari exists in the bran, and is not the nutritive part of the wheat. Having made experiments with four different kinds of flour, it appeared that the quantity of animal matter was always proportioned to the coarseness of the flour. Hence, were this gluten the nutritive part, the coarsest bread, or that which contained most bran, would afford the greatest quantity of nourishment. The contrary of this, however, is now known to be fact.

The amylaceous part, or, as some have termed it, the *fecula*, of wheat and other vegetables, is a peculiar gum, not

Bread.

laceous matter, formed into a jelly, and diffused in water, keeps for a long time without suffering any change; it then turns acid, and at length putrefies.

The amylaceous matter of acrid and poisonous plants, although innocent and nutritive, cannot be converted into bread without the addition of some mucilaginous substance. In times of great scarcity, common bran will answer the purpose; but when potatoes are to be had, the addition of a proper proportion of these is to be preferred.

Mr Parmentier gives an account of the bread which he obtained from the amylaceous powders of the different vegetables mentioned above, with the addition of potatoes and a small quantity of common leaven of grain. This bread appeared in general to be well fermented; it was of a good white colour, and free from any disagreeable odour: but to the taste it was somewhat insipid: which, however, he imagines, might have been corrected by the addition of a proper quantity of salt.

As the resources against scarcity here pointed out can be procured only at particular seasons, the author proposes a method for preserving the matter thus obtained. For this purpose, he advises, that bread prepared in the manner mentioned above should be carefully dried, reduced to powder, and then kept in a close cask. By this means, he is of opinion that it may be preferred for a very long time, and will always be ready to make an agreeable and wholesome panada by the addition of a little butter and salt.

Mr Parmentier, in order to discover the degree of power wherewith this alimentary powder nourished, made himself the subject of experiment; and found, that three ounces of it for dinner, and as much for supper, made into panada with water, was a sufficient quantity of aliment for a day. From his discharge by stool while he used it, he had reason to believe that it is almost totally alimentary. He concludes with recommending it not only as useful in times of scarcity, but as a proper substitute for sea-biscuit, and as a species of food well adapted for armies and hospitals.

3. *Cheap method of making wholesome BREAD*, when wheat-flour is dear, by mixing turnip with it*.

* From a letter in the *Museum Rusticum et Commerciale*.

"At the time I tried this method, bread was very dear, inasmuch that the poor people, in the country where I live, could hardly afford themselves half a meal a-day. This put me upon considering whether some cheaper method might not be found than making it of wheat-meal. Turnips were at that time very plentiful. I had a number of them pulled, washed clean, pared, and boiled; when they were become soft enough to mash, I had the greatest part of the water pressed out of them, and afterwards had them mixed with an equal quantity in weight of coarse wheat-meal; the

Bread.

dough was then made in the usual manner, with yeast or barm, salt, water, &c. It rose very well in the trough; and after being well kneaded, was formed into loaves, and put into the oven to be baked. I had at the same time some other bread made with common meal in the ordinary way. I baked my turnip-bread rather longer than the other. When they were drawn from the oven, I caused a loaf of each sort to be cut; and found, on examination, the turnip-bread was sweeter than the other, to the full as light and as white, but had a little taste (though nowise disagreeable) of the turnip. Twelve hours afterwards I tasted my turnip-bread again, when I found the taste of the turnip in it scarce perceivable, and the smell quite gone off. On examining it when it had been baked 24 hours, had I not known that there were turnips in its composition, I should not have imagined it: it had, it is true, a peculiar sweetish taste, but by no means disagreeable; on the contrary, I rather preferred it to the bread made of wheat-meal alone. After it had been baked 48 hours, it underwent another examination, when it appeared to me to be rather superior to the other; it eat fresher and moister, and had not at all abated in its good qualities: to be short, it was still very good after a week; and, as far as I could see, kept as well as the bread made of common wheat-meal.

"In my trials of this bread by the taste, I was not satisfied with eating it by itself; I had some of it spread with butter; I tasted it with cheese; I eat of it toasted and buttered, and finally in boiled milk and in soup: in all these forms it was very palatable and good.

BREAD in medicine. Besides the alimentary, bread has also medical, qualities.—Decoctions, creams, and jellies of bread are directed in some dispensaries. Bread carefully toasted, and infused or lightly boiled in water, imparts a deep colour, and a sufficiently agreeable restraining taste. This liquor, taken as common drink, has done good service in a weak lax state of the stomach and intestines; and in bilious vomiting and purging, or the cholera morbus: examples are related in the Edinburgh essays of several cases of this kind cured by it, without the use of any other medicine.—In Westphalia there is a very coarse bread eaten, which still retains the opprobrious name given it by a French traveller of *Bonpournickel*, "good for his horse *Nickel*." It is the same with what the Romans called *panis fursuraceus*, or *panis impurus*, from its not being cleaned from the husk; and *panis ater*, from the blackness of its colour: though we learn from Pliny, that the Romans for 300 years knew no other bread. The Germans* make two sorts of waters by distillation from this bread; the one with, the other without, the addition of a spirituous liquor: to both which great virtues are ascribed. That without

* Hoffman's *Obs. r. Chem.*

not soluble in spirit of wine, vinegar, or cold water. It contains more acid, and less water, than the ordinary gums. It is found in many of those plants that make the nourishment of men and other animals. Hence Mr Parmentier concludes it to be the nutritive matter.

Though we are not to consider the glutinous matter as the nutritious part of vegetables, yet it is a very necessary ingredient. It is that which preserves the cohesion of the paste in fermenting bread: it is that which forms the viscid pellicle, and stops the air in fermentation; gives the savoury taste to bread; occasions it to be light, to ferment, and which forms the small cells seen in it. It is found especially near the cortical part of grain; and this accounts for its being found in the greatest quantity in coarse brown meal. It is this gluten which renders wheat a superior aliment to the other grains and roots.

Bread. without any thing spirituous, is made out of the juice of craw-fish, may-dew, rose-water, nutmegs, and saffron, distilled from a large quantity of this bread. This is esteemed a great restorative, and given in hectic habits. The other is distilled from this bread and Rhenish wine, with nutmegs and cinnamon. This is given in all the disorders of the stomach, vomiting, loss of appetite, and other complaints of the same kind: and besides these, there is a spirit distilled from it by the retort in the dry way, which, when separated from its fetid oil, is esteemed a powerful sudorific, and very valuable medicine in removing impurities of the blood.

Bread is also medicinal, applied *externally*, as is vulgarly known*. Mr Boyle assures us he drew a menstruum from bread stronger than aquafortis, and which would act even upon glass itself †.

BREAD-Tree. See *ARTOCARPUS*.

Bees-BREAD. See *BEE*, n^o 12.

Cassada-BREAD. See *JATROPHA*.

Earth-BREAD †. "In the lordship of Moseaw in the Upper Lutatia, a sort of white earth is found, of which the poor, urged by the calamities of the wars which raged in those parts, make bread. It is taken out of a hill where they formerly worked at saltpetre. When the sun has somewhat warmed this earth, it cracks, and small white globules proceed from it as meal; it does not ferment alone, but only when mixed with meal. Mr Sarlitz, a Saxon gentleman, was pleased to inform us, that he has seen persons who in a great measure lived upon it for some time. He assures us that he procured bread to be made of this earth alone, and of different mixtures of earth and meal; and that he even kept some of this bread by him upwards of six years: he further says, a Spaniard told him, that this earth is also found near Geronne in Catalonia."

Eucharist or Sacramental BREAD, in the Protestant churches, is common leavened bread, in conformity to the ancient practice. In the Romish mats, azymous or unleavened bread is used, particularly in the Gallican church, where a sort is provided for this purpose called *pain a chanter*, made of the purest wheaten flour pressed between two iron plates graven like wafer-moulds, being first rubbed with white wax to prevent the paste from sticking. The Greeks observe divers ceremonies in their making the eucharist bread. It is necessary the person who bakes it have not lain with his wife the day before; or, if it be a woman, that she have not conversed with her husband. The Abyssinians have an apartment in their churches for this service, being a kind of sacristy. F. Sirmund, in his disquisition on azymous bread, shows from the council of Toledo, that anciently there were as many ceremonies used in the Latin church in the preparation of their unleavened bread as are still retained in the eastern churches. He cites the example of Queen Radegonda, who distributed with her own hands, in the church, the bread which she herself had made. It appears also from the dispute of cardinal Humbert against the Greeks, that in the Latin church no bread was used for the eucharist, but what was taken out of the sacristy, and had been made by the deacons, subdeacons, and even priests, who rehearsed several psalms during the process.

Ecclesiastical writers enumerate other species of bread allotted for purposes of religion; as, 1. *Calendarius*,

that anciently offered to the priest at the kalends. 2. *Prebendarius*, the same with *capitularis*, that distributed daily to each prebendary or canon. 3. *Benedictus*, that usually given to catechumens before baptism, in lieu of the eucharistic bread, which they were incapable of partaking of. The *panis benedictus* was called also *panagium* and *eulogium*, being a sort of bread blessed and consecrated by the priest, whereby to prepare the catechumens for the reception of the body of Christ. The same was used afterwards, not only by catechumens, but by believers themselves, as a token of their mutual communion and friendship. Its origin is dated from the 7th century, at the council at Nantz. In the Gallican church we still find *panis benedictus*, *pain benit*, used for that offered for benediction, and afterwards distributed to pious persons who attend divine service in chapels. 4. Consecrated bread is a piece of wax, paste, or even earth, over which several ceremonies have been performed with benedictions, &c. to be sent in an *Agnus Dei*, or relic-box, and presented for veneration. 5. Unleavened bread, *panis azymus*. The Jews eat no other bread during their passover; and exact search was made in every house, to see that no leavened bread was left. The usage was introduced in memory of their hasty departure from Egypt, when they had not leisure to bake leavened. 6. Shew-bread was that offered to God every Sabbath-day, being placed on the golden table in the holy of holies.

Horse-BREAD is made of wheat, oats, and beans; to which sometimes are added aniseed, gentian, liquorice, fenugreek, eggs, and ale; and sometimes rye and white wine are used.

For race-horses three sorts of bread are usually given with success, for the second, third, and fourth nights feeding: they are all made of beans and wheat worked with barm; the difference consisting chiefly in the proportion of the two former. In the first kind, three times the quantity of beans is used to one of wheat; in the second, equal quantities of both; in the third, three times the quantity of wheat to one of beans.

Sago-BREAD. See *SAGO*.

Assize * of *BREAD*. The price and weight of bread is regulated by the magistrates according to the price of wheat. We have divers tables of the weights of the loaves both of wheat, wheaten, and household bread, at every price of wheat. If bread want one ounce in 36, the baker formerly was to suffer the pillory: now, to forfeit 5 s. for every ounce wanting; and for every defect less than an ounce, 2 s. 6 d.; such bread being complained of and weighed before a magistrate within 24 hours after it is baked or exposed to sale within the bills of mortality, or within three days in any other place. It is to be observed, bread loses weight by keeping: in some experiments recited by Bartholine, the diminution was near one fourth in six months. The same author assures us, that in Norway they make bread which keeps 30 or 40 years; and that they are there sonder of their old hard bread, than elsewhere of new or soft; since the older it is, the more agreeable it grows. For their great feasts, particular care is taken to have the oldest bread; so that, at the christening of a child, they have usually bread which had been baked perhaps at the christening of his grandfather. It is made of barley and oat-meal baked between two hollow stones.

Bread
||
Breast.

BREAD-Room, in a ship, that destined to hold the bread or biscuit.

The boards of the bread-room should be jointed and caulked, and even lined with tin plates or mats. It is also proper to warm it well with charcoal for several days before the biscuit is put into it; since nothing is more injurious to the bread than moisture.

BREADTH, in geometry, one of the three dimensions of bodies, which multiplied into their length constitutes a surface.

BREAK, in a general sense, signifies to divide a thing into several parts with violence.

In the art of war, to *break ground*, is to open the trenches before a place.

Among sportsmen, to *break a horse* in trotting, is to make him light upon the hand in trotting, in order to make him fit for a gallop. To *break a horse* for hunting, is to supple him, to make him take the habit of running.

BREAKERS, a name given by sailors to those billows that break violently over rocks lying under the surface of the sea. They are distinguished both by their appearance and sound, as they cover that part of the sea with a perpetual foam, and produce a hoarse and terrible roaring, very different from what the waves usually have in a deeper bottom. When a ship is unhappily driven among breakers, it is hardly possible to save her, as every billow that heaves her upwards serves to dash her down with additional force when it breaks over the rocks or sands beneath it.

BREAKING, in a mercantile style, denotes the becoming bankrupt. See **BANKRUPT**.

BREAKING-Bulk, in the sea language, is the same with unloading part of the cargo.

BREAKSPEAR (Nicholas). See **ADRIAN IV**.

BREAM, in ichthyology. See **CYPRINUS**.

To **BREAM**, to burn off the filth, such as grass, ooze, shells, or sea-weed, from a ship's bottom, that has gathered to it in a voyage, or by lying long in a harbour. This operation is performed by holding kindled furze, faggots, or such materials, to the bottom, so that the flame incorporating with the pitch, sulphur, &c. that had formerly covered it, immediately loosens and throws off whatever filth may have adhered to the planks. After this, the bottom is covered anew with a composition of sulphur, tallow, &c. which not only makes it smooth and slippery, so as to divide the fluid more readily, but also poisons and destroys those worms which eat through the planks in the course of a voyage. Breaming may be performed either when the ship lies aground after the tide has ebbed from her, or by docking, or by careening.

BREAST, in anatomy, denotes the fore-parts of the thorax. See **ANATOMY**, n° 36, 111.

Smiting the breast is one of the expressions of penitence. In the Romish church, the priest beats his breast in rehearsing the general confession at the beginning of the mass.

BREASTS, or *Mammæ*, in anatomy. See **ANATOMY**, Lex. Med. n° 112.

The breasts are usually two; though we also meet with instances of *trimaniæ* or women with three breasts*, and even some with four, all yielding milk alike †.

BREAST-Hooks, in ship-building, are thick pieces of

timber incurvated into the form of knees, and used to strengthen the fore-part of the ship, where they are placed at different heights directly across the stem, so as to unite it with the bows on each side. The breast-hooks are strongly connected to the stem and hawse-pieces by tree-nails, and by bolts driven from without through the planks and hawse-pieces, and the whole thickness of the breast-hooks, upon whose inside those bolts are forelocked or clinched upon rings. They are usually about one third thicker, and twice as long, as the knees of the decks they support.

BREAST-Plate, in antiquity, a piece of armour worn to defend the breast, originally believed to be made of hides, or hemp twisted into small cords, but afterwards made of brass, iron, or other metals, which were sometimes so exquisitely hardened, as to be proof against the greatest force.

BREAST-Plate, in Jewish antiquity, one part of the priestly vestments anciently worn by the high priests. It was a folded piece of the same rich embroidered stuff of which the *ephod* was made; and it was set with twelve precious stones, on each of which was engraven the name of the tribes. They were set in four rows, three in each row; and were divided from each other by the little golden squares or partitions in which they were set. The names of these stones, and that of the tribes engraven on them, as also their disposition on the breast-plate, are as follows:

Sarame. RUBEN	Emerala. JUDAH.	Ligure. GAD.	Beryl. ZEBULON
Topaz. SIMEON	Sapphire. DAN.	Agate. ASHEP.	Onyx. JOSEPH.
arbuncle LEVI	Diamoni. NAPHTHALI	Amethyst ISACHAR.	Jasper. BENJAMIN.

This breast-plate was fastened at the four corners; those on the top to each shoulder by a golden hook or ring at the end of a wreathed chain; and those below, to the girdle of the *ephod*, by two strings or ribbons, which had likewise two rings and hooks.

This ornament was never to be severed from the priestly garment; and it was called the *memorial*, to put the high-priest in mind how dear those tribes ought to be to him, whose names he wore on his breast. It is also called the *breast-plate of judgment*, because it had the divine oracle of *Urim and Thummim* annexed to it. See **URIM AND THUMMIM**.

BREAST-Plate, in the manege, the strap of leather that runs from one side of the saddle to the other, over the horse's breast, in order to keep the saddle tight, and hinder it from sliding backwards.

BREAST-Work, in fortification, the same with **PARAPET**.

BREATH, the air inspired and expelled again in the action of respiration.

The ancients were very watchful over the last breath of dying persons, which the nearest relations, as the mother, father, brother, or the like, received in their mouths.

BREATHING, the same with **RESPIRATION**.

BRECHIN, a town of Scotland, in the county of Angus, situated in E. Long. 2 18. N. Lat. 56. 40. It consists.

Breast
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Brechin.

* Baribol. Asi. Med. p. 171. Cab. Lex. Med. n° 728.
† Cabrol Ob. serv. 7. Blas. Com. ad Vesting. p. 133.

Brechin. consists of one large handsome street, and two smaller; and is seated on the side of a small hill, washed by the river Southesk, over which there is a stone-bridge of two large arches. At the foot of the town is a long row of houses independent of it, built on ground held in feu from the family of Northesk. It is a royal borough, and, with four others, sends a member to parliament. In respect to trade, it has only a small share of the linen manufacture. It lies at no great distance from the harbour of Montrose; and the tide flows within two miles of the town; to which a canal might be made, which perhaps might create a trade, but would be of certain service in conveying down the corn of the country for exportation.

Brechin was a rich and ancient bishopric founded by David I. about the year 1150. At the Reformation, its revenues, in money and in kind, amounted to 700 l. a-year; but, after that event, were reduced to 150 l. chiefly by the alienation of lands and tythes by Alexander Campbell, the first Protestant bishop, to his chieftain the earl of Argyle.—The Culdees had a convent here. Their abbot Leod was witness to the grant made by king David to his new abbey of Dunfermline. In after times, they gave way to the Mathurines or Red Friars. The ruins of their house, according to Maitland, are still to be seen in the College Wy: d.—Here was likewise an hospital called *Maison de Dieu*, founded in 1256, by William de Brechin, for the repose of the souls of the kings William and Alexander; of John earl of Chester, and of Huntingdon his brother; of Henry his father, and Juliana his mother. Albans bishop of Brechin, in the reign of Alexander II. was witness to the grant. By the walls which are yet standing, behind the west end of the chief street, it appears to have been an elegant little building.

The cathedral is a Gothic pile, supported by 12 pillars; is in length 166 feet, in breadth 61: part is ruinous, and part serves as the parish-church. The west end of one of the aisles is entire: its door is Gothic, and the arch consists of many mouldings; the window of it neat tracery. The steeple is a handsome tower, 120 feet high; the four lower windows in form of long narrow openings; the belfry windows adorned with that species of opening called the *quatrefoil*: the top battlemented, out of which rises a handsome spire.—At a small distance from the aisle stands one of those singular round towers whose use has so long baffled the conjectures of antiquaries. These towers appear to have been peculiar to North-Britain and Ireland: in the last they are frequent; in the former, only two at this time exist. That at Brechin stood originally detached from other buildings. It is at present joined near the bottom by a low additional aisle to the church, which takes in about a sixth of its circumference. From this aisle there is an entrance into it of modern date, approachable by a few steps, for the use of the ringers; two handsome bells are placed in it, which are got at by means of six ladders placed on wooden semicircular floors, each resting on the circular abutments within side of the tower. The height from the ground to the roof is 80 feet; the inner diameter, within a few feet of the bottom, is 8 feet; the thickness of the wall at that part, 7 feet 2 inches; so that the whole diameter is 15 feet 2 inches; the circumference very near 48 feet; the inner diame-

ter at top is 8 feet 7 inches; the thickness of the walls, 4 feet 6 inches; the circumference, 38 feet 8 inches; which proportion gives the building an inexpressible elegance: the top is roofed with an octagonal spire 23 feet high, which makes the whole 103. In this spire are four windows placed alternate on the sides, resting on the top of the tower; near the top of the tower are four others facing the four cardinal points: near the bottom are two arches, one within another, in relief; on the top of the utmost is a crucifixion: between the mouldings of the utmost and inner are two figures; one of the Virgin Mary; the other of St John, the cup, and lamb. On each corner of the bottom of this tower is a figure of certain beasts; one possibly the Caledonian bear; and the other, with a long snout, the boar. The stone-work within the inner arch has a small slit or peep-hole, but without the appearance of there having been a door within any modern period: yet there might have been one originally; for the filling up consists of larger stones than the rest of this curious rotund. The whole is built with most elegant masonry, which Mr Gough observed to be composed of 60 courses.—This tower hath often been observed to vibrate with a high wind.

The castle of Brechin was built on an eminence, a little south of the town; it underwent a long siege in the year 1303; was gallantly defended against the English under Edward III.; and, notwithstanding all the efforts of that potent prince, the brave governor Sir Thomas Maule, ancestor of the present earl of Panmure, held out this small fortress for 20 days, till he was slain by a stone cast from an engine on the 20th of August, when the place was instantly surrendered. The family of Panmure have now a noble house on the site of the old castle.—Brechin is also remarkable for a battle fought near it, in consequence of the rebellion raised in 1452, on account of the murder of the earl of Douglas in Stirling castle. The victory fell to the royalists under the earl of Huntly. The malcontents were headed by the earl of Crawford, who, retiring to his castle of Finhaven, in the frenzy of disgrace declared, that he would willingly pass seven years in hell, to obtain the glory which fell to the share of his antagonist.

BRECKNOCK, or **BRECON**, a town of Brecknockshire in Wales, and capital of the county. It is called by the Welch *Aber Hondey*, and is seated at the confluence of the rivers Hondey and Usk, over which there is a handsome stone bridge. It is an ancient place, containing three churches, one of which is collegiate, and is seated at the west end of the town. The houses are well built. Here was formerly a stately castle, and a strong wall, through which there were three gates, that are all demolished. It sends one member to parliament. It is well inhabited, which is in some measure owing to its being the town where the assizes are kept; and there is here a considerable woollen-manufactory. The markets are well supplied with cattle, corn, and provisions. W. Long. 3. 15. N. Lat. 52. 0.

BRECKNOCKSHIRE, a county of Wales, bounded by Radnorshire, on the north; Cardiganshire and Caermarthenshire, on the west; Herefordshire and Monmouthshire, on the east; and by Clamorganthire and Monmouthshire, on the south. It is 35 miles in length, 30 in breadth, and about 100 in circumference. It is surrounded with hills, which renders the air in

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Brecknock-
shire.

Brecknock-shire,
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the vall-ys pretty temperate. The soil on the hills is very stony, but the streams descending from thence into the vall-ys render them fruitful both in corn and grafs. The chief commodities here are corn, cattle, fish, and otter's fur, besides manufactures of cloth and stockings. The principal rivers are the Uik, the Wye, and the Yrwon. The chief towns are Brecknock, Bealt, and Hay.

Two miles to the east of Brecknock is a large lake, called *Brecknock Meer*, and by the Welch *Llyn Savad-dan*: it is two miles in length, and nearly the same in breadth. It contains plenty of otters, tench, perch, and eels. The county sends one member to parliament. It is in the diocese of Landaff, and contains 61 parishes, as 1 is divided into six hundreds.

BREDA, a town in Holland, the capital of Dutch Brabant. It is a large, populous, well built city, regularly fortified after the modern way, and is one of the strongest places on the Dutch frontiers. It is seated on the river Meck, in a marshy country, which may be overflowed and rendered inaccessible to an army. It is 4000 paces in circumference, and contains upwards of 2000 houses. The town is of a triangular figure, and the ramparts are all planted round with elms. At every angle there is a gate built with brick. The great church is a noble structure, remarkable for its fine spire, which is 362 feet high. The mausoleum of Angelbert II. count of Nassau, is a curious piece adorned with several statues and inscriptions suitable to the occasion. In 1577 the garrison delivered this city to the States-general; but it was retaken in 1581 by Cloude de Barlaimont, assisted by the baron de Fresin, who was prisoner therein. In 1590, prince Maurice took it again from the Spaniards.

In 1625 it was invested by Spinola; when it endured a siege too remarkable not to deserve a particular detail.

The citadel, which formed the residence of the princes of that family, was surrounded by a ditch of prodigious depth filled with water, and a strong wall defended by three great bastions; and the arsenal was celebrated for its extent, and the vast quantities of arms and military stores it contained. Spinola, perfectly acquainted with the strength of the place, thought he should expose his whole army to imminent destruction, should he attempt an assault before he had regularly carried on his approaches. He even resolved upon reducing the city by famine, as the method attended with least danger to his army; and accordingly began with drawing trenches round, for the space of four miles, erecting forts and redoubts at certain distances.

On the other hand, the garrison, consisting of seven thousand infantry, and several troops of horse, composed of English, French, and Dutch soldiers, took the most vigorous measures for their own defence. The English were under the command of Colonel Morgan, who had frequently distinguished his valour in the service of the states: the French were directed by colonel de Hauterive; and the Dutch troops were subject to the immediate orders of colonel Lohre, though the whole received their instructions from Justin de Nassau, the governor. The first advantage was gained by Baglioni, who seized a large convoy of provisions and stores coming up the river, converting the boats into a bridge. This loss dispirited the besieged, and reduced them to

a stated allowance of bread; and what added to their misfortunes, though they were ignorant of it, was the death of Prince Maurice, from whom they were in hopes of receiving relief.

Meanwhile Spinola prosecuted the siege with the utmost diligence and vigour. On his pushing his trenches near the bastions, the besieged began a terrible fire to retard his approaches, and kept it up with such vehemence and obstinacy, that Spinola was in hopes they must soon surrender for want of ammunition. But here he formed a false judgment of the prudence of Justin de Nassau, who finding he could not accomplish his purpose by his firing, resolved to try the effect of water. With this view, he stopped up the course of the river Mark; and having formed a large basin of water, opened the sluices, swept away men, horses, and houses, in an inundation, and overflowed the whole country. The chief force of the torrent fell upon Spinola's quarters, and he exerted his utmost ability to remove the consequences. He dug large pits, and cut out ditches and canals to receive the water; but these being filled, and the whole ground covered over, so as to appear one uniform mass of water, served only to entrap his cavalry. The inundation was augmented by the rains which happened to fall; a mortality among the soldiers and horses ensued; and of his whole army, Spinola had scarce twelve thousand men fit for service by the month of December. With these inconsiderable remains, lines of vast extent were to be defended, the works were to be advanced, the sallies from the garrison repulsed, and provisions to be conveyed into the camp, while Spinola, the soul of action, was confined to a sick-bed.

In the garrison, an epidemical disease and fearcity likewise prevailed; but the excellent regulations made, and strictly observed, enabled the town to hold out three or four months beyond the time expected. The magistrates bought the corn for the bakers; obliging them to sell the bread to the inhabitants and garrison at a price affixed, and returning the overplus of their pay to the soldiers. A variety of other prudent regulations were established by the magistrates and governor, such as we do not find equalled by any instances recorded in history upon a similar occasion, and all evincing the steadiness, sagacity, courage, and ability, of Justin de Nassau. A kind of rivalry appeared between him and Spinola, which should best fulfil their several duties. The Spanish general caused himself to be carried about the works in a litter; he inspected and directed every thing; and displayed the activity of full health at the time his life was in imminent danger from an acute malady. He ordered several breaches in the lines to be repaired. These the Hollanders had made by sap, with a view of introducing succours to the besieged. He drove piles into all the ditches and canals through which their boats could pass. He made drains, to clear off the waters of the river Mark; and succeeded in a great measure by dint of perseverance, vigilance, and conduct. He was now reinforced with a body of eight thousand foot, and one thousand five hundred horse; many of the sick were perfectly recovered by his extreme care; and his army was again become formidable, amounting to twenty five thousand infantry and eight thousand cavalry. Nor was prince Henry idle, who now succeeded to the

Breda.

Breda.

titles and dominions of his brother Maurice, and was elected governor of Holland, Zealand, Guelderland, Utrecht, and Overyffel. He pressed France for assistance, and was joined by a body of cavalry under the conduct of the count de Rouffi and the marquis de Rambures. With this reinforcement, and a body of German infantry, he attacked the enemy's lines, and after an obstinate conflict was repulsed. He advanced a second time; but Spinola, who entertained a high opinion of his valour and conduct, did not choose to wait for him in his lines; he marched out with the greater part of his army, seized upon a convenient post, and obliged the prince a second time to retire towards Boisleduc. Henry, finding no prospect of being able to relieve the garrison, sent a permission to the governor to surrender on the best conditions he could obtain. This plan, which was signed with no name, fell into the hands of the besiegers, and Spinola sent it open, by a trumpet, to Justin de Nassau, offering him an honourable capitulation; but that intrepid governor, suspecting the letter was forged, because it was anonymous, replied civilly, that a permission was not an order to surrender; and that he should better follow the prince of Orange's intention, and show his respect for Spinola, by continuing to defend the city to the last extremity.

By this time the garrison was diminished by disease, fatigue, want, and hardship, to half the original number; but Justin put on such a countenance, as concealed his situation from Spinola. He frequently sallied out upon Baglioni's quarters, where the Italians were perishing with cold and hunger, the whole subsistence of the besiegers depending on the contributions raised in the neighbouring territories. This inconvenience produced a mutiny in the camp, that could not be appeased without applying violent remedies, and executing within sight of the whole army the chief ringleaders. One of the mutincers blew up Spinola's chief magazine, valued at two hundred thousand livres. Urged more by necessity than compassion for the besieged, Spinola sent a message to the governor, exhorting him not to force him to extremities, which might be attended with fatal consequences to a brave garrison; but Justin, with equal art and dissimulation, answered, that Spinola was certainly ill served by his spies, as he appeared wholly unacquainted with the state of affairs in Breda, which was fully provided for a siege of several months, and defended by soldiers who preferred death to the necessity of surrendering. At that time the besieged were not informed of the death of the prince of Orange. They flattered themselves with the hopes of speedy succour, and were entirely ignorant of prince Henry's late disappointment. When they wrote to the army an account of their miserable condition, Henry returned an answer, written with his own hand, and signed with his name, apprising them of the death of Maurice, the unsuccessful attempts made to raise the siege and throw in succours, the great inferiority of his troops in point of numbers, and the death of king James, whereby he was disappointed of a strong reinforcement; concluding, that he left the city entirely to the discretion of the governor and other principal officers. Justin was thunderstruck with the contents of this letter. He had hitherto concealed the total want of provision and ammunition from the

enemy, and his own garrison, except a few officers and other persons in whom he reposed confidence. The colonels Hauterive and Morgan would listen to no propositions, saying, that the honour of their several countries were concerned, and that they were responsible for the conduct of the English and French forces. They therefore required an express order from the prince of Orange to surrender, notwithstanding they were under the united pressure of fatigue, scarcity, and disease. Justin acquainted the prince with their resolution, and he sent back an order to surrender, threatening with capital punishment whoever should disobey; but he requested that the garrison would first acquaint him by a certain number of fires, lighted up in different parts of the city, how many days they should be able to hold out. Upon receipt of this order, eleven fires were kindled; but as the prince had sent a duplicate of the order by another messenger, and this fell into the hands of the enemy, Spinola was now acquainted with the desperate circumstances of the besieged. By this acquisition he likewise discovered the mystery of the eleven fires: a council of war was assembled to deliberate whether they should stay the eleven days, and then oblige the garrison to surrender at discretion, or immediately offer conditions worthy of so brave a garrison. The Spanish officers were of the former opinion; the count de Berg and Spinola supported the latter. At last the marquis, determined to pursue the dictates of his noble generosity, sent such terms as could not be refused. The count de Berg conducted the negociation. Two separate capitulations were drawn up, one for the garrison and the other for the city, and both the most honourable and advantageous that could be devised. They were accepted, and the garrison marched out on the 6th of June, after having sustained a siege for ten months, whereby they were diminished two-thirds; nor was the loss inferior on the part of the inhabitants. Spinola drew up his army to salute them, and surrounded by his field officers, paid particular compliments to the governor, the colonels Morgan, Hauterive, and Lohre. He distributed money among the soldiers, ordered the sick and wounded to be treated with the utmost tenderness, conveyed the rest in the manner most commodious for them to Gertuydenburgh, and displayed all the sentiments of a hero in the regard paid to the valour and merit of his enemies.

Breda was retaken by the prince of Orange, for the United Provinces, in 1637. There was a congress held there, and peace concluded, in 1667, between the Dutch and the English. E. Long. 4. 45. N. Lat. 51. 35.

EREDA (John Van), painter of history, landscape, and conversations, was born at Antwerp in 1683, the son of Alexander Van Breda, an artist who was much esteemed for landscapes, views of particular scenes in Italy, fairs, and markets, with a variety of animals and figures. He was instructed by his father; and having the advantage of a good example and a good director, added to his own great application, he continued his studies with his father till he was 18 years of age. Among the variety of capital paintings which were at that time in the possession of John de Wit at Antwerp, Breda fixed upon those of Velvet Brughel, which he copied with extraordinary success; and he was also employed for
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nine years in copying the pictures of several other great masters; which he performed with such incredible exactness as scarcely to leave it in the power of any judicious person to distinguish the originals from the copies. Having at length established his reputation in Holland, he went to London with Ryssbrack the sculptor, and there gradually rose into such esteem that he was visited by persons of the highest rank, and particularly patronised by the unfortunate Earl of Derwentwater, who was beheaded for rebellion in 1715. He found so much encouragement in London, that he was employed by the court and the nobility, and could scarce execute the large demands for his performances. After a residence of some years in England, he returned to Antwerp loaded with riches, the honourable testimonies of English liberality, as well as of his own merit; and in the year 1746, when Louis XIV. arrived in that city, he so far honoured this master as to purchase four of his pictures. One represented Christ at the sea of Tiberias; another, Christ performing miracles; and the other two were landscapes, with a number of figures, so exquisitely drawn and finished that it would be difficult to distinguish them from those of Velvet Brueghel. He certainly approached nearer to those great masters whose manner he imitated, namely, Brueghel and Wouwermans, than any other artist of his time. His landscapes are in the style and taste of the former, and his conversations, historical figures, fairs, skirmishes, or battles, are in the manner of the latter. His colouring is good; his touch neat; his skies and distances natural and beautiful; and his taste of design agreeable. He had as much fire in his composition, and perhaps more genius, than Brueghel, in those subjects which he painted in the style of that master; his figures are generally well placed, his grounds skilfully broken; every small figure hath its particular character, and occupies its proper place; and, in short, he is a painter of such a rank, that the value and estimation of his works must always increase. He died in 1750.

BREECH of a great gun, or cannon, the end next the touch-hole.

BREECHES, a garment worn by males, reaching from the girdle to the knees, and serving to cover the hips, thighs, &c.

The ancient Romans had nothing in their dress answering to our breeches and stockings; instead of which, under their lower tunics and waistcoats they sometimes bound their thighs and legs round with silken scarves or fasciæ, called *tibialia* and *femoralia*. Breeches appear to be a habit peculiar to the barbarous nations, especially those inhabiting the colder countries of the north; whence Tacitus calls them *barbarum tegmen*. We find mention made of them among the ancient Getæ, Sarmatæ, Gauls, Germans, and Britons; they also obtained among the Medes and Persians, as being a people of Scythian origin: they also afterwards got footing in Italy, some pretend as early as the time of Augustus; but without much foundation, that emperor's breeches, mentioned by Suetonius, being apparently only swaths tied over his thighs. However this be, breeches were at last received into Italy, and grew so highly into fashion, that it was thought necessary under Honorius and Arcadius, to restrain them by

law, and expel the *bracarii* or breeches-makers out of the city; it being thought unworthy of a nation that commanded the world, to wear the apparel of barbarians.

BREECHINGS, in the sea-language, the ropes with which the great guns are lashed or fastened to the ship's side. They are thus called, because made to pass round the breech of the gun.

BREEDING, in a general sense, the producing, nourishing, and educating, all manner of young animals.

BREEDING, in a moral sense, denotes a person's deportment or behaviour in the external offices and decourments of social life. In this sense we say *well-bred*, *ill-bred*, *a man of breeding*, &c. Good-breeding is hard to define; none can understand the speculation but those who have the practice. Good-breeding amounts to much the same with what is otherwise called *politeness*, among the ancient Romans *urbanity*. Good-breeding is near to virtue, and will of itself lead a man a great part of the way towards the same. It teaches him to rejoice in acts of civility, to seek out objects of compassion, and to be pleased with every occasion of doing them good offices. Lord Shaftesbury compares the well-bred man with the real philosopher: both characters aim at what is excellent, aspire to a just taste, and carry in view the model of what is beautiful and becoming. The conduct and manners of the one are formed according to the most perfect ease, and good entertainment of company; of the other, according to the strictest interest of mankind; the one according to his rank and quality in his private station, the other according to his rank and dignity in nature. Horace seems to have united both characters,

Quid verum atque decens curo et rogo, et omnis in hoc sum.

See the article *Good-MANNERS*.

BREEDING of Horses. See *EQUUS*.

BREEDING of Fish. The necessary qualities of a pond, to make it serve well for breeding fish, are very different from those which are to make it serve for the feeding of them, inasmuch that some particular ponds serve only for one of these purposes, and others for the other; and scarce ever the same pond is found to answer for them both. In general, it is much more rare to find a good breeding pond than a good feeding one. The best indications for a good breeding pond are these; that there be a good quantity of rushes and grass about its sides, with gravelly shoals, such as horse-ponds usually have; when a pond has this property, and takes to the breeding of fish, it is amazing what a progress will be made in a little time. The spawn of fish is prodigious in quantity; and where it succeeds, one is able to produce many millions: thus, in one of these breeding ponds, two or three melters, and as many spawners, will, in a very little time, stock the whole country. When these ponds are not meant entirely for breeding, but the owner would have the fish to grow to some size in them, the method is to thin the numbers, because they would otherwise starve one another, and to put in other fish that will prey upon the young, and thin them in the quickest manner. Eels and perch are the most useful on this account; because they prey not only upon the spawn itself, but upon the young fry from the first hatching to the time they are of a considerable size.

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Some fish are observed to breed indifferently in all kinds of waters, and that in considerable plenty; of this nature are the roach, pike, and perch.

BRENNBERG (Bartholomew), an excellent painter, was born in 1620. He is best known by the name of *Bartolomeo*, an appellation bestowed upon him, for distinction sake, by the society of Flemish painters at Rome called *Bentvogels*. He was born at Utrecht; but in the early part of his life went to Rome. His studies in the art of painting were attended with such success, that his pictures were held in the highest estimation. He greatly excelled in landscapes, and these he enriched with historical subjects. The figures and animals which he introduced were very spirited, and drawn in a masterly manner; especially when they were not larger than the size in which he usually painted them. He died 1660, aged 40 years. He also etched from his own designs a set of 24 *Views and Landscapes, ornamented with Ruins*.

BREEZE, a shifting wind that blows from sea or land for some certain hours in the day or night; common in Africa and some parts of the East and West Indies.

Breezes differ from *etesia* or trade-winds, as the former are diurnal, or have their periods each day; and the latter are anniversary, and blow at a distance from land. The sea-breezes rule by day, and the land-breezes by night; so that, dividing their empire, they remain constant as the seasons of the year, or course of the sun, on which they seem to depend: not but that they appear sooner or later, stronger or weaker, in some places than in others; and vary the alternative according to the several latitudes, situations, and soils, &c. of the countries where they are found. See the article **WIND**.

BREEZE-Fly. - See **TABANUS**.

BREGENTZ, or **BERGENTZ**, a town of Tyrol in Germany, situated at the east end of the lake of Constance, in E. Long. 9. 40. N. Lat. 47. 36.

BREGMA, in anatomy, the same with *siniput*. See **ANATOMY**, n^o 11, 13.

BREHAR, one of the Scilly islands, lying almost directly west of the land's end in Cornwall, about the distance of 30 miles. It lies between the isles of Miscarlo, Guel, Trefeaw, and Samson. It is the roughest and most mountainous of them all, and not many years since, there were only two families in it, but now there are 13. There are a few poor houses, called the *town of Brehar*; and there are several *barrows* edged with stone, in which they buried considerable persons in ancient times; besides many monuments of the **DRUIDS**. Some are of opinion, that this with the rest made but one island, which is the reason why so many antiquities are now found in most of them.

BREHONS, the provincial judges among the ancient Irish, by whom justice was administered, and controversies decided. These sages were a distinct tribe or family, to whom competent lands were allowed in inheritance. In criminal cases the brehon had the eleventh part of all the fines; which could not but be considerable at a time when murders, rapes, robberies, and the like offences, were only subject to pecuniary commutations.

BREHON-LAWS, or *Leges Brehonicae*, denote the general maxims or rules of law observed by the brehons, and having the force of laws throughout all the provinces of Ireland. Several fragments of the *leges*

brehonicae are still extant in public and private libraries. The most complete collection is that belonging to the duke of Chandos; containing 22½ sheets close written, full of abbreviated words, and not very legible. By the statute of Kilkenny, made under Edward III. it is enacted that no English subject shall submit to a trial by the *brehon* law, on the penalty of high treason. Notwithstanding which, many were still under a necessity of being concluded by the Irish laws and customs, till the whole kingdom was settled on an English bottom by king James I.

BREMEGARTON, a handsome and pretty considerable town of Swisserland, in the territory of Fyen-Aempter, between the cantons of Zurich and Bern. The inhabitants deal chiefly in paper; and their religion is the Roman-catholic. It is divided into the upper and larger towns, and is very advantageously seated on the river Rufs. E. Long. 8. 25. N. Lat. 47. 20.

BREMEN, a large, populous, and very strong town of Germany, capital of a duchy of the same name, with an archbishop's see, secularized in favour of the Swedes, but now belongs to the elector of Hanover. The river Weser runs through the middle, and divides it into the old and new town. In September 1739, while the inhabitants were asleep, the magazine of powder was set on fire by lightning; and all the houses were shook, as if there had been a violent earthquake, which threw them into a terrible consternation. This town is divided into four quarters, each of which has a burgomaster; and in the middle there is a large market-place, with the statue of Rolando. Bremen drives a very large trade for iron, flax, hemp, and linen, with France, England, Spain, and Portugal, and in return takes back other provisions, with which it supplies Westphalia and the countries about Hanover. It also gets a great deal by its fisheries; the trade for blubber with the south of Germany is very considerable. E. Long. 8. 45. N. Lat. 53. 40.

BREMEN, a duchy of Germany, in the province of Lower Saxony, lying between the rivers Weser and the Elbe; of which the former separates it from the duchy of Oldenburg, and the other from that of Holstein. The air is cold; but the country is fertile, and well peopled. It formerly belonged to the Swedes, but was afterwards sold to the king of Great Britain, as elector of Hanover, in 1716. In the winter it is subject to inundations. In 1617, on Christmas-day, several thousand cattle were drowned, besides several hundred of men; and the country was so covered with water, that it has cost immense sums to repair the dykes. Bremen is the capital town.

BREMEN-VEERD, a town of Germany, in the circle of lower Saxony, and duchy of Bremen. It is an open town, seated on the river Oost, and was formerly the place of residence of the archbishop. E. Long. 8. 35. N. Lat. 53. 58.

BRENNAGE, **BRENNAGIUM**, in middle-age writers, a kind of tribute paid in lieu of bran, or bran itself, which the tenants were obliged to furnish for the support of the lord's hounds. The word is also written *brename*, *brenamegium*, and *brenameige*, *brenamegium*, *brenameicum*, and *brenameaticum*.

BRENNUS, a celebrated captain among the Gauls, who, about 388 years before the Christian era, entered

Bremegart-
LON
||
Brennus.

Brent
||
Bresciano.

Italy with a powerful army; made great conquests there; defeated the Romans; and sacked Rome. The capital alone was defended; and Camillus coming to its relief, drove the Gauls not only out of Rome, but out of all Italy. See (*History of*) ROME.

BRENT, a town of Devonshire, with a market on Saturdays, and two fairs, on May 13th and October 10th, for horned cattle. It is but a small place, and lies on the road from Exeter to Plymouth, being 26 miles south-west from the former, and 198 west-by-south of London. W. Long. 5. 7. N. Lat. 50. 30.

BRENT GOOSE, a species of goose with a black neck, and a white collar round; usually confounded with the barnacle, tho' in reality a distinct species. See ANAS.

BRENTFORD, a town of Middlesex, in the great London road to the west. It is divided into old and new Brentford, in which last are the church and market-house, and where the county elections are held. It is a long place, well stocked with public houses, and is seated on the river Thames, in W. Long. 0. 10. N. Lat. 51. 26.

BRENTWOOD, or BURNTWOOD, a town of Essex in England; it stands on a rising ground in the road from London to Colchester, and has several good inns. E. Long. 0. 25. N. Lat. 51. 38.

BREREWOOD (Edward), a very learned English mathematician and antiquary, was the son of Robert Brerewood a tradesman, who was thrice mayor of Chester; and born in that city in the year 1565. He was educated in grammar learning at the free school in Chester; and afterwards admitted, in 1581, of Brazen-nose-college in Oxford. In the year 1596, he became the first professor of astronomy in Gresham-college in London; where he led the same private and retired course of life that he had before done in Oxford. He died thereof of a fever, upon the 4th of November 1613, much lamented. He was a great searcher into antiquity and curious knowledge; but is remarkable for having never published any thing during his lifetime. After his death came out the following works. 1. *De ponderibus et pretiis veterum nummorum.* 2. Inquiries touching the diversities of languages and religion through the chief parts of the world. 3. *Elementa logicæ in gratiam studiosæ juventutis in Acad. Oxon.* 4. *Tractatus quidam logici.* 5. 6. Two treatises on the Sabbath. 7. *Tractatus duo, quorum primus est de meteoris, secundus de oculo.* 8. *Commentarii in ethica Aristotelis.* Mr Wood tells us, that the original manuscript of this, written with his own hand, is in the smallest and neatest characters that his eyes ever beheld; and that it was finished by him on the 27th of October 1586. 9. Patriarchal government of the ancient church.

BRESCIA, a strong and handsome town of Italy, with a bishop's see and a good citadel. It is the capital of Bresciano in the territory of Venice, and is seated in an agreeable plain on the river Garza, in E. Long. 10. 5 N. Lat. 45. 31.

BRESCIANO, a province of Italy in the territory of Venice; bounded on the north, by the Grisons and the bishopric of Trent; on the east, by the lake Garda, the Veronese, and the duchy of Mantua; on the south, by the duchy of Mantua and the Cremonese; and on the west, by the Cremasco, the Burghomasco, and the Valtelina. It is watered by several small rivers, which

render it very fertile; and is full of towns and villages, of which Brescia is the capital.

BRESELLÒ, a small town in Italy, of the duchy of Modena, seated on the river Po, in E. Long. 10. 25. N. Lat. 44 55.

BRESCICATE, in commerce, a kind of bays, of which there is some trade carried on with the negroes, between the river Gambia and Sierra Leona. The best sorts for that purpose are the blue and the red.

BRESLAU, a small duchy of lower Silesia, in Germany, lying between those of Wolaw, Olffe, Brieg, Schwednitz, and Lignitz. It is every where level and flat; is an excellent corn country, yielding also good pasture; abounding also with herds of cattle and flocks of sheep; but destitute of wood, except in one district or circle; and the roads in general are very bad. It is an immediate principality, that is, one of which both the property and jurisdiction belong to the king, forming a part of one of the three bailiwicks into which all the immediate principalities are divided.

BRESLAU, the chief town of the duchy of that name, and of all Silesia, is situated at the conflux of the Oder and Oldlau, in E. Long. 17. 5. N. Lat. 51. 4. Including the suburbs, it is of great extent; having many large regular squares, broad streets, stately public and private edifices; but the fortifications are of no great importance. Here are in particular a great many churches and convents belonging to the catholics; of the former are several also belonging to the Lutherans, one to the Calvinists, and another to the Greeks. The Jews have likewise two synagogues, the bishop a stately palace, and the Lutherans two gymnasiums. The Polish university is a noble structure, nor is the exchange destitute of magnificence. This city is the seat of all the high colleges; and the third in rank, next to Berlin and Konigsberg, in all the Prussian dominions. The magistracy of it is Lutheran, and its trade and manufactures are very considerable. Several of the monasteries and nunneries are very magnificent; and there are also some good public libraries in it, with two armouries, a college of physicians, and a mint. Breslau is very populous, and much frequented by Hungarians, Bohemian, Polish, and other merchants, having several yearly fairs. The city was taken by the king of Prussia in 1741, and retaken by the Austrians in 1757; but the king of Prussia took it back again the same year, and gained a signal victory over the Austrians at Leuthen, a village not far from the capital.

BRESSE, a province of France, bounded on the north, by Burgundy and the Franche Comte; on the east, by Savoy; on the south, by Viennois; on the west, by the principality of Dombes and the Somme. It is 40 miles from north to south, and 23 from east to west. It is fertile in corn and hemp, has fine pastures, and several lakes with plenty of fish. It is divided into the higher and lower; the first is on the side of Bourges, and the second towards St Trivier and the river Sonne. The French got possession of it in 1601. The principal places are Bourgen, Bresse, Montluel, Pont de Vaux, and Coligny.

BRESSICI, in geography. See BRESTE.

BREST, a maritime town of France, in lower Brittany, seated on the declivity of a hill on the side of its port, which is the largest in the kingdom, and will hold

Breslau
||
Brest.

Brest 500 ships at a time. There is an arsenal with stores, which was placed there on account of its nearness to the woods, mines of iron, and other things proper for the building of ships. It was entirely consumed by fire in 1744, which was an irreparable loss to France. The entrance into the port is guarded by a strong castle seated on a rock, which cannot be attempted on the sea side, because it is craggy, and is defended on the land side by a large ditch and other fortifications. The streets of Brest are very narrow, ill contrived, few in number, and have all a descent. A great quay surrounds this side of the port, which is above a mile in length, and 200 paces broad; and there are magazines on the quay full of all foreign merchandizes. On the other side of the port the fine church of Notre Dame is situated; and in a suburb, which is as big as half the city, there is a strong tower opposite to the castle, at the entrance of the port; there is also a great quay on this side, bordered with large magazines, partly within the rock, which has been cut away to enlarge the place. These are extended almost as far as the bottom of the harbour, where there are two docks very commodious for the building of large ships: the shops and houses of the workmen are all around them: the ropewalks are separated from the city by one of these docks. The entrance into the harbour is called the *gullet*, and is a passage extremely difficult on account of the sunk rocks on both sides of the shore; but there are experienced pilots who carry ships in very safely. The English attempted to take possession of this harbour in 1694, but were disappointed. W. Long. 4. 26. N. Lat. 48. 23.

BREST, or *Breast*, in architecture, a term sometimes used for the member of a column, more usually called *Torus*. See *Torus*.

BREST-Summers, in timber buildings, are pieces in the outward thereof, into which the girders are framed: this, in the ground-floor, is called a *cell*; and, in the garret-floor, a *beam*.—As to their size, it is the same with that of girders. See *GIRDERS*.

BRESTE, the palatinate of, is one of the provinces of Cujava, in Poland. It lies between the palatinates of Ploesco, Rava, and Lencici Wiadislaw. It is divided into four chatelannies, and Breste is the capital of the whole.

BRESTE, or *Bressici*, the capital of the palatinate of Bressici, and of Polchia, in Poland, seated on the river Bog, 80 miles east of Warsaw, and subject to Poland. It is a fortified town, and has a castle built upon a rock. Here is a famous synagogue, resorted to by the Jews from all the countries in Europe. E. Long. 24. 0. N. Lat. 41. 35.

BRET, a name the people on the coasts of Lincolnshire give to the common turbot, a fish extremely plentiful with them, and taken in vast abundance. The way of catching them is in a net trailed on the ground by two horses; the one going up to the middle of his body in water, the other on shore.

BRETESSE, in heraldry, denotes a line embattled on both sides.

BRETHREN AND SISTERS OF THE FREE SPIRIT, in Ecclesiastical History, an appellation assumed by a new sect which sprung up towards the close of the thirteenth century, and gained many adherents in Italy, France, and Germany. They took their denomina-

tion from the words of St Paul, Rom. chap. viii. ver. 2, 14. and maintained, that the true children of God were invested with the privilege of a full and perfect freedom from the jurisdiction of the law. They were enthusiasts to a degree of distraction, both in their principles and practice. They resembled the *Beghards*, by which name they were sometimes called, in their aspect, apparel, and manner of living. Some of their professed principles resembled those of the Pantheists; for they held, that all things flowed by emanation from God; that rational souls were portions of the Deity, and that the universe was God; and that, by the power of contemplation, they were united to the Deity, and acquired hereby a glorious and sublime liberty, both from the sinful lusts and the common instincts of nature: and hence they conclude, that the person, who was thus absorbed in the abyss of the Deity, became a part of the Godhead, and was the son of God, in the same sense and manner that Christ was, and that he was freed from the obligation of all laws human and divine. They treated with contempt all Christian ordinances, and all external acts of religion, as unsuitable to the state of perfection at which they were arrived. Some of them were honest but deluded enthusiasts; and they endured the torments inflicted upon them by the inquisitors with astonishing calmness and triumph. Others proceeded to the most extravagant licentiousness of conduct. They held their secret assemblies stark naked, and lay in the same beds with their spiritual sisters, and indiscriminately with other women, without the least scruple or hesitation: modesty and decency being, according to their creed, marks of inward corruption. And some of them proceeded still farther, and maintained, that the *divine man*, or believer, could not sin, let his conduct be ever so horrible or atrocious. Many edicts were published against them; but notwithstanding the severities they suffered, they continued till about the middle of the fifteenth century. They were called by several other names, such as *Schwelltriones*, *Picards*, *Adamites*, and *Turlupins*.

BRETHREN and *Clerks of the Common Life*, a denomination assumed by a religious fraternity towards the latter end of the fifteenth century. They lived under the rule of St Augustin, and were eminently useful in promoting the cause of religion and learning. Their society was first formed, in the preceding century, by Gerard de Groote, a native of Deventer; but did not flourish till about the period above mentioned, when it obtained the approbation of the council of Constance, and became very respectable in Holland, the Lower Germany, and the adjacent provinces. It was divided into two classes; the *lettered brethren* or *clerks*, and the *illiterate*: they lived in separate habitations, but maintained the closest fraternal union. The former applied to the study of polite literature, and the education of youth; whilst the latter were employed in manual labour, and the mechanic arts. They were frequently called *Beghards* and *Lollards*, by way of reproach.

White BRETHREN, *seatrae albat*, were the followers of a leader about the beginning of the fifteenth century, who was arrayed in a white garment; and as they were also clothed in white linen, they were distinguished by this title. Their leader was a priest from the

Breton.

Alps, who carried about a cross, like a standard, and whose apparent sanctity and devotion drew together a number of followers. This deluded enthusiast practised many acts of mortification and penance, endeavoured to persuade the European nations to renew the holy war, and pretended that he was favoured with divine visions. Boniface IX. ordered him to be apprehended and committed to the flames, upon which his followers dispersed.

BRETON, or CAPE-BRITAIN, an island near the eastern continent of North America, lying between 45 and 47 degrees of north latitude. It is separated from Nova Scotia by a narrow strait called *Canso*, and is about 100 miles in length and 50 in breadth. It is surrounded with little sharp-pointed rocks, separated from each other by the waves, above which some of their tops are visible. All its harbours are open to the east, turning towards the south. On the other parts of the coast there are but a few anchoring places for small vessels, in creeks, or between islets. Except in the hilly parts, the surface of the country has but little fertility, being every where covered with a light moss, and with water. The dampness of the soil is exhaled in fogs, without rendering the air unwholesome. In other respects, the climate is very cold; owing either to the prodigious quantity of lakes, which cover above half the island, and remain frozen a long time; or to the number of forests, that totally intercept the rays of the sun; the effect of which is besides decreased by perpetual clouds.

Though some fishermen had long resorted to this island every summer, not more than 20 or 30 had ever fixed there. The French, who took possession of it in August 1713, were properly the first inhabitants. They changed its name into that of *Isle Royale*, and fixed upon Fort Dauphin for their principal settlement. This harbour was two leagues in circumference. The ships came to the very shore, and were sheltered from winds. Forests affording oak sufficient to fortify and build a large city, were near at hand; the ground appeared less barren than in other parts, and the fishery was more plentiful. This harbour might have been rendered impregnable at a trifling expence; but the difficulty of approaching it (a circumstance that had at first made a stronger impression than the advantages resulting from it) occasioned it to be abandoned, after great labour had been bestowed upon the undertaking. They then turned their views to Louisbourg, the access to which was easier; and convenience was thus preferred to security: the fortification of Louisbourg, however, was not begun till 1720.

In the year 1714, some fishermen, who till then had lived in Newfoundland, settled in this island. It was expected that their number would soon have been increased by the Acadians, who were at liberty, from the treaties that had been granted them, to remove with all their effects, and even to dispose of their estates; but these hopes were disappointed. The Acadians chose rather to retain their possessions under the dominion of Britain, than to give them up for any precarious advantage they might derive from their attachment to France. Their place was supplied by some distressed adventurers from Europe, who came over from time to time to Cape Breton, and the number of inhabitants gradually increased to 4000. They were settled at

Breton.

Louisbourg, Fort Dauphin, Port Toulouise, Nerucka, and on all the coasts where they found a proper beach for drying the cod. The inhabitants never applied themselves to agriculture, the soil being unfit for it. They often sowed corn, but it seldom came to maturity; and when it did thrive so much as to be worth reaping, it had degenerated so considerably, that it was not fit for seed for the next harvest. They have only continued to plant a few pot-herbs that are tolerably well tasted, but must be renewed every year from abroad. The poorness and scarcity of pastures has likewise prevented the increase of cattle. In a word, the soil of Cape Breton seemed calculated to invite none but fishermen and soldiers.

Though the island was entirely covered with forests before it was inhabited, its wood has scarce ever been an object of trade. A great quantity, however, of soft wood was found there fit for firing, and some that might be used for timber; but the oak has always been scarce, and the fir never yielded much resin. The peltry trade was a very inconsiderable object. It consisted only in the skins of a few lynxes, elks, musk-rats, wild cats, bears, otters, and foxes both of a red and silver-grey colour. Some of these were procured from a colony of Mickmac Indians who had settled on the island with the French, and never could raise more than 60 men able to bear arms. The rest came from St John's, or the neighbouring continent. Greater advantages might possibly have been derived from the coal-mines which abound in the island. They lie in a horizontal direction; and being no more than six or eight feet below the surface, may be worked without digging deep, or draining off the waters. Notwithstanding the prodigious demand for this coal from New England, from the year 1745 to 1749, these mines would probably have been forsaken, had not the ships which were sent out to the French islands wanted ballast. In one of these mines a fire has been kindled, which could never yet be extinguished.

The people of Cape Breton did not send all their fish to Europe. They sent part of it to the French southern islands, on board 20 or 25 ships from 70 to 140 tons burden. Besides the cod, which made at least half their cargo, they exported to the other colonies timber, planks, thin oak-boards, salted salmon and mackerel, train-oil, and sea-coal. All these were paid for in sugar and coffee, but chiefly in rum and molasses. The island could not consume all these commodities. Canada took off but a small part of the overplus; it was chiefly bought by the people of New England, who gave in exchange fruits, vegetables, wood, brick, and cattle. This trade of exchange was allowed; but a smuggling trade was added to it, carried on in flour, and salt fish.

This island, the key of Canada, was attacked by the English in 1745; and the event is of so singular a nature, that it deserves a particular detail. The plan of this first invasion was laid at Boston, and New England bore the expence of it. A merchant named *Pepperel*, who had excited, encouraged, and directed the enterprize, was intrusted with the command of an army of 6000 men, which had been levied for this expedition.

Though these forces, convoyed by a squadron from Jamaica, brought the first news to Cape Breton of the danger that threatened it; though the advantage of a surprisè

Breton.

surprise would have secured the landing without opposition; though they had but 600 regular troops to encounter, and 800 inhabitants hastily armed; the success of the undertaking was still precarious. What great exploits, indeed, could be expected from a militia suddenly assembled, who had never seen a siege or faced an enemy, and were to act under the direction of sea-officers only. These unexperienced troops stood in need of the assistance of some fortunate incident, which they were indeed favoured with in a singular manner.

The construction and repairs of the fortifications had always been left to the care of the garrison of Louisbourg. The soldiers were eager of being employed in these works, which they considered as conducive to their safety, and as the means of procuring them a comfortable subsistence. When they found that those who were to have paid them, appropriated to themselves the profit of their labours, they demanded justice. It was denied them, and they were determined to assert their right. As these depredations had been shared between the chief persons of the colony and the subaltern officers, the soldiers could obtain no redress. Their indignation against these rapacious extortioners rose to such a height, that they despised all authority. They had lived in an open rebellion for six months, when the British appeared before the place.

This was the time to conciliate the minds of both parties, and to unite in the common cause. The soldiers made the first advances; but their commanders mistrouled a generosity of which they themselves were incapable. It was firmly believed that the soldiers were only desirous of falling out, that they might have an opportunity of deserting; and their own officers kept them in a manner prisoners, till a defence so ill managed had reduced them to the necessity of capitulating. The whole island shared the fate of Louisbourg, its only bulwark.

This valuable possession, restored to France by the treaty of Aix la Chapelle, was again attacked by the British in 1758. On the 2d of June, a fleet of 23 ships of the line and 18 frigates, carrying 16,000 well disciplined troops, anchored in Gabarus bay, within half a league of Louisbourg. As it was evident it would be to no purpose to land at a great distance, because it would be impossible to bring up the artillery and other necessaries for a considerable siege, it had been attempted to render the landing impracticable near the town. In the prudent precautions that had been taken, the besiegers saw the dangers and difficulties they had to expect; but, far from being deterred by them, they had recourse to stratagem, and while by extending their line they threatened and commanded the whole coast, they landed by force of arms at the creek of Cormorant.

This place was naturally weak. The French had fortified it with a good parapet planted with cannon. Behind this rampart they had posted 2000 excellent soldiers and some Indians. In front they had made such a close hedge with branches of trees, that would have been very difficult to penetrate, even if it had not been defended. This kind of pallisade, which concealed all the preparations for defence, appeared at a distance to be nothing more than a verdant plain.

This would have preserved the colony, had the assail-

ants been suffered to complete their landing, and to advance with the confidence that they had but few obstacles to surmount. Had this been the case, overpowered at once by the fire of the artillery and the small arms, they would infallibly have perished on the shore or in the hurry of embarking; especially as the sea was just then very rough. This unexpected loss might have interrupted the whole project.

But all the prudent precautions that had been taken were rendered abortive by the impetuosity of the French. The English had scarce begun to move towards the shore, when their enemies hastened to discover the snare they had laid for them. By the brisk and hasty fire that was aimed at their boats, and still more by the premature removal of the bougis that masked the forces, which it was so much the interest of the French to conceal, they guessed at the danger they were going to rush into. They immediately turned back, and saw no other place to effect their landing but a rock, which had been always deemed inaccessible. General Wolf, though much taken up in re-embarking his troops, and sending off the boats, gave the signal to major Scot to repair thither. That officer immediately removed to the spot with his men. His own boat coming up first, and sinking at the very instant he was stepping out, he climbed up the rock alone. He was in hopes of meeting with 100 of his men who had been sent thither some hours before. He found only ten. With these few, however, he gained the summit of the rock. Ten Indians and 60 Frenchmen killed two of his men, and mortally wounded three. In spite of his weakness, he stood his ground under cover of a thicket, till his brave countrymen, regardless of the boisterous waves and the fire of the cannon, came up to him, and put him in full possession of that important post, the only one that could secure their landing. The French, as soon as they saw that the enemy had got a firm footing on land, betook themselves to the only remaining refuge, and shut themselves up in Louisbourg. The fortifications were in a bad condition, because the sea land, which they had been obliged to use, is by no means fit for works of masonry. The revetments of the several curtains were entirely crumbled away. There was only one casemate and a small magazine that were bomb-proof. The garrison which was to defend the place consisted only of 2900 men.

Notwithstanding all these disadvantages, the besieged were determined to make an obstinate resistance. It is scarce credible that the French were confirmed in their resolution by the courage of a woman. Madame de Dru-court was continually upon the ramparts, with her purse in her hand; and firing herself three guns every day, seemed to dispute with the governor her husband the glory of his office. The besieged were not dismayed at the ill success of their several sallies, or the masterly operations concerted by Admiral Boscawen and general Amherst. It was but at the eve of an assault, which it was impossible to sustain, that they talked of surrendering. They made an honourable capitulation; and the conqueror showed more respect for his enemy and for himself, than to sully his glory by any act of barbarity or avarice.—The possession was confirmed to Great Britain by the peace 1763; since which the fortifications have been blown up and the town of Louisbourg dismantled.

Breton.

Brettigaw
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Breugel.

BRETTIGAW, a territory or valley of the Grisons, lying between the Rhine and the county of Tyrol, and along the river Lanquet. The fortress of Castels is the principal town.

BREVE, in law, is any writ directed to the chancellor, judges, sheriffs, or other officers, whereby a person is summoned, or attached, to answer in the king's court, &c.

BREVE Perquirere, the purchasing of a writ or licence for trial in the king's courts; whence comes the present use of paying 6s. 8d. fine to the king in suit, for money due on bond, where the debt is L. 40, and of 10s. where it is L. 100, &c.

BREVE de Resto, is a writ of right or licence, for a person ejected, to sue for the possession of the estate detained from him.

BREVE, in music, a note or character of time, in the form of a diamond or square, without any tail, and equivalent to two measures or minims.

BREVET, in the French customs, denotes the grant of some favour or donation from the king; in which sense it partly answers to our warrant, and partly to letters-patent.

BREVET, more particularly denotes the commission of a subaltern officer, being only written on parchment, and without seal. A brevet officer is one whose rank in the army is above his pay: for instance, a brevet major serves only as a captain, and receives pay as such.

BREUGEL (Peter), an eminent painter, commonly called *Old Breugel*, to distinguish him from his son, was born at a village of the same name near Breda, in the year 1565; and was the first pupil of Peter Cock, whose daughter he married. It was customary with him to dress like a country-man, in order to be more easily admitted into the company of country-people, and be allowed to join in their frolics, by which means he became perfectly acquainted with their manners and gestures, of which he made excellent use in his pictures. He travelled to France and Italy, and for a long time studied landscapes on the mountains of Tyrol. His humorous turn of mind displayed itself in all his pictures, which generally consisted of country dances, marriages, sports, and diversions; though he sometimes performed pieces from the historical parts of the holy Scriptures. At his return from Italy, he settled at Antwerp, and in his last illness caused his wife to gather together all his inmodest pieces and burn them before his face. He died at Antwerp about the year 1570. Of the works of old Breugel, the great duke of Tuscany has, Christ carrying his cross, with a great number of figures; and a country feast. The emperor has the tower of Babel, the massacre of the Innocents, and the conversion of St Paul, of his painting: the elector Palatine, a landscape, with St Philip baptizing queen Candace's eunuch; and St John preaching in the wilderness, with a great many figures. Old Breugel also, for his amusement, is said to have engraved some few plates of landscapes and grotesque subjects.

BREUGEL (Peter), the younger, was the son of the above-mentioned artist, and named *Hellish Breugel*, from the horrible subjects he delighted to represent. He engraved also, according to M. Heineken; but his works are not specified. He died 1642.

BREUGEL (John), commonly called *Velvet Breugel*,

from his generally wearing velvet clothes, was the son of Peter Breugel, and born about the year 1575. He first applied himself to painting flowers and fruit, in which he excelled; and afterwards had great success in drawing landscapes, and views of the sea, set off with small figures. He lived long at Cologne, where he acquired great reputation. He travelled to Italy, where his fame had got before him; and where his fine landscapes, adorned with small figures superior to those of his father, gave very great satisfaction. If a good judgment may be formed from the great number of pictures he left behind him, all highly finished, he must have been exceedingly industrious. Nor did he satisfy himself with embellishing his own works only, but was very useful in this respect to his friends. Even Rubens made use of Breugel's hand in the landscape part of several of his small pictures, such as his Vertumnus and Pomona; the satyr viewing the sleeping nymph; and the terrestrial paradise, which is looked upon as his master-piece. He died in 1642.

—Several of his works are to be seen in the archbishop's gallery at Milan; particularly a hunting-piece with a vast many figures; a landscape representing a desert, with the picture of St Hierom painted by Cerrano, alias Gro Baptista Crespi. In the Ambrosian library are 20 pieces of this masterly hand; particularly Daniel in the lion's den, the inside of the great church at Antwerp, the four seasons on copper, and the burning of Gomorrah. In the possession of the elector Palatine at Dusseldorp, Christ preaching on the sea-shore; a country-dance; a sea-port, with a great many figures; a coach and two chariots, with a multitude of figures and animals; a landscape, wherein Flora is crowned by a nymph; St John preaching in the wilderness; a small sea-landscape, and several other pieces. In the possession of the king of France, a woman playing with a dog, the battle between Alexander and Darius, both in wood; Orpheus in hell, &c.

BREVIARY, a daily office, or book of divine service, in the Romish church. It is composed of matins, lauds, first, third, sixth, and ninth vespers, and the compline or post communion.

The breviary of Rome is general, and may be used in all places; but on the model of this various others have been built, appropriated to each diocese, and each order of religious.

The breviary of the Greeks is the same in almost all churches and monasteries that follow the Greek rites: the Greeks divide the psalter into 20 parts. In general, the Greek breviary consists of two parts; the one containing the office for the evening, the other that of the morning, divided into matins, lauds, first, third, sixth, and ninth vespers, and the compline; that is, of seven different hours, on account of that saying of David, *Septies in die laudem dixi tibi*.

The institution of the breviary is not very ancient: there have been inserted in it the lives of the saints, full of ridiculous and ill-attested stories, which gave occasion to several reformations of it, by several councils, particularly those of Trent and Cologne; by several popes, particularly Pius V. Clement VIII. and Urban VIII.; and also by several cardinals and bishops, each lopping off some extravagances, and bringing it nearer to the simplicity of the primitive offices. Originally, every body was obliged to recite the breviary every day; but by

Breugel,
Breviary.

Breviator
||
Brewer.

by degrees the obligation was reduced to the clergy only, who are enjoined, under penalty of mortal sin and ecclesiastical censures, to recite it at home, when they cannot attend in public. In the 14th century, there was particular reserve granted in favour of bishops, who were allowed, on extraordinary occasions, to pass three days without rehearsing the breviary.

This office was originally called *curfus*; and afterwards, the *breviarum*: which latter name imports that the old office was abridged; or rather, that this collection is a kind of abridgment of all the prayers.

The breviaries now in use are innumerable; the difference between them consists principally in the number and order of the psalms, hymns, paternosters, ave-Maries, creeds, magnificates, cantemus's, benedictus's, canticamus's, nunc dimittis's, miserere's, hallelujah's, gloria patri's, &c.

BREVIARY, in Roman antiquity, a book first introduced by Augustus, containing an account of the application of the public money.

BREVIATOR, an officer under the eastern empire, whose business it was to write and translate briefs.—At Rome those are stiled *breviators*, or *abbreviators*, who dictate and draw up the pope's briefs.

BREVIBUS A ROTULIS LIBERANDIS, a writ or command to a sheriff to deliver to his successor the county, with the appurtenances, and the rolls, writs, and other things to his office belonging.

BREVIER, among printers, a small kind of type or letter between bourgeois and minion.

BREVITY, in a general sense, that which denominates a thing brief or short.

BREVITY is more particularly used in speaking of the style or composition of discourse. Brevity of discourse is by some called *brachylogia* and *breviloquentia*; sometimes *laconismus*. Tacitus and Perius are remarkable for the brevity of their style. There are two kinds of brevity, one arising from dryness, poverty, and narrowness of genius; the other from judgment and reflection; which latter alone is laudable. Brevity is so essential to a tale, a song, and an epigram, that without it they necessarily languish and become dull. Rhetoricians make brevity one of the principal marks or conditions of eloquence; but the rules they prescribe for attaining it, are difficult to apply, so as still to keep the due medium between too much and too little. A just brevity is attained by using all the words which are necessary, and none but those which are necessary. Sometimes it may also be had, by choosing a word which has the force of several. It is this last kind which Quintilian admires so much in Sallust; and the imitation of which, by other writers, has caused so much obscurity.

BREVIUM CUSTOS. See CUSTOS.

BREVORDT, a town of Guelderland, in the United Netherlands, situated in E. Long. 6. 35. N. Lat. 52°.

BREWER (Anthony), a dramatic poet who flourished in the reign of king Charles I. and appears to have been held in high estimation by the wits of that time, as may be more particularly gathered from an elegant compliment paid to him in a poem called *Steps to Parnassus*, wherein he is supposed to have a magic power to call the muses to his assistance, and is even set on an equality with the immortal Shakespeare him-

self. There are, however, great disputes among the several writers as to the number of his works. Those which have been ascribed to him with any certainty are, 1. The country girl, a comedy. 2. The love-sick king, a comedy. And, 3. *Lingua*: a piece in regard to which Winstanley records a remarkable anecdote, which points it out to have been in some measure the innocent cause of those troubles that disturbed the peace of these realms in the middle of the 17th century. He tells us, that when this play was acted at Cambridge, Oliver Cromwell (then a youth) acted a part in it. The substance of the piece is a contention among the Senses for a crown which *Lingua* had laid for them to find. The part allotted to young Cromwell was that of *Tactus* or *Touch*; who having obtained the contested coronet, makes this spirited declamation:

Roses and bays, pack hence! this crown and robe
My brows and body circles and invests:
How gallantly it fits me! sure the slave
Measur'd my head who wrought this coronet.—
They lie that say complexions cannot change!
My blood's ennobled, and I am transform'd
Unto the sacred temper of a king.
Methinks I hear my noble parasites
Styling me *Cæsar*, or *Great Alexander*,
Licking my feet, &c.

It is said that he felt the whole part so warmly, and more especially the above-quoted speech, that it was what first fired his soul with ambition, and excited him from the possession of an imaginary crown to stretch his views to that of a real one; for the accomplishment of which he was content to wade through seas of blood.

BREWER, a person who professes the art of brewing.

There are companies of brewers in most capital cities; that of London was incorporated in 1427 by Henry VI. and that of Paris is still older.

The apparatus and utensils of a brewer, or a brew-house, are, A furnace made close and hollow for saving fuel, and with a vent for the smoke lest it taint the liquor; a copper, which is preferable to lead; a mask-vat near the head; a cooler near the mask-vat; and a guile-vat under the cooler: adjoining to all are several clean tubs, to receive the worts and liquors.

BREWERS-HAVEN, a good harbour at the north end of the island of Chiloe on the coast of Chili, in South America, and in the South Sea. The Dutch landed forces here in 1643, designing to get possession of some part of Chili; but they were driven from thence by the Spaniards and the natives. W. Long. 82. S. Lat. 42.

BREWING, the operation of preparing ale or beer, from MALT.

Though the art of brewing is undoubtedly a part of chemistry, and certainly depends upon fixed and inva-^{No settled} riable principles as well as every other branch of that ^{theory of} science, these principles have never yet been thoroughly ^{brewing-} investigated. For want of a settled theory, therefore, the practice of this art is found to be precarious; and to succeed unaccountably with some, and misgive as unaccountably with others. Some few hints, however, have been thrown out, in order to establish a regular theory of brewing; the principal of which we shall lay before our readers.

The usual process of brewing is as follows: A quantity

Brewer,
Brewing.

Brewing.

²
Common
pro. es. de-
scribed.

tity of water being boiled, is left to cool till the height of the steam be over; when so much is poured to a quantity of malt in the mashing tub, as makes it of a consistence stiff enough to be just well rowed up: after standing thus a quarter of an hour, a second quantity of the water is added, and rowed up as before: lastly, the full quantity of water is added; and that in proportion as the liquor is intended to be strong or weak.—This part of the operation is called *mashing*.—The whole now stands two or three hours, more or less, according to the strength of the wort or the difference of weather, and is then drawn off into a receiver; and the mashing repeated for a second wort, in the same manner as for the first, only the water must be cooler than before, and must not stand above half the time. The two worts are then to be mixed, the intended quantity of hops added, and the liquor close covered up, gently boiled in a copper for the space of an hour or two; then let into the receiver, and the hops strained from it into the coolers. When cool, the barm or yeast is applied; and it is left to work or ferment till it be fit to tun up. For small beer there is a third mashing with the water near cold, and not left to stand above three quarters of an hour; to be hopped and boiled at discretion. For double beer or ale, the liquors resulting from the two first mashings must be used as liquor for a third mashing of fresh malt.

³
Difficulties
attending it.

From considering this process, and the multiplicity of circumstances to be attended to in it, we may easily see that it must be a very precarious one. The success of the operation, *i. e.* the goodness of the beer, must depend upon the quality of the malt from which it is made; on that of the water with which it is infused; on the degree of heat applied in the infusion; on the length of time the infusion is continued; on the proper degree of boiling, the quantity and quality of the hops employed; on the proper degree of fermentation, &c.: all which, as already observed, have never yet been thoroughly investigated and ascertained.

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Sir Robert
Murray's
method of
malt-ma-
king.

The manner of making malt Sir Robert Murray describes as follows.—Take good barley newly threshed, &c.; put about six English quarters in a stone trough full of water, where let it steep till the water be of a bright reddish colour; which will be in about three days, more or less, according to the moisture or dryness, smallness or bigness, of the grain, the season of the year, or the temperature of the weather. In summer, malt never makes well; in winter it requires longer steeping than in spring or autumn. It may be known when it is steeped enough by other marks besides the colour of the water; as by the excessive swelling of the grain if it be over-steeped, and by too much softness; being, when it is in a right temper, like the barley prepared to make broth of. When it is sufficiently steeped, take it out of the trough, and lay it in heaps to let the water drain from it; then, after two or three hours, turn it over with a scoop, and lay it in a new heap, 20 or 24 inches deep. This is called the *coming heap*, in the right management whereof lies the principal skill. In this heap it may lie 40 hours, more or less, according to the forementioned qualities of the grain, &c. before it come to the right temper of malt; which that it may do equally, is mainly desired. While it lies in this heap, it must be carefully looked to after the first 15 or 16 hours: for about that time the grains

N^o 54.

begin to put forth roots; which when they have equally and fully done, the malt must, within an hour after, be turned over with a scoop; otherwise the grains will begin to put forth the blade and spire also, which must by all means be prevented. If all the malt do not come equally, but that which lies in the middle, being warmest, come the soonest; the whole must be turned, so that what was outmost may be inmost; and thus it is managed till it be all alike. As soon as the malt is sufficiently come, turn it over, and spread it to a depth not exceeding five or six inches; and by that time it is all spread out, begin and turn it over again three or four times. Afterwards turn it over in like manner once in four or five hours, making the heap deeper by degrees; and continue to do so for the space of 48 hours at least. This frequent turning it over, cools, dries, and deadens the grain; whereby it becomes mellow, melts easily in brewing, and separates entirely from the husk. Then throw up the malt into a heap as high as you can; where let it lie till it grow as hot as your hand can endure it, which usually happens in about the space of 30 hours. This perfects the sweetness and whiteness of the malt. After it is sufficiently heated, throw it abroad to cool, and turn it over again about six or eight hours after; and then lay it on a kiln with a hair-cloth or wire spread under it; where, after one fire which must last 24 hours, give it another more slow, and afterwards, if need be, a third: for if the malt be not thoroughly dried, it cannot be well ground, neither will it dissolve well in the brewing; but the ale it makes will be red, bitter, and unfit for keeping.

From this account of the process of malting, it appears, that, besides the proper management in wetting, turning, &c. the drying is an article of the utmost consequence; and concerning the proper degrees of heat to be employed for this purpose, M. Combrune has related the following experiments. “In an earthen pan, of about two feet diameter, and three inches deep, I put as much of the palest malts, very unequally grown, as filled it on a level to the brim. This I placed over a little charcoal lighted in a small stove, and kept continually stirring it from bottom to top; at first it did not feel so damp as it did about half an hour after.

“In about an hour more, it began to look of a bright orange colour on the outside, and appeared more swelled than before. Every one is sensible how long-continued custom alone makes us sufficient judges of colours. Then I macerated some of the grains, and found they were nearly such as are termed *brown malts*. On stirring and making a heap of them towards the middle, I placed therein at about half depth the bulb of my thermometer, and found it rose to 140 degrees: here the malt felt very damp, and had but little smell.

“At 165 degrees I examined it in the same manner as before, and could perceive no damp: the malt was very brown; and, on being macerated, some few black specks appeared.

“Now many corns, nearest the bottom, were become black and burnt: with all the diligence I could use, I placed my thermometer nearly there, and it rose to 175 degrees. But the particles of fire, arising from the stove, act on the thermometer in proportion to the distance of the situation it is placed in; for which,

I

through

Brewing.

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Mr Com-
brune's ex-
periments
on the dry-
ing of malt;
*Essay on
Brewing.*

through the whole experiment, an abatement of 5 degrees should be allowed, as near as I could estimate; so, a little after, putting my thermometer in the same position, where nearly half the corns were black, it showed 180 degrees. I now judged that the water was nearly all evaporated, and the heap grew black apace.

“ Again, in the centre of the heap raised in the middle of the pan, I found the thermometer at 180 degrees; the corn tasted burnt; and the whole, at top, appeared about one half part a full brown, the rest black: on being macerated, still some white specks appeared; which I observed to proceed from those barley-corns which had not been thoroughly germinated, and whose parts cohering more together, the fire, at this degree of heat, had not penetrated them: their taste was insipid, the malts brittle, and readily parting from the skin: but the thermometer was now more various, as it was nearer to or farther from the bottom; and here I judged all the true malt to be charred.

“ However, I continued the experiment; and, at 190 degrees, still found some white specks on macerating the grain; the acrospire always appearing of a deeper black or brown than the outward skin: the corn now fried at the bottom of the pan.

“ I next increased the fire; the thermometer, placed in the mean between the bottom of the pan and the upper edge of the corn, showed 210 degrees. The malt hissed, fried, and smoked abundantly; though, during the whole process, the grain had been kept stirring, yet, on examination, the whole had not been equally affected with the fire. I found a great part thereof reduced to perfect cinders, easily crumbling to dust between the fingers, some of a very black hue without gloss, some very black with oil shining on the outside. Upon the whole, two third parts of the corn were perfectly black; the rest were of a deep brown, more or less so, as they were hard, steeley, or imperfectly germinated; which was easily discovered by the length of the shoot. Most of them seemed to have lost their cohesion, and had a taste resembling that of high roasted coffee.

“ In the last stage of charring the malt, I set thereon a wine-glass inverted, into which arose a pinguious oily matter, which tasted very salt. Perhaps it may not be unnecessary to say, that the length of time this experiment took up was four hours, and that the effect it had both on myself and the person who attended me was such as greatly resembled the case of inebriation.

“ Though, from hence, it is not possible to fix the exact degree of heat in which malts char, yet we see some black appeared when the thermometer was at 165 degrees, that some were entirely black at 175 and at 180 degrees, that the grains thus affected were such as had been perfectly germinated, and that those which bore a greater heat were defective in that point; whence we may conclude with an exactness that will be sufficient for the purposes of brewing, that true germinated malts are charred in heats between 175 and 180 degrees; and that, as these correspond to the degrees in which pure alcohol, or the finest spirit of the grain itself boils, or disengages itself therefrom, they may point out to us the reason of barley being the fittest grain for the purposes of brewing.”

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From these experiments, our author has constructed the following table of the different degrees of the dryness of malt, with the colour occasioned by each degree.

Deg.	
119	White.
124	Cream colour.
129	Light yellow.
134	Amber colour.
138	High amber.
143	Pale brown.
148	Brown.
152	High brown.
157	Brown inclining to black.
162	High brown speckled with black.
167	Blackish brown with black specks.
171	Colour of burnt coffee.
176	Black.

“ The above table (says he) not only shows us how to judge of the dryness of malt from its colour, but also, when a grit is composed of several sorts of malt, what effect the whole will have when blended together by extraction; and although possibly some small errors may arise in judgments thus formed by our senses, yet as malts occupy different volumes in proportion to their dryness in the practice of brewing, if the result of the water coming in contact with the malt show the degree expected, such parcel of malt may be said to have been judged of rightly in the degree of dryness it was estimated to; so that the first trial either confirms, or sets us numerically right as to our opinion thereof.”

It is found by experience, that the less heat employed in drying the malt, the shorter time will be required before the beer is fit to be used; and of this our author has given the following table.

Deg.		Deg.	
119	2 weeks.	143	6 months.
124	a month.	148	10 months.
129	3 months.	152	15 months.
134	4 months.	157	20 months.
138	6 months.	162	two years.

Lastly, Mr Combrune hath given the following table showing the tendency beers have to become fine, when properly brewed from malts of different degrees of dryness.

Deg.	Colour of malt.	
119	White.	These, when properly brewed, become spontaneously fine, even as far as 138°; when brewed for amber by repeated fermentations, they become pellucid.
124	Cream colour.	
129	Light yellow.	
134	Amber colour.	
138	High amber.	By precipitation these grow bright in a short time.
143	Pale brown.	
148	Brown.	With precipitation these require 8 or 10 months to be bright.
152	High brown.	
157	Brown inclining to black.	With precipitation these may be fined, but will never become bright.
162	Brown speckled with black.	
167	Blackish brown speckled with black.	These with difficulty can be brewed without setting the goods, and will by no means become bright, not even with the strongest acid menstruum.
171	Colour of burnt coffee.	
176	Black.	

Brewing.

6
Mr Richardson's observations.

In a pamphlet entitled "Theoretic hints on an improved practice of brewing malt-liquors, &c. by John Richardson," we have the following observations on the nature and properties of malt.

"The process of making malt is an artificial or forced vegetation, in which the nearer we approach the footsteps of nature in her ordinary progress, the more certainly shall we arrive at that perfection of which the subject is capable. The farmer prefers a dry season to sow his corn in, that the common moisture of the earth may but gently insinuate itself into the pores of the grain, and thence gradually dispose it for the reception of the future shower, and the action of vegetation. The maltster cannot proceed by such slow degrees, but makes an immersion in water a substitute for the moisture of the earth, where a few hours infusion is equal to many days employed in the ordinary course of vegetation; and the corn is accordingly removed as soon as it appears fully saturated, left a solution, and consequently a destruction, of some of its parts, should be the effect of a longer continuance in water, instead of that separation which is begun by this introduction of aqueous particles into the body of the grain.

"Were it to be spread thin after this removal, it would become dry, and no vegetation would ensue; but being thrown into the couch, a kind of vegetative fermentation commences, which generates heat, and produces the first appearance of germination. This state of the barley is nearly the same with that of many days continuance in the earth after sowing: but being in so large a body, it requires occasionally to be turned over, and spread thinner; the former to give the outward parts of the heap their share of the required warmth and moisture, both of which are lessened by exposure to the air; the latter to prevent the progress of the vegetative to the putrefactive fermentation, which would be the consequence of suffering it to proceed beyond a certain degree.

"To supply the moisture thus continually decreasing by evaporation and consumption, an occasional but sparing sprinkling of water should be given to the floor, to recruit the languishing powers of vegetation, and imitate the shower upon the corn field. But this should not be too often repeated; for, as in the field, too much rain, and too little sun, produce rank stems and thin ears, so here would too much water, and of course too little dry warmth, accelerate the growth of the malt, so as to occasion the extraction and loss of such of its valuable parts, as by a slower process would have been duly separated and left behind.

"By the slow mode of conducting vegetation here recommended, an actual and minute separation of the parts takes place. The germination of the radicles and acrospire carries off the cohesive properties of the barley, thereby contributing to the preparation of the saccharine matter, which it has no tendency to extract or otherwise injure, but to increase and meliorate, so long as the acrospire is confined within the husk; and by how much it is wanting of the end of the grain, by so much does the malt fall short of perfection, and in proportion as it has advanced beyond, is that purpose defeated.

"This is very evident to the most common observation, on examining a kernel of malt in the different

stages of its progress. When the acrospire has shot but half the length of the grain, the lower part only is converted into that yellow saccharine flour we are solicitous about, whilst the other half affords no other signs of it than the whole kernel did at its first germination. Let it advance to two thirds of the length, and the lower end will not only have increased its saccharine flavour, but will have proportionally extended its bulk, so as to have left only a third part unmalted. This, or even less than this, is contended for by many maltsters, as a sufficient advance of the acrospire, which they say has done its business as soon as it has passed the middle of the kernel. But we need seek no further for their conviction of error, than the examination here alluded to.

"Let the kernel be slit down the middle, and tasted at either end, whilst green; or let the effects of mastication be tried when it is dried off; when the former will be found to exhibit the appearances just mentioned, the latter to discover the unwrought parts of the grain, in a body of stony hardness, which has no other effect in the mash-tun than that of imbibing a large portion of the liquor, and contributing to the retention of those saccharine parts of the malt which are in contact with it; whence it is a rational inference, that three bushels of malt, imperfect in this proportion, are but equal to two of that which is carried to its utmost perfection. By this is meant the farthest advance of the acrospire, when it is just bursting from its confinement, before it has effected its enlargement. The kernel is then uniform in its internal appearance, and of a rich sweetness in flavour, equal to any thing we can conceive obtainable from imperfect vegetation. If the acrospire be suffered to proceed, the mealy substance melts into a liquid sweet, which soon passes into the blade, and leaves the husk entirely exhausted.

"The sweet thus produced by the infant efforts of vegetation, and lost by its more powerful action, revives and makes a second appearance in the stem, but is then too much dispersed and altered in its form to answer any of the known purposes of art.

"Were we to inquire, by what means the same barley, with the same treatment, produces unequal portions of the saccharine matter in different situations, we should perhaps find it principally owing to the different qualities of the water used in malting. Hard water is very unfit for every purpose of vegetation, and soft will vary its effects according to the predominating qualities of its impregnations. Pure elementary water is in itself supposed to be only the vehicle of the nutriment of plants, entering at the capillary tubes of the roots, rising into the body, and there dispersing its acquired virtues, perspiring by innumerable fine pores at the surface, and thence evaporating by the purest distillation into the open atmosphere, where it begins anew its round of collecting fresh properties, in order to its preparation for fresh service.

"This theory leads us to the consideration of an attempt to increase the natural quantity of the saccharum of malt by adventitious means; but it must be observed on this occasion, that no addition to water will rise into the vessels of plants, but such as will pass the filter; the pores of which appearing somewhat similar to the fine strainers or absorbing vessels employed by nature in her nicer operations, we by analogy conclude,

that.

ewing. that properties so intimately blended with water as to pass the one, will enter and unite with the œconomy of the other, and *vice versa*.

“Supposing the malt to have obtained its utmost perfection, according to the criterion here inculcated, to prevent its farther progress and secure it in that state, we are to call in the assistance of a heat sufficient to destroy the action of vegetation, by evaporating every particle of water, and thence leaving it in a state of preservation, fit for the present or future purpose of the brewer.

“Thus having all its moisture extracted, and being by the previous process deprived of its cohesive property, the body of the grain is left a mere lump of flour, so easily divisible, that, the husk being taken off, a mark may be made with the kernel, as with a piece of soft chalk. The extractible qualities of this flour are, a saccharum closely united with a large quantity of the farinaceous mucilage peculiar to bread corn, and a small portion of oil enveloped by a fine earthy substance, the whole readily yielding to the impression of water applied at different times and different degrees of heat, and each part predominating in proportion to the time and manner of its application.

“In the curing of malt, as nothing more is requisite than a total extrication of every aqueous particle, if we had in the season proper for malting, a solar heat sufficient to produce perfect dryness, it were practicable to reduce beers nearly colourless; but that being wanting, and the force of custom having made it necessary to give our beers various tinctures and qualities resulting from fire, for the accommodation of various tastes, we are necessitated to apply such heats in the drying as shall not only answer the purpose of preservation, but give the complexion and property required.

“To effect this with certainty and precision, the introduction of the thermometer is necessary; but the real advantages of its application are only to be known by experiment, on account of the different construction of different kilns, the irregularity of the heat in different parts of the same kiln, the depth of the malt, the distance of the bulb of the thermometer from the floor, &c. &c. for though similar heats will produce similar effects in the same situation, yet is the dispersion of heat in every kiln so irregular, that the medium spot must be found for the local situation of the thermometer ere a standard can be fixed for ascertaining effects upon the whole. That done, the several degrees necessary for the purposes of porter, amber, pale beers, &c. are easily discovered to the utmost exactness, and become the certain rule of future practice.

“Though custom has laid this arbitrary injunction of variety in our malt liquors, it may not be amiss to imitate the losses we often sustain, and the inconveniences we combat, in obedience to her mandate.

“The further we pursue the deeper tints of colour by an increase of heat beyond that which simple preservation requires, the more we injure the valuable qualities of the malt. It is well known that scorched oils turn black, and that calcined sugar assumes the same complexion. Similar effects are producible in malts, in proportion to the increase of heat, or the time of their continuing exposed to it. The parts of the whole being so united by nature, an injury cannot be done to the one, without affecting the other; accordingly

we find, that such parts of the subject, as might have been severally extracted for the purposes of a more intimate union by fermentation, are, by great heat in curing, burnt and blended so effectually together, that all discrimination is lost, the unfermentable are extracted with the fermentable, the integrant with the constituent, to a very great loss both of spirituousity and transparency. In paler malts, the extracting liquor produces a separation which cannot be effected in brown, where the parts are so incorporated, that unless the brewer is very well acquainted with their several qualities and attachments, he will bring over, with the burnt mixture of saccharine and mucilaginous principles, such an abundance of the scorched oils, as no fermentation can attenuate, no precipitants remove; for, being in themselves impediments to the action of fermentation, they lessen its efficacy, and being of the same specific gravity with the beer, they remain suspended in, and incorporated with the body of it, an offence to the eye, and a nausea to the palate to the latest period.”

The next consideration is the quality of the water to be employed in brewing; and here soft water is universally allowed to be preferable to hard, both for the purposes of mashing and fermentation. Transparency is, however, more easily obtained by the use of hard than soft water: first, from its inaptitude to extract such an abundance of that light mucilaginous matter, which, floating in the beer for a long time, occasions its turbidity; secondly, from its greater tendency to a state of quietude after the vinous fermentation is finished, by which those floating particles are more at liberty to subside; and, lastly, from the mutual aggregation of the earthy particles of the water with those of the materials, which by their greater specific gravity thus aggregated, not only precipitate themselves, but carry down also that lighter mucilage just mentioned. For these reasons, hard water is not well adapted to the brewing of porter, and such beers as require a fulness of palate, when drawn to the great lengths of the London brewery, and of some country situations.

The purity of water is determined by its lightness; and in this, distilled water only can claim any material degree of perfection. Rain water is the purest of all naturally produced: but by the perpetual exhalations of vegetables, and other fine substances floating in the atmosphere, it does not come down to us entirely free from those qualities which pond and river waters possess in a greater degree. These, especially of rivers running through fens and morasses, from the quantity of grass and weeds growing therein, imbibe an abundance of vegetable solutions which occasions them to contain more fermentable matter, and consequently to yield a greater portion of spirit; but at the same time induces such a tendency to acidity as will not easily be conquered. This is more to be apprehended towards the latter end of the summer than at any other time; because these vegetable substances are then in a state of decay, and thence more readily impart their pernicious qualities to the water which passes over them.

At such an unfavourable time, should the brewer be necessitated to pursue his practice, it will behove him to pay the utmost attention to the cause of this

Brewing.

Quality of the water to be employed in brewing.

Brewing. disposition in his liquor, and thence endeavour to prevent the ill consequences, by conducting his process to the extraction and combination of such parts of the materials as his judgment informs him will best counteract its effects.

Where there is the liberty of choice, we would recommend the use of that water which, from natural purity, equally free of the austerity of imbibed earths, and the rankness of vegetable saturation, has a soft fulness upon the palate, is totally flavourless, inodorous, and colourless; whence it is the better prepared for the reception and retention of such qualities as the process of brewing is to communicate and preserve.

The next thing to be considered is the proper degree of heat to be employed in making the infusion: and here it is evident, that though this must be an object of the utmost importance to the success of the operation, it is extremely difficult, perhaps impossible, to fix upon a precise standard that shall at all times fully answer the purpose. On this subject Mr Richardson presents us with the following observations.

8
Mr Richardson's observations on the degree of heat.

"The quality of the saccharine part of malt resembles that of common sugar, to which it is practicable to reduce it; and its characteristical properties are entirely owing to its intimate connection with the other parts of the malt, from which such distinguishing flavours of beers are derived as are not the immediate result of the hop. Were it not for these properties, the brewer might adopt the use of sugar, molasses, honey, or the sweet of any vegetable, to equal advantage; which cannot now be done, unless an eligible succedaneum be found to answer that purpose. As we are at present circumstanced, a search on the other side would turn more to the brewer's account. We have in malt a superabundance of the grosser principles; and would government permit the introduction of a foreign addition to the saccharine, which is too deficient, many valuable improvements might be made from it; as we could, by a judicious application of such adventitious principle, produce a second and third wort, of quality very little inferior to the first.

"But in these experiments a very particular attention would be necessary to the solvent powers of the water at different degrees of heat, and to the inquiry how far a menstruum saturated with one principle may be capable of dissolving another. Such a consideration is the more necessary on this occasion to direct us clear of two extremes equally disagreeable: the first is, that of applying the menstruum pure, and at such a heat as to bring off an over proportion of the oleaginous and earthy principles, which would occasion in the beer, thus wanting its natural share of saccharum, a harshness and austerity which scarce any time the brewer could allow would be able to dissipate; the other is, that of previously loading the menstruum with the adopted sweet in such an abundance as to destroy its solvent force upon the characteristical qualities we wish to unite with it, and thereby leave it a mere solution of sugar. The requisite mean is that of considering what portion of the saccharine quality has been extracted in the first wort, according to the quantity of water and degree of heat applied; and then to make such a previous addition of artificial sweet as will just serve to counterbalance the deficiency, and assimilate with that

portion of the remaining principles we are taught to expect will be extracted with the succeeding wort.

"From the nature of the constituent principles of malt, it is easy to conceive, that the former, or saccharine or mucilaginous parts, yield most readily to the impression of water, and that at so low a degree of heat as would have no visible effect upon the latter. If, therefore, we are to have a certain proportion of every part, it is a rational inference, that the means of obtaining it rests in a judicious variation of the extracting heat according to the several proportions required.

"A low degree of heat, acting principally upon the saccharum, produces a wort replete with a rich soft sweet, fully impregnated with its attendant mucilage, and in quantity much exceeding that obtainable from increased heat; which by its more powerful insinuation into the body of the malt acting upon all the parts together, extracts a considerable portion of the oleaginous and earthy principles, but falls short in softness, fulness, sweetness, and quantity. This is occasioned by the coagulating property of the mucilage, which, partaking of the nature of flour, has a tendency to run into paste in proportion to the increase of heat applied; by which means it not only locks up a considerable part of the saccharum contained therein, but retains with it a proportionate quantity of the extracting liquor, which would otherwise have drawn out the imprisoned sweet, thence lessening both the quantity and quality of the worts. And this has sometimes been known to have had so powerful an effect, as to have occasioned the *setting of the goods*, or the uniting the whole into a pasty mass; for though heat increases the solvent powers of water in most instances, there are some in which it totally destroys them. Such is the presence of flour, which it converts into paste; besides those of blood, eggs, and some other animal substances, which it invariably tends to harden.

"From a knowledge of these effects, we form our ideas of the variations necessary in the heat of the extracting liquor; which are of more extensive utility than has yet been intimated, though exceedingly limited in their extent from one extreme to the other.

"The most common effects of too low a heat, besides sometimes producing immediate acidity, are an insipidity of the flavour of the beer, and a want of early transparency, from the superabundance of mucilaginous matter extracted by such heats, which, after the utmost efforts of fermentation, will leave the beer turbid with such a cloud of its lighter feculencies as will require the separation and precipitation of many months to disperse.

"The contrary application, of too much heat, at the same time that it lessens the mucilage, has, as we have seen before, the effect of diminishing the saccharum also; whence that lean thin quality observable in some beers; and, by extracting an over proportion of oleaginous and earthy particles, renders the business of fermentation difficult and precarious, and impresses an austerity on the flavour of the liquor which will not easily be effaced.

"Yet the true medium heat for each extract cannot be universally ascertained. An attention not only to the quality of the malt, but to the quantity wetted, is absolutely necessary to the obtaining every due advantage;

Brewing.

Brewing.

Brewing.

tage; nor must the period at which the beer is intended for use be omitted in the account. The quality of the water also claims a share in the consideration, in order to supply that deficient thinness and want of solvent force in hard, and to allow for the natural fulness and fermentative quality of soft; a particular to which London in a great measure owes the peculiar mucilaginous and nutritious quality of its malt liquors.

“Although the variations above alluded to are indispensable, it is easy to conceive from the small extent of the utmost variety, that they cannot be far distant. If, therefore, we know that a certain degree extracts the first principles in a certain proportion, we need not much consideration to fix upon another degree that shall produce the required proportion of the remaining qualities, and effect that equal distribution of parts in the extract which it is the business of fermentation to form into a consistent whole.”

9
Of boiling
worts.

The principal use of boiling, as it respects the worts particularly, is to separate the grosser or more palpable parts of the extract, preparatory to that more minute separation which is to be effected in the gyle tun. The eye is a very competent judge of this effect; for the concretions into which the continued action of boiling forms those parts are obvious to the slightest inspection, whilst the perfect transparency of the interstices of the worts points out its utility in promoting that desirable quality in the beer. These coagulable parts are formed from the superabundant mucilage already mentioned; and hence they are found in greater proportion in the first worts than in those that come after; at the same time, they are in these last so mingled with a quantity of oleaginous matter, that they become much more difficultly coagulable in the weak worts than in such as are stronger, and hence these require to be much longer boiled than the others.

During this operation the hops are generally added, which are found to be absolutely necessary for preventing the too great tendency of beer to acidity. The fine essential oil of hops being most volatile and soonest extracted, we are thence taught the advantage of boiling the first wort no longer than is sufficient to form the extract, without exposing it to the action of the fire so long as to dissipate the finer parts of this most valuable principle, and defeat the purpose of obtaining it. To the subsequent worts we can afford a larger allowance, and pursue the means of preservation so long as we can keep in view those of flavour; to which no rules can positively direct, the process varying with every variety of beer, and differing as essentially in the production of porter and pale ale as the modes of producing wine and vinegar.

The consequence of not allowing a sufficient time for the due separation of the parts of the wort and extraction of the requisite qualities of the hop must be obvious. If we proceed to the other extreme, we have every thing to apprehend from the introduction of too large a quantity of the grosser principles of the hop, which are very inimical to fermentation; and from impairing the fermentative quality of the worts themselves, by suffering their too long exposure to the action of the fire passing through them, whereby they are reduced to a more dense consistence, and their parts too intimately blended to yield to the separating force of fer-

mentation with that ease the perfection of the product requires.

The last step in the process of brewing is to ferment the liquor properly; for if this is not done, whatever care and pains have been taken in the other parts, they will be found altogether insufficient to produce the liquor desired. The first thing to be done here is to procure a proper ferment; for though all fermentable liquors would in time begin to ferment of themselves, yet, being also susceptible of putrefaction, the vinous and putrefactive ferments would both take place at the same time in such a manner that the product would be entirely spoiled. There are only two kinds of artificial ferments procurable in large quantity, and at a low price, *viz.* beer-yeast and wine- lees. A prudent management of these might render the business of the brewer for distillation, as in the business of the malt-distiller, &c. much more easy and advantageous*. Brewers

10
Of fermenta-
tion.* See *Dijil*,
lation.

have always found it a considerable difficulty to procure these ferments in sufficient quantities, and preserve them constantly ready for use; and this has been so great a discouragement to the business, that some have endeavoured to produce other ferments, or to form mixtures or compounds of particular fermentable ingredients: but this has been attempted without any great success, all these mixtures falling short even of common baker's leaven in their use. Whoever has a turn for making experiments and attempting improvements of this kind, will find it much easier and more advantageous to preserve and raise nurseries of the common ones, than to devise mixtures of others. Yeast may be preserved by freeing it from its moister parts. This may be done by the sun's heat, but slowly and imperfectly. The best method is by gently pressing it in canvas bags: thus the liquid part, in which there is scarce any virtue, will be thrown off, and the solid will remain behind in form of a cake, which may be packed in a barrel or box, and will keep for a long time sweet and fragrant, and fit for the finest uses; and the same method may be taken either with wine- lees or the flowers of wine. The former may be brought from abroad with great ease in this manner: the latter may be made with us from the lees, by only dissolving them in water, and stirring them about with a stick; by this means, the lighter, more moveable, and more active part of the lees will be thrown up to the top, and may be taken off and preserved, in the manner above mentioned, in any quantity desired. By this means, an easy method is found of raising an inexhaustible fund; or a perpetual supply of the most proper ferments may be readily formed in the way of successive generation, so as to cut off all future occasion of complaint for want of them in the business of distillation. It must be observed, that all ferments abound in essential oil much more than the liquors which produce them; whence they very strongly retain the particular flavour and scent of the subject from whence they were made. It is requisite, therefore, before the ferment is applied, to consider what flavour ought to be introduced, and accordingly what species of ferment is most suited to the liquor. The alteration thus caused by ferments is so considerable, as to determine or bring over any naturally fermentable liquor of a neutral kind to be of the same kind with that which yielded the ferment. The length of this,

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however, does not extend to malt, or to any other matter that does not naturally yield a tolerably pure and tasteless spirit, as it otherwise makes not a simple, pure, and uniform flavour, but a compound and mixed one.

The greatest circumspection and care are necessary in regard to the quality of the ferment. It must be chosen perfectly sweet and fresh: for all ferments are liable to grow musty and corrupt; and if in this case they are mixed with the fermentable liquor, they will communicate their nauseous and filthy flavour to it in such a manner as never to be got off. If the ferment is sour, it must by no means be used for any liquor; for it will communicate its flavour to the whole, and even prevents its rising to a head, and give it an acetous, instead of a vinous, tendency. When the proper quantity is got ready, it must be put to the liquor in a state barely tepid, or scarce luke-warm. The best method of putting them together, so as to make the fermentation strong and quick, is as follows. When the ferment is solid, it must be broken to pieces, and gently thinned with some of the warm liquor; but a complete or uniform solution of it is not to be expected or desired, as this would weaken its efficacy for the future business. The whole intended quantity being thus loosely mixed in some of the luke-warm liquor, and kept near the fire or elsewhere in a tepid state, free from too rude commerce with the external air, more of the insensibly warm liquor ought at proper intervals to be brought in, till thus by degrees the whole quantity is set at work together. When the whole is thus set at work, secured in a proper degree of warmth, and kept from a too free intercourse with the external air, it becomes as it were the business of nature to finish the operation.

In the operation of fermentation, however, the degree of heat employed is of the utmost consequence. In forming the extracts of the malt, the variation of a few degrees of heat produces an important difference in the effect. In the heat of fermentation, similar consequences result from similar variety. Under a certain regulation of the process, we can retain in the beer, as far as art is capable, the finer mucilage, and thereby preserve that fulness upon the palate which is by many so much admired: on the other hand, by a slight alteration we can throw it off, and produce that evenness and uniformity of flavour which has scarce any characteristical property, and is preferred by some only for want of that heaviness which they complain of in full beers. If a more vinous racy ale be required, we can, by collecting and confining the operation within the body of the wort, cause the separation and absorption of such an abundant portion of the oleaginous and earthy principles, as to produce a liquor in a perfect state at the earliest period, and so highly flavoured as to create a suspicion of an adventitious quality. But though all this may be done, and often hath been done, the proper management of fermenting liquors depends so much upon a multiplicity of slight and seemingly unimportant circumstances, that it hath never yet been laid down in an intelligible manner; and no rules, drawn from any thing hitherto published on the subject of brewing, can be at all sufficient to direct any person in this matter, unless he hath had considerable opportunities of observing the practice of a brew-house.

BREY, a town of Germany, on the frontiers of

Brabant, seated on a rivulet, in E. Lon. 5. 35. N. Lat. 51. 6.

BREYNIA, in botany, a synonyme of the capparitis. See **CAPPARIS**.

BRIANCON, a town of France, in upper Dauphiny, capital of the Brianconnois. E. Long. 6. 45. N. Lat. 44. 46.

BRIANCONNOIS, a territory of France, in Dauphiny bounded by Grenoblois, Gapennois, Ambrunois, Piedmont, and Savoy. It comprehends several valleys, which lie among the mountains of the Alps; and though it is extremely cold, yet it is fertile in corn and pastures. The inhabitants have a great deal of wood; yet they choose to be in the stables with their cattle six months in the year, to keep themselves warm. Briancon is the capital town.

BRIAR, in botany, the English name of a species of rosa. See **ROSA**.

BRIARE, a town of France, in the Gatinois, seated on the river Loire. It is remarkable for nothing but a long street full of inns and farriers, it being on the great road to Lyons; and the canal of Briare, which is 33 miles in length, and maintains a communication between the Loire and the Seine, by means of the Loing. E. Long. 2. 45. N. Lat. 47. 40.

BRIAREUS, in fabulous history, a giant; the son of Æther, Titan, or Cœlus, and Terra. This was his name in heaven; on earth he was called *Ægeon*. He was of singular service to Jupiter, when Juno, Pallas, Neptune, and the rest of the gods, endeavoured to bind him in chains and dethrone him. Afterwards, however, he conspired with the rest of his gigantic brethren to dethrone Jupiter. Virgil, on this occasion, describes him as having 100 hands, 50 heads, and breathing out fire †. The fable says that Jupiter, to punish him, threw him under mount Ætna, which, as often as he moves, belches out fire. See **ÆTNA**. † Æn. x.

BRIBE, a reward given to pervert the judgment. See the next article.

The word is French, *bribe*, which originally denotes a bit, fragment, or relic of meat taken off the table; on which footing, bribe imports as much as *panis mendicatus*, and still keeps up the idea of the matter whereof bribes anciently consisted. Hence also the Spaniards use *bribar* and *briuar* for *begging*; and *brivia briveneria*, and *brivonismo*, for *beggary*. In middle-age writers, a bribe given a judge is called *quato litis*, and the receiver, *campi particeps*, or *cambi particeps*; because the spoils of the field i. e. the profits of the cause, were thus shared with the giver.

BRIBERY, in law, is a high offence, where a person in a judicial place takes any fee, gift, reward, or brockage, for doing his office, but of the king only. But, taken largely, it signifies the receiving or offering any undue reward to or by any person concerned in the administration of public justice, whether judge, officer, &c. to act contrary to his duty; and sometimes it signifies the taking or giving a reward for a public office.

In the East it is the custom never to petition any superior for justice, not excepting their kings, without a present. This is calculated for the genius of despotic countries; where the true principles of government are never understood, and it is imagined that there is no

Bribery
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Brick.Black.
Comment.

obligation due from the superior to the inferior, no relative duty owing from the governor to the governed. The Roman law, though it contained many severe injunctions against bribery, as well for selling a man's vote in the senate or other public assembly, as for the bettering of common justice; yet, by a strange indulgence in one instance, it tacitly encouraged this practice; allowing the magistrate to receive small presents, provided they did not on the whole exceed 100 crowns a-year: not considering the insinuating nature and gigantic progress of this vice, when once admitted. Plato, therefore, in his ideal republic, orders those who take presents for doing their duty to be punished in the severest manner: and by the laws of Athens, he that offered a bribe was also prosecuted, as well as he that received a bribe. In England this offence of taking bribes is punished, in inferior officers, with fine and imprisonment; and in those that offer a bribe, though not taken, the same. But in judges, especially the superior ones, it has been always looked upon as so heinous an offence, that the chief justice Thorpe was hanged for it in the reign of Edward III. By a statute 11 Henry IV. all judges and officers of the king convicted of bribery, shall forfeit treble the bribe, be punished at the king's will, and be discharged from his service for ever. And some notable examples have been made in parliament, of persons in the highest stations, and otherwise very eminent and able, but contaminated with this fordid vice. Thus in the reign of king James I. the earl of M. lord treasurer of England, being impeached by the commons, for refusing to hear petitions referred to him by the king, till he had received bribes, &c. was, by sentence of the lords, deprived of all his offices, and disabled to hold any for the future, or to sit in parliament; he was also fined 50,000 l. and imprisoned during the king's pleasure. In the 11th year of king George I. the lord chancellor M—— had a somewhat milder punishment: he was impeached by the commons, with great zeal, for bribery, in selling the places of masters in chancery for exorbitant sums, and other corrupt practices, tending to the great loss and ruin of the suitors of that court; and the charge being made good against him, being before diviced of his office, he was sentenced to pay a fine of 30,000 l. and imprisoned till it was paid. It is said that one of the peers, if not two, who voted against him, had been possessed of the office of chancellor, and sold the places of masters in chancery whenever vacant.

BRIBERY in Elections. See ELECTIONS.

BRICIANI, those of the order of that name. This was a military order, instituted by St Bridget, queen of Sweden, who gave them the rules and constitutions of those of Malta and St Augustin. This order was approved by pope Urban V. They were to fight for the burying of the dead, to relieve and assist widows, orphans, the lame, sick, &c.

BRICK, a fat reddish earth, formed into long squares, four inches broad, and eight or nine long, by means of a wooden mould, and then baked or burnt in a kiln, to serve the purposes of building.

Bricks are of great antiquity, as appears by the sacred writings, the tower and walls of Babylon being built with them.

The Greeks chiefly used three kinds of bricks; the first whereof was called [*didiron*], i. e. of two palms;

the second [*tetradiron*], of four palms; the third [*pentadiron*], of five palms. They had also other bricks, just half each of those, to render their works more solid, and also more agreeable to the sight, by the diversities of the figures and sizes of the bricks.

The dimensions of the brick chiefly used by the Romans, according to Pliny, were a foot and a half long, and a foot broad; which measures agree with those of several Roman bricks in England, which are about 17 inches long, and 11 broad, of our measure. Sir Henry Wotton speaks of a sort of bricks at Venice, of which stately columns were built; they were first formed in a circular mould, and cut, before they were burnt, into four or more quarters or sides; afterwards, in laying, they were jointed so close, and the points concentrated so exactly, that the pillars appeared one entire piece. The ordinary Paris brick is eight inches long, four broad, and two thick, French measure, which makes something more than ours. But this smallness is an advantage to a building, the strength of which consists much in the multitude of angles and joints, at least if well laid, and having a good bond.

Bricks among us are various, according to their various forms, dimensions, uses, method of making, &c. The principal are, compass-bricks, of a circular form, used in steining of walls: concave, or hollow bricks, on one side flat like a common brick, on the other hollowed, and used for conveyance of water: feather-edged bricks, which are like common statute-bricks, only thinner on one edge than the other, and used for penning up the brick pannels in timber buildings: cogging bricks are used for making the indented works under the capping of walls built with great bricks: capping bricks, formed on purpose for capping of walls: Dutch or Flemish bricks, used to pave yards, stables, and for soap-boilers vaults and cisterns: clinkers, such bricks as are glazed by the heat of the fire in making: sandel or samel-bricks, are such as lie outmost in a kiln or clamp, and consequently are soft and useless, as not being thoroughly burnt: great bricks are those twelve inches long, six broad, and three thick, used to build fence-walls: platter or buttress bricks, have a notch at one end, half the breadth of the brick; their use is to bind the work which is built of great bricks: statute-bricks, or small common bricks, ought, when burnt, to be nine inches long, four and a quarter broad, and two and a half thick; they are commonly used in paving cellars, sinks, hearths, &c.

Worlidge, and others after him, have endeavoured to excite brickmakers to try their skill in making a new kind of brick, or a composition of clay and sand, whereof to form window-frames, chimney-pieces, door-cases, and the like. It is to be made in pieces fashioned in moulds, which, when burnt, may be set together with a fine red cement, and seem as one entire piece, by which may be imitated all manner of stone-work. The thing should seem feasible, by the earthen pipes made fine, thin, and durable, to carry water under-ground at Portsmouth; and by the earthen backs and grates for chimneys, formerly made by Sir John Winter, of a great bigness and thickness. If chimney-pieces thus made in moulds, and dried and burnt, were not found smooth enough, they might be polished with sand and water; or were care taken, when they were half dry in the air, to have them polished with an instrument of copper

Brick.

* Wotton.
Elem. of
Architecture
l. ii.Supplement
to Chambers

Brick.

copper or iron, then leave them till they were dry enough to burn, it is evident they would not want much polishing afterwards. The work might even be glazed, as potters do their fine earthen ware, either white, or of any other colour; or it might be veined in imitation of marble, or be painted with figures of various colours, which would be much cheaper, perhaps equally durable, and as beautiful, as marble itself.

Bricks are commonly red; though there are some also of a white colour, for which fort Walpit in Suffolk is famous. Bricks may be made of any earth that is clear of stones, even sea-oufe; but all will not burn red, a property peculiar to earths which contain ferruginous particles. In England, bricks are chiefly made of a hazely, yellowish-coloured, fatty earth, somewhat reddish, vulgarly called *loam*. The earth, according to Leibourn, ought to be dug before winter, but not made into bricks before spring. For the making of such bricks as will stand the fiercest fires, Sturbridge clay or Windfor loam are esteemed the best. In general, the earth whereof bricks are made ought not to be too sandy, which would render them heavy and brittle; nor too fat, which would make them crack in drying.

The first step in the process of brickmaking is casting the clay, or earth. The next step is to tread or temper it, which ought to be performed doubly of what is usually done; since the goodness of the bricks depends chiefly upon this first preparation. The earth itself, before it is wrought, is generally brittle and dusty; but adding small quantities of water gradually to it, and working and incorporating it together, it opens its body, and tinges the whole with a tough, gluey band or substance. If, in the tempering, you overwater them, as the usual method is, they become dry and brittle, almost as the earth they are made of; whereas, if duly tempered, they become smooth and solid, hard and durable. A brick of this last fort takes up near as much earth as a brick and a half made the contrary way; in which the bricks are spongy, light, and full of cracks, partly through want of due working, and partly by mixing of ashes and light sandy earth to make it work easy and with greater dispatch; as also to save culm or coals in the burning. We may add, that for bricks made of good earth, and well tempered, as they become solid and ponderous, so they take up a longer time in drying and burning than the common ones; and that the well drying of bricks before they are burnt, prevents their cracking and crumbling in the burning.

Bricks are burnt either in a kiln or clamp. Those that are burnt in a kiln, are first set or placed in it; and then the kiln being covered with pieces of bricks, they put in some wood to dry them with a gentle fire; and this they continue till the bricks are pretty dry, which is known by the smoke's turning from a darkish colour to transparent smoke: they then leave off putting in wood, and proceed to make ready for burning; which is performed by putting in brush, furze, spray, heath, brake, or fern faggots: but before they put in any faggots, they dam up the mouth or mouths of the kiln with pieces of bricks (which they call *shinlog*) piled up one upon another, and close it up with wet brick-earth instead of mortar. The shinlog they make so high, that there is but just room above it to thrust in a faggot: then they proceed to put in more faggots, till the kiln

and its arches look white, and the fire appears at the top of the kiln; upon which they slacken the fire for an hour, and let all cool by degrees. This they continue to do, alternately heating and slackening, till the ware be thoroughly burnt, which is usually effected in 48 hours.

About London they chiefly burn in *clamps*, built of the bricks themselves, after the manner of arches in kilns, with a vacancy between each brick, for the fire to play through; but with this difference, that instead of arching, they span it over by making the bricks project one over another on both sides of the place, for the wood and coals to lie in till they meet, and are bounded by the bricks at the top, which close all up. The place for the fuel is carried up straight on both sides, till about three feet high; then they almost fill it with wood, and over that lay a covering of sea-coal, and then overspan the arch; but they strew sea-coal also over the clamp, betwixt all the rows of bricks; lastly, they kindle the wood, which gives fire to the coal; and when all is consumed, then they conclude the bricks are sufficiently burnt.

In Dr Percival's essays*, we have the following experiment of the effects of bricks on water. "Two or three pieces of common brick were steeped four days in a basin full of distilled water. The water was then decanted off, and examined by various chemical tests. It was immiscible with soap, struck a lively green with syrup of violets, was rendered slightly lactescent by the volatile alkali, and quite milky by the fixed alkali and by a solution of saccharum saturni. The infusion of tormentil root produced no change in it." This experiment, he observes, affords a striking proof of the impropriety of lining wells with brick, a practice very common in many places, and which cannot fail of rendering the water hard and unwholesome. Clay generally contains a variety of heterogeneous matters. The coloured loams often participate of bitumen, and the ochre of iron. Sand and calcareous earth are still more common ingredients in their composition; and the experiments of Mr Geoffry and Mr Pott prove, that the earth of alum also may in large quantity be extracted from clay. Now as clay is exposed to the open air for a long space of time, is then moulded into bricks, and burnt, this process resembles in many respects that by which the alum-stone is prepared. And it is probable that the white efflorescence which is frequently observable on the surface of new bricks, is of an aluminous nature. The long exposure of clay to the air before it is moulded into bricks, the sulphureous exhalations of the pit-coal used for burning it, together with the suffocating and bituminous vapour which arises from the ignited clay itself, sufficiently account for the combination of a vitriolic acid with the earth of alum.

Oil of BRICKS, olive oil imbibed by the substance of bricks, and afterwards distilled from it. This oil was once in great repute for curing many diseases, but is now justly laid aside.

BRICK-Layer, an artificer, whose business is to build with bricks, or make brick work.

Bricklayers work, or business, in London, includes tying, walling, chimney-work, and paving with bricks and tyles. In the country it also includes the mason's and plasterer's business.

The materials used by brick-layers are bricks, tyles, mortar,

Bricks.

* Vol. I. P. 322.

Brick mortar, laths, nails, and tyle-pins. Their tools are a brick trowel, wherewith to take up mortar; a brick-ax, to cut bricks to the determined shape; a saw, for sawing bricks; a rub-stone, on which to rub them; also a square, wherewith to lay the bed or bottom, and face or surface of the brick, to see whether they are at right angles; a bevel, by which to cut the under sides of bricks to the angles required; a small trammel of iron, wherewith to mark the bricks; a float-stone, with which to rub a moulding of brick to the pattern described; a banker, to cut the bricks on; line-pins, to lay their rows or courses by; plumb-rule, whereby to carry their work upright; level, to conduct it horizontal; square, to set off right angles; ten-foot-rod, wherewith to take dimensions; jointer, wherewith to run the long joints; rammer, wherewith to beat the foundation; crow and pick-ax, wherewith to dig through walls.

The London brick-layers make a regular company, which was incorporated in 1568; and consists of a master, two wardens, 20 assistants, and 78 on the livery.

Brick-Laying, the art of framing edifices of bricks.

Moxon hath an express treatise on the art of brick-laying; in which he describes the materials, tools, and method of working, used by brick layers.

Great care is to be taken, that bricks be laid joint on joint in the middle of the walls as seldom as may be; and that there be good bond made there, as well as on the outsides. Some brick-layers, in working a brick and half wall, lay the header on one side of the wall perpendicular on the header on the other side, and so all along the whole course; whereas, if the header on one side of the wall were toothed as much as the stretcher on the other side, it would be a stronger toothing, and the joints of the headers of one side would be in the middle of the headers of the course they lie upon of the other side. If bricks be laid in winter, let them be kept as dry as possible; if in summer, it will quit cost to employ boys to wet them, for that they will then unite with the mortar better than if dry, and will make the work stronger. In large buildings, or where it is thought too much trouble to dip all the bricks separately, water may be thrown on each course after they are laid, as was done at the building the physician's college, by order of Dr Hooke. If bricks are laid in summer, they are to be covered; for if the mortar dries too hastily, it will not bind so firmly to the bricks as when left to dry more gradually. If the bricks be laid in winter, they should also be covered well, to protect them from rain, snow and frost; which last is a mortal enemy to mortar, especially to all such as have been wetted just before the frost assaults it.

Brick-Maker, is he who undertakes the making of BRICKS. This is mostly performed at some small distance from cities and towns; and though some, thro' ignorance, look upon it as a very mean employ, because laborious, yet the masters about London, and other capital cities, are generally men of substance.

BRICKING, among builders, the counterfeiting of a brick wall on plaster: which is done by smearing it over with red ochre, and making the joints with an edged tool; these last are afterwards filled with a fine plaster.

BRIDE, a woman newly married. Among the Greeks, it was customary for the bride to be conducted from her father's house to her husband's in a chariot,

the evening being chosen for that purpose, to conceal her blushes; she was placed in the middle, her husband sitting on one side, and one of her most intimate friends on the other; torches were carried before her, and she was entertained in the passage with a song suitable to the occasion. When they arrived at their journey's end, the axle-tree of the coach they rode in was burnt, to signify that the bride was never to return to her father's house.—Among the Romans, the bride was to seem to be ravished by force from her mother, in memory of the rape of the Sabines under Romulus; she was to be carried home in the night-time to the bridegroom's house, accompanied by three boys, one whereof carried a torch, and the other two led the bride; a spindle and distaff being carried with her: she brought three pieces of money called asses, in her hand to the bridegroom, whose doors on this occasion were adorned with flowers and branches of trees: being here interrogated who she was, she was to answer *Caia*, in memory of *Caia Cecilia*, wife of *Tarquin the Elder*, who was an excellent *lanifica* or spinners; for the like reason, before her entrance, she lined the door-posts with wool, and smeared them with grease. Fire and water being set on the threshold, she touched both; but starting back from the door, refused to enter, till at length she passed the threshold, being careful to step over without touching it: here the keys were given her, a nuptial supper was prepared for her, and minstrels to divert her; she was seated on the figure of a priapus, and here the attendant boys resigned her to the *pronuba*, who brought her into the nuptial chamber and put her to bed. This office was to be performed by matrons who had only been once married, to denote that the marriage was to be for perpetuity.

BRIDEGROOM, a man newly married, the spouse of the bride.

The Spartan bridegrooms committed a kind of rape upon their brides. For matters being agreed on between them two, the woman that contrived and managed the match, having shaved the bride's hair close to her skin, dressed her up in man's clothes, and left her upon a mattress: this done, in came the bridegroom, in his usual dress, having supped as ordinary, and stealing as privately as he could to the room where the bride lay, and untying her virgin girdle, took her to his embraces; and having stayed a short time with her, returned to his companions, with whom he continued to spend his life, remaining with them by night as well as by day, unless he stole a short visit to his bride, which could not be done without a great deal of circumspection, and fear of being discovered. Among the Romans, the bridegroom was decked to receive his bride; his hair was combed and cut in a particular form; he had a coronet or chaplet on his head, and was dressed in a white garment.

By the ancient canons, the bridegroom was to forbear the enjoyment of his bride the first night, in honour of the nuptial benediction given by the priest on that day*. In Scotland, and perhaps also some parts of England, a custom called *marchet*, obtained: by which the lord of the manor was intitled to the first night's habitation with his tenants brides†.

BRIDEWELL, a work-house, or place of correction for vagrants, strumpets, and other disorderly persons.—These are made to work, being maintained with

Bride-
groom,
Bride &c I

Job's
part I
an. 40.
† See *Mar-*
chets.

Bridewell, Bridge. clothing and diet; and when it seems good to their governors, they are sent by passes into their native countries; however, while they remain here, they are not only made to work, but, according to their crimes, receive once a fortnight such a number of stripes as the governor commands.

BRIDEWELL, near Fleet-street, is a foundation of a mixt and singular nature, partaking of the hospital, the prison, and workhouse; it was founded in 1553, by Edward VI. who gave the place where king John had formerly kept his court, and which had been repaired by Henry VIII. to the city of London, with 700 merks of land, bedding, and other furniture. Several youths are sent to this hospital as apprentices to manufacturers, who reside there; they are clothed in blue doublets and breeches, with white hats. Having faithfully served their time of seven years, they have their freedom, and a donation of L. 10 each, for carrying on their respective trades.

BRIDGE, a work of masonry or timber, consisting of one or more arches built over a river, canal, or the like, for the convenience of passing the same. See **ARCHITECTURE**, n^o 122; and **CANAL**.

The first inventor of bridges, as well as of ships and crowns, is by some learned men supposed to be Janus: their reason is, that on several ancient Greek, Sicilian, and Italian coins, there are represented on one side a Janus, with two faces; and on the other a bridge, or a crown or a ship.

Bridges are a sort of edifices very difficult to execute on account of the inconvenience of laying foundations and walling under water. The earliest rules and instructions relating to the building of bridges are given by Leon Baptista Alberti, *Archit.* l. viii. Others were afterwards laid down by Palladio, l. iii. Serlio, l. iii. c. 4. and Scamozzi, l. v. all of which are collected by M. Blondel, *Cours d'Archit.* p. 629, *seq.* The best of them are also given by Goldman, *Baukhurst*, l. iv. c. 4. p. 134, and Hawkesmoor's *History of London bridge*, p. 26, *seq.* M. Gautier has a piece expressive on bridges, ancient and modern; *Trait des Ponts*, Paris 1716, 12mo.

The parts of a bridge are, The piers; the arches; the pavement, or way over for cattle and carriages; the foot-way on each side, for foot-passengers; the rail or parapet, which incloses the whole; and the buttments or ends of the bridge on the bank.

The conditions required in a bridge are, That it be well-designed, commodious, durable, and suitably decorated. The piers of stone-bridges should be equal in number, that there may be one arch in the middle, where commonly the current is strongest; their thickness is not to be less than a sixth part of the span of the arch, nor more than a fourth; they are commonly guarded in the front with angular sterlings, to break the force of the current: the strongest arches are those whose sweep is a whole semicircle; as the piers of bridges always diminish the bed of a river, in case of inundations, the bed must be sunk or hollowed in proportion to the space taken up by the piers, as the waters gain in depth what they lose in breadth, which otherwise conduce to wash away the foundation and endanger the piers: to prevent this, they sometimes diminish the current, either by lengthening its course, or by making it more winding; or by stopping the bottom with

rows of planks, stakes, or piles, which break the current.

Among the Romans, the building and repairing of bridges was first committed to the pontifices or priests; then to the censors, or curators of the roads; lastly, the emperors took the care of bridges into their own hands. Thus Antoninus Pius built the Pons Janiculensis of marble; Gordian restored the Pons Cestius; and Adrian built a new one denominated from him. In the middle-age, bridge-building was reckoned among the acts of religion; and a regular order of Hospitaliers was founded by St Benezet, towards the end of the 12th century, under the denomination of *pontifices*, or bridge-builders, whose office it was to be assistant to travellers, by making bridges, settling ferries, and receiving strangers in hospitals, or houses built on the banks of rivers. We read of one hospital of this kind at Avignon, where the hospitaliers dwelt under the direction of their first superior St Benezet. The Jesuit Raynaldus has a treatise expressive on St John the bridge-builder.

Among the bridges of antiquity, that built by Trajan over the Danube is allowed to be the most magnificent.

Among modern bridges, that of Westminster, built over the river Thames, may be accounted one of the finest in the world: it is 44 feet wide, a commodious foot-way being allowed for passengers, on each side, of about seven feet broad, raised above the road allowed for carriages, and paved with broad moor-stones, while the space left between them is sufficient to admit three carriages and two horses to go a-breast, without any danger. Its extent from wharf to wharf is 1220 or 1223 feet, being full 300 feet longer than London-bridge. The free water-way under the arches of this bridge is 870 feet, being four times as much as the free water-way left between the sterlings of London bridge: this disposition, together with the gentleness of the stream, are the chief reasons why no sensible fall of water can ever stop, or in the least endanger, the smallest boats in their passage through the arches.

It consists of 13 large and 2 small arches, together with 14 intermediate piers.

Each pier terminates with a salient right angle against either stream: the two middle piers are each 17 feet in thickness at the springing of the arches, and contain 3000 cubic feet, or near 200 tons, of solid stone; and the others decrease in width equally on each side by one foot.

All the arches of this bridge are semicircular; they all spring from about two feet above low-water mark; the middle arch is 76 feet wide, and the others decrease in breadth equally on each side by 4 feet.

This bridge is built of the best materials; and the size and disposition of these materials are such, that there is no false bearing, or so much as a false joint in the whole structure; besides that it is built in a neat and elegant taste, and with such simplicity and grandeur, that, whether viewed from the water, or by the passengers who walk over it, it fills the mind with an agreeable surprize. The semioctangular towers which form the recesses of the foot-way, the manner of placing the lamps, and the height of the balustrade, are at once the most beautiful, and, in every other respect, the best contrived.

Bridge.

Bridge.

London-bridge consists of 20 locks or arches, 19 of which are open, and one filled up or obscured. It is 900 feet long, 60 high, and 74 broad, with almost 20 feet aperture in each arch. It is supported by 18 piers, from 25 to 34 feet thick; so that the greatest water-way when the tide is above the sterlings is 450 feet, scarce half the width of the river; and below the sterlings, the water-way is reduced to 194 feet. Thus a river 900 feet wide is here forced through a channel of 194 feet. London bridge was first built of timber, some time before the year 994, by a college of priests, to whom the profits of the ferry of St Mary Overy's had descended; it was repaired, or rather new built of timber, in 1163. The stone-bridge was begun by king Henry in 1176, and finished by king John in 1209. The architect was Peter of Colechurch, a priest *. For the keeping it in repair, a large house is allotted, with a great number of offices, and a vast revenue in land, &c. The chief officers are two bridge-masters, chosen yearly out of the body of the livery. The defects of this bridge are the narrowness and irregularity of the arches, and the largeness of the piers, which, together with the sterlings, turn the current of the Thames into many frightful cataracts, which must obstruct and endanger the navigation through the bridge. The sterlings have been added, to hinder the piers from being undermined by the rotting of the piles on which they are built: for by means of these sterlings the piles are kept constantly wet; and thus the timber is kept from decaying, which always happens when it is suffered to be alternately wet and dry.

Blackfriars bridge, situated near the centre of the city, and built according to a plan drawn by Mr Robert Mylne, is an exceeding light and elegant structure. The arches are only 9 in number; but very large, and of an elliptical form. The centre-arch is 100 feet wide; those on the sides decrease in a regular gradation; and the width of that near the abutment at each end is 70 feet. It has an open balustrade at the top, and a foot-way on each side, with room for three carriages abreast in the middle. It has also recesses on the sides for the foot-passengers, each supported by two lofty Ionic columns.

The longest bridge in England is that over the Trent at Burton, built by Bernard abbot of Burton, in the 12th century; it is all of squared free stone, strong and lofty, 1545 feet in length, and consisting of 34 arches. Yet this comes far short of the wooden bridge over the Drave, which according to Dr Brown is at least five miles long.

But the most singular bridge in Europe is that built over the river Tave in Glamorganshire. It consists of one stupendous arch, the diameter of which is 175 feet, the chord 140, the altitude 35, and the abutments 32. This magnificent arch was built by William Edward, a poor country mason, in the year 1756.

The famous bridge of Venice, called the *Rialto*, consists of but a single arch, and that a flat or low one, and passed for a masterpiece of art. It was built in 1591, on the design of Michael Angelo; the span of the arch is 98½ feet, and its height above the water only 23.—Poulet mentions a bridge of a single arch in the city of Munster in Bohnia, much bolder than that of the Ri-

alto at Venice. But these are nothing to a bridge in China, built from one mountain to another, consisting of a single arch 400 cubits long and 500 in height, whence it is called the *flying-bridge*: a figure of it is given in the Philosophical Transactions. Kircher also speaks of a bridge in the same country 360 perches long, supported by 300 pillars.

Rushen BRIDGE, *Pont de jonc*, is made of large sheaves of rushes growing in marshy grounds, which they cover with boards or planks; they serve for crossing ground that is boggy, miry, or rotten. The Romans had also a sort of subitaneous bridges made by the soldiers, of boats, or sometimes of casks, leather bottles, or bags, or even of bullocks bladders blown up and fastened together, called *ascogafri*. M. Couplet gives the figure of a portable bridge 200 feet long, easily taken asunder and put together again, and which 40 men may carry. Frezier speaks of a wonderful kind of bridge at Apurima in Lima, made of ropes, formed of the bark of a tree.

Pendent or Hanging BRIDGES, called also *Philosophical Bridges*, are those not supported either by posts or pillars, but hung at large in the air, only supported at the two ends or butments. Instances of such bridges are given by Palladio and others. Dr Wallis gives the design of a timber-bridge 70 feet long, without any pillars, which may be useful in some places where pillars cannot be conveniently erected. Dr Plot assures us, that there was formerly a large bridge over the castle-ditch at Tutbury in Staffordshire, made of pieces of timber, none much above a yard long, and yet not supported underneath either with pillars or archwork, or any sort of prop whatever.

Draw-BRIDGE, one that is fastened with hinges at one end only, so that the other may be drawn up; in which case, the bridge stands upright, to hinder the passage of a ditch or moat.

Flying-BRIDGE, or *Pons ductorius*, an appellation given to a bridge made of pontoons, leather boats, hollow beams, casks, or the like, laid on a river, and covered with planks, for the passage of an army.

Flying-BRIDGE (*pont volant*) more particularly denotes a bridge composed of one or two boats joined together by a sort of flooring, and surrounded with a rail or balustrade; having also one or more masts, to which is fastened a cable, supported, at proper distances, by boats, and extended to an anchor, to which the other end is fastened, in the middle of the water: by which contrivance, the bridge becomes moveable, like a pendulum from one side of the river to the other, without any other help than the rudder.—Such bridges sometimes also consist of two stories, for the quicker passage of a great number of men, or that both infantry and cavalry may pass at the same time.

In Plate CVIII is represented a flying-bridge of this kind. Fig. 2. is a perspective view of the course of a river and its two banks. *a, b, c, d*, Two long boats or batteaux, which support the flying-bridge. *GH, KL*, two masts joined at their tops by two transverse pieces, or beams, and a central arch, and supported in a vertical position by two pair of shrouds and two chains *LN, HR*. *M*, a horse, or crabs piece, over which the rope or cable *M, V, e, f*, that rides or holds the bridge against the current, passes. *E*, a roll or windlass round

Bridge

which the rope M, F, *e, f*, is wound. *a, b*, The rudders. A B, and CD, two portions of bridges of boats fastened to the bank on each side, and between which the flying-bridge moves in passing from one side of the river to the other. *e, f*, Chains supported by two punts, or small flat-bottomed boats: there are five or six of these punts at about 40 fathoms from one another. The first, or farthest from the bridge, is moored with anchors in the middle of the bed of the river.

Fig. 3. Is a plan of the same bridge. *a, b, c, d*, The two boats that support it. K and G, the two masts. K F G, the transverse piece or beam over which the cable passes. E, the roll, or windlafs. round which the rope or cable is wound. *a, b*, The rudders. O, a boat. *c*, One of the punts, or small flat-bottomed boats that support the chain. N, N, pumps for extracting the water out of the boats. P, P, capstans.

Fig. 4. Lateral elevation of the bridge. *a, c*, One of the boats. *b*, The rudder. E, The roll, or windlafs. M, The horse, or cross-piece. G H, One of the masts. E, M, H, F, The cable. In this view the balustrade running along the side of the bridge is plainly exhibited.

Fig. 5. Elevation of the hinder or stern part of the bridge. *a, b*, The two boats. G H, K L, The two masts. H L, The upper transverse beam. *p, q*, The lower transverse beam, or that over which the cable passes, and on which it slides from one mast to the other; this beam is therefore always kept well greased. *p, k, q, g*, Shrouds extending from the sides of the bridge to the tops of the masts. M, The horse or cross-piece over which the cable passes to the roll or windlafs E.

BRIDGES of Boats are either made of copper or wooden boats, fastened with stakes or anchors, and laid over with planks. One of the most notable exploits of Julius Cæsar was the expeditious making a bridge of boats over the Rhine. Modern armies carry copper or tin boats, called *pontoons*, to be in readiness for making bridges; several of these being joined side by side till they reach across the river, and planks laid over them, make a plane for the men to march on. There are fine bridges of boats at Beaucaire and Rouen, which rise and fall with the water; and that at Seville is said to exceed them both. The bridge of boats at Rouen, built in lieu of the stately stone-bridge erected there by the Romans, is represented by a modern writer as the wonder of the present age. It always floats, and rises and falls with the tide, or as the land-waters fill the river. It is near 300 yards long, and is paved with stone, just as the streets are; carriages with the greatest burdens go over it with ease, and men and horses with safety, though there are no rails on either hand. The boats are very firm, and well moored with strong chains, and the whole well looked after and constantly repaired, though now very old.

BRIDGE of Communication, is that made over a river, by which two armies, or forts, which are separated by that river, have a free communication with one another.

Floating-BRIDGE, is ordinarily made of two small bridges, laid one over the other, in such manner as that the uppermost stretches and runs out, by the help of certain cords running through pulleys placed along the sides of the under-bridge, which push it forwards till the end of it joins the place it is designed to be

Brigde.

fixed on. When these two bridges are stretched out to their full length, so that the two middle ends meet, they are not to be above four or five fathoms long; because, if longer, they will break. Their chief use is for surprising out-works, or posts that have but narrow moats. In the memoirs of the royal academy of sciences we find an ingenious contrivance of a floating-bridge, which lays itself on the other side of the river.

BRIDGE, Natural, implies a bridge not constructed by art, but the result of some operation of nature.

A most wonderful work of this kind is described by Mr Jefferson in his *State of Virginia*. It is on the ascent of a hill, which seems to have been cleft through its length by some great convulsion. The fissure, just at the bridge, is, by some admeasurements, 270 feet deep, by others only 205. It is about 45 feet wide at the bottom, and 90 feet at the top; this of course determines the length of the bridge, and its height from the water. Its breadth in the middle is about 60 feet, but more at the ends, and the thickness of the mafs at the summit of the arch about 40 feet. A part of this thickness is constituted by a coat of earth, which gives growth to many large trees. The residue, with the hill on both sides, is one solid rock of limestone. The arch approaches the semi-elliptical form; but the larger axis of the ellipsis, which would be the cord of the arch, is many times longer than the transverse. Though the sides of this bridge are provided in some parts with a parapet of fixed rocks, yet few men have resolution to walk to them and look over into the abyss. You involuntarily fall on your hands and feet, creep to the parapet, and peep over it. Looking down from this height about a minute, gave our author a violent headach. If the view from the top be painful and intolerable, that from below is delightful in an equal extreme. It is impossible for the emotions arising from the sublime to be felt beyond what they are here: so beautiful an arch, so elevated, so light, and springing as it were up to heaven, the rapture of the spectator is really indescribable! The fissure continuing narrow, deep, and straight for a considerable distance above and below the bridge, opens a short but very pleasing view of the North-mountain on one side and Blue-ridge on the other, at the distance each of them of about five miles. This bridge is in the county of Rockbridge, to which it has given name, and affords a public and commodious passage over a valley, which cannot be crossed elsewhere for a considerable distance. The stream passing under it is called *Cedar-creek*. It is a water of James River, and sufficient in the driest seasons to turn a grist-mill, though its fountain is not more than two miles above.

Don Ulloa mentions a break, similar to this, in the province of Angaraez, in South America. It is from 16 to 22 feet wide, 111 feet deep, and of 1.3 miles continuance, English measures. Its breadth at top is not sensibly greater than at bottom. Don Ulloa inclines to the opinion, that this channel has been effected by the wearing of the water which runs through it, rather than that the mountain should have been broken open by any convulsion of nature. But if it had been worn by the running of water, would not the rocks which form the sides have been worn plane? or if, meeting in some parts with veins of harder stone, the

Plate CVIII. *Fig. 1. Balena, Mysticetus, The Whale*

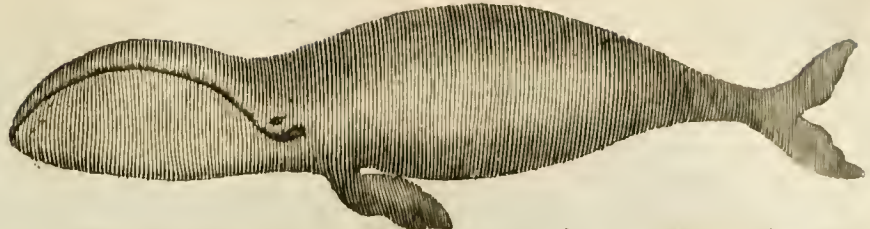


Fig. 5.

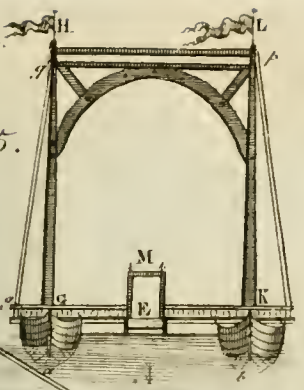


Fig. 9. Balistes, Monoceros or Unicorn Fish

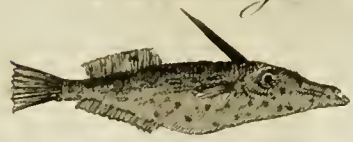


Fig. 10. Balistes setula or Old Wife



Fig. 4.

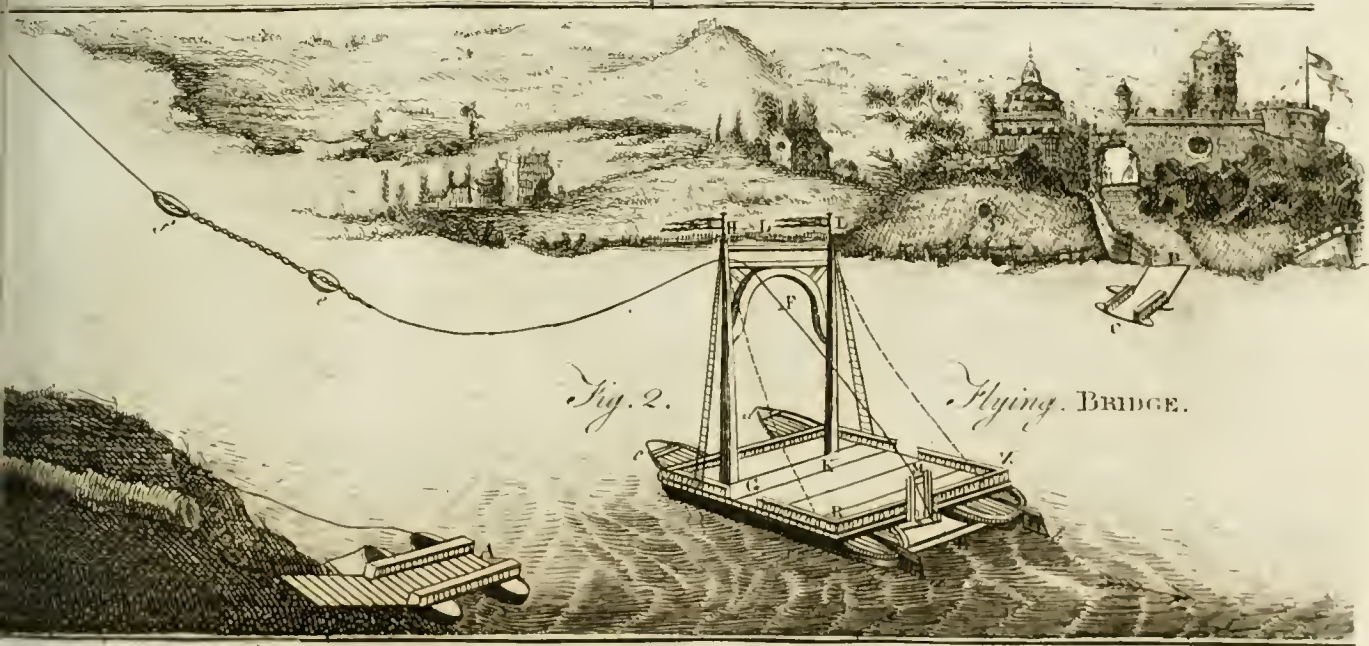
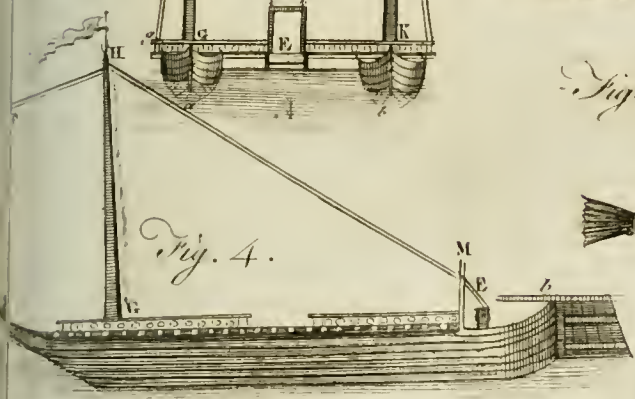


Fig. 2.

Flying BRIDGE.

Fig. 6.

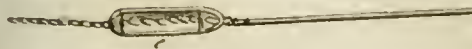


Fig. 7.

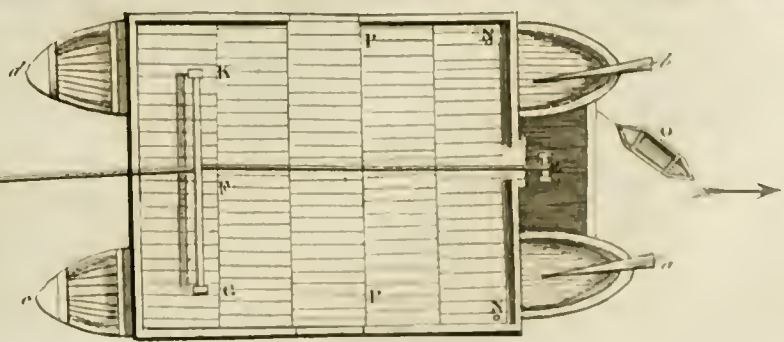
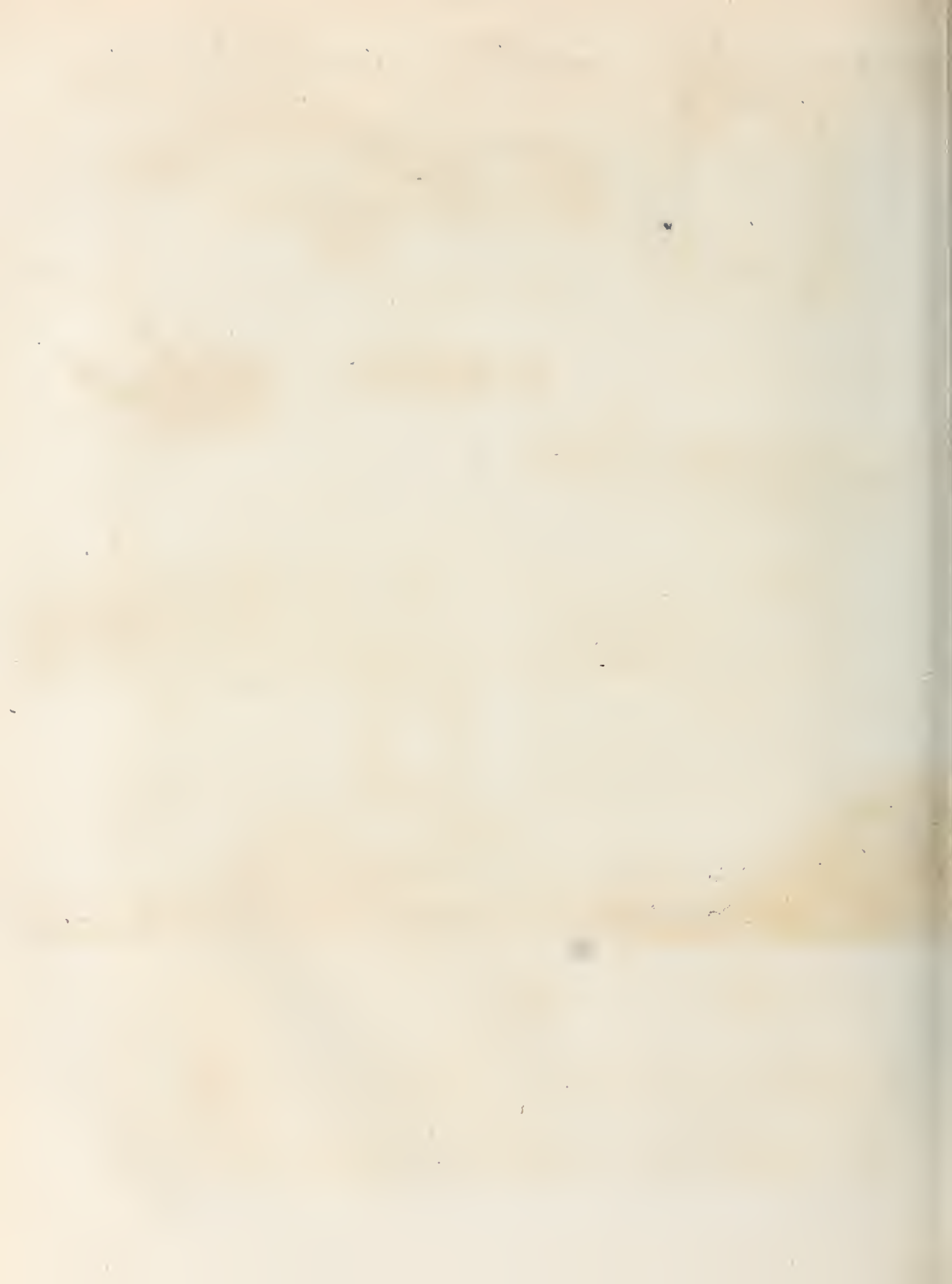


Fig. 3.

A Bell Sloop.



Bridge.

the water had left prominences on the one side, would not the same cause have sometimes, or perhaps generally, occasioned prominences on the other side also? Yet Don Ulloa tells us, that on the other side there are always corresponding cavities, and that these tally with the prominences so perfectly, that, were the two sides to come together, they would fit in all their indentures, without leaving any void. In fact, this does not resemble the effect of running water, but looks rather as if the two sides had parted asunder. The sides of the break, over which is the Natural bridge of Virginia, consisting of a veiny rock which yields to time, the correspondence between the salient and re-entering inequalities, if it existed at all, has now disappeared. This break has the advantage of the one described by Don Ulloa in its finest circumstance; no position in that instance having held together, during the separation of the other parts, so as to form a bridge over the abyss.

BRIDGE, in gunnery, the two pieces of timber which go between the two transoms of a gun-carriage, on which the bed rests.

BRIDGE, in music, a term for that part of a stringed instrument over which the strings are stretched. The bridge of a violin is about one inch and a quarter high, and near an inch and a half long.

BRIDGE TOWN, the capital of the island of Barbadoes, situated in W. Long. 61°. N. Lat. 13°. It stands in the inmost part of Carlisle bay. This originally was a most unwholesome situation, and was chosen entirely for its convenience for trade; but is now deemed to be as healthy as any place in the island. The town itself would make a figure in any European kingdom. It is said to contain 1500 houses, and some contend that it is the finest the British possess in America. The houses in general are well built and finished, and their rents as high as such houses would let for in London. The wharfs and quays are well defended from the sea, and very convenient. The harbour is secure from the north-east wind, which is the constant trade-wind there; and Carlisle-bay is capable of containing 500 ships, and is formed by Needham and Pelican points. But what renders Bridge-town the finest and most desirable town in the West Indies is its security against any attacks from foreign enemies. It is defended on the westward by James-fort, which mounts 18 guns. Near this is Willoughby's fort, which is built upon a tongue of land running into the sea, and mounts 12 guns. Needham's fort has three batteries, and is mounted with 20 guns; and St Anne's fort, which is the strongest in the island, stands more within land. In short, according to Mr Douglas, there is all along the lee-shore a breast-work and trench, in which, at proper places, were 29 forts and batteries, having 308 cannon mounted, while the windward shore is secured by high rocks, steep cliffs, and foul ground. Such was the state of the fortifications in 1717; but since that time they have been much strengthened. Bridge-town is destitute of few elegancies or conveniences of life that any city of Europe can afford. The church of St Michael exceeds many English cathedrals in beauty, largeness, and conveniency; and has a fine organ, bells, and clock. Here also is a free-school for the instruction of poor boys, an hospital, and a college. The latter was erected by the society for propagating the Christian religion, in pursuance of

the will of Colonel Christopher Codrington, who left about L. 2000 a-year for its endowment, for maintaining professors and scholars to study and practise divinity, surgery, and physic. See CODRINGTON.

BRIDGENORTH, a town of Shropshire in England, seated on the river Severn, which divides it into two parts; but they are united by a handsome stone bridge, and these are called the *upper* and the *lower town*. It is said to have been built by Ethelfleda, widow of Etheldred king of the Mercians, about the year 675. Robert de Belizma, son of Robert de Montgomery, built the castle, and maintained it against king Henry I. by which means it was so feited to the crown, and remained so till the reign of Richard III. who gave it to John Sutton lord Dudley. This town has undergone several sieges; and in the civil war it suffered very much, many fine buildings, and the whole town, being almost destroyed by fire, when Sir Lewis Kirke defended the citadel for king Charles. There are now no other remains of the castle than a small part of the towers, and a place yet called the *castle*, within the walls of the old one; within which stands one of the churches, dedicated to St Mary Magdalen, which was made a free chapel, and exempted from episcopal jurisdiction. The other church is at the north end of the town, on the highest part of the hill, near to whose church-yard stood a college, which was destroyed by fire in the civil wars, together with the church just mentioned; which has been since rebuilt by the inhabitants. On the west bank of the river are the remains of an ancient and magnificent convent, under which was several remarkable vaults and caverns running to a great length. Part of the cow-gate street is a rock, rising perpendicularly, in which are several houses and tenements that make a very agreeable though grotesque appearance. In many other places there are also caves and dwellings for families, in the rocks; and indeed the whole town has an appearance surprisingly singular. W. Long. 2. 30. N. Lat. 52. 40.

BRIDGEWATER, a town of Somersetshire in England, seated on the river Parret, over which there is a stone bridge, near which ships of 100 tons burden may ride with ease. It is a large, well frequented place, with the title of a duchy, and sends two members to parliament. There are in it several large inns, and the market is well supplied with provisions. W. Long. 3. 0. N. Lat. 51. 15.

BRIDLE, in the manege, a contrivance made of straps or thongs of leather and pieces of iron, in order to keep a horse in subjection and obedience.

The several parts of a bridle are the bit, or snaffle; the head-stall, or leathers from the top of the head to the rings of the bit; the fillet, over the fore-head and under the fore-top; the throat-band, which buttons from the head-band under the throat; the reins, or long thongs of leather that come from the rings of the bit, and being cast over the horse's head, the rider holds them in his hand; the nose-band, going through loops at the back of the head-stall, and buckled under the cheeks; the trench; the caveman; the martingal; and the chaff halter.

Pliny assures us that one Pelethronius first invented the bridle and saddle; though Virgil ascribes the invention to the Lapithæ, to whom he gives the epithet *Pelethronii*, from a mountain in Thessaly named

Pelethronium,

Bridge-
north
||
Bridle.

Bridon
||
Brig.

Pellictrionum, where horses were first begun to be broken.

The first horsemen, not being acquainted with the art of governing horses with bridles, managed them only with a rope or a switch, and the accent of the voice. This was the practice of the Numidians, Getulians, Libyans, and Massilians. The Roman youth also learned the art of fighting without bridles, which was an exercise or lesson in the manege; and hence it is, that on the Trajan column, soldiers are represented riding at full speed without any bridles on.

Scolding-BRIDLE. See BRANK.

BRIDON, or SNAFFLE, after the English fashion, is a very slender bit-mouth without any branches. The English make much use of them, and scarcely use any true bridles except in the service of war. The French call them *bridons*, by way of distinction from bridles.

BRIDLINGTON, a sea-port town in the east riding of Yorkshire in England. It is seated on a creek of the sea near Flamborough-head, having a commodious quay for ships to take in their lading. It has a safe harbour, and is a place of good trade. It is more generally known by the name of *Burlington*, as it gave title to an earl of that name, though the earldom is now extinct. E. Long. 0. 10. N. Lat. 54. 15.

BRIDPORT, a town of Dorsetshire in England. It has a low dirty situation between two rivers, which, at a little distance, joining a small stream, formerly made a convenient harbour; but is now quite choked up with sand. It sends two members to parliament, who are chosen by the inhabitants who are housekeepers. It is noted for making of ropes and cables for shipping; whence arises a proverb of a man that is hanged, that he is *stabbed with a Bridport dagger*. W. Long. 3. 0. N. Lat. 50. 40.

BBIEF, in law, an abridgment of the client's case, made out for the instruction of council on a trial at law; wherein the case of the plaintiff, &c. is to be briefly but fully stated: the proofs must be placed in due order, and proper answers made to whatever may be objected to the client's cause by the opposite side; and herein great care is requisite, that nothing be omitted, to endanger the cause.

BRIEF, in Scots law, a writ issued from the chancery, directed to any judge-ordinary, commanding and authorising that judge to call a jury to inquire into the case mentioned in the brief, and upon their verdict to pronounce sentence.

Apofolical BRIEFS, letters which the pope dispatches to princes, or other magistrates, relating to any public affair.—These briefs are distinguished from bulls, in regard the latter are more ample, and always written on parchment, and sealed with lead or green wax; whereas briefs are very concise, written on paper, sealed with red wax, and with the seal of the fisherman, or St Peter in a boat.

BRIEG, a town of Silesia in Germany, situated in E. Long. 17. 35. N. Lat. 50. 40. It might have passed for a handsome place before the last siege; the castle, the college, and the arsenal, being very great ornaments, and most of the houses very well built. But the Prussians, who besieged it in 1741, threw 2172 bombs into it, and 4714 cannon bullets, which reduced a great part of the town to ashes, and quite ruined a

wing of the castle. It was obliged to surrender, after sustaining seven days continual fire. The Prussians, to whom this place was ceded by the peace, have augmented the fortifications, and built a new suburb.—The town stands upon the Oder; on the other side of which there are plenty of fallow-deer, and large forests of beech and oak trees. They have a yearly fair, at which they sell above 12,000 horned cattle. Since 1728, they have begun to manufacture fine cloth.

BRIEL, a maritime town of the United Provinces, and capital of the island of Vuorn. It was one of the cautionary towns which was delivered into the hands of queen Elizabeth, and garrisoned by the English during her reign and part of the next. The Dutch took it from the Spaniards in 1572, which was the foundation of their republic. It is seated at the mouth of the river Meuse, in E. Long. 3. 56. N. Lat. 51. 53.

BRIESCIA, a palatinate in the duchy of Lithuania, in Poland. The name given to it by some is *Polesia*. It is bounded on the north, by Novogrode and Troki; on the west, by those of Bielsko and Lublin; on the south, by that of Chelm and upper Volhinia; and on the east, by the territory of Rziczica. This province is of considerable extent from east to west, and is watered by the rivers Bug and Pripefe: it is full of woods and marshes; and there are lakes that yield large quantities of fish, that are salted by the inhabitants, and sent into the neighbouring provinces.

BRIEUX (St), a town of France, in upper Brittany, with a bishop's see. It is seated in a bottom, surrounded with mountains, which deprive it of a prospect of the sea, though it is not above a mile and a quarter from it, and there forms a small port. The churches, streets, and squares, are tolerably handsome; but the town is without walls and ditches. The church of Michael is in the suburb of the same name, and is the largest in the place. The convent of the Cordeliers is well built, and the garden is spacious. The college, which is very near, is maintained by the town for the instruction of youth. W. Long. 2. 58. N. Lat. 48. 33.

BRIG, or BRIGANTINE, a merchant-ship with two masts. This term is not universally confined to vessels of a particular construction, or which are masted and rigged in a manner different from all others. It is variously applied, by the mariners of different European nations, to a peculiar sort of vessel of their own marine. Amongst British seamen, this vessel is distinguished by having her mainsails set nearly in the plane of her keel; whereas the mainsails of larger ships are hung athwart, or at right angles with the ship's length, and fastened to a yard which hangs parallel to the deck: but in a brig, the foremost edge of the mainsail is fastened in different places to hoops which encircle the main-mast, and slide up and down it as the sail is hoisted or lowered: it is extended by a gaff above and a boom below.

BRIGADE, in the military art, a party or division of a body of soldiers, whether horse or foot, under the command of a brigadier.—An army is divided into brigades of horse and brigades of foot: a brigade of horse is a body of eight or ten squadrons; a brigade of foot consists of four, five, or six battalions. The eldest brigade has the right of the first line, and the second the right of the second; the two

Briel
||
Brigade.

Briggs next take the left of the two lines, and the youngest stand in the centre.

BRIGADE-Major, is an officer appointed by the brigadier, to assist him in the management and ordering of his brigade.

BRIGADIER, is the general officer who has the command of a brigade. The eldest colonels are generally advanced to this post. He that is upon duty is brigadier of the day. They march at the head of their own brigades, and are allowed a serjeant and ten men of their own brigade for their guard.—But the rank of brigadier general in the British service is now abolished.

BRIGADIERS, or *Sub-brigadiers*, are posts in the horse-guards.

BRIGANDINE, a coat of mail, a kind of ancient defensive armour, consisting of thin jointed scales of plate, pliant and easy to the body.

BRIGANTES, (Tacitus), a people of Britain, reaching from sea to sea, the whole breadth of the island, (Ptolemy). Now Yorkshire, Lancashire, Durham, Westmoreland, and Cumberland, (Camden). Also a people of Ireland, of uncertain position.

BRIGANTIA, or **BRIGANTIUM**, (anc. geog.), a town of Vindelicia; now *Bregentz*, in Tyrol, at the east end of the lake of Constance.—Another *Brigantium* in the Alpes Cottæ; which last is probably Briancón, a town on the borders of Dauphiny.

BRIGANTINE. See **BRIG**.

BRIGANTINUS LACUS, (anc. geog.), a lake of Rætia, or Vindelicia which Tacitus includes in Rætia. Ammian calls the lake *Brigantia*. It took its name either from the Brigantii, the people inhabiting on it, or from the adjoining town. Now the lake of *Constance*, or *Bodensee*.

BRIGANTINUS PORTUS, (anc. geog.), a port of the Iberian Spain; so called from Flavius Brigantium. Now *El Puerto de la Corunna*, commonly the *Greyne*.

BRIGG, by some called *Glamford Bridges*, a town of England, in Lincolnshire, seated on the river Ankam. W. Long. o. 20. N. Lat. 53. 40.

BRIGGS (Henry), one of the greatest mathematicians in the 16th century, was born at Warley Wood in the parish of Halifax in Yorkshire, in 1556. In 1592, he was made examiner and lecturer in mathematics, and soon after reader of the physic lecture founded by Dr Linacér. When Gresham college in London was established, he was chosen the first professor of geometry there, about the beginning of March 1596. In 1609, Mr Briggs contracted an intimacy with the learned Mr James Usher afterwards archbishop of Armagh, which continued many years by letters, two of which, written by our author, are yet extant. In one of these letters, dated in August 1610, he tells his friend he was engaged in the subject of eclipses; and in the other, dated March 10th 1615, he acquaints him with his being wholly employed about the noble invention of logarithms, then lately discovered, in the improvement of which he had afterwards a large share. In 1619, he was made Savilian professor of geometry at Oxford; and resigned his professorship of Gresham college on the 25th of July 1620. Soon after his going to Oxford, he was incorporated master of arts in that university; where he continued till his death, which happened on the 26th of January 1630. Dr Smith

gives him the character of a man of great probity; a contemner of riches, and contented with his own station; preferring a studious retirement to all the splendid circumstances of life. He wrote, 1. *Logarithmorum chilias prima*. 2. *Arithmetica logarithmica*. 3. *Trigonometria Britannica*. 4. A small tract on the north-west passage; and some other works.

BRIGGS (William), an eminent physician in the latter end of the 17th century, was the son of Augustin-Briggs, Esq; four times member for the city of Norwich, where our author was born. He studied at the university of Cambridge; and his genius leading him to the study of physic, he travelled into France, where he attended the lectures of the famous anatomist M. Vieussens, at Montpellier. After his return, he published his *Ophthalmographia* in 1676. The year following he was created doctor of medicine at Cambridge, and soon after was made fellow of the college of physicians at London. In 1682, he quitted his fellowship to his brother; and the same year, his *Theory of vision* was published by Hooke. The ensuing year he sent to the royal society a continuation of that discourse, which was published in their Transactions; and the same year, he was by King Charles II. appointed physician to St Thomas's hospital. In 1684, he communicated to the royal society two remarkable cases relating to vision, which were likewise printed in their Transactions; and in 1685 he published a Latin version of his *Theory of vision*, at the desire of Mr Newton, afterwards Sir Isaac, professor of mathematics at Cambridge, with a recommendatory epistle from him prefixed to it. He was afterwards made physician in ordinary to king William, and continued in great esteem for his skill in his profession till he died September 4th 1704.

BRIGITHELMSTONE, a sea-port town of Suffolk in England. It is a pretty large and populous town, though ill built, and has a pretty good harbour. W. Long. o. 10. N. Lat. 50. 50. It was at this place king Charles II. embarked for France, 1651, after the battle of Worcester. It has lately been considerably extended and embellished, in consequence of its having become a place of great resort for sea-bathing.

BRIGITTINS, or **BRIDGETINS**, more properly *Brigittins*, a religious order, denominated from their founder St Bridget or *Birgit*, a Swedish lady in the 14th century: whom some represent as a queen; but Fabricius, on better grounds, as a princess, the daughter of king Birgenes, legislator of Upland, and famous for her revelations. The Brigittins are sometimes also called the *Order of our Saviour*; it being pretended, that Christ himself dictated the rules and constitutions observed by them to St Bridget. In the main, the rule is that of St Agullin; only with certain additions supposed to have been revealed by Christ, whence they also denominate it the *Rule of our Saviour*.—The first monastery of the Bridgetin order was erected by the foundress about the year 1344, in the diocese of Lineopen; on the model of which all the rest were formed. The constitution of these houses was very singular: though the order was principally intended for nuns, who were to pay a special homage to the holy Virgin, there are also many friars of it, to minister to them spiritual assistance. The number of nuns is fixed at 60 in each monastery, and that of friars to 13,

Brigado
||
Briggs.

Brignoles.
||
Brim.

answerable to the number of apostles, of whom St Paul made the 13th; besides which there are to be four deacons, to represent the four doctors of the church, St Ambrose, St Augustine, St Gregory, and St Jerome; and eight lay-brothers; making together, says our author, the number of Christ's 72 disciples.—The order being instituted in honour of the Virgin, the direction is committed to an abbeſs, who is superior not only of the nuns, but also of the friars, who are obliged to obey her. Each house consists of two convents or monasteries, separately inclosed, but having one church in common; the nuns being placed above, and the friars on the ground. The Bridgetins profess great mortification, poverty, and self-denial, as well as devotion; and they are not to possess any thing they can call their own, not so much as an halfpenny; nor even to touch money on any account. This order spread much thro' Sweden, Germany, the Netherlands, &c. In England we read but of one monastery of Brigittins, and this built by Henry V. in 1413, opposite to Richmond, now called *Sion house*; the ancient inhabitants of which, since the dissolution, are settled at Lisbon. The revenues were reckoned at 1495l. per annum.

BRIGNOLES, a town of France, in Provence, famous for its prunes. It is seated among mountains, in a pleasant country, 275 miles S. S. E. of Paris. E. Long. 6. 15. N. Lat. 43. 24.

BRIHUEGA, a town of Spain, in New Castile, where general Stanhope with the English army were taken prisoners, after they had separated themselves from that commanded by count Straremburg. It is seated at the foot of the mountain Tajuna, 43 miles north-east of Madrid. W. Long. 3. 20. N. Lat. 41. 0.

BRIL (Matthew and Paul), natives of Antwerp, and good painters.—Matthew was born in the year 1550, and studied for the most part at Rome. He was eminent for his performances in history and landscape, in the galleries of the Vatican; where he was employed by Pope Gregory XIII. He died in 1584, being no more than 34 years of age.—Paul was born in 1554; followed his brother Matthew to Rome; painted several things in conjunction with him; and, after his decease, brought himself into credit by his landscapes, but especially by those which he composed in his latter time. The invention of them was more pleasant, the disposition more noble, all the parts more agreeable, and painted with a better gusto, than his earlier productions in this way; which was owing to his having studied the manner of Hanibal Carrache, and copied some of Titian's works in the same kind. He was much in favour with Pope Sixtus V.; and for his successor Clement VIII. painted the famous piece, about 68 feet long, wherein the saint of that name is represented cast into the sea with an anchor about his neck. He died at Rome in the year 1626, aged 72.

BRILLIANT, in a general sense, something that has a bright and lucid appearance.

BRILLIANT, in the manege. A brisk, high mettled, stately horse is called *brilliant*, as having a raised neck; a fine motion; and excellent haunches, upon which he rises, though ever so little put on.

BRILLIANTS, a name given to diamonds of the finest cut. See DIAMOND.

BRIM, denotes the outmost verge or edge, especially of round things. The brims of vessels are made to project a little over, to hinder liquors, in pouring out, N^o. 54.

from running down the side of the vessel. The brimming of vessels was contrived by the ancient potters, in imitation of the supercilium or drip of the cornices of columns: it is done by turning over some of the double matter when the work is on the wheel.

BRIM, in country affairs. A sow is said to *brim*, or to go to *brim*, when she is ready to take the boar.

BRIMSTONE. See SULPHUR.

BRIMSTONE Medals, Figures, &c. may be cast in the following manner. Melt half a pound of brimstone over a gentle fire: with this mix half a pound of fine vermilion; and when you have cleared the top, take it off the fire, stir it well together, and it will dissolve like oil: then cast it into the mould, which should be first anointed with oil. When cool, the figure may be taken out; and in case it should change to a yellowish colour, you need only wipe it over with aqua fortis, and it will look like the finest coral †.

BRIN, a strong town of Bohemia, in Moravia. It is pretty large, and well built: the assembly of the states is held alternately there and at Olmutz. The castle of Spilberg is on an eminence, out of the town, and is its principal defence. It was invested by the king of Prussia in 1741, but he was obliged to raise the siege. It is near the river Swart, in E. Long. 7. 8. N. Lat. 49. 8.

BRINDISI, an ancient celebrated town of Italy, in the Terra d'Otranto, and kingdom of Naples, with an archbishop's see. Its walls are ill of great extent, but the inhabited houses do not fill above half the enclosure. The streets are crooked and rough; the buildings poor and ruinous; no very remarkable church or edifice. The cathedral, dedicated to St Theodore, is a work of king Roger, but not equal in point of architecture to many churches founded by that monarch, who had a strong passion for building. Little remains of ancient Brundisium, except innumerable broken pillars, fixed at the corners of streets to defend the houses from carts; fragments of coarse Mosaic, the floors of former habitations; the column of the lighthouse; a large marble basin, into which the water runs from brazen heads of deer; some inscriptions, ruins of aqueducts, coins, and other small furniture of an antiquary's cabinet. Its castle, built by the emperor Frederick II. to protect the northern branches of the harbour, is large and stately. Charles V. repaired it. The port is double, and the finest in the Adriatic. The outer part is formed by two promontories, which stretch off gradually from each other as they advance into the sea, leaving a very narrow channel at the base of the angle. The island of St Andrew, on which Alphonfus I. built a fortress, lies between the capes, and secures the whole road from the fury of the waves. In this triangular space, large ships may ride at anchor. At the bottom of the bay the hills recede in a semicircular shape, to leave room for the inner haven; which, as it were, clasps the city in its arms, or rather encircles it, in the figure of a stag's head and horns. This form is said to have given rise to the name of *Brundisium*, which, in the old Messapian language, signified *the head of a deer*. In ancient days, the communication between the two havens was marked by lights placed upon columns of the Corinthian order, standing on a rising ground, in a direct line with the channel.

Of these one remains entire upon its pedestal. Its capital

Brim
||
Brindisi.

† Smith's
Laboratory,
p. 3.

Pillington's
Diſ.

capitals is adorned with figures of Syrens and Tritons, intermingled with the acanthus leaf, and upon it a circular vase, which formerly held the fire. A modern inscription has been cut upon the plinth. Near it is another pedestal of similar dimensions, with one piece of the shaft lying on it. The space between these pillars answered to the entrance of the harbour. "The whole kingdom of Naples (says Mr Swinburne) cannot show a more complete situation for trade than Brindisi. Here goodness of soil, depth of water, safety of anchorage, and a central position, are all united; yet it has neither commerce, husbandry, nor populousness. From the obstructions in the channel, which communicates with the two havens, arises the tribe of evils that afflict and desolate this unhappy town. Julius Cæsar may be said to have begun its ruin, by attempting to block up Pompey's fleet. He drove piles into the neck of land between the two ridges of hills; threw in earth, trees, and ruins of houses; and had nearly accomplished the blockade, when Pompey failed out and escaped to Greece. In the 15th century, the prince of Taranto sunk some ships in the middle of the passage, to prevent the royalists from entering the port, and thereby provided a resting place for sea-weeds and sand, which soon accumulated, choked up the mouth, and rendered it impracticable for any vessels whatsoever. In 1752 the evil was increased, so as to hinder even the waves from beating through; and all communication was cut off, except in violent easterly winds or rainy seasons, when an extraordinary quantity of fresh water raises the level. From that period the port became a fetid green lake, full of infection and noxious insects; no fish but eels could live in it, nor any boat ply except canoes made of a single tree. They can hold but one person, and overset with the least irregularity of motion. The low grounds at each end were overflowed and converted into marshes, the vapours of which created every summer a real pestilence; and in the course of very few years, swept off or drove away the largest portion of the inhabitants. From the number of eighteen thousand, they were reduced in 1766 to that of five thousand livid wretches, tormented with agues and malignant fevers. In 1775 above fifteen hundred persons died during the autumn; a woful change of climate! Thirty years ago, the air of Brindisi was esteemed so wholesome and balsamic, that the convents of Naples were wont to send their consumptive friars to this city for the recovery of their health. This state of misery and destruction induced the remaining citizens to apply for relief to Don Carlo Demarco, one of the king's ministers, and a native of Brindisi. In consequence of this application, Don Vito Caravelli was ordered to draw up plans, and fix upon the means of opening the port afresh: Don Andrea Pigonati was last year sent to execute his projects; and, by the help of machines and the labour of the galley-slaves, has succeeded in some measure. The channel has been partly cleared, and has now two fathom of water. It can admit large boats, a great step towards the revival of trade; but what is of more immediate importance, it gives a free passage to the sea, which now rushes in with impetuosity, and runs out again at each tide; so that the water of the inner port is set in motion, and once more rendered wholesome. The canal or gut is to be seven hundred yards long,

and drawn in a straight line from the column. At present its parapets are defended by piles and fascines; but if the original plan be pursued, stone piers will be erected on both sides. When the canal shall be scooped out to a proper depth, and its piers solidly established, vessels of any burden may once more enter this landlocked port, which affords room for a whole navy. Docks wet and dry may be dug, goods may be shipped at the quay, and convenient watering-places be made with great ease. If merchants should think it a place of rising trade, and worthy of their notice, there is no want of space in the town for any factory whatever. Circulation of cash would give vigour to husbandry, and provisions would soon abound in this market. The sands at the foot of the hills, which form the channel, are to be laid out in beds for muscles and oysters. Some ecclesiastics are raising nurseries of orange and lemon trees; and other citizens intend introducing the cultivation of mulberry-trees, and breeding of silk-worms. The engineer would have done very little for the health of Brindisi, had he only opened a passage, and given a free course to the waters; the marshes at each extremity of the harbour would still have infected the air: he, therefore, at the expence of about a thousand ducats, had the fens filled up with earth, and a dam raised to confine the waters, and prevent their flowing back upon the meadows. The people of Brindisi, who are sensible of the blessings already derived from these operations, who feel a return of health, and see an opening for commerce and opulence, seem ready to acknowledge the obligation. They intend to erect a statue to the king, with inscriptions on the pedestal in honour of the minister and agents. The workmen, in cleaning the channel, have found some medals and seals, and have drawn up many of the piles that were driven in by Cæsar. They are small oaks stripped of their bark, and still as fresh as if they had been cut only a month, though buried above eighteen centuries seven feet under the sand. The soil about the town is light and good. It produces excellent cotton, with which the Brindisians manufacture gloves and stockings.

"It is impossible to determine who were the founders of Brundisium, or when it was first inhabited. The Romans took early possession of a harbour so convenient for their enterprises against the nations dwelling beyond the Adriatic. In the year of Rome 509, they sent a colony hither. Pompey took refuge here; but finding his post untenable, made a precipitate retreat to Greece. In this city Octavianus first assumed the name of *Cæsar*, and here he concluded one of his short-lived peaces with Antony. Brundisium had been already celebrated for giving birth to the tragic poet Pacuvius, and about this time became remarkable for the death of Virgil. The barbarians, who ravaged every corner of Italy, did not spare so rich a town; and, in 836, the Saracens gave a finishing blow to its fortunes. The Greek emperors, sensible of the necessity of having such a port as this in Italy, would have restored it to its ancient strength and splendor, had the Normans allowed them time and leisure. The Greeks struggled manfully to keep their ground; but, after many varieties of success, were finally driven out of Brindisi by William I. The frenzy for expeditions to Palestine, though it drained other kingdoms of their

Brinley. wealth and subjects, contributed powerfully to the re-establishment of this city, one of the ports where pilgrims and warriors took shipping. It also benefited by the residence of the emperor Frederick, whose frequent armaments for the Holy Land required his presence at this place of rendezvous. The loss of Jerusalem, the fall of the Grecian empire, and the ruin of all the Levant trade after the Turks had conquered the East, reduced Brindisi to a state of inactivity and desolation, from which it has never been able to emerge." E. Long. 18. 5. N. Lat. 40. 52.

BRINLEY (James), a most uncommon genius for mechanical inventions, and particularly excellent in planning and conducting inland navigations, was born, 1716, at Tunsted in Derbysire. Through the mismanagement of his father (for there was some little property in his house) his education was totally neglected; and, at seventeen, he bound himself apprentice to a mill-wright, near Macclesfield, in Cheshire. He served his apprenticeship; and, afterwards, setting up for himself, advanced the mill-wright business, by inventions and contrivances of his own, to a degree of perfection which it had not attained before. His fame, as a most ingenious mechanic, spreading widely, his genius was no longer confined to the business of his profession: for, in 1752, he erected a very extraordinary water-engine at Clifton, in Lancashire, for the purpose of draining coal-mines; and, 1755, was employed to execute the larger wheels for a new silk-mill, at Congleton, in Cheshire. The potteries of Staffordshire were also, about this time, indebted to him for several valuable additions in the mills used by them for grinding flint-stones. In 1756, he undertook to erect a steam-engine near Newcastle under Line upon a new plan; and it is believed that he would have brought this engine to a great degree of perfection, if some interested engineers had not opposed him.

His attention, however, was soon afterwards called off to another object, which, in its consequences, hath proved of high importance to trade and commerce; namely, the projecting and executing "Inland navigations." By these navigations the expence of carriage is lessened; a communication is opened from one part of the kingdom to another, and from each of these parts to the sea; and hence products and manufactures are afforded at a moderate price. The duke of Bridgewater hath, at Worsley, about seven miles from Manchester, a large estate abounding with coal, which had hitherto lain useless, because the expence of land-carriage was too great to find a market for consumption. The duke, wishing to work these mines, perceived the necessity of a canal from Worsley to Manchester; upon which occasion Brindley, now become famous, was consulted; and declaring the scheme practicable, an act for this purpose was obtained in 1758 and 1759. It being, however, afterwards discovered, that the navigation would be more beneficial, if carried over the river Irwell to Manchester, another act was obtained to vary the course of the canal agreeably to the new plan, and likewise to extend a side-branch to Longford-bridge in Stretford. Brindley, in the mean time, had begun these great works, being the first of the kind ever attempted in England, with navigable subterraneous tunnels and elevated aqueducts; and as, in order to preserve the level of the water, it should be free from

the usual obstructions of locks, he carried the canal over rivers, and many large and deep vallies. When it was completed as far as Barton, where the Irwell is navigable for large vessels, he proposed to carry it over that river, by an aqueduct of thirty-nine feet above the surface of the water; and though this project was treated as wild and chimerical, yet, supported by his noble patron, he began his work in Sept. 1760, and the first boat sailed over it in July 1761. The duke afterwards extended his ideas to Liverpool; and obtained, in 1762, an act for branching his canal to the tideway in the Mersey: this part of the canal is carried over the rivers Mersey and Bollan, and over many wide and deep vallies.

The success of the duke of Bridgewater's undertakings encouraged a number of gentlemen and manufacturers in Staffordshire, to revive the idea of a canal-navigation through that county; and Brindley was, therefore, engaged to make a survey from the Trent to the Mersey. In 1766, this canal was begun, and conducted under Brindley's direction as long as he lived; but finished after his death by his brother-in-law Mr Henshall, of whom he had a great opinion, in May 1777. The proprietors called it, "the canal from the Trent to the Mersey;" but the engineer, more emphatically, "the Grand Trunk Navigation," on account of the numerous branches, which, as he justly supposed, would be extended every way from it. It is 93 miles in length; and, besides a large number of bridges over it, has 76 locks and five tunnels. The most remarkable of the tunnels is the subterraneous passage of Harecastle, being 2880 yards in length, and more than 70 yards below the surface of the earth. The scheme of this inland-navigation had employed the thoughts of the ingenious part of the kingdom for upwards of 20 years before; and some surveys had been made: but Harecastle hill, through which the tunnel is constructed, could neither be avoided nor overcome by any expedient the most able engineers could devise. It was Brinley alone who surmounted this and other the like difficulties, arising from the variety of strata and quicksands, as no one but himself would have attempted to conquer.

Brinley was engaged in many other similar undertakings, for a fuller account of which, not being consistent with our plan, we refer the reader to the "Biographia Britannica;" or rather to a curious and valuable pamphlet, published some years since, and intitled, "The History of Inland-Navigations, particularly that of the Duke of Bridgewater." He died at Turnhurst in Staffordshire, Sept. 27th, 1772, in his 56th year: somewhat immaturally, as it should seem; but he is supposed to have shortened his days by too intense application, and to have brought on a hectic fever, which continued on him for some years before it consumed him. For he never indulged and relaxed himself in the common diversions of life, as not having the least relish for them; and, though once prevailed on to see a play in London, yet he declared that he would on no account be present at another; because it so disturbed his ideas for several days after, as to render him unfit for business. When any extraordinary difficulty occurred to him in the execution of his works, he generally retired to bed; and has been known to lie there one, two, or three days, till he has surmounted it. He would

Brine. would then get up, and execute his design without any drawing or model: for he had a prodigious memory, and carried every thing in his head.

As his station in life was low, and his education totally neglected, so his exterior accomplishments were suitable to them. He could indeed read and write, but both very indifferently; and he was perhaps, in his way, as *abnormis sapiens*—"of mother-wit, and wife without the schools"—as any man that ever lived. "He is as plain a looking man as one of the boors in the Peake, or one of his own carters: but when he speaks, all ears listen; and every mind is filled with wonder, at the things he pronounces to be practicable." The same author gives us also no ungracious idea of his moral make: "being great in himself, he harbours no contracted notions, no jealousy of rivals: he conceals not his methods of proceeding, nor asks patents to secure the sole use of the machines, which he invents and exposes to public view. Sensible that he must one day cease to be, he selects men of genius, teaches them the power of mechanics, and employs them in carrying on the various undertakings in which he is engaged. It is not to the duke of Bridgewater only that his services are confined: he is of public utility, and employs his talents in rectifying the mistakes of despairing workmen, &c. His powers shine most in the midst of difficulties; when rivers and mountains seem to thwart his designs, then appears his vast capacity, by which he makes them subservient to his will."

BRINE, or PICKLE; water replete with saline particles.

Brine taken out of brine-pits, or brine-pans, used by some for curing or pickling of fish, without boiling the same into salt; and rock-salt, without refining it into white-salt; are prohibited by 1 Ann. cap. 21.

Brine is either native, as the sea-water, which by coction turns to salt; or factitious, formed by dissolving salt in water. In the salt-works at Upwick in Worcestershire, there are found, at the same time, and in the same pit, three sorts of brine, each of a different strength. They are drawn by a pump; and that in the bottom, first brought up, is called *first man*; the next, *middle man*; and the third, *last man*.

Leach Brine, a name given to what drops from the corned salt in draining and drying, which they preserve and boil again; being stronger than any brine in the pit. There is sand found in all the Staffordshire brines after coction; but naturalists observe, it did not pre-exist in the water, but rather is the product of the boiling. Some steep their seed-wheat in brine, to prevent the smut. Brine is also commended as of efficacy against gangrenes.

BRINE also denotes a pickle pregnant with salt, wherein things are steeped to keep.

BRINE-PANS, the pits wherein the salt-water is retained, and tussled to stand, to bear the action of the sun, whereby it is converted into salt. There are divers sorts of salt-pans, as the water-pan, second pan, sun-pan; the water being transferred orderly from one to another.

BRINE-PIT, in salt-making, the salt spring from whence the water to be boiled into salt is taken. There are of these springs in many places; that at Nampt-

wich, in Cheshire, is alone sufficient, according to the account of the people of the place, to yield salt for the whole kingdom; but it is under the government of certain lords and regulators, who, that the market may not be overstocked, will not suffer more than a certain quantity of the salt to be made yearly. See the next article.

BRINE Springs, are fountains which flow with salt-water instead of fresh. Of these there are a good number in South Britain, but though not peculiar to this island, are far from being common in the countries on the continent. There are some of them in several different counties; and perhaps, on a due search, others might be discovered*. The most remarkable of these already known are, one at East-Chenock in Somersetshire, about 20 miles from the sea. Another at Leamington in Warwickshire, very near the river Leam; which, however, is but weak. Such a spring likewise runs into the river Cherwell in Oxfordshire, and several more in Westmoreland and Yorkshire: but as they are but poor, and the fuel in most of those counties scarce and dear, no salt is prepared from them. At Barrowdale near Grange, three miles from Keswick in Cumberland, a pretty strong spring rises in a level near a moss, 16 gallons of the water of which yield one of pure salt; which is the more remarkable, when it is considered that the same quantity of salt cannot be obtained from less than 22 gallons of the waters of the German ocean. At a place called *Salt-water Haugh*, near Butterpy, in the bishopric of Durham, there are a multitude of salt springs which rise in the middle of the river Wear, for the space of about 40 yards in length, and ten in breadth; but particularly one out of a rock, which is so strong that in a hot summer's day the surface will be covered with a pure white salt. At Welton, in Staffordshire, there are brine pits which afford about a ninth part of very fine white salt. There are others at Enson, St Thomas, and in the parish of Ingestre, but so weak that they are not wrought; though it is believed, that by boring, stronger springs might be found in the neighbourhood. In Lancashire there are several salt springs, but (if we except that at Barton, which is as rich as the spring at Norwich) by no means so famous as those of Cheshire, called in general by the name of the *wiches*. Namptwich on the river Weever, has a noble spring not far from the river, which is so rich as to yield one sixth-part of pure white salt. At six miles distance stands Northwich, at the confluence of the Weever and the Dan; where the brine is still richer, since they obtain six ounces of salt from 16 of water. There are, even at this day, some visible remains of a Roman causeway between these two towns. The inhabitants of Wales, who, before that country was incorporated into England, were supplied chiefly, if not solely, with that necessary commodity from these two towns, called the former *Hellath Wen*, and the latter *Hellath Du*; i. e. the white and black salt pit. In 1670, a rock of salt was discovered at a small distance from Norwich, which has been wrought to a great depth, and to a vast extent, so as to be justly esteemed one of the greatest curiosities in England; and it is highly probable, that there is an immense body of fossil salt in the bowels of the earth, under this whole county; since, upon boring, brine pits have been found in many

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* *Campbell's Political Survey, Vol. L p. 76.*

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places on both sides the river Weever. This is the more likely, since, at Middlewich, which stands at the confluence of the Croke and the Daa, there are salt-springs with a fresh brook running between them. The brines from these pits are of unequal strength; but when mixed, they commonly obtain four ounces of salt from a pound of brine. Experience shows, that in these springs the water is strongest nearest the bottom, richer in dry weather than in wet, and when long drawn than when first wrought. But these are no rules in respect to other salt-springs, since in those of Franche Compte the brine is strongest in wet weather. There are several other bodies dissolved in these brines besides salt; in some a sulphureous substance, which sublimes as the brine heats; a sort of dirty ochre which discolours the brine, but, if suffered to stand, speedily subsides; and in most brines a calcareous, or rather selenitic earth, which settles to the bottom of the pans†.

† See Salt,
and Spring.

To BRING-TO, in navigation, to check the course of a ship when she is advancing, by arranging the sails in such a manner, that they shall counteract each other, and prevent her either from retreating or moving forward. In this situation the ship is said to lie by, or lie to; having, according to the sea-phrase, some of her sails *aback*, to oppose the force of those which are full; or having them otherwise shortened by being *furled*, or *hauled up in the trails*.

BRINGING-TO, is generally used to detain a ship in any particular station, in order to wait the approach of some other that may be advancing towards her; or to retard her course occasionally near any port in the course of a voyage.

BRINGING-in a Horse, in the manege, the same as to *stay*, keep down the nose of a horse that boars and tosses his nose in the wind: this is done by means of a branch.

BRINING OF CORN, in husbandry, an operation performed on the wheat seed, in order to prevent the smut. Alqoristo is prepared for this purpose, by putting 70 gallons of water into a tub (like a mash-tub used for brewing), and a corn-bushel of unslaked lime-stone. This is to be well stirred till the whole is dissolved, and left to stand for 30 hours; after which it is to be drained off into another tub, in the manner practised for beer. In this way about a hogshead of strong lime-water will be obtained, to which must be added three pecks of salt. The wheat must be steeped in this pickle, by running it gently, and in small quantities, into a broad-bottomed basket of about 24 inches in diameter, and 20 inches deep, and stirring it. The light seed that floats must be strained off with a strainer, and must not be sown. When the basket has been drawn up, and drained of the pickle, the wheat will be fit for sowing in two hours after the brining.

BRINGING of hay-ricks, a practice common in America, of mixing salt with the hay as it is stacked.

BRIONNE, a town of France, in Normandy, seated on the river Rille. E. Long. 0. 51. N. Lat. 49. 51.

BRIOUDE, a town of France, in lower Auvergne. There are two Brioudes, three quarters of a mile from each other; the one is called *Church Brioude*, the other *Old Brioude*. The houses are built after the antique manner, and are badly disposed. The canoes are all temporal lords and counts. It is in no diocese, but de-

pends immediately on the Pope. There are several convents; and, among the rest, the church of St Ferrol, which is highly celebrated. Near the Old Town is a stone-bridge on the river Allier, which consists of one arch: this is esteemed a stupendous structure, and is thought to be a work of the Romans. The inhabitants have no manufactures. It is situated in E. Long. 3. 25. N. Lat. 45. 14.

BRIQUERAS, a town in Piedmont, seated in the valley of Lucern, three miles from the town of that name, and four fourth of Pignerol. It had a very strong castle towards the latter end of the 16th century; but when the French got footing in it, it was ruined, that is, before they delivered it up to the duke of Savoy in 1696. E. Long. 7. 24. N. Lat. 44. 41.

BRISACH, a town of Germany, and capital of Brisgaw. It was twice in possession of the French; but restored to the house of Austria, in consequence of treaties of peace. It was a very strong place, but the fortifications have been demolished. It is seated on the Rhine, where there is a bridge of boats. E. Long. 7. 49. N. Lat. 48. 5.

BRISACH (New), a town of France, in Alsace, built by order of Louis XIV. over against Old Brisach, and fortified by Vauban. It is 32 miles south of Stralburg. E. Long. 7. 46. N. Lat. 48. 5.

BRISEIS, or HIPPODAMIA, in fabulous history, the wife of Mynes king of Lyrnessa. After Achilles had taken that city, and killed her husband, she became his captive. That hero loved her tenderly; but Agamemnon taking her from him, she became the accidental cause of numberless disorders in the Grecian army. Achilles, enraged, retired to his tent; and, till the death of Patroclus, refused to fight against the Trojans. The resentment of this prince is finely painted in the Iliad.

BRISGAW, a territory of Germany, in the circle of Suabia, on the eastern banks of the Rhine, about 50 miles in length, and 30 in breadth. The principal places are Old Brisach, New Brisach, Freyburgh, Rhinmarck, and an island in the Rhine.

BRISIACUS mons (anc. geog.), a town on the right or east side of the Rhine. Now *Brisac*, situate on a round hill; a fortified town of Suabia, and distinguished by the name of *Old Brisac*. E. Long. 7. 15. Lat. 48. 10.

BRISSOT (Peter), one of the ablest physicians of the 16th century. was born at Fontenai le Comte in Poitou. He studied at Paris; and, having taken his doctor's degree, bent his thoughts to the reforming of physic, by restoring the precepts of Hippocrates and Galen, and exploding the maxims of the Arabians: to this purpose he publicly explained Galen's works, instead of those of Avicenna, Rhafis, and Messue. He afterwards resolved to travel to acquire the knowledge of plants; and going to Portugal, practised physic in the city of Eboræ. His new method of bleeding in pleurisy, on the side where the pleurisy was, raised a kind of civil war among the Portuguese physicians; it was brought before the university of Salamanca, who at last gave judgment, that the opinion ascribed to Brissot was the pure doctrine of Galen. The partizans of Denys, his opponent, appealed in 1529 to the emperor, to prevent the practice, as being attended with destructive consequences; but Charles III. duke of Savoy hap-

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pening to die at this time of a pleurisy, after having been bled on the opposite side, the prosecution dropped. He wrote an Apology for his practice; but died before it was published, in 1552: but Anthony Lucæus, his friend, printed it at Paris three years after. Renatus Moreau procured a new edition of it at Paris in 1622; and annexed to it a treatise intitled *De missione sanguinis in pleuritide*, together with the Life of Bristol.

BRISTLE, a rigid glossy kind of hair found on swine, and much used by brush-makers, &c.

BRISTOL, a city of England, and inferior to none, except London, for wealth, trade, and number of inhabitants. Bristol is a corruption of *Brightstow*, as it was called by the Saxons. It is thought to have stood anciently altogether on the west or Somersetshire side of the Avon, before the bridge was built; but after that, it came to be partly in Somersetshire and partly in Gloucestershire, until it was made a county of itself, though even before that, in the parliament rolls, it was always placed in Somersetshire. At present, the east side is by much the largest and most populous. It had anciently a castle, built by Robert earl of Gloucester, natural son to Henry I. which was demolished by Cromwell; and the ground is now laid out into streets. The corporation consists of a mayor; recorder; twelve aldermen, of whom the recorder is one; two sheriffs; and twenty-eight common-council men. The recorder is generally a serjeant at law, and sits as judge in capital and all other criminal causes. The mayor, to support his dignity, and defray his extraordinary expence, is intitled to certain fees from ships, which long ago amounted to L.500 or L.600. Bristol is a bishop's see, being one of the six erected by King Henry VIII. out of the spoils of the monasteries and religious houses which that monarch had got dissolved. The cathedral church was the church of the abbey of St Anstin in Bristol, founded by Robert Fitzharding son to a king of Denmark, once a citizen here, by him filled with canons regular in the year 1148. At the reformation King Henry VIII. placed therein a dean and six prebendaries, which mode of government still continues. During a great part of Queen Elizabeth's reign, his see was held *in commendam* by the bishop of Gloucester. This diocese was formed chiefly out of the diocese of Salisbury, with a small part from the dioceses of Wells and Worcester. It contains most of the city of Bristol, and all the county of Dorset, in which are 236 parishes, of which 64 are impropriated. It hath only one archdeaconry, viz. of Dorset; is valued in the king's books L.338:8:4, and is computed to be annually worth L.1500, including its *commendams*. The tenths of the clergy, L.353, 18s. c.†d. This see hath yielded to the state one Lord Privy Seal. The revenues of the abbey of St Augustine, or St Anstin, in Bristol, was valued at the dissolution at L.670:13:11, when it was erected into a cathedral by King Henry VIII. by the name of the *Cathedral Church of the Holy Trinity*. To this cathedral belongs a bishop, a dean, an archdeacon, a chancellor, six prebendaries, and other inferior officers and servants. Besides the cathedral, there are 18 parish-churches; and here are dissenters of all denominations, of whom the quakers are very respectable both for their wealth and numbers. Of the parish-churches,

Bristol.

St Mary Ratcliff is reckoned one of the finest, not only here, but in the whole kingdom. In this church, besides two monuments of the founder William Cannings, who had been five times mayor of this city, one in the habit of a magistrate, and another in that of a priest (for in his latter days he took orders), there is one of Sir William Penn, father to the famous quaker. The old bridge over the Avon consisted of four broad arches, with houses on both sides like those formerly on London bridge; but this has been lately pulled down, and another erected in its place. No carts or waggons are admitted into Bristol, for fear of damaging the vaults and gutters made under ground for carrying the filth of the city into the river. Queen's-square, in this city, is larger than any in London, except Lincoln's-inn-fields, and has in the centre an equestrian statue of King William III. All the gates of the city remain entire, and a part of the walls; the rest were razed in the reign of William Rufus. It is almost as broad as long, about seven miles in circumference, and contains about 97,000 inhabitants. Of the hospitals, the chief are, 1. That called Queen Elizabeth's, in which 100 boys are taught reading, writing, arithmetic, and navigation; six of whom, when they go out, have L.10, and the rest L.8, 8s. to bind them apprentices: the master is allowed L.450 a-year for the maintenance of the boys. 2. Collton's hospital; in which 100 boys are maintained for seven years, and taught and apprenticed, as in Queen Elizabeth's. 3. Another founded by the same gentleman in 1691, for 12 men and 12 women, with an allowance of 3s. per week, and 24 sacks of coals in the year. This charity cost the founder L.25,000. 4. Another founded partly by Mr Collton and partly by the merchants, in which 18 men on account of the merchants, and 12 men and women on account of Mr Collton, are maintained. 5. An infirmary, which was opened in 1736 for the sick, lame, and distressed poor of the city, which is maintained by subscription, besides L.5000 bequeathed to it by John Eldridge, Esq; formerly comptroller of the customs at this port. There are, besides these, a bridewell, several alms-houses, and charity-schools. There is also a guildhall for the sessions and assizes; the mayor's and sheriffs courts; a council-house, where the mayor and aldermen meet every day, except Sundays, to administer justice; a handsome new exchange, with three entrances, about two-thirds as large as that in London; and a quay half a mile in length, the most commodious in England for shipping and landing goods, for which purpose it is provided with several cranes. In College-green is a stately high cross, with the effigies of several kings round it. In Winch-street is a guard-house, with barracks for soldiers. As to the trade of this city, it was computed many years ago to be much greater in proportion, especially to America and the West Indies, than that of London. Fifty sail, some of them ships of considerable burden, have arrived here at one time, or very near one another, from the West Indies. For this trade, and that to Ireland, it is much better situated than London, besides the great advantages it possesses of an inland navigation by the Wye and Severn. Their trade extends to the Baltic, Norway, Holland, Hamburg, Guinea, and the Straits. The largest ships are discharged at Hungrad, four miles below the city, and the goods are brought to the quay by lighters.

For

Bristol.

For building, equipping, and repairing ships, there are docks, yards, rope-walks, and ship-wrights. Here are some considerable woollen manufactures; and no less than 15 glass-houses, for which Kingwood and Mendip furnish the coals. The city companies are 13: 1. The merchant adventurers. 2. The merchant tailors. 3. The mercers. 4. The soap-boilers. 5. The tobacconists. 6. The butchers. 7. The barbers. 8. The tylers. 9. The holliers, who are the sled-men. 10. Shoemakers. 11. Coopers. 12. Bakers. 13. Smiths. For supplying the city with water there are six public conduits; and handsome hackney-coaches may be hired at very reasonable rates, but they do not ply in the streets. There are also stage-coaches, which set out every day for Bath, London, and other places. A mile below the city, close by the river, is the hot well, whose waters are specific for the diabetes, and good in phthisical, scorbutic, and inflammatory disorders. Hither is a great resort in the summer of invalids, as well as other company; for whose accommodation and entertainment there is a pump-room, ball room, coffee-house, with taverns, and a great number of elegant lodging-houses, both below on a level with the well, and above in the delightful village of Clifton, which is situated on the brow of a hill, from whence there are downs extending several miles, where the company ride out for exercise. Nothing can be more pure and salutary than the air of these downs, which afford a variety of the most romantic and agreeable prospects, comprehending Kingroad, with the ships at anchor, the mouth of the Severn, and the mountains of Wales. In the rocks above the well are found those six-cornered stones called *Bristol-stones*; but they are not so plentiful now as in Camden's days, when, he says, whole bushels might have been easily gathered. In this city is a theatre, where plays are acted almost every night during the recess of the comedians from the metropolis. There are two annual fairs, to which the concourse is so great, that the neighbouring inns have filled 100 beds a-piece with their guests. In the winter season there is an assembly every Thursday for the gayer part of the citizens of both sexes. About half way betwixt Bristol and Bath, at a place called *Warmly*, a company of Bristol merchants have erected a noble manufacture of pins and other brass utensils, which employs a great number of hands, including about 200 children of both sexes from seven to twelve or thirteen years of age. All the different operations of melting, splitting, drawing, hammering, turning, &c. are performed by wheels worked with water, which is raised by two fire-engines of a very curious mechanism. The city of Bristol gives the title of earl to the family of Hervey, and sends two members to parliament. It is worth observing, that whoever marries a citizen's daughter becomes free of the city.

New BRISTOL, the capital of the county of Bucks in Pennsylvania, situated on the river Delawar, about 20 miles north of Philadelphia, in W. Long. 75. N. Lat. 40. 45.

BRISTOL Water. Of the four principal warm waters naturally produced in England this is the least so. As the Bath waters are proper where the secretions are defective, so the Bristol water is of service where they exceed the requirements of health. The Bath water warms; the Bristol cools. Bath water helps the sto-

Britain.

mach, intestines, and nerves; the Bristol favours the lungs, kidneys, and bladder. Except a jaundice attend, the Bristol water may be of use in dropics by its drying and diuretic qualities. Dr Wynter asserts, that there is no iron in Bristol water; and that its mineral contents are chalk, lapis calcareus, and calaminaris. Five gallons of this water, after evaporation, afforded only 3 iii. and gr. ii. of a mineral-like substance. The diseases in which this water is useful are internal hæmorrhagies, immoderate menses, internal inflammations, spitting blood, dysentery, purulent ulcers of the viscera, consumption, dropsy, scurvy with heat, stone, gravel, strangury, habitual gout, atrophy, slow fever, scrophula, gleet, and diabetes, in which last it is a specific, and may be drank as freely as the thirst requires it. The hotter months are the best for using it. The Bristol and Matlock waters are of exactly the same qualities. Doctors Mead and Lane first established the reputation of Bristol waters in diseases of the kidneys and bladder.

BRITAIN, or GREAT BRITAIN, the most considerable of all the European islands, extends from the Lizard Point, in the latitude of about 50° to Dunsbay-head in latitude 58. 30. N. or, taking it in a straight line from north to south, about eight degrees or 550 miles; and from Dover head on the east to Land's-end on the west comprehends about seven degrees of longitude, which may be computed at about 290 miles: but the form being very irregular, and lessening continually towards the north, proper allowances must be made in computing its dimensions.

The ancient name of this island was *Albion*, the name ¹ *Britain* being then common to all the islands round it. Hence Agathemerus, speaking of the British islands, ^{ancient name.} "They are many in number (says he); but the most considerable among them are Hibernia and Albion." And Ptolmy, to the chapter wherein he describes the island now called *Great Britain*, prefixes the following title: "The situation of *Albion* a British island." But as this far excelled the other British islands, the name of *Albion* in process of time was laid quite aside, and that of *Britain* used in its stead. By this name it was known in Pliny's time, and even in Cæsar's. The origin ² of both these names is very uncertain. Some derive that of *Albion* from the Greek word *alphon*, which, according to Festus, signifies *white*, the chalky cliffs that in several places rise on the southern coasts having that colour; while others pretend this name to have been borrowed from a giant feigned to have been the son of Neptune, and mentioned by several ancient authors. Some etymologists have recourse to the Hebrew, and others to the Phœnician; *alben* in the former signifying *white*, and *alp* in the latter signifying *high*. The origin of the name *Britain* is no less uncertain than that of *Albion*. Nennius and some other British writers derive it from Brutus, whom they likewise call *Brito*, the fifth in descent from the celebrated Æneas. Others derive it from the British words *pryd cain*, that is, a *white sum*, softened by degrees into *Britannia*. Camden derives it from the word *brith*, which, in the ancient language of the island, signifies *painted*; and *tania*, importing, in Greek, a region or country; so that the word *Brithania*, changed in process of time into *Britannia*, expresses what the Britons really were, that is, *painted*. Somner, disliking Camden's etymology,

¹ *Albion* the ancient name.

² Origin of the different names.

Britain.

gy, proposes another, viz. that the name *Britain* comes from *brydis*; signifying, in the British tongue, *viz.* and pointing out the violent motion of the sea that surrounds the island. Mr Whittaker, in his History of Manchester, derives it from the word *brith*, *briet*, *brit*, *bri*, or *brig*, which, he says, signifies *divided* or *striped*. Against the first of these etymologies it may be objected, that it is founded on a fable: and against the other four lies one common and unanswerable objection; which is, that the name of *Britain* was given to the island by foreigners, who could not borrow it from the British tongue, with which they were in all likelihood unacquainted. That the island received the name of *Britain* from foreigners is evident, since the natives never styled themselves *Britons*, nor their country *Britain*; their true name being *Cymri*, or *Cumbri*; whence *Cambria* the name of Wales to this day among the Welsh.

Bochart's opinion.

The learned Bochart, speaking of the colonies and language of the Phœnicians, offers a conjecture which most of our modern writers have adopted as the most natural. The Phœnicians, according to that writer, called this island and some others near it, *Barat Anas*, that is, *the land or country of tin or lead*, and more contractedly *Bratanac*; which name, passing from the Phœnicians to the Greeks, and from these to the Romans, might have been softened into that of *Britannice* and *Britannia*. That the Phœnicians first discovered these islands, which were afterwards by the Greeks called *Cassiterides*, and are proved by Camden to be our Scilly islands, appears both from Strabo and Pliny; of whom the former tells us, that the Phœnicians first brought tin from the Cassiterides, which they sold to the Greeks; but kept the trade to themselves, and the place private; and the latter writes, that Mediocritus was the first who brought lead from the Cassiterides; where Bochart shows that we ought to read *Melichartus*, who is the Phœnician Hercules of Sanchoniatho, to whom that nation ascribe their first western discoveries. But notwithstanding the care of the Phœnicians to conceal these islands, the Greeks at last discovered them; and gave them the name of *Cassiterides*, which, in the Greek tongue, signifies the same with *Barat Anac* in the Phœnician. This name was at first given to the islands of Scilly already mentioned, but by degrees communicated to all the others lying in the same sea. Thus Bochart. But after all, his opinion, however plausible in appearance, may be as foreign to the purpose as any of the rest; many instances of names given to new-discovered countries showing that the origin of such names is not always owing to reason, but often to chance or caprice.

The general division of Britain is into ENGLAND, SCOTLAND, and WALES; for a particular description and history of which, see these articles.

James VI. Scotland ceeds to crown England.

In the year 1603, the kingdoms of Scotland and England fell under the dominion of one sovereign, by the accession of James VI. of Scotland to the throne of England. He derived his title to the latter from being the grandson of Margaret eldest daughter to Henry VII. of that kingdom; and, on the failure of all the male line, his hereditary right remained incontestable. Queen Elizabeth, with her latest breath, had recognized him for her successor; so that few sovereigns ever ascended a throne with more approbation

of their subjects, or greater hopes of a peaceable and happy reign.

Those hopes, however, were soon blasted; and the history of this monarch's reign consists of little else than a detail of disputes and contentions between him and his parliament. A particular and minute account of such transactions could afford very little entertainment; but it is of importance to know their origin, as they are to be reckoned the ultimate causes of those succeeding events which make so conspicuous a figure in the annals of Britain.

In those barbarous ages which preceded the period we are now entering upon, the human mind, enervated by superstition, and obscured by ignorance of every art and science, seemed to have given up all pretensions to liberty, either religious or civil. Unlimited and uncontrollable despotism prevailed every where; and though England suffered less in this respect than almost any other nation, the many examples of arbitrary power excited by her sovereigns, queen Elizabeth herself, James's immediate predecessor, not excepted, show that they were very far from being then a free people. An incontestable proof of this, and an evidence how little restraint at that time the people could lay upon the authority of the sovereign, is, that the proceedings of parliament were accounted, even by themselves, of so little consequence, that they were not at the trouble to keep journals of them. It was not till the year 1607, four years after the accession of James, that parliamentary journals were kept, at the motion of Sir Edwin Sandys, a member of great authority in the house.

The proceedings of the parliament being at that time of so little consequence, it is no wonder that the sessions were not regular, or that little attention was paid to the choice or continuance of the members. In the reign of Elizabeth, and her predecessors, the sessions of parliament did not continue above the twelfth part so long as the vacations. It was then usual, after parliaments had been prolonged beyond one session, for the chancellor to exert a discretionary authority of issuing new writs to supply the place of any members whom he judged incapable of attending, either on account of their employment, sickness, or other impediment. No practice could be more dangerous to liberty than this, as it gave the chancellor, and consequently the sovereign, an opportunity of garbling at pleasure the representatives of the nation: yet so little was liberty at that time understood, that the commons, of their own accord, without the least count influence or intrigue, and contrary to some former votes of their own, confirmed the chancellor's power in this respect in the 23d of Elizabeth. Nor did they proceed any farther in the assertion of their privileges, than to vote, that "during the sitting of parliament there do not, at any time, any writ go out for the choosing or returning any member without the warrant of the house."

Towards the end of the 16th or beginning of the 17th century, a great revolution took place, though insensibly, throughout all Europe. Arts and sciences began to flourish, commerce and navigation were greatly extended, and learning of all kinds began to diffuse itself. By more enlarged views, the love of freedom began, in England especially, to take place in the breasts of most people of birth and education; and this was

greatly

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General state of the nation at that time.

Parliament of little consideration.

Origin of the party.

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greatly promoted by an acquaintance with the ancient Greek and Latin historians. From the example of the republics of Greece and Rome, whose members had so often sacrificed their lives for the sake of liberty, a patriotic spirit began to arise; and a desire of circumscribing the excessive prerogative and arbitrary proceedings of the crown began secretly to take place throughout the nation.

8

Grievances the nation at that time laboured under.

Nor was this desire unreasonable, or without a solid foundation. During the last years of queen Elizabeth's reign, the commerce, navigation, and number of seamen in England, had sensibly decayed. A remonstrance from the Trinity-house in 1602 says, that since 1588, the number of seamen and shipping had decayed about a third part. Every species of domestic industry was fettered by monopolies; and by exclusive companies, which are only another species of monopoly, almost all foreign trade, except that to France, was brought into the hands of a few rapacious engrossers, and all prospect of future improvement in commerce was for ever sacrificed to a little temporary advantage of the sovereign. These companies, though arbitrarily erected, had carried their privileges so far, that almost all the commerce of England centered in London; the customs of that port alone amounted to 110,000*l.* a-year; while those of all the kingdom beside amounted only to 17,000*l.*; nay, the whole trade of London was confined to about 200 citizens, who were easily enabled, by combining among themselves, to fix whatever price they pleased both on the exports and imports of the nation. Besides this, the subjects were burdened by wardships and purveyances. The latter was an old prerogative of the crown, by which the officers of the household were empowered to take, without consent of the owners, provisions for the king's family, and carts and horses for the removal of his baggage, upon paying a stated price for them. The king had also a power of sending any person, without his consent, on whatever message he pleased; and thus he could easily force any individual to pay him whatever money he chose, rather than be sent out of the country on a disagreeable errand. Money extorted from individuals, by this or any other method, was called a *benevolence*.

These were some of the grievances under which the nation at this time laboured, and these the rising spirit of patriotism tended to redress. This disposition, however, the severe government of Elizabeth had confined within very narrow bounds: but when James succeeded to the throne; a foreign prince, less dreaded and less beloved; symptoms of a more free and independent genius immediately appeared. Happily James neither perceived the alteration, nor had sufficient capacity to check its early advances. He had established in his own mind a speculative system of absolute government, which few of his subjects, and none but traitors and rebels, he thought, would make any scruple to admit. He considered himself as intitled to equal prerogatives with other European sovereigns, not considering the military force with which their despotism was supported. The almost unlimited power which, for upwards of a century, had been exercised by the English sovereigns, he considered as due to royal birth and title, not to the prudence and spirit of those monarchs, or the conjunctures of the times. In his person, therefore, he imagined all legal power to be centered by an heredi-

N^o 55.

tary and a divine right; nay, so fully was he persuaded that he was the absolute proprietor of his subjects, that in his speech to the parliament in 1621, he told them, that he "wished them to have said that their privileges were derived from the grace and permission of him and his ancestors." And when the same parliament protested that "the liberties, franchises, privileges, and jurisdictions of parliament, are the ancient and undoubted birthright and inheritance of the subjects of England," he was so enraged, that sending for the journals of the commons, he, with his own hand, before the council, tore out this protestation; and ordered his reasons to be inserted in the council-book.

Such were the opposite dispositions of the prince and parliament, at the commencement of the Scottish line; dispositions just beginning to exist and to appear in parliament, but thoroughly established, and openly avowed on the part of the king, throughout his whole reign.

The consequence of such opposite dispositions prevailing in the king and parliament was, that during this reign the prerogatives of the crown were violently and openly attacked; but the chief grounds of discontent were money and religion. The king's high notions of the royal prerogative made him imagine he had a right to whatever sums he pleased to demand; and his profusion caused him to dissipate in a short time the scanty supplies he could extort from the parliament, who seem to have behaved as unreasonably on the one

TO
Reasons of the dissensions between the king and parliament.

hand as James himself did on the other. With regard to religious matters, the nation was at that time greatly infected with puritanism. Though the severities of Elizabeth had almost totally suppressed the Papists, it had been otherwise with the Puritans. So much had they increased by the very means which had diminished the number of catholics, that no less than 750 clergymen of that persuasion signed a petition to James on his accession. They hoped that the king, having received his education in Scotland, and having always professed an attachment to the church established there, would at least abate the rigour of the laws enacted against the Puritans, if he did not show them particular favour and encouragement. But in this they were mistaken. He had observed in their Scots brethren a violent turn toward republicanism, and a zealous attachment to civil liberty. In the capacities both of monarch and theologian, he had experienced the little complaisance they were disposed to show him. They controuled his commands; disputed his tenets; and to his face, before the whole people, censured his conduct and behaviour. This superiority assumed by the presbyterian clergy, the monarchic pride of James could never digest. Though he had been obliged while in Scotland to court their favour, he treasured up on that account the stronger resentment against them; and was determined to make them feel in their turn the weight of his authority. He therefore not only rejected the petition of the 750 clergymen above mentioned, but throughout his whole reign refused to relax in the least the severity of the laws against Protestant nonconformists, though very often petitioned in their favour by his parliament.

II
Aversion to James of the puritans

The same principles which occasioned in James such an aversion to the Puritans, prompted him greatly to favour the episcopals, and even the Papists, as being greater

12
He favours the episcopals and Papists.

9
James's arbitrary system of government.

¹³ Attempts to establish episcopacy in Scotland. Britain. greater friends to despotism. In his youth he had been suspected of a bias towards the religion of the latter; and when he ascended the throne of England, it is certain he often endeavoured to procure some mitigation of the laws against them, if not an absolute toleration. But in this he was constantly opposed by the parliament; and indeed the strong inclination shown by James to establish episcopacy throughout every corner of his dominions, tended very much to alienate the minds of the generality of his subjects, especially in Scotland, entirely from him.

In May 1617, the king set out for Scotland, expressly with the design of establishing episcopacy in that kingdom. He did not, however, propose to abolish presbytery entirely, and set up absolute episcopacy in its room. He designed to content himself with establishing the royal authority above the ecclesiastical, and introducing some ceremonies into the public worship, such as kneeling at the sacrament, private communion, private baptism, confirmation of children, and the observance of Christmas, &c. But as his design was fully seen from the beginning, every advance towards episcopacy gave the greatest discontent, and those trivial ceremonies were rejected as so many mortal sins.

¹⁴ Tyranny of the Scots clergy. At this time the power of the Scots clergy was exceedingly great; and the gloomy enthusiastic spirit with which they were actuated, prompted them to exercise it in such a manner as to make their tyranny insupportable to those who were of a different way of thinking from themselves. Every ecclesiastical court possessed the power of excommunication; which was then attended with some very serious temporal consequences, besides the spiritual ones which were supposed to flow from it. The person excommunicated was shunned by every one as profane and impious: his whole estate during his life-time, and all his moveables for ever, were forfeited to the crown. A sentence of excommunication was sometimes pronounced in a summary manner, by any ecclesiastical court however inferior, against any person, whether he lived within the bounds of their jurisdiction or not. And by this means, the whole tyranny of the inquisition, though without its orders, was introduced into Scotland. But the clergymen were not satisfied with this unbounded authority in ecclesiastical matters; they assumed a censorial power over every part of administration; and in all their sermons and even prayers mingling politics with religion, they inculcated the most seditious and turbulent principles. One Black, a minister of St Andrew's, went so far as to pronounce in one of his sermons, that all kings were the devil's children; and in his prayer for the queen he used these words, "We must pray for her for the fashion's sake, but we have no cause: she will never do us any good." Another minister preaching in the principal church of that capital, said, that the king was possessed with a devil; and that, one devil being expelled, seven worse had entered in his place. To which he added, that the subjects might lawfully rise, and take the sword out of the hands of their sovereign.

¹⁵ Anecdotes of some of them. We can scarce wonder that James should be desirous of subjugating such rebellious and turbulent spirits as these; and, on the other hand, considering the extreme weakness of this monarch's understanding, and that he imagined himself able to manage not only su-

rious religionists, but even the most powerful foreign nations, with no other weapon than mere argumentation, we can as little wonder at his want of success.— In short, so far was James from being able to establish his royal authority above the ecclesiastical, that he found himself unable to introduce a single ceremony. He returned therefore with the mortification not only of seeing his schemes entirely baffled with regard to Scotland, but of having disgusted even the few of that nation over whom religious prejudices did not prevail: for they, considering the ceremonies so much insisted on by the king as trivial and insignificant, could not help thinking the national honour sacrificed by a servile imitation of the modes of worship practised in England, and that their sovereign betrayed equal narrowness of mind, though in an opposite manner, with those he so much condemned.

The like bad success attended James when he attempted some opposition to the puritanical innovations in England. He had observed in his progress through that kingdom, that a Judaical observance of the Sunday gained ground every day: and that by this means, under colour of religion, the people were debarred from such sports and recreations as contributed to their health as well as amusement. Imagining, therefore, that it would be easy to infuse cheerfulness into the dark spirit of devotion which then prevailed, he issued a proclamation to allow and encourage, after divine service, all kinds of lawful games and exercises; and this proclamation his subjects regarded as an instance of the utmost profaneness and impiety. In 1620 a bill was brought in by the commons for the more strict observance of the Sunday, which they affected to call the *sabbath*. One Shepherd opposed this bill, objected to the appellation of *sabbath* as puritanical, and seems even to have justified sports on that day. For this he was expelled the house by the suggestion of Mr Pym; and in the sentence pronounced against Shepherd, his offence is said to be *great, exorbitant, and unparalleled*.

This sketch, we hope, will be sufficient to give the reader a tolerable idea of the situation of affairs during the reign of James I. We now proceed to give an account of the few remarkable transactions which occurred in this period.

¹⁶ Sir Walter Raleigh's conspiracy. The first thing of any consequence was a conspiracy formed, the very year of the king's accession to the throne, to displace him, and bestow the kingdom on Arabella Stuart, a near relation of James's, and equally descended from Henry VII. With regard to this conspiracy every thing remains still mysterious, as it was at the time when the conspiracy itself was discovered. What renders it remarkable is the concern Sir Walter Raleigh was said to have in it; for which he was tried, condemned without sufficient proof, suffered 13 years imprisonment in the tower, and was afterwards executed out of complaisance to the Spaniards. See RALEIGH.

¹⁷ Account of the gunpowder treason. In 1605 was discovered the famous *gunpowder treason*, the anniversary of which discovery hath ever afterwards been celebrated with rejoicings. Its origin was as follows: On the accession of James, great expectations had been formed by the catholics that he would prove favourable to them, both as that was the religion of his mother, and as he himself had been

Britain.

¹⁸ His bad success against the puritans in England.

¹⁹ Account of the gunpowder treason.

Britain.

suspected of a bias towards it in his youth. It is even pretended that he had entered into positive engagements to grant them a toleration as soon as he should mount the throne of England. Here, however, they found their hopes built on a false foundation. James on all occasions expressed his intention of executing strictly the laws enacted against them, and of persevering in all the rigorous measures of Queen Elizabeth. A plan of revenge was first thought of by one Catesby, a gentleman of good parts, and of an ancient family. He communicated his mind to Percy, a descendant of the house of Northumberland. The latter proposed to assassinate the king; but this seemed to Catesby very far from being adequate to their purpose. He told Percy, that the king would be succeeded by his children, who would also inherit his maxims of government. He told him, that even though the whole royal family were destroyed, the parliament, nobility, and gentry, who were all infected with the same heresy, would raise another Protestant prince to the throne. "To serve any good purpose (says he), we must destroy, at one blow, the king, the royal family, the lords and commons; and bury all our enemies in one common ruin. Happily they are all assembled on the first meeting of parliament; and afford us the opportunity of glorious and useful vengeance. Great preparations will not be requisite. A few of us may run a mine below the hall, in which they meet; and chusing the very moment when the king harangues both the houses, consign over to destruction those determined foes to all piety and religion. Mean while, we ourselves standing aloof, safe and unsuspected, shall triumph in being the instruments of divine wrath, and shall behold with pleasure those sacrilegious walls, in which were passed the edicts for proscribing our church and butchering her children, tossed into a thousand fragments; while their impious inhabitants, meditating perhaps still new persecutions against us, pass from flames above to flames below, there for ever to endure the torments due to their offences."

20
Catesby's
speech.

21
Preparations for the
execution of
the plot.

This terrible scheme being approved of, it was resolved to communicate it to a few more. One Thomas Winter was sent over to Flanders in quest of Fawkes, an officer in the Spanish service of approved zeal and courage. All the conspirators were bound by the most solemn oaths, accompanied with the sacrament; and to such a degree had superstition effaced every principle of humanity from their minds, that not one of them ever entertained the smallest compunction for the cruel massacre they were going to commit. Some indeed were startled at the thoughts of destroying a number of catholics who must necessarily be present as spectators, or attendants on the king, or as having seats in the house of peers. But Telford a Jesuit, and Garnet superior of that order in England, removed those scruples, by showing that the interest of religion required in this case the sacrifice of the innocent with the guilty.

This happened in the spring and summer of 1604; when the conspirators also hired a house in Percy's name, adjoining to that in which the parliament was to assemble. Towards the end of that year they began to pierce through the wall of the house, in order to get in below that where the parliament was to sit. The wall was three yards thick, and consequently occasioned a great deal of labour. At length, however, they ap-

proached the other side, but were then startled by a noise for which they could not well account. Upon inquiry, they found that it came from a vault below the house of lords; that a magazine of coals had been kept there; and that the coals were then selling off, after which the vault would be let to the highest bidder. Upon this the vault was immediately hired by Percy; 36 barrels of powder lodged in it; the whole covered up with faggots and billets; the doors of the cellar boldly flung open; and every body admitted, as if it contained nothing dangerous.

Being now, as they thought, assured of success, the conspirators began to plan the remaining part of their enterprize. The king, the queen, and prince Henry, were expected to be present at the opening of the parliament. The duke, by reason of his tender age, would be absent, and it was resolved that Percy should seize or murder him. The princess Elizabeth, likewise a child, was kept at Lord Harrington's house in Warwickshire; and some others of the conspirators engaged to assemble their friends on pretence of a hunting match, when they were to seize that princess, and immediately proclaim her queen. The day so long wished for at last approached; the dreadful secret, tho' communicated to more than 20 persons, had been religiously kept for near a year and an half; and nothing could be foreseen which could possibly prevent the success of their design. Ten days before the meeting of parliament, however, lord Monteagle, a catholic son to lord Moyley, received the following letter, which had been delivered to his servant by an unknown hand. "My lord, out of the love I bear to some of your friends, I have a care for your preservation. Therefore I would advise you, as you tender your life, to devise some excuse to shift off your attendance on this parliament. For God and man have determined to punish the wickedness of this time. And think not slightly of this advertisement; but retire yourself into the country, where you may expect the event in safety. For, tho' there be no appearance of any stir, yet, I say, they shall receive a terrible blow this parliament; and yet they shall not see who hurts them. This counsel is not to be contemned, because it may do you good, and can do you no harm: for the danger is over as soon as you have burned this letter. And I hope God will give you the grace to make good use of it, to whose holy protection I commend you."—Though Monteagle imagined this letter to be only a ridiculous artifice to frighten him, he immediately carried it to lord Salisbury, secretary of state; who laid it before the king on his arrival in town a few days after.

22
Conspiracy
discovered.

The king looked upon the letter in a more serious light. From the manner in which it was wrote he concluded that some design was forming to blow up the parliament-house with gunpowder, and it was thought adviseable to search the vaults below. The lord chamberlain, to whom this charge belonged, purposely delayed the search till the day before the meeting of parliament. He remarked those great piles of wood and faggots which lay in the vault under the upper-house; and casting his eye upon Fawkes, who stood in a corner and passed himself for Percy's servant, he took notice of that daring and determined courage which was conspicuous in his face, and so much distinguished this conspirator even amongst

the.

Britain.

Britain.

the other heroes in villany that were concerned in the scheme. Such a quantity of fuel, also, for one who lived so little in the town as Percy, appeared somewhat extraordinary; and, upon comparing all circumstances, it was resolved to make a further search. About midnight, Sir Thomas Knevet, a justice of peace, was sent with proper attendants; and before the door of the vault, finding Fawkes, who had just finished all his preparations, he immediately seized him, and, turning over the faggots, discovered the powder. The matches and every thing proper for setting fire to the train were taken in Fawkes's pocket; who seeing now no refuge but in boldness and despair, expressed the utmost regret that he had lost the opportunity of firing the powder at once, and of sweetening his own death by that of his enemies. For two or three days he displayed the same obstinate intrepidity; but, being confined in the tower, and the rack just shown to him, his courage at last failed, and he made a full discovery of all the conspirators.

23
Fawkes
sized.24
onpira-
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Catesby, Percy, and the other criminals, on hearing that Fawkes was arrested, hurried away to Warwickshire; where Sir Edward Digby, imagining that his confederates had succeeded, was already in arms, to seize the princess Elizabeth. She had escaped into Coventry; and they were obliged to put themselves in a posture of defence against the country-people, who were raised from all quarters and armed by the sheriffs. The conspirators, with all their attendants, never exceeded the number of 80 persons; and being surrounded on every side, could no longer have any hope either of prevailing or escaping. Having therefore confessed themselves, and received absolution, they boldly prepared for death, and resolved to sell their lives as dear as possible. But even this miserable consolation was denied them. Some of their powder took fire, and disabled them from defending themselves. The people then rushed in upon them. Percy and Catesby were killed with one shot. Digby, Rookwood, Winter, and others, being taken prisoners, were tried, confessed their guilt, and died as well as Garnet, by the hands of the common executioner. The lords Stourton and Mordaunt, two catholics, were fined, the former of 4000 *l.* the latter of 10,000 *l.* by the star-chamber; because their absence from parliament had occasioned a suspicion of their being made acquainted with the conspiracy. The earl of Northumberland was fined 30,000 *l.* and detained several years a prisoner in the tower; because, not to mention other grounds of suspicion, he had admitted Percy into the number of gentlemen pensioners, without his taking the requisite oaths.

25
mes'-wife
nuel in
e legisla-
on of Ire-
nd.

In 1612, James appears in his most advantageous point of view, namely, as legislator of Ireland, and the person who undertook to civilize the barbarous inhabitants of that kingdom, and to render their subjection durable and useful to the crown of England. In this work, James proceeded by a steady, regular, and well-concerted plan. He began with abolishing the ancient Irish customs which supplied the place of laws, and which were exceedingly barbarous and absurd. By the Brehon law, every crime however enormous was punished not with death, but by a fine. Murder itself was compensated in this way. Every one had a value affixed to him, called his *eric*; and whoever was able

Britain.

to pay this, might kill him when he pleased. As for such slight offences as oppression, extortion, or other things of that nature, no penalty was affixed to them, nor could any redress for them ever be obtained. By the custom of *gavelkind*, upon the death of any person, his land was divided among all the males of the sept or family, both bastard and legitimate: and after partition made, if any of the sept died, his portion was not shared out among his sons; but the chieftain at his discretion made a new partition of all the lands belonging to that sept, and gave every one his share: as no man, by reason of this custom, enjoyed the fixed property of any land; to build, cultivate, or improve, must have been so much lost labour. Their chieftains were established by election, or, more properly speaking, by force and violence. Their authority was absolute; and, notwithstanding certain lands were assigned to the office, its chief profit resulted from exactions, dues, assessments, for which there was no fixed law, and which were levied at pleasure.

After abolishing these customs, and substituting English law in their place; James having taken all the natives under his protection, and declared them free citizens, proceeded to govern them by a regular administration, military as well as civil. A sufficient army was maintained, its discipline inspected, and its pay transmitted from England, in order to prevent the soldiery from preying upon the country, as had been usual in former reigns. When O'Doghartie raised an insurrection, a reinforcement was sent over, and the rebellion immediately extinguished. All minds being first quieted by an universal indemnity, circuits were established, justice administered, and crimes of every kind severely punished. As the Irish had been universally engaged in a rebellion against Elizabeth, a resignation of all the rights formerly granted them to separate jurisdictions was rigorously exacted; a resignation of private estates was even required; and when they were restored, the proprietors received them under such conditions as might prevent all future tyranny and oppression over the common people. The whole province of Ulster having fallen to the crown by the attainder of rebels, a company was established in London for planting new colonies in that fertile country. The property was divided into moderate shares, the largest not exceeding 2000 acres: Tenants were brought over from England and Scotland: The Irish were removed from the hills and fastnesses, and settled in the open country: Husbandry and the arts were taught them; and by these means Ulster, from being the most wild and disorderly province in Ireland, soon became the best cultivated and most civilized.

This year was also remarkable for the death of Henry prince of Wales, who died suddenly on the 6th of November, not without strong suspicions of poison, for which the king himself was blamed. On opening his body, however, no symptoms of poison appeared; but his death diffused an universal grief throughout the nation, he being reckoned a prince of extraordinary accomplishments.

26
Death of
Henry
prince of
Wales.

The marriage of the princess Elizabeth with Frederic elector palatine, which was celebrated February 14th 1613, served to dissipate the grief which had arisen on account of prince Henry's death. But this marriage, in the event, proved unhappy to the king as well as

27
Marriage of
the princess
Elizabeth
with the
elector palat-
ine.

Britain. as his son-in-law. The elector, trusting to so great an alliance, engaged in enterprizes beyond his strength; and James, not being able, and indeed perhaps not willing, to assist him in his distress, lost entirely what remained of the affections of his people.

²⁸ The elector These bad consequences did not begin to appear till the year 1619. At that time the states of Bohemia having taken arms against the emperor Matthias, in defence of the Protestant religion, and continued their revolt against his successor Ferdinand II. and being alarmed at his mighty preparations against them, made an offer of their crown to the elector palatine. To this they were induced by the greatness of his connections, as being son-in-law to the king of England, and nephew to prince Maurice, whose authority in the United Provinces was almost absolute; and the young palatine stimulated by ambition, without consulting either James or Maurice, whose opposition he foresaw, immediately accepted the offer, and marched all his forces into Bohemia, in support of his new subjects.

²⁹ Defeated and driven out of his dominions.

The affairs of the new king were not long of coming to an unfortunate crisis. It was known almost at one time in England, that Frederic being defeated in the great and decisive battle of Prague, had fled with his family into Holland; and that Spinola the Spanish general had invaded the palatinate, where meeting with little resistance, except from one body of 2400 Englishmen commanded by the brave Sir Horace Vere, had in a little time reduced almost the whole principality. In 1621, the ban of the empire was published against the unfortunate elector, and the execution of it was committed to the duke of Bavaria. The upper palatinate was in a little time conquered by that prince; and measures were taken in the empire for bestowing on him the electoral dignity of which the palatine was despoiled. Frederic was now obliged to live with his numerous family, in poverty and distress, either in Holland, or at Sedan, with his uncle the duke of Bouillon; and the new conquests of the catholics throughout all Germany were attended with persecutions against the Protestants.

³⁰ English insist for a war with the house of Austria.

At this news the religious zeal of the English was inflamed to the highest degree; and they would have plunged headlong into a war with the house of Austria, without reflecting in the least on the consequences that might ensue. The sufferings of their Protestant brethren in Germany were the only objects of consideration, and the neutrality and inactive spirit shown by James were loudly exclaimed against. But though James might have defended his pacific measures by very plausible arguments, it is certain that some of his motives were the most ridiculous that can be imagined. Such was the opinion that he himself entertained of his own wisdom, that he imagined himself capable of disarming hostile nations by dint of argument; and that the whole power of Austria, though not awed by the power of England, would submit to his arbitration, merely out of respect to his virtue and moderation.—So much also he was wedded to his opinion concerning the prerogative of kings, that he imagined, wherever there was a contention between any sovereign and his subjects, the latter behoved always to be in the wrong; and for this reason, from the very first he had denied his son-in-law the title of *king of Bohemia*, and forbid

him to be prayed for in the churches under that appellation. Besides these reasons, James was on another account extremely averse to come to a rupture with Spain. He had entertained an opinion peculiar to himself, which was, that any alliance below that of a king was unworthy a prince of Wales; and he never would allow any prince's but a daughter of France or Spain to be mentioned as a match for his son. This piece of pride, which really implied meanness as if he could have received honour from any alliance, gave Spain an opportunity of managing this monarch in his most important concerns. With a view to engage him to a neutrality with regard to the succession of Cleves, the eldest daughter of the king of Spain had been indirectly offered during the life of prince Henry. The bait, however, did not then take; James, in consequence of his alliance with the Dutch, marched 4000 men to the assistance of the Protestants, by which means the succession was secured to the Protestant line. In 1618, Gondomar the Spanish ambassador made offer of the king's second daughter to prince Charles; and, that he might render the temptation irresistible to the necessitous James, gave hopes of an immense fortune that should attend the prince's. Upon this match James had built great hopes, not only of relieving his own necessities, but of recovering the palatinate for his son-in-law; which last, he imagined, might be procured from the mere motive of friendship and personal attachment.

Britain. ³² He is desirous of a Spanish match for his son.

This last step was equally disagreeable to the commons with the rest; and, joined to the other pieces of James's conduct, at last blew into a flame the contention which had so long subsisted between their sovereign and them. On the 14th of November 1621, the commons framed a remonstrance which they intended to carry to the king. They represented, that the enormous growth of the Austrian power threatened the liberties of Europe; that the progress of the Catholic religion in England bred the most melancholy apprehensions lest it should again acquire an ascendant in the kingdom; that the indulgence of his majesty towards the professors of that religion had encouraged their insolence and temerity; that the uncontrolled conquests made by the Austrian family in Germany raised mighty expectations in the English Papists; but above all, that the Spanish match elevated them so far as to hope for an entire toleration, if not a final re-establishment, of their religion. They therefore intreated his majesty, that he would immediately undertake the defence of the palatine, and maintain it by force of arms; that he would turn his sword against Spain, whose armies and treasures were the chief support of the Catholic interest in Europe; that he would enter into no negotiation for the marriage of his son but with a Protestant prince's; that the children of Popish recusants should be taken from their parents, and committed to the care of Protestant teachers and schoolmasters; and that the fines and confiscations to which the Catholics by law were liable, should be levied with the utmost severity.

³³ Commons averse to this measure.

³⁴ They frame a remonstrance against it.

The king, who was then at Newmarket, hearing of the intended remonstrance, wrote a letter to the speaker in which he sharply rebuked the house for debating on matters far above their reach and capacity; and he strictly forbid them to meddle with any thing that regarded

³⁵ Contention between the king and commons.

Britain.

gaided his government, or deep matters of state, and especially not to touch on his son's marriage with the Spanish princess. Upon this the commons framed a new remonstrance, in which they asserted their right of debating on all matters of government, and that they possessed entire freedom of speech in their debates. The king replied, that their remonstrance was more like a denunciation of war, than an address of dutiful subjects; that their pretension to inquire into all state affairs without exception, was such a plenipotency as none of their ancestors, even during the reign of the weakest princes, had ever pretended to; that public transactions depended on a complication of views and intelligence, with which they were entirely unacquainted; that they could not better show their wisdom, as well as duty, than by keeping within their proper sphere; and that in any business which depended on his prerogative, they had no title to interpose with their advice, unless when he pleased to ask it, &c. The commons in return framed the protestation already mentioned, which the king tore out of their journals, and soon after dissolved the parliament. The leading members of the house, Sir Edward Coke and Sir Robert Phillips, were committed to the tower: three others, Selden, Pym, and Mallory, to other prisons; and, as a lighter punishment, some others were sent into Ireland to execute the king's business. Sir John Saville, however, a powerful man in the house of commons, and a zealous opposer of the court, was made comptroller of the household, a privy counsellor, and soon after a baron. This event is memorable; as being the first instance in the English history, of any king's advancing a man on account of parliamentary interest, and of opposition to his measures.

36
Origin of
the factions
of whig and
tory.

This breach between the king and parliament soon made politics become a general subject of discourse, and every man began to indulge himself in reasonings and inquiries concerning matters of state; and the factions which commenced in parliament were propagated throughout the nation. In vain did James, by reiterated proclamations, forbid discourses of this kind. Such proclamations, if they had any effect, served rather to inflame the curiosity of the public. In every company or society the late transactions became the subject of argument and debate; some taking the side of monarchy, others of liberty; and this was the origin of the two parties since known by the names of *Whigs* and *Tories*.

37
James gains
the favour
of the court
of Spain.

For five years, James continued the dupe of the court of Spain. Though firmly resolved to contract no alliance with a heretic, the king of Spain had continued to procrastinate and invent one excuse after another, while he pretended to be very willing to conclude the match. At last the king of England, finding out what was really the matter, resolved to remove that obstacle if possible. He issued public orders for discharging all Popish recusants who were imprisoned; and it was daily apprehended that he would forbid, for the future, the execution of the penal laws against them. For this conduct he was obliged to apologize, and even pretend that it was done in order to procure from foreign princes a toleration for the Protestants; the severity of the English laws against catholics, he said, having been urged as a reason against showing any favour to Protestants residing in catholic kingdoms.

Britain.

These concessions in favour of the catholics, however ill relished by his subjects, at last obtained James's end with regard to the marriage. The earl of Bristol, ambassador at the court of Spain, a minister of vigilance and penetration, and who had formerly opposed the alliance with catholics, being now fully convinced of the Spanish sincerity, was ready to congratulate the king on the completion of his projects. The Spanish princess is represented as very accomplished; she was to bring with her a fortune of L. 600,000; and, what was more, not only Bristol considered this match as an infallible prognostic of the palatine's restoration, but the Spaniards themselves did the same. All things being therefore agreed upon between the parties, nothing was wanting but the dispensation from Rome, which might be considered as a matter of mere formality. The king exulted in his pacific counsels, and boasted of his superior sagacity and penetration; when all his flattering prospects were blated by the temerity of the duke of Buckingham, who governed both court and nation with almost unlimited sway.

38
Marriage
with the in-
fanta: agreed
upon.

This nobleman had suddenly been raised to the highest honours. Though possessed of some accomplishments of a courtier, he was utterly devoid of every talent of a minister; but at once partook of the insolence which attends a fortune newly acquired, and the impetuosity which belongs to persons born in high stations, and unacquainted with opposition. Among those who had experienced the arrogance of this overgrown favourite, the prince of Wales himself had not been entirely spared; and a great coldness, if not enmity, had for that reason taken place between them. Buckingham being desirous of putting an end to this coldness, and at the same time envious of the great reputation of the earl of Bristol, persuaded the prince to undertake a journey to Madrid; which, he said, would be an unexpected galantry; would equal all the fictions of Spanish romance; and, suiting the amorous and enterprising character of that nation, must immediately introduce him to the princess under the agreeable character of a devoted lover and daring adventurer. Little persuasion was necessary to prevail with prince Charles to undertake this journey; and the impetuosity of Buckingham having extorted a consent from James, our two adventurers set out, prince Charles as the knight-errant, and Buckingham as the squire. They travelled through France in disguise, assuming the names of Jack and Tom Smith. They went to a ball at Paris, where the Prince first saw the princess Henrietta whom he afterwards married, who was then in the bloom of youth and beauty, and with whom the novelists of that time say he then fell in love. On their arrival at Madrid, every body was surprised by a step so little usual among great princes. The Spanish monarch made Charles a visit, expressed the utmost gratitude for the confidence he reposed in him, and made warm protestations of a correspondent confidence and friendship. He gave him a golden key which opened all his apartments, that the prince might, without any introduction, have access to him at all hours: he took the left hand of him on every occasion, except in the apartments assigned to Charles; for there, he said, the prince was at home: Charles was introduced into the palace with the same pomp and ceremony which attend the kings of Spain on their coronation: the council received public orders to obey him as the

39
Prince
Charles and
Buckingham
resolve
on a journey
into Spain.

40
Their king's
reception in
that king-
dom.

Britain.

king himself: Olivarez too, the prime minister, though a grandee of Spain, who has the right of being covered before his own king, would not put on his hat in the prince's presence: all the prisons of Spain were thrown open, and all the prisoners received their freedom, as if an event the most honourable and most fortunate had happened to the monarchy; and every sumptuary law with regard to apparel was suspended during prince Charles's residence in Spain. The infanta, however, was only shown to her lover in public; the Spanish ideas of decency being so strict, as not to allow any farther intercourse till the arrival of the dispensation. The point of honour was carried so far by these generous people, that no attempt was made, on account of the advantage they had acquired by having the prince of Wales in their power, to impose any harder conditions of treaty: their pious zeal only prompted them on one occasion to desire more concessions in the religious articles; but, on the opposition of Bristol, they immediately desisted. The Pope, however, hearing of Charles's arrival in Madrid, tacked some new clauses to the dispensation; and it became necessary to transmit the articles to London, that the king might ratify them.

41
Articles of
the marriage treaty

This treaty, which was made public, consisted of several articles, chiefly regarding the exercise of the catholic religion by the infanta; and, among these, nothing could reasonably be found fault with, except one article, in which the king promised that the children should be educated by the princess till they were ten years of age; which undoubtedly was insisted upon with a view of seasoning their minds with catholic principles. But, besides this public treaty, there were some private articles sworn to by James, which could not have been made public without grievous murmurs. A suspension of the penal laws against the English catholics was promised, as likewise a repeal of them in parliament, and a toleration for the exercise of that religion in private houses. Meanwhile Gregory XV. who granted the dispensation, died; and Urban VIII. was chosen in his place. Upon this event, the nuncio refused to deliver the dispensation till it should be renewed by Urban. This the crafty pontiff delayed, in hopes that, during the prince's residence in Spain, some expedient might be fallen upon to effect his conversion. The king of England, as well as the prince, became impatient: but, on the first hint, Charles obtained leave to return; and Philip graced his departure with all the circumstances of civility and respect which had attended his arrival. He even erected a pillar on the spot where they took leave of each other, as a monument of mutual friendship; and the prince, having sworn to the observance of all the articles, embarked on board the English fleet at St Ande-
ro.

42
The prince
returns.

The modest, reserved, and decent behaviour of Charles, together with his unparalleled confidence in them, and the romantic gallantry he had practised with regard to their princess, had endeared him to the whole court of Madrid. But in the same proportion that Charles was beloved and esteemed, was Buckingham despised and hated. His sallies of passion; his indecent freedoms with the prince; his dissolute pleasures; his arrogant impetuous temper, which he neither could nor would disguise; were to the Spaniards the objects of peculiar aversion. They lamented the infanta's fate, who must

be approached by a man whose temerity seemed to respect no laws divine or human. Buckingham, on the other hand, sensible how odious he was become to the Spaniards, and dreading the influence which that nation would naturally acquire after the arrival of the infanta, resolved to employ all his credit in order to prevent the marriage. By what arguments he could prevail on the prince to offer such an insult to the Spanish nation, from whom he had received such generous treatment; by what colours he could disguise the ingratitude and imprudence of such a measure; these are totally unknown to us: certain it is, however, that when the prince left Madrid, he was firmly determined, in opposition to his most solemn promises, to break off the treaty with Spain. On their arrival at London, therefore, the prince and Buckingham assumed the entire direction of the negotiation; and it was their business to seek for pretences by which they could give a colour to their intended breach of treaty. At last, after many fruitless artifices were employed to delay or prevent the espousals, Bristol received positive orders not to deliver the proxy which had been left in his hands, or to finish the marriage, till security was given for the full restitution of the palatinate. Philip understood this language: but being determined to throw the whole blame of the rupture on the English, he delivered into Bristol's hand a written promise, by which he bound himself to procure the restoration of the palatinate either by persuasion or by every other possible means; and when he found that this concession gave no satisfaction, he ordered the infanta to lay aside the title of *Princess of Wales*, which she bore after the arrival of the dispensation from Rome, and to drop the study of the English language; and as he knew that such rash counsels as now governed the court of England would not stop at the breach of the marriage-treaty, he immediately ordered preparations for war to be made throughout all his dominions.

Britain.
43
Buckingham pre-
vails on him
to resolve against the
marriage.

A match for prince Charles was soon after negotiated with Henrietta, daughter of the great Henry IV. and this met with much better success than the former. However, the king had not the same allurements in prosecuting this match as the former, the portion promised him being much smaller; but, willing that his son should not be altogether disappointed of a bride, as the king of France demanded only the same terms that had been offered to the court of Spain, James thought proper to comply. In an article of this treaty of marriage, it was stipulated, that the education of the children till the age of 13 should belong to the mother; and this probably gave that turn towards popery which has since proved the ruin of the unfortunate family of Stuart.

44
Philip obliges himself to procure the restitution of the palatinate.

James now, being deprived of every other hope of relieving his son-in-law but by force of arms, declared war against Spain and the emperor, for the recovery of the palatinate; 6000 men were sent over into Holland to assist prince Maurice in his schemes against those powers; the people were every where elated at the courage of their king, and were satisfied with any war which was to exterminate the Papists. This army was followed by another consisting of 12,000 men, commanded by count Mansfeldt; and the court of France promised its assistance. But the English were disappointed in all their views: the troops being embarked

45
Match with
Henrietta
princess of
France.

46
Unsuccessful expedition of count Mansfeldt.

Britain. at Dover, upon failing to Calais, found no orders for their admission. After waiting for some time, they were obliged to sail towards Zealand, where no proper measures were yet consulted for their disembarkation. Mean while, a peñential disorder crept in among them, so long cooped up in narrow vessels: half the army died while on board; and the other half, weakened by sickness, appeared too small a body to march into the palatinate; and thus ended this ill-concerted and fruitless expedition. Whether this misfortune had any effect on the king's constitution or not, is uncertain; but he was soon after seized with a tertian ague, which put an end to his life on the 27th of March 1625, after having lived 59 years, and reigned over England 22, and over Scotland almost as long as he had lived.

48
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James.
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James was succeeded by his son Charles I. who ascended the throne amidst the highest praises and caresses of his subjects for what was perhaps the most blame-worthy action of his life, namely, his breaking off the match with the Spanish princes, and procuring the rupture with the house of Austria. Being young and inexperienced, he regarded these praises as sincere; and therefore was so impatient to assemble the great council of the nation, that he would gladly, for the sake of dispatch, have called together the same parliament which sat under his father, and which lay at that time under prorogation. But being told that such a measure would appear unusual, he issued writs for summoning a new parliament on the 7th of May; and it was not without regret that the arrival of the princess Henrietta, whom he had espoused by proxy, obliged him to delay, by repeated prorogations, their meeting till the 18th of June, when they assembled at Westminster for the dispatch of business.

Charles inherited from his father great distrests for money, very high notions of the royal prerogative, and a violent attachment to episcopacy. As to his character, he seems to have been obstinate, though not resolute; and therefore, though it was scarce ever possible to make him give up his point, he never could carry on his designs with that spirit which was necessary for their success. In other respects, he appears to have possessed every virtue requisite to constitute the character of a good man. At present believing his subjects to be in perfect friendship with him as he was with them, he resolved that their bounty to him should be entirely unasked, and the genuine effect of mutual confidence and regard. Accordingly, his discourse to the parliament which was full of simplicity and cordiality; he lightly mentioned the occasion he had for supply. He employed no intrigue to influence the suffrages of the members. He would not even allow the officers of the crown, who had seats in the house, to mention any particular sum which he had occasion for; but trusted entirely to the wisdom and affection of his parliament, who perfectly well knew his circumstances.

It is almost impossible to read without indignation an account of the return made by the commons to this generous behaviour of their sovereign. They knew that all the money granted by the last parliament had been expended on military and naval preparations; and that great anticipations were likewise made on the revenues of the crown. They were not ignorant that Charles was loaded with a debt contracted by his father, who had borrowed money both from foreign

princes, and from his own subjects. They had learned by experience, that the public revenues could with difficulty maintain the dignity of the crown, even under the ordinary charges of government. They were sensible that the present war was, very lately, the result of their own importunate applications and intreaties, and that they had solemnly engaged to support their sovereign in the management of it. They were acquainted with the difficulty of military enterprises directed against the whole house of Austria; against the king of Spain, possessed of the greatest riches and most extensive dominions of any prince in Europe; against the emperor Ferdinand, hitherto the most fortunate monarch of the age, who had subdued and astonished Germany by the rapidity of his victories. Deep impressions they saw must be made by the British sword, and a vigorous offensive war be waged against these mighty potentates, ere they would resign the palatinate which they had now fully subdued, and which they held in secure possession by its being surrounded with all their other territories. To answer, therefore, all these great and important ends; to satisfy their young king in the first request he made them; to prove their sense of the many royal virtues, particularly economy, with which Charles was endued; the commons thought proper to confer on the king a supply of £. 1,125,000. To search for the reasons of such an extravagant piece of conduct would be needless; it is impossible they could be good.

It is not to be supposed that Charles, or any person of common sense, could be insensible of such treatment as this; he behaved, however, with great moderation. He represented in the most explicit manner the necessity there was for a large supply: he even condescended to use intreaties: he said that this request was the first he had ever made them; that he was young, and in the commencement of his reign; and if he now met with kind and dutiful usage, it would endear him to the use of parliaments, and would for ever preserve an entire harmony between him and his people.—To these reasons and intreaties, the commons remained inexorable; they even refused the addition of two fifteenths to the former supply. Instead of this, they renewed their ridiculous complaints against the growth of popery, which was now their only grievance. They showed their intolerant spirit by demanding a strict execution of the penal laws against the catholics; and remonstrated against some late pardons granted to priests. They attacked Montague, one of the king's chaplains, on account of a moderate book which he had lately composed, and which, to their great disgust, saved virtuous catholics as well as other Christians from eternal torments. Charles gave them a gracious and complaisant answer; but firmly resolved to abate somewhat of the rigorous laws against that unfortunate party, which his engagements with France absolutely required. No measure, however, throughout the whole reign of this prince, was more disgustful to his bigoted subjects, or by its consequences more fatal to himself, than this resolution. The Puritans had continued to gain ground during the whole reign of James, and now formed the majority of the house of commons; in consequence of which, petitions were presented to the king for replacing such able clergymen as had been silenced for want of conformity to the ceremonies. They

Britain.

54
King's resolu-
tion to re-
vive the Ca-
tholics.

also.

⁵⁵ ^{Britain.} also enacted laws for the strict observance of Sunday, which they affected to call the *sabbath*, and which they sanctified with the most melancholy indolence; and it is worthy of notice, that the different appellations of *Sunday* and *sabbath* were at that time known symbols of the different parties.—In consequence of this behaviour in Charles's first parliament, it was dissolved on the 12th of August 1625, and a new one called on February 6th 1626.

⁵⁶ ^{His scheme to raise money.} During this interval Charles had been obliged to borrow from his subjects on privy-seals; the advantage of which was but a small compensation for the disgust it occasioned. By means, however, of that supply, and some other expedients, he was enabled to equip his fleet, though with difficulty. It was designed against Spain, but performed nothing worth notice, and its bad success increased the clamours against the court.

⁵⁷ ^{Proceedings of his second Parliament.} Charles's second parliament immediately adopted the same views with the former; however, they voted him a supply of three subsidies (L.168,000), and three fifteenths; but the passing this vote into a law was reserved until the end of the session, that in the mean time they might have an opportunity of forcing the king to make what concessions they pleased. This harsh and undutiful conduct was greatly resented by Charles; but he found himself obliged to submit, and wait the event with patience. In the mean time they attacked the duke of Buckingham, who was become generally obnoxious; and he was also impeached by the earl of Bristol, on account of his conduct with regard to the Spanish negotiation. The earl's impeachment, however, was entirely overlooked, and the commons were able to prove nothing otherwise of any consequence against him. The king imagining that Buckingham's greatest crime was the having been so much in favour with his sovereign, commanded the house expressly not to meddle with his minister and servant, but to finish in a few days the bill they had begun for the subsidies; otherwise they must expect to sit no longer.

⁵⁸ ^{The commons dissolved.} Suggestions of this kind had a bad effect; and when the king proceeded further to throw into prison two members of the house who had managed the impeachment against Buckingham, the commons declared that they would proceed no further in business till they had satisfaction in their privileges. Charles alleged as the reason of this measure, certain seditious expressions, which, he said, had, in their accusation of the duke, dropped from these members. Upon inquiry it appeared that no such expressions had been used, and the members were accordingly released. Soon after, the house of lords, moved by the example of the commons, claimed liberty for the earl of Arundel, who had been lately confined in the tower; and after many fruitless evasions the king was obliged, though somewhat ungracefully, to comply.

The next attack made by the commons would have proved decisive, had it succeeded, and would have reduced the king to an absolute dependence on his parliament. They were preparing a remonstrance against the levying of tonnage and poundage without consent of parliament. This article, together with the new impositions laid on merchandize by James, constituted near one-half of the crown revenues; and after having gained this point, they were to petition the

⁵⁹ ^{Britain.} king, which then would have been the same thing with commanding him, to remove Buckingham from his presence and councils. The king, however, being alarmed at the yoke they were preparing for him, dissolved his parliament a second time, June 15. 1626.

Charles having thus made such a breach with his parliament as there was no hopes of repairing, was obliged to have recourse to the exercise of every branch of his prerogative in order to supply himself with money. A commission was openly granted to compound with the catholics, and agree for dispensing with the penal laws enacted against them; and by this expedient the king, indeed, filled his coffers, but gave universal disgust to his subjects. From the nobility he desired assistance: from the city he required a loan of L. 100,000. The former contributed slowly: but the latter, covering themselves under many pretences and excuses, gave at last a flat denial. In order to equip a fleet, a distribution by order of the council was made to all the maritime towns; and each of them was required, with the assistance of the adjacent counties, to arm as many vessels as were appointed them. The city of London was rated at 20 ships: and this is the first appearance, in Charles's reign, of ship money; a taxation which had once been imposed by Elizabeth, but which, when carried some steps farther by Charles, produced the most violent discontents.—These methods of supply were carried on with some moderation, till news arrived of the king of Denmark being totally defeated by count Tilly the Imperial general; but money then becoming more than ever necessary, it was suggested in council, that the most speedy, equal, and convenient method of loan supply was by a general loan from the subject, according as every man was assessed in the rolls of the last subsidy. That precise sum was required which each would have paid, had the vote of four subsidies been passed into a law: care, however, was taken, that the sums thus exacted were not to be called subsidies but loans; but it was impossible to avoid observing, that thus the liberty of the subject was entirely destroyed, and all parliaments rendered at once superfluous.

Many people throughout England refused these loans, and some were even active in encouraging their neighbours to insist upon their common rights and privileges. By warrant of the council, these were thrown into prison. Most of them patiently submitted to confinement, or applied by petition to the king, who commonly released them. Five gentlemen, however, Sir Thomas Darnel, Sir John Corbet, Sir Walter Earl, Sir John Heweningham, and Sir Edmond Hamden, demanded release, not as a favour from the court, but as their due by the laws of their country. No particular cause was assigned for their commitment. The special command of the king and council alone was pleaded. And it was alleged, that by law this was not sufficient reason for refusing bail or release to the prisoners. The question was brought to a solemn trial before the court of king's bench; and the whole kingdom was attentive to the issue of the cause. By the debates on this subject it appeared, that personal liberty had been secured by no less than six different statutes, and by an article in magna charta itself. It appeared, that, in times of turbulence and sedition, the princes infringed upon these laws; and of this also many examples were produced. The difficulty then lay

⁵⁹ ^{Britain.} Parliament dissolved.

⁶⁰ ^{Ship-money.}

⁶¹ ^{A general loan required.}

⁶² ^{Five gentlemen resolved to stand trial.}

Britain. to determine when such violent measures were necessary; but of that the court pretended to be the supreme judge. As it was legal, therefore, that these five gentlemen should plead the statute, by which they might demand bail, so it was expedient in the court to remand them to prison, without determining on the necessity of taking bail for the present. This was a cruel evasion of justice; and, in fact, satisfied neither party. The court insisted that no bail could be taken; the country exclaimed that the prisoners ought to be set free.

63
ar decla-
l against
aucc.

While the king was thus embroiled with his parliament at home, and with powerful nations abroad, he rashly engaged in a war with France, a kingdom with which he had but lately formed the most natural alliance. All historians agree that this war proceeded from the rivalry of the duke of Buckingham and cardinal Richelieu; both of whom were in love with the queen of France; and an inveterate enmity being thus produced between these favourites, they resolved to involve their respective nations in the dispute. However this be, war was declared against France; and Charles was taught to hope, that hostilities with that kingdom would be the surest means of procuring tranquillity at home.—The success of this war was proportionable to the wisdom with which it was commenced. Buckingham was appointed commander; and he being entirely unacquainted both with sea and land service, managed matters so ill, that he lost two thirds of his army, and returned in total discredit both as an admiral and general.

64
d success-
Bucking-
m.

The discontent in England now rose to such an height, that there was reason to apprehend an insurrection or rebellion. Charles was also reduced to the greatest distress for want of money. That which he had levied by virtue of his prerogative came in very slowly, and it was dangerous to renew the experiment on account of the ill humour of the nation in general. A third parliament therefore was called, March 17th 1628; whom Charles plainly told at the beginning of the session, that "if they should not do their duties, in contributing to the necessities of the state, he must, in discharge of his conscience, use those other means which God had put into his hands, in order to save that which the follies of some particular men might otherwise put in danger." This parliament behaved in a much more reasonable manner than either of the two former ones. The nation was now really aggrieved by the late arbitrary proceedings. They began with voting against arbitrary imprisonments and forced loans; after which, five subsidies (280,000*l.*) were voted to the king. With this sum, though much inferior to his wants, Charles declared himself well satisfied; and even tears of affection started in his eye when informed of this concession: the commons, however, resolved not to pass this vote into a law, before they had obtained from the king a sufficient security that their liberties should be no longer violated as they had formerly been. They resolved to frame a law, which they were to call a *petition of right*, in which they should collect all the arbitrary exertions of the prerogative which Charles had exposed to their view, and these they were to assault at once by their petition. The grievances now complained of were, forced loans, benevolences, taxes without consent of parliament, arbitrary imprisonments, billeting soldiers, and martial law. They pretended not, as they

Britain. affirmed, to any unusual power or privileges; nor did they intend to infringe the royal prerogative in any respect: they aimed only at securing those rights and privileges derived from their ancestors.

67
Duplicitv of
the king.

The king, on his part, now began plainly to show, that he aimed at nothing less than absolute power. This reasonable petition he did his utmost to evade, by repeated messages to the house, in which he always offered his royal word that there should be no more infringements on the liberty of the subject. These messages, however, had no effect on the commons: they knew how insufficient such promises were, without further security; and therefore the petition at last passed both houses, and nothing was wanting but the royal assent to give it the force of a law. The king accordingly came to the house of peers, sent for the commons, and being seated in the chair of state, the petition was read to him. In answer to it, he said, "The king willeth, that right be done according to the laws and customs of the realm, and that the statutes be put into execution; that his subjects may have no cause to complain of any wrong or oppression contrary to their just rights and liberties, to the preservation whereof he holds himself in conscience as much obliged as of his own prerogative."

This equivocal answer was highly resented. The commons returned in very ill humour. Their indignation would undoubtedly have fallen on the unfortunate catholics, had not their petition against them already received a satisfactory answer. To give vent to their present wrath, therefore, they fell on Dr Manwaring, who had preached a sermon, and, at the special command of the king, printed it; which was now found to contain doctrines subversive of all civil liberty. It taught, that though property was commonly lodged in the subject, yet, whenever any exigency required supply, all property was transferred to the sovereign; that the consent of parliament was not necessary for the imposition of taxes; and that the divine laws required compliance with every demand, however irregular, which the prince should make upon his subjects. For these doctrines Manwaring was sentenced to be imprisoned during the pleasure of the house; to be fined 1000*l.* to the king; make submission and acknowledgment for his offence; be suspended three years; be incapable of holding any ecclesiastical dignity or secular office; and that his book be called in and burnt. No sooner, however, was the session ended, than Manwaring received a pardon, and was promoted to a living of considerable value. Some years afterwards he was promoted to the see of St Asaph. At last, the king, He at last
68
seeing it was impossible to carry his point, yielded to give his as-
the importunities of parliament. He came to the sent to the
house of peers, and pronouncing the usual form of petition.
words, "Let it be law as is desired," gave full sanction and authority to the petition. The house re-
founded with acclamations, and the bill for five sub-
sidies immediately passed.

The commons, however, were not yet satisfied; they began again to attack Buckingham, against whom they were implacable: they also asserted, that the levying of tonnage and poundage without consent of parliament was a palpable violation of the ancient liberties of the people, and an open infringement of the petition of right so lately granted. The king, in order to prevent a re-
69
Parliament
prorogued.

Britain.

monstrance on that subject, suddenly prorogued the parliament, on June 26th, 1628.

70
Buckingham murdered.

The commons soon got rid of their enemy Buckingham; who was murdered, on the 23d of August this same year, by one Felton who had formerly served under him as a lieutenant. The king did not appear much concerned at his death, but retained an affection for his family throughout his whole lifetime. He desired also that Felton might be tortured, in order to extort from him a discovery of his accomplices; but the judges declared, that though that practice had been formerly very common, it was altogether illegal.

71
Contentions about tonnage and poundage.

In 1629, the usual contentions between the king and his parliament continued. The great article on which the commons broke with their sovereign, and which finally created in him a disgust at all parliaments, was their claims with regard to tonnage and poundage. The dispute was, whether this tax could be levied without consent of parliament or not. Charles, supported by multitudes of precedents, maintained that it might; and the parliament, in consequence of their petition of right, asserted that it could not. The commons were resolved to support their rights; and the disputes concerning tonnage and poundage went hand in hand with some theological controversies; particularly concerning Arminianism, which the Puritans, who now formed the majority of the nation, opposed with the greatest violence; and which consequently crept in among those who professed episcopacy, where it hath still maintained its ground more than in any other party.

The commons began with summoning before them the officers of the custom-house, to give an account by what authority they had seized the goods of those merchants who had refused to pay the duties of tonnage and poundage. The barons of exchequer were questioned with regard to their decrees on that head. The sheriff of London was committed to the Tower for his activity in supporting the officers of the custom-house. The goods of Rolles, a merchant, and member of the house, being seized for his refusal to pay the duties, complaints were made of this violence, as if it were a breach of privilege. Charles, on the other hand, supported his officers in all these measures, and the quarrel between him and the commons became every day higher. Sir John Elliot framed a remonstrance against tonnage and poundage, which he offered to the clerk to read; but it was refused, and he then read it himself. The question being called for, Sir John Finch the speaker said, that he had a command from the king to adjourn, and to put no question; upon which he rose and left the chair. The whole house was in an uproar; the speaker was pushed back into the chair, and forcibly held in it, till a short remonstrance was formed, which was instantaneously passed by almost universal acclamation. Papists and Arminians were now declared capital enemies to the commonwealth. Those who levied tonnage and poundage were branded with the same epithet. And even the merchants, who should voluntarily pay these duties, were declared betrayers of English liberty, and public enemies. The doors being locked, the gentleman-usher of the house of lords, who was sent by the king, could get no admittance till this remonstrance was finished. By the king's order he took the mace from the table, which put an end to their pro-

72
Parliament dissolved.

ceedings, and on the 10th of March the parliament was dissolved. Some of the members were imprisoned and fined; but this severity served only to increase the general discontent, and point out the sufferers as proper leaders for the popular party.

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Charles being now disgusted with parliaments, resolved to call no more; but finding himself destitute of resources, was obliged to make peace with the two powers with which he was at war. A treaty was signed with France on the 14th of April, and another with Spain on the 5th of November 1630, by which Charles bound himself to observe a neutrality with regard to the affairs of the continent. His conduct to his subjects cannot now appear entirely blameless, nor the general discontent altogether without foundation. As if, however, he had resolved to ruin himself, and to lose the small degrees of affection which remained among his subjects, Charles now began to set about making innovations in religion. Archbishop Laud had obtained a prodigious ascendancy over the king; and, by his superstitious attachment to foolish ceremonies, led him into a conduct that proved fatal to himself and to the kingdom in general. The humour of the nation ran at that time in a channel perfectly the reverse of superstition. The ancient ceremonies which had been sanctified by the permission and practice of the first reformers, could scarce be retained in divine service. Laud chose this time, of all others the most improper, for renewing the ceremonies of the fourth and fifth century, when the Christian church, as is well known, was sunk into those superstitions which were afterwards continued and augmented by the policy of the church of Rome. So openly were these tenets espoused, that not only the discontented Puritans believed the church of England to be relapsing fast into the Romish superstition, but the court of Rome itself entertained hopes of regaining its authority in this island. To forward Laud's good intentions, an offer was twice made him, in private, of a cardinal's hat; which he declined accepting. His answer was (as he says himself), that "something dwelt within him which would not suffer his compliance, till Rome was other than it is." It must be confessed, however, that though Laud deserved not the appellation of a *Papist*, the genius of his religion was, though in a less degree, the same with that of the Romish. The same profound respect was exacted to the sacerdotal character; the same submission to the creeds and decrees of synods and councils required; the same pomp and ceremony was affected in worship; and the same superstitious regard to days, postures, meats, and vestments. Orders were given, and rigorously insisted on, that the communion-table should be removed from the middle of the area where it had hitherto stood in all churches except cathedrals. It was placed at the east end, railed in, and denominated an *altar*; as the clergyman who officiated commonly received the appellation of *priest*. All kinds of ornaments, especially pictures, were introduced. Some of these, upon inquiry, were found to be the very same that were to be met with in the mass-book. The crucifix too, that perpetual consolation of all pious Catholics, and terror to all sound Protestants, was not forgot on this occasion.

73
Peace with France and Spain.

74
The king attempts to introduce new religious ceremonies.

In return for Charles's indulgence towards the church, Laud and his followers took care to magnify

ca

Britain. on every occasion the regal authority, and to treat with the utmost disdain or detestation all puritanical pretensions to a free and independent constitution. From this subjection, however, they took care to exclude themselves, and insisted upon a divine and apostolical charter in preference to a legal and parliamentary one. The sacerdotal character was magnified as sacred and indefeasible; all right to spiritual authority, or even to private judgment in spiritual subjects, was refused to profane laymen: ecclesiastical courts were held by bishops in their own name, without any notice taken of the king's authority: and Charles, though extremely jealous of every claim in popular assemblies, seemed rather to encourage than repress those encroachments of his clergy.

75. The principles which exalted prerogative were put in practice during the whole time that Charles ruled without parliaments. He wanted money for the support of government; and he levied it, either by the revival of obsolete laws, or by violations of the privileges. Though humane and gentle in his nature, he gave way to severities in the star-chamber and high commission, which seemed necessary in order to support the present mode of administration, and suppress the rising spirit of liberty throughout the kingdom. Tonnage and poundage were continued to be levied by royal authority alone. The former arbitrary impositions were still exacted; and even new impositions laid upon different kinds of merchandize. The custom-house officers received orders from the council to enter into any house, warehouse, or cellar; to search any trunk or chest; and to break any bulk whatever, in default of the payment of customs. In order to exercise the militia, each county by an edict of the council was assessed in a certain sum for maintaining a muster-master appointed for that service. Compositions were openly made with recusants, and the Popish religion became a regular part of the revenue. A commission was granted for compounding with such as were possessed of crown-lands on defective titles; and on this pretence some money was exacted of the people, &c.

76. While the English were in the utmost discontent, and almost ready to break out in open rebellion by these arbitrary proceedings, Charles thought proper to attempt setting up episcopacy in Scotland. The canons for established ecclesiastical jurisdiction were promulgated in 1635, and were received without much appearance of opposition; yet with great inward apprehension and discontent. The first reading of the liturgy was attempted in the cathedral church of St Giles in Edinburgh, in 1637; but this produced such a tumult, that it was not thought safe to repeat the experiment. An universal combination against the religious innovations began immediately to take place; but Charles, as if obstinately bent on his own destruction, continued inflexible in his purpose, though he had nothing to oppose to the united force of the kingdom but a proclamation, in which he pardoned all past offences, and exhorted the people to be more obedient for the future, and to submit peaceably to the use of the liturgy. This proclamation hastened forward the insurrection which had been slowly advancing before. 77. Four tables, which were called, were formed in Edinburgh. One consisted of nobility, another of gentry, a third of ministers, and the fourth of burghesses.

The table of gentry was divided into many subordinate ones, according to their different counties. In the hands of the four tables, the authority of the whole kingdom was placed. Orders were issued by them, and every where obeyed with the utmost regularity; and among the first acts of their government was the production of the COVENANT.

This famous covenant consisted of a renunciation of Popery, formerly signed by James in his youth, and filled with many virulent invectives against that party. A bond of union followed, by which the subscribers obliged themselves to resist all religious innovations, and to defend each other against all opposition whatsoever: And all this for the greater glory of God, and the greater honour and advantage of their king and country. The covenant was subscribed by people of all ranks and conditions. Few disapproved of it in their hearts, and still fewer dared openly to condemn it. The king's ministers and counsellors themselves were mostly of the same way of thinking; and none but rebels to God, and traitors to their country, it was thought, would withdraw themselves from so salutary and pious a combination.

The king now began to be alarmed. He sent the marquis of Hamilton, as commissioner, with authority to treat with the covenanters. He required the covenant to be renounced and recalled; and he thought that on his part he made very satisfactory concessions, when he offered to suspend the canons and liturgy till in a fair and legal way they could be received, and so to model the high commission that it should no longer give offence to his subjects. In answer to this demand the covenanters told him, they would sooner renounce their baptism; and invited the commissioner himself to sign it. Hamilton returned to London; made another fruitless journey with new conclusions to Edinburgh; returned again to London, and was immediately sent back with still more satisfactory concessions. The king was now willing to abolish entirely the canons, the liturgy, and the high-commission court; he even resolved to limit extremely the power of the bishop, and was content if on any terms he could retain that order in the church of Scotland. And to ensure all these gracious offers, he gave Hamilton authority to summon first an assembly, and then a parliament, where every national grievance should be redressed.—These successive concessions only showed the weakness of the king, and encouraged the malcontents to rise in their demands. The offer, however, of an assembly and a parliament, in which they expected to be entirely masters, was very willingly embraced by the covenanters.

80. Charles, perceiving what advantage his enemies had reaped from their covenant, resolved to have a covenant also on his side; and he ordered one to be drawn up for that purpose. It consisted of the same violent renunciation of Popery with the other; which, though the king did not approve of it, he thought proper to adopt, in order to remove all the suspicions entertained against him. As the covenanters, in their bond of mutual defence against all opposition, had been careful not to except the king; Charles had formed a bond which was annexed to this renunciation, and which expressed the subscribers loyalty and duty to his majesty. But the covenanters perceiving that this new covenant was only meant to weaken and divide them,

Britain. them, received it with the utmost scorn and detestation. And, without delay, they proceeded to model the assembly from which such great achievements were expected.

81
Violent
proceedings
of the assembly.

The assembly met at Glasgow in 1638. A firm determination had been entered into of utterly abolishing episcopacy; and, as a preparative to it, there was laid before the presbytery of Edinburgh, and solemnly read in all the churches of the kingdom, an accusation against the bishops, as guilty, all of them, of heresy, simony, bribery, perjury, cheating, incest, adultery, fornication, common-swearing, drunkenness, gaming, breach of the sabbath, and every other crime which had occurred to the accusers. The bishops sent a protest, declining the authority of the assembly; the commissioner too protested against that court, as illegally constituted and elected; and, in his majesty's name, dissolved it. This measure was foreseen, and little regarded. The court still continued to sit and do business. All the acts of assembly, since the accession of James to the crown of England, were, upon pretty reasonable grounds, declared null and invalid. The acts of parliament which affected ecclesiastical affairs were on that very account supposed to have no authority. And thus the whole fabric which James and Charles, in a long course of years, had been rearing with much care and policy, fell at once to the ground. The covenant likewise was ordered to be signed by every one, under pain of excommunication.

82
Preparations for war by the covenanters.

In 1639, the covenanters prepared in earnest for war. The earl of Argyle, though he long seemed to temporize, at last embraced the covenant; and he became the chief leader of that party. The earls of Rothes, Cassils, Montrose, Lothian, the lords Lindesay, Loudon, Yester, and Balmerino, also distinguished themselves. Many of their officers had acquired reputation in the German wars, particularly under Gullavus; and these were invited over to assist their country in their present necessity. The command was entrusted to Lesly, a foldier of experience and ability. Forces were regularly enlisted and disciplined. Arms were commissioned and imported from foreign countries. A few castles which belonged to the king, being unprovided of victuals, ammunition, and garrisons, were soon seized. And the whole country, except a small part, where the marquis of Huntly still adhered to the king, being in the covenanters hands, was soon put into a tolerable posture of defence.

83
By the king.

Charles, on the other hand, was not deficient in his endeavours to oppose this formidable combination. By regular economy he had not only paid all the debts contracted in the French and Spanish wars, but had amassed a sum of L.200,000; which he had reserved for any sudden exigency. The queen had great interest with the catholics, both from the sympathy of religion, and from the favours and indulgences which she had been able to procure them. She now employed her credit, and persuaded them, that it was reasonable to give large contributions, as a mark of their duty to the king, during this urgent necessity: And thus, to the great scandal of the Puritans, a considerable supply was gained. The king's fleet was formidable and well supplied. Having put 5000 land forces on board, he intrusted it to the marquis of Hamilton, who had orders to sail to the frith of Forth, and cause a diver-

sion in the forces of the malcontents. An army was levied of near 20,000 foot and 3000 horse; and was put under the command of the earl of Arundel, a nobleman of great family, but celebrated neither for military nor political abilities. The earl of Essex, a man of strict honour, and extremely popular, especially among the soldiery, was appointed lieutenant-general; The earl of Holland was general of the horse. The king himself joined the army, and he summoned all the peers of England to attend him. The whole had the appearance of a splendid court rather than a military armanent, and in this situation the camp arrived at Berwick.

Britain.

The Scottish army was equally numerous with that of the king, but inferior in cavalry. The officers had more experience; and the soldiers, though ill disciplined and armed, were animated, as well by the national aversion to England, and the dread of becoming a province to their old enemy, as by that religious enthusiasm which was the occasion of the war. Yet so prudent were their leaders, that they immediately sent very submissive messages to the king, and craved leave to be admitted to a treaty.—Charles, as usual, took the worst course. He concluded a sudden pacification, in which it was stipulated, that he should withdraw his fleet and army; that within 48 hours the Scots should dismiss their forces; that the king's forts should be restored to him; his authority be acknowledged; and a general assembly and parliament be immediately summoned, in order to compose all differences.

84
Peace concluded.

This peace was of no long duration. Charles could not prevail on himself to abandon the cause of episcopacy, and secretly intended to seize every favourable opportunity to recover the ground he had lost. The assembly, on the other hand, proceeded with the utmost fury and violence. They voted episcopacy to be unlawful in the church of Scotland: they stigmatized the canons and liturgy as popish: they denominated the high commission tyranny. The parliament, which sat after the assembly, advanced pretensions which tended to diminish the civil power of the monarch; and, what probably affected Charles still more, they were proceeding to ratify the acts of assembly, when by the king's instructions Traquair the commissioner prorogued them. And on account of these claims, which might have been easily foreseen, war was recommenced the same year.

85
War again declared.

No sooner had Charles concluded the peace, than he found himself obliged to disband his army, on account of his want of money; and as the soldiers had been held together merely by mercenary views, it was not possible, without great trouble, expence, and loss of time, to reassemble them. On the contrary, the covenanters, in dismissing their troops, had been careful to preserve nothing but the appearance of a pacification. The officers had orders to be ready on the first summons: The soldiers were warned not to think the nation secure from an English invasion: And the religious zeal which animated all ranks of men made them immediately fly to their standards, as soon as their trumpet was sounded by their spiritual and temporal leaders.

In 1640, however, the king made shift to draw an army together; but finding himself unable to support them, was obliged to call a parliament after an inter-

85
A parliament called
mission

Britain. mission of about 11 years. As the sole design of the king's calling this parliament was to obtain a supply, and the only reason they had for attending was to procure a redress of grievances, it is not to be supposed there could be any good agreement between them. The king accordingly insisted for money, and the parliament on their grievances, till a dissolution ensued. — To add to the unpopularity of this measure, the king, notwithstanding his dissolving the parliament, allowed the convocation to sit; a practice of which, since the reformation, there had been very few examples, and which was now by many deemed very irregular. Besides granting to the king a supply from the spirituality, the convocation, jealous of innovations similar to those which had taken place in Scotland, imposed an oath on the clergy and the graduates in the universities, by which every one swore to maintain the established government of the church, by archbishops, bishops, deans, chapters, &c. These steps were deemed illegal, because not ratified by consent of parliament; and the oath, containing an &c. in the middle of it, became a subject of general ridicule.

87
Solved.

88
Charles dissolved for money.

The king, disappointed of parliamentary subsidies, was obliged to have recourse to other expedients. The ecclesiastical subsidies served him in some stead; and it seemed but just that the clergy should contribute to the expence of a war which had been in a great measure of their own raising. He borrowed money from his ministers and courtiers; and so much was he beloved among them, that above 300,000 l. were subscribed in a few days. Some attempts were made towards forcing a loan from the citizens; but still repelled by the spirit of liberty, which was now become unconquerable. A loan of 40,000 l. was extorted from the Spanish merchants who had bullion in the tower. Coat and conduct money for the soldiery was levied on the counties; an ancient practice, but which was supposed to be abolished by the petition of right. All the pepper was bought from the East India Company upon trust; and sold, at a great discount, for ready money. A scheme was proposed for coining two or three hundred thousand pounds of base money. Such were the extremities to which Charles was reduced. The fresh difficulties, which amidst the present distresses were every day raised, with regard to the payment of ship-money, obliged him to exert continual acts of authority, augmented extremely the discontents of the people, and increased his indigence and necessities.

89
Royalists defeated at Newburn.

The present expedients, however, enabled the king, though with great difficulty, to march his army, consisting of 19,000 foot and 2000 horse. The earl of Northumberland was appointed general; the earl of Strafford, who was called over from Ireland, lieutenant-general; lord Conway, general of the horse. A small fleet was thought sufficient to serve the purposes of this expedition. The Scots, though somewhat superior, were sooner ready than the king's army, and marched to the borders of England. Notwithstanding their warlike preparations and hostile attempts, the covenanters still preserved the most submissive language to the king; and entered England with no other design, they said, than to obtain access to the king's presence, and lay their humble petition at his royal feet. At Newburn upon Tyne they were opposed by a detachment of 4500 men

under Conway, who seemed resolute to dispute with them the passage of the river. The Scots first intreated them, with great civility, not to stop them in their march to their gracious sovereign; and then attacked them with great bravery, killed several, and chased the rest from their ground. Such a panic seized the whole English army, that the forces at Newcastle fled immediately to Durham; and not yet thinking themselves safe, they deserted that town, and retreated into Yorkshire.

The Scots continued to advance; they dispatched messengers to the king, who was now arrived at York. They took care, after the advantage they had gained, to redouble their expressions of loyalty, duty, and submission to his person; and they even made apologies full of sorrow and contrition for their late victory. Charles was in a very distressed condition; and, in order to prevent the further advance of the Scots, agreed to a treaty, and named 16 English noblemen to meet with 11 Scots commissioners at Rippon. Strafford, upon whom, by reason of Northumberland's sickness, the command of the army had devolved, advised Charles rather to put all to hazard, than submit to such unworthy terms as he saw would be imposed upon him. He advised him to push forward and attack the Scots, and bring the affair to a quick decision; and if he were ever so unsuccessful, nothing worse could befall him than what from his inactivity he would certainly be exposed to; and, to show how easily this project might be executed, he ordered an assault to be made on some quarters of the Scots, and gained an advantage over them. This salutary advice Charles had not resolution to follow. He therefore resolved to call a council of the peers; and as he foresaw that they would advise him to call a parliament, he told them in his first speech, that he had already taken that resolution. In order to subsist both armies (for the king was obliged to pay his enemies, in order to save the northern counties), Charles wrote to the city, desiring a loan of 200,000 l. And the peers at York, whose authority was now much greater than that of their sovereign, joined in the same request.

90
Parliament meets.

The parliament met November 3d 1640: the house of commons had never been observed so numerous; and, that they might strike a decisive blow at once against the court, they began with the impeachment of the earl of Strafford.

91
Unhappy situation of Strafford.

That nobleman, who was considered as the prime minister, both on account of the credit he possessed with his master, and his own uncommon vigour and capacity, had now the misfortune of having incurred the hatred of all the three kingdoms. The Scots looked upon him as the capital enemy of their country. He had engaged the parliament of Ireland to advance large subsidies to be employed in a war against them: he had levied an army of 9000 men, with which he had menaced all their western coast: he had obliged the Scots who lived under his government to renounce the covenant, &c.: he had governed Ireland, first as deputy, and then as lord-lieutenant, during eight years, with great vigilance, activity, and prudence, but with very little popularity. In a nation so averse to the English government and religion, these very virtues were sufficient to draw on him the public hatred. His manners, besides, were at bottom haughty, rigid, and severe; and no sooner did adversity begin to seize him, than the con-

Britain. cealed aversion blazed up at once, and the Irish parliament used every expedient to aggravate the charge against him.

The universal discontent which prevailed throughout the English nation was all pointed against the earl of Strafford; though for no other reason but because he was the minister of state whom the king most favoured and trusted. His extraction was honourable, his paternal fortune considerable: yet envy attended his sudden and great elevation; and his former associates in popular counsels, finding that he owed his advancement to the desertion of their cause, represented him as the great apostate of the commonwealth, whom it behoved them to sacrifice as a victim to public justice.

From so terrible a combination against a single person, nothing else could be expected than what really happened. Strafford was impeached, most unjustly condemned, and at last executed, in the year 1641. It was not without extreme difficulty that the king could be brought to consent to his execution. He came to the house of lords, where he expressed his resolution never to employ Strafford again in any public business; but with regard to the treason for which he was condemned, he professed himself totally dissatisfied. The commons voted it a breach of privilege for the king to take notice of any bill depending before the house. Charles did not perceive, that his attachment to Strafford was the chief motive for the bill; and the greater proof he gave of this attachment to his favourite minister, the more inevitable did he render his destruction. The house of lords were intimidated, by popular violence, into passing the bill of attainder against the unfortunate earl. The same battery was next employed to force the king's assent. The populace flocked about Whitehall, and accompanied their demand of justice with the loudest clamours and most open menaces. A thousand idle reports of conspiracies, insurrections, and invasions, were spread abroad. On whatever side the king cast his eyes, he saw no resource nor security. All his servants, consulting their own safety rather than their master's honour, declined interposing with their advice between him and his parliament. The queen, terrified at the appearance of so great danger, pressed Charles, with tears, to satisfy his people in this demand, which it was hoped would finally content them. Archbishop Juxon alone had the courage to advise him, if he did not approve of the bill, by no means to consent to it.

Strafford, hearing of the king's irresolution and anxiety, wrote to him a letter, in which he desired his own execution, in order to give peace to the nation: and at last, after the most violent anxiety and doubt, Charles granted a commission to four noblemen, in his name, to give the royal assent to the bill; flattering himself, perhaps, that as neither his will consented to the deed, nor was his hand immediately engaged in it, he was the more free from all the guilt which attended it. These commissioners he empowered at the same time to give his assent to a bill yet more fatal to himself, viz. That the present parliament should not be dissolved, prorogued, or adjourned, without their own consent.

By this last bill Charles rendered the power of his enemies perpetual, as it was already uncontrollable. The reason of this extraordinary step was, that the

commons, from policy, more than necessity, had embraced the expedient of paying the two armies by borrowing money from the city. These loans they repaid afterwards by taxes levied on the people. At last the citizens, either of themselves, or by suggestion, began to start difficulties with regard to a farther loan which was demanded. "We make no scruple of trusting the parliament (said they), were we certain that the parliament was to continue till our repayment. But, in the present precarious situation of affairs, what security can be given us for our money?" In order to obviate this objection, the abovementioned bill was suddenly brought in, and having passed both houses with great rapidity, was at last brought to the king; who, being oppressed with grief on account of the unhappy fate of Strafford, did not perceive the pernicious consequence of the bill.

All this time the commons had ruled in other respects with an uncontrollable sway. Soon after the impeachment of Strafford, Laud was accused of high treason, and committed to custody. To avoid the like fate, the lord keeper Finch and secretary Windebank fled, the one into Holland, the other into France. The house instituted a new species of guilt, termed *delinquency*: those who had exercised the powers necessary for the defence of the nation during the late military operations, were now called *delinquents*. In consequence of this determination, many of the nobility and prime gentry of the nation, while only exerting, as they justly thought, the legal powers of magistracy, found themselves unexpectedly involved in this new crime of delinquency. The commons, however, by their institution, reaped this multiplied advantage; they disarmed the crown, they established the maxims of rigid law and liberty, and they spread the terror of their own authority. All the sheriffs who had formerly exacted ship money, though by the king's express command, were now declared delinquents. The farmers and officers of the customs who had been employed during so many years in levying tonnage, poundage, &c. were likewise denominated criminals of the same kind, and were afterwards glad to compound for a pardon, by paying 150,000 l. Every discretionary or arbitrary sentence of the star-chamber and high commission courts, which from their very nature were arbitrary, underwent a severe scrutiny; and all those who had concurred in such sentences, were voted to be liable to the penalties of law. No minister of the king, no member of the council, but what found himself exposed by this determination. The judges who had formerly given judgement against Hambden for refusing to pay ship-money, were accused before the peers, and obliged to find security for their appearance. Berkley, a judge of the king's bench, was seized by order of the house, even when sitting in his tribunal. The sanction of the lords and commons, as well as that of the king, was declared necessary for the confirmation of ecclesiastical canons. Monopolists and projectors, if of the king's party, were now expelled the house; but one Mildmay, a notorious monopolist, was allowed to keep his seat, because he was of the popular party. In short, the constitution was completely new-modelled; and during the first period of the transactions of this remarkable parliament, if we except Strafford's attainder, their merits in other respects so much overbalance their mistakes, as to in-

Britain. 95 His reasons for this step.

96 Laud imprisoned.

97 New crime of delinquency.

98 Partiality and injustice of the parliament.

92 Unjustly executed.

93 Distress of the king on account of his execution.

94 Charles renders the parliament perpetual.

Britain. title them to very ample praises from all lovers of liberty. Not only were former abuses remedied, and grievances redressed, great provision for the future was made by excellent laws against the return of the like complaints. And if the means by which they obtained such mighty advantages favoured often of artifice, sometimes of violence; it is to be considered, that revolutions of government cannot be effected by mere force of argument and reasoning; and that, factions being once excited, men can neither so firmly regulate the tempers of others, nor their own, as to ensure themselves against all exorbitancies.

Had the parliament stopped here, it had been happy for the nation; but they were now resolved to be satisfied with nothing less than the total abolition of monarchy. The king had promised to pay a visit, this summer, to his subjects in Scotland, in order to settle their government; and though the English parliament was very importunate with him to lay aside that journey, they could not prevail with him so much as to delay it. Having failed in this, they appointed a small committee of both houses to attend him, in order, as was pretended, to see the articles of pacification executed, but really to be spies upon the king, to extend still farther the ideas of parliamentary authority, as well as eclipse his majesty. Endeavours were even used, before Charles's departure, to have a protector of the kingdom appointed, with a power to pass laws without having recourse to the king. About this time, the king concluded the marriage of the princess Mary with William prince of Orange. He did not conclude this alliance without communicating his intentions to parliament, who were very well satisfied with the proposal. They adjourned from Sept. 9th, to October 20th, 1641.

Charles arrived in Scotland August 14th 1641, with a design to give full satisfaction if possible to this restless kingdom. Some good regulations were made; the bench of bishops, and lords of articles, were abolished; it was ordained that no man should be created a Scottish peer, who possessed not 10,000 marks (above 500 l.) of annual rent in the kingdom; a law for triennial parliaments was likewise enacted; and it was ordained, that the last act of every parliament should be to appoint the time and place for holding the parliament next ensuing; the king was also deprived of that power formerly exercised, of issuing proclamations which enjoined obedience under the penalty of treason. But the most fatal blow given to royal authority, and what in a manner dethroned the prince, was an article, that no member of the privy-council, in whose hands, during the king's absence, the whole administration lay, no officer of state, none of the judges, should be appointed but by advice and approbation of parliament. Charles even agreed to deprive of their seats four judges who had adhered to his interests; and their place was supplied by others more agreeable to the ruling party. Several of the covenanters were also sworn of the privy-council; and all the ministers of state, counsellors and judges, were, by law, to hold their places during life or good behaviour. The king, while in Scotland, conformed himself to the established church; he bestowed pensions and preferments on Henderson, Gillespy, and other popular preachers; he practised every art to soften, if not to gain, his greatest enemies; the earl of Argyll was created a marquis, Lord Loudon

Britain. an earl, and Lesly was dignified with the title of *Lord Leven*. But though Charles was thus obliged to heap favours on his enemies and overlook his friends, the former were not satisfied, as believing all he did proceeded from artifice and necessity; while some of the latter were disgusted, and thought themselves ill rewarded for their past services.

Argyle and Hamilton, being seized with an apprehension, real or pretended, that the earl of Crawford and others meant to assassinate them, left the parliament suddenly, and retired into the country: but, upon invitation and assurances, returned in a few days. This event, which in Scotland had no visible consequence, was commonly denominated the *incident*; but though the incident had no effect in Scotland, it was attended with very serious consequences in England. The English parliament immediately took the alarm; or rather probably were glad of the hint: they insinuated to the people, that the *malignants*, so they called the king's party, had laid a plot at once to murder them and all the gentry in both kingdoms. They applied therefore to Essex, whom the king had left general of the south of England; and he ordered a guard to attend them

In the mean time a most dangerous rebellion broke out in Ireland, with circumstances of unparalleled horror, bloodshed, and devastation. The old Irish, by the wife conduct of James, had been fully subdued, and proper means taken for securing their dependence and subjection for the future; but their old animosity still remained, and only wanted an occasion to exert itself. This they obtained from the weak condition to which Charles was reduced, and this was made use of in the following manner.

One Roger More, a gentleman descended from an ancient Irish family, but of narrow fortune, first formed the project of expelling the English, and asserting the independency of his native country. He secretly went from chieftain to chieftain, and roused up every latent principle of discontent. He maintained a close correspondence with lord Macguire, and Sir Phelim O'Neale, the most powerful of the old Irish; and by his persuasions soon engaged not only them, but the most considerable persons of the nation, into a conspiracy; and it was hoped, the *English of the pale*, as they were called, or the old English planters, being all catholics, would afterwards join the party which restored their religion to its ancient splendor and authority. The plan was, that Sir Phelim O'Neale, and the other conspirators, should begin an insurrection on one day throughout the provinces, and should attack all the English settlements; and that, on the very same day, lord Macguire and Roger More should surprize the castle of Dublin. They fixed on the beginning of winter for the commencement of this revolt; that there might be more difficulty in transporting forces from England. Succours to themselves, and supplies of arms, they expected from France, in consequence of a promise made them by cardinal Richelieu; and many Irish officers who had served in the Spanish troops had given assurances of their concurrence, as soon as they saw an insurrection entered upon by their Catholic brethren. News, which every day arrived from England, of the fury expressed by the commons against all Papists, struck fresh terror into the Irish nation, stimu-
lated

97
marriage
the prin-
Mary
with the
ince of
Orange.

100
Charles ar-
rives in
Scotland.

101
great
cessions.

103
English
parliament
desire a
guard.

103
Rebellion
breaks out
in Ireland.

Britain. lated the conspirators to execute their fatal purpose, and assured them of the concurrence of their countrymen.

Such a propensity was discovered in all the Irish to revolt, that it was deemed unnecessary as well as dangerous to trust the secret in many hands; and though the day appointed drew nigh, no discovery had yet been made to government. The king, indeed, had received information from his ambassadors, that something was in agitation among the Irish in foreign parts; but though he gave warning to the administration in Ireland, his intelligence was entirely neglected. They were awakened from their security only that very day before the commencement of hostilities. The castle of Dublin, by which the capital was commanded, contained arms for 10,000 men, with 35 pieces of cannon, and a proportionable quantity of ammunition. Yet was this important place guarded, and that too without any care, by no greater force than 50 men. Macguire and More were already in town with a numerous band of their retainers; others were expected that night; and next morning they were to enter upon what they esteemed the easiest of all enterprises, the surprisal of the castle. O'Connell, however, an Irishman, but a Protestant, discovered the conspiracy. The justices and council fled immediately to the castle, and reinforced the guards. The city was immediately alarmed, and all the Protestants prepared for defence. More escaped, but Macguire was taken; and Mahon, one of the conspirators, being likewise seized, first discovered to the justices the project of a general insurrection.

104
Horrid cruelties of the rebels;

But though O'Connell's discovery saved the castle from a surprize, Mahon's confession came too late to prevent the intended insurrection. O'Neale and his confederates had already taken arms in Ulster. The houses, cattle, and goods of the English were first seized. Those who heard of the commotions in their neighbourhood, instead of deserting their habitations, and assembling together for mutual protection, remained at home in hopes of defending their property; and fell thus separately into the hands of their enemies. An universal massacre now commenced, accompanied with circumstances of unequalled barbarity. No age, sex, or condition, was spared. All connections were dissolved, and death was dealt by that hand from which protection was implored and expected. All the tortures which wanton cruelty could devise, all the lingering pains of body, the anguish of mind, the agonies of despair, could not satiate revenge excited without injury, and cruelty derived from no cause. Such enormities, in short, were committed, that though attested by undoubted evidence, they appear almost incredible. The stately buildings or commodious habitations of the planters, as if upbraiding the sloth and ignorance of the natives, were consumed with fire, or laid level with the ground; and where the miserable owners, shut up in their houses, and preparing for defence, perished in the flames, together with their wives and children, a double triumph was afforded to their insulting foes. If any where a number assembled together, and resolved to oppose the assassins; they were disarmed by capitulations, and promises of safety, confirmed by the most solemn oaths. But no sooner had they surrendered, than the rebels, with perfidy equal to their cruelty,

made them share the fate of their unhappy countrymen. Others tempted their prisoners, by the fond love of life, to embroil their hands in the blood of friends, brothers, or parents; and having thus rendered them accomplices in their own guilt, gave them that death which they sought to shun by deserting it.

Such were the barbarities by which Sir Phelim O'Neale and the Irish in Ulster signalized their rebellion. More, shocked at the recital of these enormities, flew to O'Neale's camp; but found that his authority, which was sufficient to excite the Irish to a rebellion, was too feeble to restrain their inhumanity. Soon after, he abandoned the cause, and retired to Flanders. From Ulster, the flames of rebellion diffused themselves in an instant over the other three provinces of Ireland. In all places, death and slaughter were not uncommon; though the Irish in these other provinces pretended to act with moderation and humanity. But cruel and barbarous was their humanity! Not content with expelling the English from their houses, they stripped them of their very clothes, and turned them out naked and defenceless to all the severities of the season. The heavens themselves, as if conspiring against that unhappy people, were armed with cold and tempest unusual to the climate, and executed what the sword had left unfinished. By some computations, those who perished by all these cruelties are supposed to amount to 150 or 200,000; but by the most reasonable and moderate, they are made to amount only to 40,000; though probably even this account is not free of exaggeration.

The English of the pale, who probably were not at first in the secret, pretended to blame the insurrection, and to detest the barbarity with which it was accompanied. By their protestations and declarations they engaged the justices to supply them with arms, which they promised to employ in defence of government. But in a little time, the interests of religion were found to be more prevalent over them than regard and duty to their native country. They chose lord Gormonstone their leader; and, joining the old Irish, rivalled them in every act of cruelty towards the English Protestants. Besides many smaller bodies, dispersed over the kingdom, the main army of the rebels amounted to 20,000 men, and threatened Dublin with an immediate siege. Both the English and Irish rebels conspired in one imposture, by which they seduced many of their countrymen. They pretended authority from the king and queen, but especially the latter, for their insurrection; and they affirmed that the cause of their taking arms was to vindicate the royal prerogative, now invaded by the puritanical parliament. Sir Phelim O'Neale, having found a royal patent in the house of lord Caulfield, whom he had murdered, tore off the seal, and affixed it to a commission which he had forged for himself.

The king received intelligence of this insurrection while in Scotland, and immediately acquainted the Scots parliament with it. He hoped, as there had all along been such an outcry against Popery, that now, when that religion was appearing in its blackest colours, the whole nation would vigorously support him in the suppression of it. But here he found himself mistaken. The Scots considering themselves now as a republic, and conceiving hopes from the present distresses of Ire-

Britain.

105
Scots refuse to assist in quelling the rebellion.

Britain. land, they resolved to make an advantageous bargain for the success with which they should supply the neighbouring nation. Except dispatching a small body of forces, to support the Scots colonies in Ulster, they would, therefore, go no farther than to send commissioners to London, in order to treat with the parliament, to whom the sovereign power was in reality transferred. The king too, sensible of his utter inability to subdue the Irish rebels, found himself obliged, in this exigency, to have recourse to the English parliament, and depend on their assistance for supply. He told them that the insurrection was not, in his opinion, the result of any rash enterprize, but of a formed conspiracy against the crown of England. To their care and wisdom, therefore, he said, he committed the conduct and prosecution of the war, which, in a cause so important to national and religious interests, must of necessity be immediately entered upon, and vigorously pursued.

106
amous
duct of
English
liament.

The English parliament, now re-assembled, discovered in each vote the same dispositions in which they had separated. Nothing less than a total abolition of monarchy would serve their turn. But this project it had not been in the power of the popular leaders to have executed, had it not been for the passion which seized the nation for the presbyterian discipline, and the wild enthusiasm which at that time attended it. By the difficulties and distresses of the crown, the commons, who possessed alone the power of supply, had aggrandized themselves; and it seemed a peculiar happiness, that the Irish rebellion had succeeded, at such a critical juncture, to the pacification in Scotland. That expression of the king's, by which he committed to them the care of Ireland, they immediately laid hold of, and interpreted in the most unlimited sense. They had on other occasions been gradually encroaching on the executive power of the crown, which forms its principal and most natural branch of authority; but with regard to Ireland, they at once assumed it, fully and entirely, as if delivered over to them by a regular gift or assignment. And to this usurpation the king was obliged passively to submit, both because of his inability to resist, and lest he should expose himself still more to the charge of favouring the rebels; a reproach eagerly thrown upon him by the popular party as soon as they heard that the Irish pretended to act by his commission. Nay, to complete their character, while they pretended the utmost zeal against the insurgents, they took no steps for its suppression, but such as likewise gave them the superiority in those commotions which they foresaw must be so soon excited in England. They levied money under pretence of the Irish expedition, but reserved it for purposes which concerned them more nearly: they took arms from the king's magazines, but still kept them with a secret intention of making use of them against himself: whatever law they deemed necessary for aggrandizing themselves, they voted, under colour of enabling them to recover Ireland; and if Charles withheld his royal assent, the refusal was imputed to those pernicious counsels which had at first excited to Popish rebellion, and which still threatened total ruin to the Protestant interest throughout his dominions. And though no forces were for a long time sent over into Ireland, and very little money remitted during the extreme distress of that kingdom; so strong

Britain. was the people's attachment to the commons, that the fault was never imputed to those pious zealots, whose votes breathed nothing but death and destruction to the Irish rebels.

The conduct of the parliament towards the king now became exceedingly unreasonable, unjust, and cruel. It was thought proper to frame a general remonstrance of the state of the kingdom; and accordingly the committee, which at the first meeting of the parliament had been chosen for that purpose, were commanded to finish their undertaking. The king returned from Scotland November 25th 1641. He was received in London with the shouts and acclamations of the populace, and with every demonstration of regard and affection. Sir Richard Gournay, lord mayor, a man of great merit and authority, had promoted these favourable dispositions; and had engaged the populace, who so lately insulted the king, and who so soon after made furious war upon him, to give him these marks of their dutiful attachment. But all the pleasure which Charles reaped from this joyful reception was soon damped by the remonstrance of the commons, which was presented to him together with a petition of the like nature. The bad counsels which he followed were there complained of; his concurrence in the Irish rebellion plainly insinuated; the scheme laid for the introduction of popery and superstition inveigled against; and for a remedy to all these evils, the king was desired to entrust every office and command to persons in whom his parliament should have cause to confide. By this phrase, which was very often repeated in all the memorials and addresses of that time, the commons meant themselves and their adherents. To this remonstrance Charles was obliged to make a civil reply, notwithstanding his subjects had transgressed all bounds of respect and even good manners in their treatment of their sovereign.

108
Commons
assume the
sovereignty.

It would be tedious to point out every invasion of the prerogative now attempted by the commons: but finding themselves at last likely to be opposed by the nobility, who saw their own depression closely connected with that of the crown, they openly told the upper house, that "they themselves were the representatives of the whole body of the kingdom, and that the peers were nothing but individuals, who held their seats in a particular capacity; and therefore, if their lordships will not consent to acts necessary for the preservation of the people, the commons, together with such of the lords as are more sensible of the danger, must join together and represent the matter to his majesty." Every method proper for alarming the populace was now put in practice. The commons affected continual fears of destruction to themselves and to the whole nation. They excited the people by never-ceasing inquiries after conspiracies, by reports of insurrections, by feigned intelligence of invasions from abroad, and by discoveries of dangerous combinations at home against Papists and their adherents. When Charles dismissed the guard which they had ordered during his absence, they complained; and, upon his promising them a new guard under the command of the earl of Lindsey, they absolutely refused the offer: they ordered halberds to be brought into the hall where they assembled, and thus armed themselves against those conspiracies with which they pretended they were hourly threatened.

Britain. threatened. Several reduced officers, and young gentlemen of the inns of court, during this time of distress and danger, offered their service to the king. Between them and the populace there passed frequent skirmishes, which ended not without bloodshed. By way of reproach, these gentlemen gave the rabble the name of *round-heads*, on account of their short cropped hair; while they distinguished the others by the name of *cavaliers*. And thus the nation, which was before sufficiently provided with religious as well as civil causes of quarrel, was also supplied with party-names, under which the factions might rendezvous and signalize their mutual hatred.

107
Round-heads
and Cavaliers.

110
Bishops retire from
the house of
lords.

These tumults continued to increase about Westminster and Whitehall. The cry continually resounded against bishops and *rotten-hearted lords*. The former especially, being easily distinguishable by their habit, and being the object of violent hatred to all the sectaries, were exposed to the most dangerous insults. The archbishop of York, having been abused by the populace, hastily called a meeting of his brethren. By his advice a protestation was drawn and addressed to the king and the house of lords. The bishops there set forth, that though they had an undoubted right to sit and vote in parliament, yet in coming thither they had been menaced, assaulted, affronted, by the unruly multitude, and could no longer with safety attend their duty in the house. For this reason they protested against all laws, votes, and resolutions, as null and invalid, which should pass during the time of their forced absence. This protestation, which, though just and legal, was certainly ill-timed, was signed by twelve bishops, and communicated to the king, who hastily approved of it. As soon as it was presented to the lords, that house desired a conference with the commons, whom they informed of this unexpected protestation. The opportunity was seized with joy and triumph. An impeachment of high treason was immediately sent up against the bishops, as endeavouring to subvert the fundamental law, and to invalidate the authority of the legislature. They were, on the first demand, sequestered from parliament, and committed to custody. No man in either house ventured to speak a word in their vindication; so much was every one displeased at the egregious imprudence of which they had been guilty. One person alone said, that he did not believe them guilty of high treason; but that they were stark mad, and therefore desired they might be sent to bedlam.

This was a fatal blow to the royal interest; but it soon felt a much greater from the imprudence of the king himself. Charles had long suppressed his resentment, and only strove to gratify the commons by the greatness of his concessions; but finding that all his compliance had but increased their demands, he could no longer contain. He gave orders to Herbert his attorney-general to enter an accusation of high treason, in the house of peers, against lord Kimbolton, one of the most popular men of his party, together with five commoners, Sir Arthur Haslerig, Hollis, Hambden, Pym, and Strode. The articles were, That they had traiterously endeavoured to subvert the fundamental laws and government of the kingdom, to deprive the king of his regal power, and to impose on his subjects an arbitrary and tyrannical authority; that they had invited a so-

111
Six members of parliament impeached by the king's order.

Britain. reign army to invade the kingdom; that they had aimed at subverting the very right and being of parliaments; and had actually raised and countenanced tumults against the king. Men had scarce leisure to wonder at the precipitancy and imprudence of this impeachment, when they were astonished by another measure still more rash and unsupported. A serjeant at arms, in the king's name, demanded of the house the five members, and was sent back without any positive answer. This was followed by a conduct still more extraordinary. The next day, the king himself was seen to enter the house of commons alone, advancing through the hall, while all the members stood up to receive him. The speaker withdrew from his chair, and the king took possession of it. Having seated himself, and looked round him for some time, he told the house, that he was sorry for the occasion that forced him thither; that he was come in person to seize the members whom he had accused of high treason, seeing they would not deliver them up to his serjeant at arms. Then addressing himself to the speaker, he desired to know whether any of them were in the house: but the speaker, falling on his knees, replied, that he had neither eyes to see, nor tongue to speak, in that place, but as the house was pleased to direct him; and he asked pardon for being able to give no other answer. The king sat for some time, to see if the accused were present; but they had escaped a few minutes before his entry. Thus disappointed, perplexed, and not knowing on whom to rely, he next proceeded, amidst the invectives of the populace, who continued to cry out, *Privilege! privilege!* to the common council of the city, and made his complaint to them. The common council answered his complaints by a contemptuous silence; and, on his return, one of the populace, more insolent than the rest, cried out, "To your tents, O Israel!" a watch-word among the Jews, when they intended to abandon their princes.

112
He goes in person to seize them.

When the commons assembled the next day, they pretended the greatest terror; and passed an unanimous vote that the king had violated their privileges, and that they could not assemble again in the same place, till they should obtain satisfaction, and have a guard for their security. The king had retired to Windsor, and from thence he wrote to his parliament, making every concession, and promising every satisfaction in his power. But they were resolved to accept of nothing unless he would discover his advisers in that illegal measure; a condition to which, they knew, that without rendering himself for ever vile and contemptible, he could not possibly submit.

113
Bad consequences of this attempt.

The commons had already stripped the king of almost all his privileges; the bishops were fled, the judges were intimidated; it now only remained, after securing the church and the law, that they should get possession of the sword also. The power of appointing governors and generals, and of levying armies, was still a remaining prerogative of the crown. Having therefore first magnified their terrors of Popery, which perhaps they actually dreaded, they proceeded to petition that the Tower might be put into their hands; and that Hull, Portsmouth, and the fleet, should be intrusted to persons of their choosing. These were requests, the complying with which subverted what remained of the constitution; however, such was the necessity of the times, that they were first contested, and then granted. At last, every compliance

114
Commons demand possession of the executive power of the state.

compliance only increasing the avidity of making fresh demands, the commons desired to have a militia, raised and governed by such officers and commanders as they should nominate, under pretence of securing them from the Irish Papists, of whom they were under the greatest apprehension.

It was here that Charles first ventured to put a stop to his concessions; and that not by a refusal, but a delay. He was at that time at Dover attending the queen and the princess of Orange, who had thought it prudent to leave the kingdom. He replied to the petition, that he had not now leisure to consider a matter of such great importance; and therefore would defer an answer till his return. But the commons were well aware, that though this was depriving him even of the shadow of power, yet they had now gone too far to recede; and they were therefore desirous of leaving him no authority whatever, being conscious that themselves would be the first victims to its fury. They alleged, that the dangers and distempers of the nation were such as could endure no longer delay; and unless the king should speedily comply with their demands, they should be obliged, both for his safety and that of the kingdom, to embody and direct a militia by the authority of both houses. In their remonstrances to the king, they desired even to be permitted to command the army for an appointed time; which so exasperated him, that he exclaimed, "No, not for an hour." This peremptory refusal broke off all further treaty; and both sides were now resolved to have recourse to arms.

Charles, taking the prince of Wales with him, retired to York, where he found the people more loyal, and less infected with the frenzy of the times. He found his cause there backed by a more numerous party among the people than he had expected. The queen, who was in Holland, was making successful levies of men and ammunition by selling the crown-jewels. But before war was openly declared, the shadow of a negotiation was carried on, rather with a design to please the people than with any view of reconciliation. Nay, that the king might despair of all composition, the parliament sent him the conditions on which they were willing to come to an agreement. Their demands were contained in 19 propositions, and amounted to a total abolition of monarchial authority. They required that no man should remain in the council who was not agreeable to parliament; that no deed of the king's should have validity unless it passed the council, and was attested under their hand; and that all the officers of state should be chosen with consent of parliament; that none of the royal family should marry without consent of parliament or council; that the laws should be executed against Catholics; that the votes of Popish lords should be excluded; that the reformation of the liturgy and church-government should take place according to the advice of parliament; that the ordinance with regard to the militia be submitted to; that the justice of parliament may pass upon all delinquents; that a general pardon be granted with such exceptions as should be advised by parliament; that the forts and castles be disposed of by consent of parliament; and that no peers be made but with consent of both houses. War on any terms was esteemed, by the king and all his counsellors, preferable to so ignominious a peace. Charles

accordingly resolved to support his authority by force of arms. "His towns (he said) were taken from him; his ships, his army, and his money: but there still remained to him a good cause, and the hearts of his loyal subjects; which, with God's blessing, he doubted not would recover all the rest." Collecting therefore some forces, he advanced southwards, and erected his royal standard at Nottingham.

The king found himself supported in the civil war by the nobility and more considerable gentry. They, dreading a total confusion of rank from the fury of the populace, enlisted themselves under the banner of their monarch: from whom they received, and to whom they communicated, their lustre. The concurrence of the bishops and church of England also increased the adherents of the king; but it may be safely affirmed, that the high monarchical doctrines so much inculcated by the clergy, had never done him any good. The bulk of the nobility and gentry who now attended the king in his distresses, breathed the spirit of liberty as well as of loyalty: and in the hopes alone of his submitting to a limited and legal government they were willing to sacrifice their lives and fortunes.

On the other hand, the city of London, and most of the great corporations, took part with the parliament; and adopted with zeal those democratical principles on which these assemblies were founded. The example of the Dutch commonwealth too, where liberty had so happily supported industry, made the commercial part of the nation desire to see a like form of government established in England. Many families also, who had enriched themselves by commerce, saw with indignation, that, notwithstanding their opulence, they could not raise themselves to a level with the ancient gentry; they therefore adhered to a power by whose success they hoped to acquire rank and consideration.

At first every advantage seemed to lie against the royal cause. The king was totally destitute of money. London, and all the sea-ports except Newcastle, being in the hands of parliament, they were secure of a considerable revenue; and the seamen naturally following the disposition of the ports to which they belonged, the parliament had the entire dominion of the sea. All the magazines of arms and ammunition they seized at first; and their fleet intercepted the greatest part of those sent by the queen from Holland. The king, in order to arm his followers, was obliged to borrow the weapons of the train bands, under promise of restoring them as soon as peace should be settled. The nature and qualities of his adherents alone, gave the king some compensation for all the advantages possessed by his adversaries. More bravery and activity were hoped for from the generous spirit of the nobles and gentry, than from the base disposition of the multitude. And as the landed gentlemen, at their own expense, levied and armed their tenants, besides an attachment to their masters, greater force and courage were to be expected from these rustic troops than from the vicious and enervated populace of cities. Had the parliamentary forces, however, exerted themselves at full, they might have easily dissipated the small number the king had been able to collect, and which amounted to no more than 800 horse and 300 foot; while his enemies were within a few days' march of him with 6000 men. In a short time the parliamentary army were ordered to

Britain. march to Northampton; and the earl of Essex, who had joined them, found the whole to amount to 15,000. The king's army too was soon reinforced from all quarters; but still, having no force capable of coping with the parliamentary army, he thought it prudent to retire to Derby, and from thence to Shrewsbury, in order to countenance the levies which his friends were making in those parts. At Wellington, a day's march from Shrewsbury, he made a rendezvous of all his forces, and caused his military orders to be read at the head of every regiment. That he might bind himself by reciprocal obligations, he here protested solemnly before his whole army, that he would maintain the Protestant religion according to the church of England; that he would govern according to the known statutes and customs of the kingdom; and particularly, that he would observe inviolable the laws to which he had given his consent during this parliament, &c.

120
They gain an advantage over their enemies.

While Charles lay at Shrewsbury, he received the news of an action, the first which had happened in these parts, and wherein his party was victorious. On the appearance of commotions in England, the princes Rupert and Maurice, sons of the unfortunate elector palatine, had offered their service to the king; and the former at that time commanded a body of horse which had been sent to Worcester in order to watch the motions of Essex, who was marching towards that city. No sooner had the prince arrived, than he saw some cavalry of the enemy approaching the gates. Without delay he briskly attacked them, as they were desfilng from a lane, and forming themselves. Colonel Sandys their commander was killed, the whole party routed, and pursued above a mile.

121
Battle of Edgell.

In 1642, October 23d, happened a general engagement at Edgell, in which, though the royalists were at first victorious, their impetuosity lost the advantage they had gained, and nothing decisive happened. Five thousand men, it is said, were found dead on the field of battle. Soon after, the king took Banbury and Reading; and defeated two regiments of his enemies at Brentford, taking 500 prisoners. Thus ended the campaign in 1642; in which, though the king had the advantage, yet the parliamentary army amounted to 24,000 men, and was much superior to his; notwithstanding which, his enemies had been so far humbled as to offer terms of peace.

In 1643, the treaty was carried on, but without any cessation of hostilities: and indeed the negotiation went no farther than the first demand on each side; for the parliament, finding no likelihood of coming to an accommodation, suddenly recalled their commissioners. On the 27th of April, Reading surrendered to the parliamentary forces under the earl of Essex, who commanded a body of 18,000 men. The earl of Northumberland united in a league for the king the counties of Northumberland, Cumberland, Westmorland, and the bishopric; and engaged some time after other counties in the same association. The same nobleman also took possession of York, and dislodged the forces of the parliament at Tadcaster, but his victory was not decisive. Other advantages were also gained by the royalists; the most important of which was the battle of Stratton, where the poet Waller, who commanded the parliament's army, was entirely defeated, and forced to fly with only a few horse to Bristol. This happened on

122
Association in favour of the king.

123
Parliamentary forces defeated at Stratton.

the 13th of July; and was followed by the siege of that city, which surrendered to prince Rupert on the 25th of the same month.

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Though the taking of Bristol had cost the royalists dear, yet such a continued run of success had greatly dispirited the opposite party; and such confusion now prevailed at London, that some proposed to the king to march directly to that city, which it was hoped might be reduced either by an insurrection of the citizens by victory or by treaty, and thus an end put to the civil disorders at once. This advice, however, was rejected, on account of the great number of the London militia; and it was resolved first to reduce Gloucester, in consequence of which the king would have the whole course of the Severn under his command. The rich and malcontent counties of the west having then lost all protection from their friends, might be enforced to pay large contributions as an atonement for their disaffection; an open communication could be preserved between Wales and these new conquests; and half the kingdom being entirely freed from the enemy, and thus united into one firm body, might be employed in re-establishing the king's authority throughout the remainder.

124
Charles besieges Gloucester.

The siege of this city commenced August 10th; but being defended by Massie a resolute governor, and well garrisoned, made a vigorous defence. The consternation at London, however, was as great as if the enemy had been already at their gates; and in the midst of the general confusion, a design was formed by Waller of forcing the parliament to accept of some reasonable conditions of peace. He imparted his design to some others; but a discovery being made of their proceedings, he and two others were condemned to death. Waller, however, escaped with a fine of 10,000*l*. The city of Gloucester in the mean time was reduced to the utmost extremity; and the parliament, as their last resource, dispatched Essex with an army of 14,000 men, in order to force the king to raise the siege of that city. This he accomplished; and when he entered, found only one barrel of gunpowder left, and other provisions in the same proportion. On his return to London, he was intercepted by the king's army, with whom a most desperate battle ensued at Newbury which lasted till night. Though the victory was left undecided, Essex next morning proceeded on his march, and reached London in safety, where he received the applause for his conduct he deserved. The king followed him on his march; and having taken possession of Reading after the earl left it, he there established a garrison, and straitened by that means London and the quarters of the enemy.

125
He is forced to raise the siege.

126
Battle of Newbury.

In the north, during this summer, the earl, now created marquis of Newcastle, had raised a considerable force for the king; and great hopes of success were entertained from that quarter. There appeared, however, in opposition to him, two men on whom the event of the war finally depended, and who began about this time to be remarked for their valour and military conduct. These were, Sir Thomas Fairfax, son to the lord of that name; and Oliver Cromwell. The former gained a considerable advantage over the royalists at Wakefield, and took general Goring prisoner: the latter obtained a victory at Gainsborough over a party commanded by the gallant Cavendish, who perished in the action.

127
Advantages gained by Fairfax and Cromwell.

Britain. action. But both these defeats were more than compensated by the total rout of lord Fairfax at Atherton moor, and the dispersion of his army, which happened on the 31st of July. After this victory, the marquis of Newcastle sit down before Hull with an army of 15,000 men; but being beat off by a sally of the garrison, he suffered so much that he thought proper to raise the siege. About the same time, Manchester, who advanced from the eastern associated counties, having joined Cromwell and young Fairfax, obtained a considerable victory over the royalists at Horn castle; where the two last mentioned officers gained renown by their conduct and gallantry. And though fortune had thus balanced her favours, the king's party still remained much superior in those parts of England; and had it not been for the garrison of Hull, which kept Yorkshire in awe, a conjunction of the northern forces with the army in the south might have been made, and had probably enabled the king, instead of entering on the unfortunate, perhaps imprudent enterprize of Gloucester, to march directly to London, and put an end to the war. The battle of Newbury was attended with such loss on both sides, that it put an end to the campaign of 1643, by obliging both parties to retire into winter quarters.

The event of the war being now very doubtful, the king and parliament began both of them to look for assistance from other nations. The former cast his eyes on Ireland, the latter on Scotland. The parliament of England had ever invited the Scots, from the commencement of the civil dissensions, to interpose their mediation, which they knew would be very little favourable to the king, and which for that reason he had declined. Early in the spring 1643, this offer of mediation had been renewed, with no better success than before. The commissioners were also empowered to press the king to a compliance with the presbyterian worship and discipline. But this he absolutely refused, as well as to call a parliament in Scotland; so that the commissioners, finding themselves unable to prevail in any one of their demands, returned home highly dissatisfied. The English parliament being now in great distress, gladly sent commissioners to Edinburgh, to treat of a more close confederacy with the Scottish nation. The person they principally trusted to on this occasion was Sir Henry Vane, who in eloquence, address, capacity, as well as in art and dissimulation, was not even surpassed by any one in that age so famous for active talents. By his persuasions was framed at Edinburgh the SOLEMN LEAGUE AND COVENANT; which effaced all former protestations and vows taken in both kingdoms, and long maintained its credit and authority. In this covenant, the subscribers, besides engaging mutually to defend each other against all opponents, bound themselves to endeavour, without respect of persons, the extirpation of popery and prelacy, superstition, heresy, and profaneness; to maintain the rights and privileges of parliaments, together with the king's authority; and to discover and bring to justice all incendiaries and malignants. They vowed also to preserve the reformed religion established in the church of Scotland; but by the artifice of Vane, no declaration more explicit was made with regard to England and Ireland, than that these kingdoms should

be reformed according to the word of God, and the example of the purest churches. Britain.

Great were the rejoicings among the Scots, that they should be the happy instruments of extending their mode of religion, and dissipating the profound darkness in which the neighbouring nations were involved. And being determined that the sword should carry conviction to all refractory minds, they prepared themselves with great vigilance and activity for their military enterprizes; so that, having added to their other forces the troops which they had recalled from Ireland, they were ready about the end of the year to enter England under their old general the earl of Leven, with an army of above 20,000 men. The king, in order to secure himself, concluded a cessation of arms with the Irish rebels, and recalled a considerable part of his army from Ireland. Some Irish catholics came over with these troops, and joined the royal army, where they continued the same cruelties and disorders to which they had been accustomed. The parliament voted, that no quarter in any action should ever be given them. But prince Rupert, by making some reprisals, soon repressed this inhumanity.

The campaign of 1644 proved very unfortunate to the royal cause. The forces brought from Ireland were landed at Moystne in North Wales, and put under the command of lord Byron. They besieged and took the castles of Hawarden, Beeston, Acton, and Deddington-house. No place in Cheshire or the neighbourhood now adhered to the parliament, except Lantwich; and to this place Byron laid siege in the depth of winter. Sir Thomas Fairfax, alarmed at so great a progress, assembled an army of 4000 men in Yorkshire; and having joined Sir William Brereton, was approaching to the camp of the royalists. Byron and his soldiers, elated with successes in Ireland, entertained a most profound contempt for their enemies. Fairfax suddenly attacked their camp. The swelling of the river by a thaw, divided one part of the army from another. That part exposed to Fairfax, being beat from their post, retired into the church at Acton, where being surrounded, they were all taken prisoners. The other retreated with precipitation; and thus was dissipated or rendered useless that body of forces which had come from Ireland. This happened on the 25th of January; and on the 11th of April, Colonel Bellasis was totally defeated at Selby in Yorkshire by Sir Thomas Fairfax, who had returned from Cheshire with his victorious forces. Being afterwards joined by lord Leven, the two generals sat down before the city of York; but being unable to invest that city completely, they were obliged to content themselves with incommoding it by a loose blockade. Uxetown, having assembled a body of 14,000 men, endeavoured to break into Suffex, Kent, and the southern association, which seemed well disposed to receive him; but was defeated by Waller at Cherington. At Newark, however, prince Rupert totally defeated the parliamentary army which besieged that place; and thus preserved the communication open between the king's northern and southern quarters.

The great advantages the parliament had gained in the north, seemed now to second their unwarrantable enterprizes, and finally to promise them success. Manchester

128
d Fairfax
defeated
Atherton.

127
English par-
liament as-
sistance
from the
 Scots.

130
solemn
league and
covenant
made.

131
Charles af-
fected by the
 Irish.

132
Irish forces
dispersed.

Britain. chester having taken Lincoln, had united his army to that of Leven and Fairfax; and York was now closely besieged by their numerous forces. That town, tho' vigorously defended by the marquis of Newcastle, was reduced to the last extremity, when prince Rupert, having joined Sir Charles Lucas who commanded Newcastle's horse, hastened to its relief with an army of 20,000 men. The Scots and parliamentary generals raised the siege, and drawing up on Marston moor, proposed to give battle to the royalists. Prince Rupert approached the town by another quarter, and interposing the river Ouse between him and the enemy, safely joined his forces to those of Newcastle. The marquis endeavoured to persuade him; that having so successfully effected his purpose, he ought to be contented with the present advantages, and leave the enemy, now much diminished by their losses, and discouraged by their ill success, to dissolve by those mutual dissensions which had begun to take place among them. The prince, however, hurried on by his natural impetuosity, gave immediate orders for fighting. The battle was lost, the royal army entirely pushed off the field, and the train of artillery taken. Immediately after this unfortunate action the marquis of Newcastle left the kingdom, and prince Rupert retired into Lancashire. The city of York was surrendered in a few days, and Newcastle soon after taken by storm.

133
York besieged by the parliamentary forces.

134
Royalists defeated at Marston moor.

This was a fatal blow to the royal cause, and far from being balanced by an advantage gained at Cropredy bridge by the king over Waller, or even by the disarming of Essex's forces, which happened on the 1st of September. On the 27th of October, another battle was fought at Newbury, in which the royalists were worsted, but soon after retrieved their honour at Dennington castle, which finished the campaign in 1644.

135
Extra-gaunt demands of the parliament.

In 1645, a negotiation was again set on foot, and the commissioners met at Uxbridge on the 30th of January; but it was soon found impossible to come to any agreement. The demands of the parliament were exorbitant; and, what was worse, their commissioners owned them to be nothing but preliminaries. The king was required to attain, and except from a general pardon, 40 of the most considerable of his English subjects, and 19 of his Scots, together with all the Popish recusants who had borne arms for him. It was insisted that 48 more, with all the members of either house who had sat in the parliament called by the king at Oxford, all lawyers and divines who had embraced the king's party, should be rendered incapable of any office, be forbid the exercise of their profession, be prohibited from coming within the verge of the court, and forfeit the third of their estates to the parliament. It was required, that whoever had borne arms for the king should forfeit the tenth of their estates, or if that did not suffice, the sixth, for the payment of public debts. As if royal authority were not sufficiently annihilated by these terms, it was demanded that the court of wards should be abolished; that all the considerable officers of the crown, and all the judges, should be appointed by parliament; and that the right of peace and war should not be exercised without consent of parliament. A little before the commencement of this fruitless treaty, the parliament, to show their determined resolution to proceed in the same haughty imperious method in which they had begun, brought to

the block archbishop Laud, who had long been a prisoner in the tower, and was incapable of giving offence to any.

Britain.
136
Execution of Laud.

While the king's affairs thus went into decay in England, they seemed to revive a little in Scotland, thro' the conduct and valour of the earl of Montrose, a young nobleman newly returned from his travels. He had been introduced to the king; but not meeting with an agreeable reception, had gone over to the covenanters, and been active in forwarding all their violence. Being commissioned, however, by the tables, to wait upon the king while the army lay at Berwick, he was so gained by the civilities and caresses of that monarch, that he thenceforth devoted himself entirely, though secretly, to his service. For attempting to form an association in favour of the royal cause, Montrose was quickly thrown into prison; but being again released, he found the king ready to give ear to his counsels, which were of the boldest and most daring kind. Though the whole nation of Scotland was occupied by the covenanters, though great armies were kept on foot by them, and every place guarded by a vigilant administration, he undertook by his own credit, and that of the few friends who remained to the king, to raise such commotions, as would soon oblige those malcontents to recal the forces which had so sensibly thrown the balance in the favour of parliament. The defeat at Marston-moor had left him no hopes of any succours from England; he was therefore obliged to stipulate with the earl of Antrim, a nobleman of Ireland, for some supply of men from that country. And he himself having used various disguises, and passed through many dangers, arrived in Scotland, where he lay for some time concealed in the borders of the Highlands.

137
Exploits of the earl of Montrose in Scotland.

The Irish did not exceed 1000 foot, very ill armed. Montrose immediately put himself at their head; and, being joined by 1300 Highlanders, attacked lord Elcho, who lay at Perth with 6000 men, utterly defeated him, and killed 2000 of the covenanters. He next marched northwards, in order to rouse again the marquis of Huntly and the Gordons, who had taken arms before, but been suppressed by the covenanters. At Aberdeen he attacked and entirely defeated lord Burley, who commanded 2500 men. Montrose, however, by this victory, did not obtain the end he proposed; the marquis of Huntly showed no inclination to join an army where he was so much eclipsed by the general.

Montrose was now in a very dangerous situation. Argyle, reinforced by the earl of Lothian, was behind him with a great army. The militia of the northern counties, Murray, Rois, and Caithness, to the number of 5000, opposed him in front, and guarded the banks of the Spey, a deep and rapid river. In order to save his troops, he turned aside into the hills; and after some marches and countermarches, Argyle came up with him at Paivy cattle; and here, after some skirmishes, in which he was always victorious, Montrose got clear of a superior army, and by a quick march through these almost inaccessible mountains put himself absolutely beyond their power.

It was the misfortune of this general, that very good or very ill fortune were equally destructive of his army. After every victory his Scots soldiers went home to enjoy

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joy the spoil they had acquired; and had his army been composed of these only, he must have soon been abandoned altogether: but his Irishmen having no place to which they could retire, adhered to him in every fortune. With these, therefore, and some reinforcements of the Atholmen and Macdonalds, Montrose fell suddenly upon Argyle's country, letting loose upon it all the horrors of war. Argyle, collecting 3000 men, marched in quest of the enemy, who had retired with their plunder: and he lay at Innerlochy, supposing himself to be still at a good distance from them. The earl of Seaforth, at the head of the garrison of Inverness, and a body of 5,000 new-levied troops, pressed the royalists on the other side, and threatened them with total destruction. By a quick and unexpected march, Montrose hastened to Innerlochy, and presented himself in order of battle before the covenanters. Argyle alone, seized with a panic, deserted his army. They made a vigorous resistance, however; but were at last defeated and pursued with great slaughter: after which, Montrose was joined by great numbers of Highlanders; Seaforth's army dispersed of itself; and the lord Gordon, eldest son to the marquis of Huntly, having escaped from his uncle Argyle, who had hitherto detained him, now joined Montrose with a considerable number of his followers, attended by the earl of Aboyne.

The council at Edinburgh, alarmed at these victories, sent for Baillie, an officer of reputation, from England; and, joining him in command with Urrey, sent them with a considerable army against the royalists. Montrose, with a detachment of 800 men, had attacked Dundee, a town extremely attached to the covenant; and having carried it by assault, had given it up to be plundered by his soldiers; when Baillie and Urrey with their whole force came upon him. He instantly called off his soldiers from the plunder; put them in order; secured his retreat by the most skilful measures; and having marched 60 miles in the face of an enemy much superior, without stopping, or allowing his soldiers the least sleep or refreshment, at last secured himself in the mountains. His antagonists now divided their forces, in order to carry on the war against an enemy who surprised them as much by the rapidity of his marches as by the boldness of his enterprizes. Urrey met him with 4000 men, at Alderne near Inverness; and trusting to his superiority in numbers (for Montrose had only 2000 men), attacked him in the post which he had chosen. Montrose, having placed his right wing in strong ground, drew the best of his forces to the other, and left no main body between them; a defect which he artfully concealed by showing a few men through trees and bushes with which that ground was covered. That Urrey might have no leisure to perceive the stratagem, he instantly led his wing to the charge, made a furious attack on the covenanters, drove them off the field, and obtained a complete victory over them. Baillie now advanced, in order to revenge Urrey's defeat; but he himself met with a like fate at Alford. Montrose, weak in cavalry, lined his troops of horse with infantry; and, after putting the enemy's horse to rout, fell with united force upon their foot, which were entirely cut in pieces, though with the loss of the gallant lord Gordon on the part of the royalists. —Having thus prevailed in so many battles, which his vigour always rendered as decisive as they were success-

ful, he prepared for marching into the southern provinces, in order to put a total period to the power of the covenanters, and dissipate the parliament, which with great pomp and solemnity they had ordered to meet at St Johnstone's.

While Montrose was thus signaling his valour in the north, Fairfax, or rather Oliver Cromwell under his name, employed himself in bringing in a *new model* into the parliamentary army, and throwing the whole troops into a different shape; and never surely was a more singular army established, than that which was now set on foot by the parliament. To the greatest number of the regiments chaplains were not appointed. The officers assumed the spiritual duty, and united it with their military functions. During the intervals of action they occupied themselves in sermons, prayers, and exhortations. Rapturous ecstasies supplied the place of study and reflection; and while the zealous devotees poured out their thoughts in unpremeditated harangues, they mistook that eloquence, which to their own surprise, as well as that of others, flowed in upon them, for divine illuminations, and illapses of the Holy Spirit. Wherever they were quartered, they excluded the minister from his pulpit; and, usurping his place, conveyed their sentiments to the audience with all the authority that followed their power, their valour, and their military exploits, united to their apparent zeal and fervour. The private soldiers were seized with the same spirit; and in short, such an enthusiasm seized the whole army as was perhaps scarce ever equalled.

The royalists ridiculed this fanaticism of the parliamentary armies, without being sensible how much reason they had to dread it. They were at this time equal, if not superior, in numbers to their enemies; but so licentious, that they were become more formidable to their friends than their enemies. The commanders were most of them men of dissolute characters; in the west especially, where Goring commanded, universal spoil and havock were committed; and the whole country was laid waste by the rapine of the army; so that the most devoted friends both to the church and state wished there for such success to the parliamentary forces as might put an end to these disorders.

The natural consequence of such enthusiasm in the parliamentary army, and licentiousness in that of the king, was, that equal numbers of the latter would no longer maintain their ground against the former. This appeared in the decisive battle of Naseby, where the forces were nearly equal; but after an obstinate engagement, Charles was entirely defeated, 500 of his officers and 4000 private men made prisoners, all his artillery and ammunition taken, and his infantry totally dispersed; so that scarce any victory could be more complete.

After this fatal battle, the king retired first to Hereford, then to Abergavenny; and remained some time in Wales, from the vain hope of raising a body of infantry in these quarters already harassed and exhausted. His affairs now, however, went to ruin in all quarters. Fairfax retook Leicester on the 17th of June. On the 10th of July, he raised the siege of Taunton; and the royalists retired to Lamport, an open town in the county of Somerset. Here they were attacked by Fairfax, and beat from their post, with the loss of 300 killed and 1400 taken prisoners. This was followed by

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Parliamentary army
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140
Royalists
defeated at
Naseby.

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¹⁴¹ Britain. the loss of Bridgewater, which Fairfax took three days after; making the garrison, to the number of 2600 men, prisoners of war. He then reduced Bath and Sharburn; and on the 11th of September Bristol was surrendered to him by prince Rupert, though a few days before he had boasted in a letter to Charles, that he would defend the place for four months. This so enraged the king, that he immediately recalled all the prince's commissions, and sent him a pass to go beyond sea.

The Scots in the mean time, having made themselves masters of Carlisle after an obstinate siege, marched southwards and invested Hereford; but were obliged to raise the siege on the king's approach. And this was the last glimpse of success that attended his arms. Having marched to the relief of Chester, which was anew besieged by the parliamentary forces under colonel Jones, his rear was attacked by Pointz, and an engagement immediately ensued. While the fight was continued with great obstinacy, and victory seemed to incline to the royalists, Jones fell upon them from the other side, and defeated them with the loss of 600 killed and 1000 taken prisoners. The king with the remains of his army fled to Newark; and from thence escaped to Oxford, where he shut himself up during the winter season.

After the surrender of Bristol, Fairfax and Cromwell having divided their forces, the former marched westwards in order to complete the conquest of Devonshire and Cornwall; the latter attacked the king's garrisons which lay the east of Bristol. Nothing was able to stand before these victorious generals; every town was obliged to submit, and every body of troops that pretended to resist were utterly defeated. At last, news arrived, that Montrose himself, after some more successes, was defeated; and thus the only hope of the royal party was destroyed.

¹⁴³ When that brave general descended into the southern counties, the covenanters, assembling their whole force, met him with a numerous army, and gave him battle at Kilsyth. Here he obtained his most memorable victory: 6000 of the covenanters were killed on the spot, and no remains of an army left them in Scotland. Many noblemen, who secretly favoured the royal cause, now declared openly for it, when they saw a force able to support them. The marquis of Douglas, the earls of Annandale and Hartfield, the lords Fleming, Seton, Maderty, Carnegy, with many others, flocked to the royal standard. Edinburgh opened its gates, and gave liberty to all the prisoners there detained by the covenanters. Among the rest was lord Ogilvy, son to Airly, whose family had contributed very much to the victory gained at Kilsyth.—David Lesly was detached from the army in England, and marched to the relief of his distressed party in Scotland. Montrose advanced still further to the south, allured by the vain hopes, both of rousing to arms the earls of Hume, Traquaire, and Roxborough, who had promised to join him; and of obtaining from England some supply of cavalry, in which he was very deficient. By the negligence of his scouts, Lesly, at Philip-laugh in the forest, surprized his army, much diminished in numbers from the desertion of the Highlanders, who had retired to the hills, according to custom, to secure their plunder. After a sharp conflict, in which Montrose exerted great valour,

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his forces were routed by Lesly's cavalry, and he himself forced to fly to the mountains.

Nothing could be more affecting than the situation in which the king now was. He now resolved to grant the parliament their own terms, and sent them repeated messages to this purpose, but they never deigned to make him the least reply. At last, after reproaching him with the blood spilt during the war, they told him that they were preparing some bills, to which, if he would consent, they would then be able to judge of his pacific inclinations. Fairfax, in the mean time, was advancing with a victorious army in order to lay siege to Oxford; and Charles, rather than submit to be taken captive and led in triumph by his insolent subjects, resolved to give himself up to the Scots, who had never testified such implacable animosity against him, and to trust to their loyalty for the rest. After passing through many bye-ways and cross-roads, he arrived in company with only two persons, Dr Hudson and Mr Ashburnham, at the Scots camp before Newark, and discovered himself to lord Leven their general.

The reception he met with was such as might be expected from these infatuated bigots, destitute of every principle of reason, honour, or humanity. Instead of endeavouring to alleviate the distresses of their sovereign, they suffered him to be insulted by the clergymen. They immediately sent an account of his arrival to the English parliament, and they as quickly entered into a treaty with the Scots about delivering up their prisoner. The Scots thought this a proper time for the recovery of their arrears due to them by the English. A great deal was really due them, and they claimed much more than actually belonged to them. At last, after various debates between them and the parliament, in which they pretended to great honour, and insisted upon many punctilios, it was agreed, that, upon payment of L.400,000, the Scots should deliver up the king to his enemies; and this was cheerfully complied with. Thus the Scots justly fell under the censure of having sold their king who had thrown himself upon their mercy; a stain peculiar to the nation, and unparalleled in history either ancient or modern. It must, however, be acknowledged, that the infamy of this bargain had such an influence on the Scots parliament, that they once voted that the king should be protected and his liberty insisted on. But the general assembly interposed; and pronounced, that as he had refused to take the covenant which was pressed on him, it became not the godly to concern themselves about his fortunes. In consequence of this, the parliament were obliged to retract their vote. The king, being delivered over to the English commissioners, was conducted under a guard to Holdenby in the county of Northampton, where he was very rigorously confined; his ancient servants being dismissed, himself debarred from visits, and all communication cut off with his friends or family.

The civil war being now over, the king absolved his followers from their allegiance, and the parliament had now no enemy to fear but their own troops. From this quarter their danger only arose; and it was not long before they found themselves in the same unfortunate situation to which they had reduced the king. The majority of the house were Presbyterians, but the majority of the army were independents. The former, soon after the retreat of the Scots, seeing every thing reduced

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¹⁴⁴ Charles surrenders himself to the Scots.

¹⁴⁵ Who fell him to the English.

¹⁴⁶ The army begin to usurp the sovereign power.

Britain. reduced to obedience, proposed to disband a considerable part of the army, and send the rest over to Ireland. This was by no means relished, and Cromwell took care to heighten the disaffection. Instead of preparing to disband, therefore, the soldiers resolved to petition; and they began by desiring an indemnity, ratified by the king, for any illegal actions which they might have committed during the war. The commons voted that this petition tended to introduce mutiny, &c. and threatened to proceed against the promoters of it as enemies to the state and disturbers of the public peace. The army now began to set up for themselves. In opposition to the parliament at Westminster, a military parliament was formed. The principal officers formed a council to represent the body of peers; the soldiers elected two men out of each company to represent the commons, and these were called the *agitators of the army*; and of this assembly Cromwell took care to be a member. The new parliament soon found many grievances to be redressed; and specified some of the most considerable. The commons were obliged to yield to every request, and the demands of the agitators rose in proportion. The commons accused the army of mutiny and sedition; the army retorted the charge, and alleged that the king had been deposed only to make way for their usurpations. Cromwell, in the mean time, who secretly conducted all the measures of the army, while he exclaimed against their violence, resolved to seize the king's person. Accordingly a party of 500 horse appeared at Holmby castle, under the command of one Joyce, originally a taylor, but now a cornet; and by this man was the king conducted to the army, who were hastening to their rendezvous at Triplo-heath near Cambridge. Next day Cromwell arrived among them, where he was received with acclamations of joy, and immediately invested with the supreme command.

The commons now saw the designs of the army; but it was too late, all resistance was become vain: Cromwell advanced with precipitation, and was in a few days at St Alban's. Even submission was now to no purpose; the army still rose in their demands, in proportion as these demands were gratified, till at last they claimed a right of modelling the whole government, and settling the nation.

Cromwell began with accusing eleven members of the house, the very leaders of the presbyterian party, as guilty of high treason, and being enemies of the army. The commons were willing to protect them; but the army insisting on their dismissal, they voluntarily left the house. At last the citizens of London, finding the constitution totally overturned, and a military despotism beginning to take place, instead of the kingly one they were formerly afraid of, began to think seriously of repressing the insolence of the troops. The common council assembled the militia of the city; the works were manned; and a manifesto published, aggravating the hostile intentions of the army. Finding that the commons, in compliance with the request of the army, had voted that the city-militia should be disbanded, the multitude rose, besieged the door of the house, and obliged them to reverse that vote they had so lately passed. The assembly was, of consequence, divided into two parties; the greater part siding with the citizens; but the minority, with the two speakers at their head,

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were for encouraging the army. Accordingly the two speakers, with 62 of the members, secretly retired from the house, and threw themselves under the protection of the army, who were then at Hounslow-leath. They were received with shouts and acclamations; their integrity was extolled; and the whole force of the soldiery, to the number of 20,000 men, now moved forward to reinstate them in their places.

In the mean time, the part of the house which was left, resolved to resist the encroachments of the army. They chose new speakers, gave orders for enlisting troops, ordered the train-bands to man the lines; and the whole city boldly resolved to resist the invasion. But this resolution only held while the enemy was at a distance; for when Cromwell appeared, all was obedience and submission: the gates were opened to the general, who attended the two speakers and the rest of the members peaceably to their habitations. The eleven impeached members being accused as causes of the tumult, were expelled; and most of them retired to the continent. The mayor, sheriff, and three aldermen, were sent to the tower; several citizens, and officers of the militia, were committed to prison; the lines about the city levelled with the ground; and the command of the Tower was given to Fairfax.

It now only remained to dispose of the king, who remained a prisoner at Hampton-court. The independent army, at the head of whom was Cromwell, on one hand; and the presbyterians, in name of both houses, on the other; treated with him separately in private. He had sometimes even hopes, that, in these struggles for power, he might have been chosen mediator in the dispute; and he expected that the kingdom at last, being sensible of the miseries of anarchy, would of its own accord be hushed into its former tranquil condition. At this time he was treated with some flattering marks of distinction; he was permitted to converse with his old servants; his chaplains were permitted to attend him, and celebrate divine service their own way. But the most exquisite pleasure he enjoyed was in the company of his children, with whom he had several interviews. The meeting on these occasions was so pathetic, that Cromwell himself, who was once present, could not help being moved, and was heard to declare, that he never beheld such an affecting scene before. But these instances of respect were of no long continuance. As soon as the army had gained a complete victory over the house of commons, the king was treated not only with the greatest disrespect, but even kept in continual alarms for his own personal safety. The consequence of this was, that Charles at last resolved to withdraw himself from the kingdom. Accordingly, on the 11th of November 1647, attended only by Sir John Berkeley, Ashburnham, and Legg, he privately left Hampton-court; and his escape was not discovered till near an hour after; when those who entered his chamber, found on the table some letters directed to the parliament, to the general, and to the officer who had attended him. All night he travelled through the forest, and arrived next day at Titchfield, a seat of the earl of Southampton, where resided the countess dowager, a woman of honour, to whom the king knew he might safely entrust his person. Before he arrived at this place, he had gone to the sea-coast; and expressed great

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anxiety

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military
parliament
med.

148
Cromwell
seizes the
king.

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Sixty-two
members of
parliament
join the
army.

149
The rest
submit.

151
Charles re-
solves to
leave the
kingdom.

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152
He is seized
and confi-
ned in the
isle of
Wight.

anxiety that a ship which he seemed to look for had not arrived. He could not hope to remain long concealed at Tichfield: the question was, what measure should next be embraced? In the neighbourhood lay the Isle of Wight, of which Hammond was governor. This man was entirely dependent on Cromwell, which was a very unfavourable circumstance: yet, because the governor was nephew to Dr Hammond the king's favourite chaplain, and had acquired a good reputation in the army, it was thought proper to have recourse to him in the present exigence, when no other rational expedient could be thought of. Ashburnham and Berkeley were dispatched to the island. They had orders not to inform Hammond of the place where the king lay concealed, till they had first obtained a promise of him not to deliver up his majesty, even though the parliament and army should require him; but restore him to his liberty, if he could not protect him. The promise would have been but a slender security: yet even without exacting it, Ashburnham imprudently, if not treacherously, brought Hammond to Tichfield; and the king was obliged to put himself into his hands, and to attend him to Carisbroke castle in the isle of Wight, where, though he was received with great demonstrations of respect and kindness, he was in reality a prisoner.

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Cromwell
in danger
from the
levellers.

While the king continued in this forlorn situation, Cromwell found himself upon the point of losing all the fruits of his former schemes, by having his own principles turned against himself. Among the Independents, who in general were for no ecclesiastical subordination, a set of men grew up called *levellers*, who disallowed all subordination whatsoever, and declared that they would have no other chaplain, king, or general, but Jesus Christ. Though this would have gone down very well with Cromwell as long as it was only directed against his enemies, he did not so well relish it when applied to himself. Having intimation that the levellers were to meet at a certain place, he unexpectedly appeared before them at the head of his red regiment, which had hitherto been deemed invincible. He demanded, in the name of God, what these meetings and murmurings meant; he expostulated with them upon the danger and consequence of their precipitant schemes, and desired them immediately to depart. Instead of obeying, however, they returned an insolent answer; wherefore, rushing on them in a fury, he laid two of them dead at his feet. His guards dispersing the rest, he caused several of them to be hanged upon the spot, and sent others to London; and thus dissipated a faction no otherwise criminal than in having followed his own example.

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He defeats
the Scots.

Cromwell's authority was greatly increased by the last mentioned action; but it became irresistible in consequence of a new and unexpected addition to his successes. The Scots, perhaps ashamed of the reproach of having sold their king, and stimulated farther by the Independents, who took all occasions to mortify them, raised an army in his favour, and the chief command was given to the earl of Hamilton: while Langdale, who professed himself at the head of the more bigotted party who had taken the covenant, marched at the head of his separate body, and both invaded the north of England. Though these two armies amounted to above 20,000 men, yet Cromwell, at the head of 8000

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of his hardy veterans, feared not to give them battle. He attacked them one after another; routed and dispersed them; took Hamilton prisoner; and, following his blow, entered Scotland, the government of which he settled entirely to his satisfaction. An insurrection in Kent was quelled by Fairfax with the same ease; and nothing but success attended all this usurper's attempts.

During these contentions, the king, who was kept a prisoner at Carisbroke castle, continued to negotiate with the parliament for settling the unspeakable calamities of the kingdom. The parliament now saw no other method of destroying the military power, but to depress it by the kingly. Frequent proposals for an accommodation passed between the captive king and the commons; but the great obstacle which had all along stood in the way, still kept them from agreeing. This was the king's refusing to abolish episcopacy, though he consented to alter the liturgy. However, the treaty was still carried on with vigour, and the parliament for the first time seemed in earnest to conclude their negotiations. But all was now too late. The victorious army, with Cromwell at their head, advanced to Windsor, and with furious remonstrances began to demand vengeance on the king. The unhappy monarch had been lately sent under confinement to that place; and from thence he was now conveyed to Hurst-castle in Hampshire, opposite to the isle of Wight. The parliament in the mean time began to issue ordinances for a more effectual opposition to these military encroachments, when they were astonished by a message from Cromwell, that he intended paying them a visit next day with his whole army; and in the mean time ordering them to raise him L.40,000 on the city of London.

The commons, though destitute of all hopes of prevailing, had still the courage to resist, and to attempt in the face of the whole army to finish the treaty they had begun with the king. They had taken into consideration the whole of his concessions; and though they had formerly voted them unsatisfactory, they now renewed the consultation with great vigour. After a violent debate which lasted three days, it was carried in the king's favour by a majority of 129 against 83, that his concessions were a foundation for the houses to proceed upon in settling the affairs of the nation. This was the last attempt in his favour; for the next day colonel Pride, at the head of two regiments, blockaded the house; and seizing in the passage 41 members of the presbyterian party, sent them to a low room belonging to the house, that passed by the denomination of *Hell*. Above 160 members more were excluded; and none were allowed to enter but the most furious and determined of the Independents, in all not exceeding 60. This atrocious invasion of parliamentary rights commonly passed by the name of *Pride's purge*, and the remaining members were called the *Rump*. These soon voted, that the transactions of the house a few days before were entirely illegal, and that their general's conduct was just and necessary.

Nothing now remained, to complete the wickedness of this parliament, but to murder the king. In this assembly, therefore, composed of the most obscure citizens, and officers of the army, a committee was appointed to bring in a charge against the king; and

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Negotia-
tion be-
tween the
king and
parliament.

156
Pride's
purge.

157
Charge
against
the king
brought
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tain. on their report, a vote passed declaring it treason in a king to levy war against his parliament. It was therefore resolved, that an high court of justice should be appointed, to try his majesty for this new invented treason. For form's sake, they desired the concurrence of the few remaining lords in the upper house; but there was virtue enough left in that body unanimously to reject the proposal. The commons, however, were not to be stopped by so small an obstacle. They voted that the concurrence of the house of lords was unnecessary, and that the people were the origin of all just power. To add to their zeal, a woman of Herefordshire, illuminated by prophetic visions, desired admittance, and communicated a revelation she pretended to have received from heaven. She assured them that their measures were consecrated from above, and ratified by the sanction of the Holy Ghost. This intelligence gave them great comfort, and much confirmed them in their present resolutions.

Colonel Harrison, the son of a butcher, was commanded to conduct the king from Hurst-castle to Windsor, and from thence to London. His afflicted subjects, who ran to have a sight of their sovereign, were greatly affected at the change that appeared in his face and person. He had permitted his beard to grow; his hair was become venerably grey, rather by the pressure of anxiety than the hand of time; while the rest of his apparel bore the marks of misfortune and decay. He had long been attended by an old decrepid servant whose name was *Sir Philip Warwick*, who could only deplore his master's fate without being able to revenge his cause. All the exterior symbols of sovereignty were now withdrawn, and his attendants had orders to serve him without ceremony. He could not, however, be persuaded that his adversaries would bring him to a formal trial; but he every moment expected to be dispatched by private assassination.

158 trial. From the 6th to the 26th of January was spent in making preparations for this extraordinary trial. The court of justice consisted of 133 persons named by the commons; but of these never above 70 met upon the trial. The members were chiefly composed of the principal officers of the army, most of them of very mean birth, together with some of the lower house, and a few citizens of London. Bradshaw a lawyer was chosen president; Coke was appointed solicitor for the people of England; Dorilaus, Steele, and Aike, were named assistants. The court sat in Westminster-hall. When the king was brought forward before the court, he was conducted by the mace-bearer to a chair placed within the bar. Though long detained a prisoner, and now produced as a criminal, he still maintained the dignity of a king. His charge was then read by the solicitor, accusing him of having been the cause of all the bloodshed which followed since the commencement of the war; after which Bradshaw directed his discourse to him, and told him that the court expected his answer.

The king began his defence with declining the authority of the court. He represented, that having been engaged in treaty with his two houses of parliament, and having finished almost every article, he expected a different treatment from what he had now received. He perceived, he said, no appearance of an upper house, which was necessary to constitute a just tribunal. He alleged that he was himself the king and

fountain of law, and consequently could not be tried by laws to which he had never given his assent; that having been intrusted with the liberties of the people, he would not now betray them by recognizing a power founded in usurpation; that he was willing, before a proper tribunal, to enter into the particulars of his defence; but that before them he must decline any apology for his innocence, lest he should be considered as the betrayer of, and not a martyr for, the constitution. Bradshaw, in order to support the authority of the court, insisted, that they had received their authority from the people, the source of all right. He pressed the king not to decline the authority of the court that was delegated by the commons of England, and interrupted and over-ruled him in his attempts to reply. In this manner the king was three times produced before the court, and as often persisted in declining its jurisdiction. The fourth and last time he was brought before this self-created tribunal, as he was proceeding thither, he was insulted by the soldiers and the mob, who cried out, "Justice! justice! Execution! execution!" but he continued undaunted. His judges having now examined some witnesses, by whom it was proved that the king had appeared in arms against the forces commissioned by parliament, they pronounced sentence against him. He seemed very anxious at this time to be admitted to a conference with the two houses, and it was supposed that he intended to resign the crown to his son; but the court refused compliance, and considered his request as an artifice to delay justice.

The behaviour of Charles under all these instances of low-bred malice was great, firm, and equal. In going through the hall from this execrable tribunal, the soldiers and rabble were again instigated to cry out, Justice and execution! They reviled him with the most bitter reproaches. Among other insults, one miscreant presumed to spit in the face of his sovereign. He patiently bore their insolence: "Poor souls (cried he), they would treat their generals in the same manner for sixpence." Those of the populace who still retained the feelings of humanity expressed their sorrow in sighs and tears. A soldier more compassionate than the rest could not help imploring a blessing on his royal head. An officer overhearing him, struck the honest centinel to the ground before the king; who could not help saying, that the punishment exceeded the offence.

At his return to Whitehall, Charles desired permission of the house to see his children, and to be attended in his private devotions by Dr Juxon late bishop of London. These requests were granted, and also three days to prepare for execution. Every night between his sentence and execution, the king slept sound as usual, though the noise of the workmen employed in framing the scaffold continually resounded in his ears. The fatal morning being at last arrived, he rose early; and calling one of his attendants, he bad him employ more than usual care in dressing him, and preparing him for so great a solemnity. The street before Whitehall was the place destined for his execution; for it was intended that this should increase the severity of his punishment. He was led through the banqueting-house to the scaffold adjoining to that edifice, attended by his friend and servant bishop Juxon, a man of the same mild and steady virtues with his master. The scaffold, which was

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He is in-
sulted by
the sol-
diers.

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His execu-
tion.

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covered with black, was guarded by a regiment of soldiers under the command of colonel Tomlinson; and on it were to be seen the block, the ax, and two executioners in masks. The people, in crowds, stood at a greater distance. The king surveyed all these solemn preparations with calm composure; and, as he could not expect to be heard by the people at a distance, he addressed himself to the few persons who stood round him. He there justified his own innocence in the late fatal wars: he observed, that he had not taken arms till after the parliament had shown him the example; and that he had no other object in his warlike preparations, than to preserve that authority entire which had been transmitted to him by his ancestors. But, though innocent towards his people, he acknowledged the equity of his execution in the eyes of his Maker: he owned that he was justly punished for having consented to the execution of an unjust sentence against the earl of Strafford. He forgave all his enemies; exhorted the people to return to their obedience, and acknowledge his son as his successor; and signified his attachment to the Protestant religion as professed by the church of England. So strong was the impression made by his dying words on those who could hear him, that colonel Tomlinson himself, to whose care he had been committed, acknowledged himself a convert. At one blow his head was severed from his body. The other executioner then, holding up the head, exclaimed, "This is the head of a traitor."

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Grief of the nation on that account.

It is impossible to describe the grief, indignation, and astonishment, which took place not only among the spectators, who were overwhelmed with a flood of sorrow, but throughout the whole nation, as soon as the report of this fatal execution was conveyed to them. Each blamed himself either with active disloyalty to the king, or a passive compliance with his destroyers. The very pulpits that used to resound with insolence and sedition were now bedewed with tears of unfeigned repentance; and all united in their detestation of those dark hypocrites who, to satisfy their own enmity, involved a whole nation in the guilt of treason.—Charles was executed on the 30th of January 1649, in the 49th year of his age, and 24th of his reign. He was of a middling stature, robust, and well-proportioned. His visage was pleasant, but melancholy; and it is probable that the continual troubles in which he was involved might have made that impression on his countenance.

162
Piety of the king in his last moments.

It being remarked, that the king, the moment before he stretched out his neck to the executioner, had said to Juxon, with a very earnest accent, the single word REMEMBER, great mysteries were supposed to be concealed under that word; and the generals vehemently insisted with the prelate that he should inform them of the king's meaning. Juxon told them, that the king, having frequently charged him to inculcate on his son the forgiveness of his murderers, had taken this opportunity in the last moment of his life, when his commands, he supposed, would be regarded as sacred and inviolable, to reiterate that desire; and that his mild spirit thus terminated its present course by an act of benevolence to his greatest enemies.

163
Dissolution of the English monarchy.

The dissolution of the monarchy in England soon followed the death of the monarch. When the peers met on the day appointed in their adjournment, they

entered upon business; and sent down some votes to the commons, of which the latter deigned not to take the least notice. In a few days after, the commons voted, that the house of lords was useless and dangerous; for which reason it was abolished. They voted it high treason to acknowledge Charles Stuart, son of the late king, as successor to the throne. A great seal was made: on one side of which were engraven the arms of England and Ireland, with this inscription, "The great seal of England." On the reverse was represented the house of commons sitting, with this motto: "On the first year of freedom, by God's blessing restored, 1649." The forms of all public business were changed from being transacted in the king's name, to that of the *keepers of the liberties of England*. The court of king's bench was called the court of *public bench*. Nay, so cautious on this head, it is said, were some of the republicans, that, in reciting the Lord's prayer, they would not say, "thy kingdom," but "thy *commonwealth*, come." The king's statue in the exchange was thrown down; and on the pedestal these words were inscribed: *Exit tyrannus, regnum ultimus*; "The tyrant is gone, the last of the kings." The commons, it is said, intended to bind the princess Elizabeth apprentice to a button-maker; the duke of Gloucester was to be taught some other mechanical employment: but the former soon died of grief, as is supposed, for her father's tragical end; the latter was sent beyond sea by Cromwell.

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164
Enthusiasm and tyranny of the republicans.

The commons next proceeded to punish those who had been most remarkable for their attachment to their late sovereign. The duke of Hamilton, lord Capel, and the earl of Holland, were condemned and executed; the earl of Norwich and Sir John Owen were also condemned, and afterwards pardoned. These executions irritated the Scots: their loyalty began to return; and the insolence of the independents, with their victories, inflamed them still more. They determined, therefore, to acknowledge prince Charles for their king, but at the same time to abridge his power by every limitation which they had attempted to impose on his father.

Charles, after the death of his father, having passed some time at Paris, and finding no likelihood of assistance from that quarter, was glad to accept of any conditions. The Scots, however, while they were thus professing loyalty to their king, were nevertheless cruelly punishing his adherents. Among others, the brave marquis of Montrose was taken prisoner, as he endeavoured to raise the Highlanders in the royal cause; and being brought to Edinburgh, was hanged on a gibbet 30 feet high, then quartered, and his limbs stuck up in the principal towns of the kingdom. Yet, notwithstanding all this severity, Charles ventured into Scotland, and had the mortification to enter the gate of Edinburgh where the limbs of that faithful adherent were still exposed.

165
Charles II. invited into Scotland.

The young king soon found that he had only exchanged his exile for imprisonment. He was furrowed by the fanatical clergymen, who having brought royalty under their feet, were resolved to keep it still subservient, and to trample upon it with all the contumely of upstarts. Charles pretended to give ear to their discourses; but, however, made an attempt

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His hard usage there.

Britain. attempt to escape. He was overtaken and brought back; when he owned the greatness of his fault, and testified his repentance for what he had done. Cromwell, in the mean time, who had been appointed by the parliament to command the army in Ireland, prosecuted the war in that kingdom with his usual success. He had to encounter the royalists commanded by the duke of Ormond, and the native Irish led on by O'Neal. These troops he quickly overcame; and most of the towns, intimidated by his cruelty, opened their gates at his approach. He was on the point of reducing the whole kingdom, when he was recalled by the parliament to defend his country against the Scots, who had raised a considerable army in support of the royal cause.

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situation
the Scots.
169
they are
affected by
Cromwell.
On the return of Cromwell to England, he was chosen commander in chief of the parliamentary forces, in the room of Fairfax, who declined opposing the presbyterians. The new general immediately set forward for Scotland with an army of 16,000 men, where he was opposed by general Lesly, who formed an excellent plan for his own defence. This prudent commander, knowing his men to be inferior in valour and discipline, however superior in numbers, to those of Cromwell, kept himself carefully in his intrenchments. At last Cromwell was drawn into a very disadvantageous post near Dunbar, where his antagonist waited deliberately to take advantage of him. From this imminent danger, however, he was delivered by the madness of the Scots clergy. They, it seems, had been wrestling in prayer with the Lord night and day, and at last fancied that they had obtained the superiority. Revelations were made them, that the heretical army, together with Agag their general, would be delivered into their hand. Upon the assurances of these visions, they obliged their general to descend into the plain, and give the English battle. When Cromwell saw this mad action, he assured his followers, that the Lord had delivered them into his hands, and ordered his army to sing psalms, as if already certain of victory. The Scots, though double the number of the English, were soon put to flight, and pursued with great slaughter, while Cromwell did not lose in all above 40 men.

After this defeat, Charles put himself at the head of the remains of his army; and these he further strengthened by the royalists, who had been for some time excluded from his service by the covenanters. He was so closely pursued by Cromwell, however, that he soon found it impossible to maintain his army. Observing, therefore, that the way was open to England, he immediately directed his march towards that country, where he expected to be reinforced by all the royalists in that part of the kingdom. In this, however, he was deceived: the English, terrified at the name of his opponent, dreaded to join him. But his mortification was greatly increased, when at Worcester he was informed, that Cromwell was marching with hasty strides from Scotland with an army of 40,000 men. This news was scarcely arrived, when Cromwell himself was there. He fell upon the town on all sides: the whole Scots army was either killed or taken prisoners; and the king himself, having given many proofs of personal valour, was obliged to fly.

The young king now entered upon a scene of ad-

ventures the most romantic that can be imagined. After his hair was cut off, the better to disguise his person, he worked for some days in the habit of a peasant, cutting faggots in a wood. He next made an attempt to retire into Wales, under the conduct of one Pendrel, a poor farmer, who was sincerely attached to his cause. In this attempt, however, he was disappointed; every pass being guarded to prevent their escape. Being obliged to return, he met one colonel Carleiss, who had escaped the carnage at Worcester. In his company the king was obliged to climb a spreading oak; among the thick branches of which they spent the day together, while they heard the soldiers of the enemy in pursuit of them below. From thence he passed with imminent danger, feeling all the varieties of famine, fatigue, and pain, till he arrived at the house of colonel Lane, a zealous royalist in Staffordshire. There he deliberated about the means of escaping into France: and Bristol being supposed the properest port, it was resolved that he should ride thither before this gentleman's sister, on a visit to one Mrs Norton, who lived in the neighbourhood of that city. During this journey, he every day met with persons whose faces he knew, and at one time passed through a whole regiment of the enemy's army.

When they arrived at Mrs Norton's, the first person they saw was one of his own chaplains sitting at the door, and amusing himself with seeing people play at bowls. The king, after having taken proper care of his horse in the stable, was shown to an apartment which Mrs Lane had provided for him, as it was said he had the ague. The butler, however, being sent to him with some refreshment, no sooner beheld his face, which was very pale with anxiety and fatigue, than he recollected his king and master; and falling on his knees, while the tears streamed down his cheeks, cried out, "I am rejoiced to see your majesty." The king was alarmed; but made the butler promise that he would keep the secret from every mortal, even from his master; and the honest servant punctually obeyed him.

No ship being found that would for a month set sail from Bristol either for France or Spain, the king was obliged to go elsewhere for a passage. He therefore repaired to the house of colonel Wyndham in Dorsetshire, where he was cordially received. His mother, a venerable matron, seemed to think the end of her life nobly rewarded in having it in her power to give protection to her king. She expressed no dissatisfaction at having lost three sons and one grandchild in the defence of his cause, since she was honoured in being instrumental in his own preservation.

Pursuing from thence his journey to the sea-side, he once more had a very narrow escape at a little inn, where he set up for the night. The day had been appointed for a solemn fast; and a fanatical weaver, who had been a soldier in the parliamentary army, was preaching against the king in a little chapel fronting the house. Charles, to avoid suspicion, was himself among the audience. It happened that a smith, of the same principles with the weaver, had been examining the horses belonging to the passengers, and came to assure the preacher, that he knew by the fashion of the shoes, that one of the strangers horses came from the north. The preacher immediately affirmed, that this horse could belong to no other than Charles Stuart, and

Britain.
177
His adventures
attended
ward.

Britain.

and instantly went with a constable to search the inn. But Charles had taken timely precautions, and left the inn before the constable's arrival.

172

He escapes to France.

At Shoreham, in Suffex, a vessel was at last found, in which he embarked. He was known to so many, that if he had not set sail at that critical moment, it had been impossible for him to escape. After 41 days concealment, he arrived safely at Feschamp in Normandy. No less than 40 men and women had at different times been privy to his escape.

173

Cromwell treats Scotland as a conquered province.

Cromwell in the mean time returned in triumph; and his first care was to depress the Scots, on account of their having *withstood the work of the gospel* as he called it. An act was passed for abolishing royalty in Scotland, and annexing that kingdom as a conquered province to the English commonwealth. It was empowered, however, to send some members to the English parliament. Judges were appointed to distribute justice; and the people of that country, now freed from the tyranny of the ecclesiastics, were not much dissatisfied with the government.

174

War with the Dutch.

All parts of the British dominions being now reduced to perfect subjection to the parliament, they next resolved to chastise the Dutch, who had given but very slight causes of complaint. It happened that one Dr Dorilaus, who was of the number of the late king's judges, being sent by the parliament as their envoy to Holland, was assassinated by one of the royal party who had taken refuge there. Some time after, also, Mr St John, appointed their ambassador to that court, was insulted by the friends of the prince of Orange. These were thought sufficient reasons for a declaration of war against the Hollanders by the commonwealth of England. The parliament's chief dependence lay in the activity and courage of Blake their admiral; who, though he had not embarked in naval command till late in life, yet surpassed all that went before him in courage and dexterity. On the other side, the Dutch opposed to him their famous admiral Van Tromp, to whom their country never since produced an equal. Many were the engagements between these celebrated admirals, and various was their success. Several dreadful encounters served rather to show the excellency of the admirals than to determine their superiority. At last the Dutch, who felt many great disadvantages by the loss of their trade, and by the total suspension of their fisheries, were willing to treat of a peace. The parliament, however, gave but a very unfavourable answer. They studied to keep their navy on foot as long as they could; rightly judging, that while the force of the nation was exerted by sea, it would diminish the formidable power of Cromwell by land.

175

Cromwell resolves to seize the sovereignty.

This great aspirer, however, quickly perceived their designs; and therefore, secure in the attachment of the army, resolved to seize the sovereign power. He persuaded the officers to present a petition for payment of arrears, and redress of grievances. His orders were obeyed: a petition was drawn up and presented, in which the officers, after demanding their arrears, desired the parliament to consider how many years they had sat, and what pretensions they had formerly made of their designs to new-model the house, and establish freedom on its broadest basis. They alleged, that it was now full time to give place to others; and however meritorious their actions might have been, yet the rest

of the nation had some right, in their turn, to manifest their patriotism in defence of their country. The house was highly offended: they appointed a committee to prepare an act, ordaining that all persons who presented such petitions for the future should be deemed guilty of high treason. To this the officers made a very warm remonstrance, and the parliament as angry a reply. Cromwell, being informed of this altercation, started up in the utmost seeming fury, and turning to major Vernon, cried out, that "he was compelled to do a thing that made the very hair of his head stand on end." Then, hastening to the house with 300 soldiers, and with the marks of violent indignation on his countenance, he entered, took his place, and attended to the debates for some time. When the question was ready to be put, he suddenly started up, and began to load the parliament with the vilest reproaches for their tyranny, ambition, oppression, and robbery of the public. Upon which, stamping with his foot, which was the signal for the soldiers to enter, the place was immediately filled with armed men. Then, addressing himself to the members, "For shame (said he), get you gone. Give place to honest men; to those who will more faithfully discharge their trust. You are no longer a parliament; I tell you, you are no longer a parliament; the Lord has done with you." Sir Harry Vane exclaiming against this conduct, "Sir Harry! (cries Cromwell with a loud voice), O Sir Harry Vane! The Lord deliver me from Sir Harry Vane!" Taking hold then of one of the members by his cloak, "Thou art a whoremaster," cries he; to another, "Thou art an adulterer;" to a third, "Thou art a drunkard;" to a fourth, "Thou art a glutton, &c." "It is you (continued he to the members), that have forced me upon this. I have fought the Lord night and day, that he would rather slay me than put me upon this work." Then pointing to the mace, "Take away that bauble," cried he: after which, turning out all the members, and clearing the hall, he ordered the doors to be locked; and putting the keys in his pocket, returned to Whitehall.

Britain.

176

He turns out the parliament.

This the whole civil and military power centered in Cromwell, who by this bold transaction became, in effect, king of Great Britain, with uncontrollable authority. Being willing, however, to amuse the people with the form of a commonwealth, he proposed to give his subjects a parliament; but such an one as should be altogether obedient to his commands. For this purpose it was decreed, that the sovereign power should be vested in 144 persons, under the denomination of a parliament; and he undertook to make the choice himself. The persons pitched upon were the lowest, meanest, and most ignorant among the citizens, and the very dregs of the fanatics. To go further than others in the absurdities of fanaticism was the chief qualification upon which each of these valued himself. Their very names, borrowed from scripture, and rendered ridiculous by their misapplication, served to show their excess of folly. One of them particularly, who was called *Praise God Barebone*, a canting leather-seller, gave his name to this odd assembly, and it was called *Barebone's Parliament*. They were chiefly composed of Antinomians; a sect that, after receiving the spirit, supposed themselves incapable of error; and the fifth-monarchy-men, who every hour expected Christ's

177 And chuses another.

Britain. second coming on earth. They began by choosing eight of their tribe to seek the Lord in prayer, while the rest calmly sat down to deliberate upon the suppression of the clergy, the universities, and courts of justice; and instead of all this, it was their intent to substitute the law of Moses.

178 **Wh. are a-**
tain turned
out. It was impossible such a legislature as this could stand; even the vulgar began to exclaim against it, and Cromwell himself to be ashamed of their absurdities. He had carefully chosen many persons among them who were entirely devoted to his interests, and these he commanded to dismiss the assembly. These accordingly met by concert earlier than the rest of their fraternity; and observing to each other that this parliament had sat long enough, they hastened to Cromwell, with Rouse their speaker at their head, and into his hands resigned the authority with which he had invested them. Cromwell accepted their resignation with pleasure; but being told that some of their number were refractory, he sent colonel White to clear the house of such as ventured to remain there. They had placed one Moyer in the chair by the time that the colonel had arrived; and he being asked by the colonel, What they did there? Moyer replied very gravely, That they were seeking the Lord. "Then you may go elsewhere (cried White); for, to my certain knowledge, the Lord hath not been here these many years."

179 **Cromwell**
declared
protector. The shadow of a parliament being thus dissolved, the officers, by their own authority, declared Cromwell protector of the commonwealth of England. The mayor and aldermen were sent for to give solemnity to his appointment, and he was instituted into his new office at Whitehall, in the palace of the kings of England. He was to be addressed by the title of *Highness*; and his power was proclaimed in London, and other parts of the kingdom. It was now, indeed, in a great measure necessary that some person should take the supreme command; for affairs were brought into such a situation, by the furious animosities of the contending parties, that nothing but absolute power could prevent a renewal of former bloodshed and confusion.

180 **He settles**
the govern-
ment. The government of the kingdom was adjusted in the following manner. A council was appointed, which was not to exceed 21, nor to be under 13 persons. These were to enjoy their offices for life, or during good behaviour; and, in case of a vacancy, the remaining members named three, of whom the protector chose one. The protector was appointed the supreme magistrate of the commonwealth, with such powers as the king was possessed of. The power of the sword was vested in him jointly with the parliament when sitting, or with the council at other times. He was obliged to summon a parliament once every three years, and to allow them to sit five months without adjournment. A standing army was established of 20,000 foot and 10,000 horse; and funds were assigned for their support. The protector enjoyed his office for life; and on his death, his place was to be supplied by the council. Of all these clauses the standing army was sufficient for Cromwell's purpose; for, while possessed of that instrument, he could mould the rest of the constitution to his pleasure at any time. He chose his council from among his officers, who had been the companions of his dangers and victories, to each of whom he assigned a pension of 1000l. a-year. He took care to have his troops,

upon whose fidelity he depended for support, paid a month in advance; the magazines were also well provided, and the public treasure managed with frugality and care; while his activity, vigilance, and resolution, were so well exerted, that he discovered every conspiracy against his person, and every plot for an insurrection, before they took effect.

Thus Cromwell continued to govern, though without assuming the title of *king*, in as absolute a manner as the most despotic prince in Europe. As he was feared at home, so he made himself respected abroad. The Dutch, having been humbled by repeated defeats, were obliged to sue for peace. Cromwell obliged them to pay deference to the British flag. He compelled them to abandon the interests of the king, to pay 85,000l. as an indemnification for former expences, and to restore to the English East India company a part of those dominions which they had been dispossessed of by the Dutch during the former reign. The ministry of France thought proper to pay deference to the imperious character of the protector; and he having lent that court a body of 6000 men to attack the Spanish dominions in the Netherlands, who obtained a signal victory, the French put Dunkirk into his hands as a reward for his attachment. By means of the celebrated admiral Blake † he humbled Spain prodigiously, as also the Algerines and Tunefines. Penn and Venables, two other admirals, made an attempt on the island of Hispaniola; but failing of this, they steered to Jamaica, which was surrendered to them without a blow. Yet so little was thought of the importance of this conquest, that, on their return, the two admirals were committed to the tower, on account of the failure of the principal object of their equipment.

It is not to be supposed that a numerous standing army could be maintained, and so many foreign wars carried on, without incurring extraordinary expences. The protector's revenues were so much exhausted, that he was obliged to have recourse to methods which he probably would not have chosen, had he not been driven to them by necessity. One or two conspiracies entered into by the royalists, which were detected and punished, served him as a pretence to lay a heavy tax upon all that party, of the tenth penny on all their possessions. In order to raise this oppressive imposition, ten major-generals were instituted, who divided the whole kingdom into so many military jurisdictions. These men had power to subject whom they pleased to this tax, and to imprison such as denied their jurisdiction. Under colour of these powers they exercised the most arbitrary authority; the people had no protection against their exactions; the very mask of liberty was thrown off, and all property was at the disposal of a military tribunal. It was in vain that the nation cried out for a free parliament. Cromwell assembled one in consequence of their clamours: but as speedily dissolved it when he found it refractory to his commands. At last, as parliaments were always held in such estimation by the people, he resolved to give them one, but such as should be entirely of his own choosing, and chiefly composed of his creatures. Lest any of a different complexion should enter the house, guards were placed at the door, and none admitted but such as produced a warrant from his council.

The principal design of convening this assembly was, that

Britain.
181
His virtu-
ous admini-
stration.

182
See the
arctic
Blaze
182
Jamaica
conquered.

183
His arbi-
trary meth-
ods of pro-
ceeding
moncy.

184
con-
s a
riament.

Britain.
185
Who offer
him the
crown.

that they should offer him the crown, with the title of king, and all the other ensigns of royalty. His creatures, therefore, took care to insinuate the confusion there was in legal proceedings without the name of a king; that no man was acquainted with the extent or limits of the present magistrates authority, but those of a king had been well ascertained by the experience of ages. The motion was at last formally made in the house, easily carried through, and nothing was now wanting but Cromwell's own consent to have his name enrolled among the kings of England. This consent, however, he never had resolution enough to give. His doubts continued for some days; and the conference carried on with the members who made him the offer, so far as it is on his part intelligible, seems to argue that he was desirous of being compelled to accept the offer: however, the conference ended in his total refusal.

186
Which he
refuses.

With all these proffered honours, and with all his despotic power, the situation of Cromwell was far from being enviable. Perhaps no situation, however mean, or loaded with contempt, could be more truly distressful than his, at the time the nation was loading him with congratulations and addresses. He had at last rendered himself hateful to every party, and he owed his safety to their mutual hatred and diffidence of one another. His arts of dissimulation were exhausted; none could be deceived by them; even those of his own party and principles disdaining the use to which he had converted his zeal and professions. Though the whole nation silently detested his administration, he had not been completely wretched if he could have found domestic consolation. But even his own family had embraced republican principles with so much vehemence, that they could not without indignation behold him invested with uncontrollable power; and Mrs Claypole, his favourite daughter, upbraided him, on her death-bed, with all the crimes which led him to trample on the throne. To add to all this, not only were conspiracies formed against him, but he was at last taught, upon reasoning principles, that his death was not only desirable, but his assassination would be meritorious. A book was published by colonel Titus, a man who had formerly been attached to his cause, entitled *Killing no murder*. Of all the pamphlets that appeared at that time, or perhaps of those that have since appeared, this was the most eloquent and masterly. Cromwell read it, and is said never to have smiled afterwards.

187
His miserable
situation,

The usurper now found, that the grandeur to which he had sacrificed his former tranquillity was only an inlet to fresh inquietudes. He was haunted with perpetual fears of assassination. He wore armour under his clothes, and always kept pistols in his pockets. His aspect was clouded by a settled gloom, and he regarded every stranger with suspicion. He was always attended by a numerous guard, and travelled in a hurry. He never returned from any place by the road he went; and never slept above three nights together in the same chamber. At last he was delivered from this life of horror and anxiety by a tertian ague, of which he died September 3d 1658, after having usurped the government nine years.

188
And death.

189
Richard
Cromwell
protector.

Oliver Cromwell was succeeded in his office of protector by his son Richard, who immediately called a parliament. To this assembly the army presented a re-

monstrance, desiring some person for their general in whom they could confide. The house voted such meetings and remonstrances unlawful: upon which the officers, surrounding Richard's house, forced him to dissolve the parliament; and soon after he signed an abdication of the government. His younger brother Henry, who had been appointed to the command in Ireland, followed Richard's example, and resigned his commission without striking a blow.

Britain.
190
Is deposed.

The officers, thus left at liberty, resolved to restore the *rump parliament* as it was called, consisting of that remnant of a parliament which had condemned Charles. They were no sooner reinstated in their authority, however, than they began to humble the army by cashiering some of the officers, and appointing others on whom they could have more dependence. The officers immediately resolved to dissolve the assembly. Lambert, one of the general officers, drew up a chosen body of troops; and placing them in the streets which led to Westminster-hall, when the speaker Lenthall proceeded in his carriage to the house, he ordered the horses to be turned, and very civilly conducted him home. The other members were likewise intercepted; and the army returned to their quarters to observe a solemn fast, which generally either preceded or attended their outrages. A committee was then elected, of 23 persons; of whom seven were officers. These they pretended to invest with sovereign authority; and a military government was established, which gave the nation a prospect of endless servitude and tyranny without redress.

191
Rump par-
liament re-
initiated.

192
Dissolved
by the
army.

193
Military
government es-
tablished.

Upon hearing that the officers had by their own authority dissolved the parliament, general Monk, who was then in Scotland with 8000 veteran troops, protested against the measure, and resolved to defend the national privileges. As soon as he put his army in motion, he found himself eagerly sought after by all parties; but so cautious was he of declaring his mind, that, till the very last, it was impossible to know which side he designed to take. A remarkable instance of this cautious behaviour was, that, when his own brother came to him with a message from lord Granville in the name of the king, he refused all conversation with him upon hearing that he had told his errand to Mr Price, the general's own chaplain, and a man of known probity and honour.

194
General
Monk's
motions.

Hearing that the officers were preparing an army to oppose him, Monk amused them with negotiations; and the people, finding themselves not entirely defenceless, began to declare for a free parliament. The *Rump*, finding themselves invited also by the navy and part of the army, again ventured to resume their seats, and to thunder votes in their turn against the officers and that party of the army by which they had been ejected. Without taking any notice of Lambert, they sent orders to the troops to repair immediately to the garrisons appointed for them. The soldiers obeyed; and Lambert at last found himself deserted by his whole army. Monk in the mean time proceeded with his army to London. The gentry, on his march, stocked round him with addresses, expressing their desire of a new parliament; but that general, still continuing his inflexible taciturnity, at last came to St Alban's, within a few miles of the capital, leaving all the world in doubt as to his motives and designs. Here he sent the parliament a message, desiring them to remove such forces

195
Rump par-
liament re-
stored.

¹⁹⁶ **Britain.** forces as remained in London to country quarters. Some of the regiments willingly obeyed this order; and such as did not, Monk turned out by force: after which he took up his quarters with his army in Westminster. The house voted him thanks for his services: he desired them to call a free parliament; and this soon inspired the citizens to refuse submission to the present government. They resolved to pay no taxes until the members formerly excluded by colonel Pride should be replaced. For this they were punished by Monk, at the desire of the parliament. He arrested 11 of the most obnoxious of the common-council; broke the gates and portcullises; and, having exposed it to the scorn and contempt of all who hated it, he returned in triumph to his quarters at Westminster. The next day, however, he made an apology for this conduct, and promised for the future to co-operate with the mayor and common-council in such schemes as they should approve.

¹⁹⁷ **Britain.** The commons were now greatly alarmed. They tried every method to gain off the general from his new alliance. Some of them even promised to invest him with the dignity of supreme magistrate, and to support his usurpation. But Monk was too just, or too wise, to hearken to such wild proposals; he resolved to restore the secluded members, and by their means to bring about a new election.

¹⁹⁸ **Britain.** The restoration of the expelled members was easily effected; and their number was so much superior to that of the *Rump*, that the chiefs of this last party now thought proper to withdraw in their turn. The restored members began with repealing all those orders by which they had been expelled. They renewed and enlarged the general's commission; fixed a proper stipend for the support of the fleet and army; and, having passed these votes, they dissolved themselves, and gave orders for the immediate assembling of a new parliament. Mean while, Monk new-modelled his army to the purposes he had in view. Some officers, by his direction, presented him with an address, in which they promised to obey implicitly the orders of the ensuing parliament. He approved of this engagement, which he ordered to be signed by all the different regiments; and this furnished him with a pretence for dismissing all the officers by whom it was rejected.

¹⁹⁹ **Britain.** In the midst of these transactions, Lambert, who had been confined in the Tower, escaped from his prison, and began to raise forces; and as his activity and principles were sufficiently known, Monk took the earliest precautions to oppose his measures. He dispatched against him colonel Ingoldsbj, with his own regiment, before Lambert had time to assemble his dependents. That officer had taken possession of Daventry with four troops of horse: but the greater part of them joined Ingoldsbj; to whom he himself surrendered, not without exhibiting strong marks of pusillanimity.

All this time Monk still persisted in his reserve; nor would he intrust his secret intentions with any person, except one Morrice, a gentleman of Devonshire. He was of a sedentary and studious disposition; and with him alone did the general deliberate on the great and dangerous enterprize of the restoration. Sir John Granville, who had a commission from the king, applied for access to the general; but he was desired to communicate his business to Morrice. Granville refused, though

twice urged, to deliver his message to any but the general himself: so that Monk now, finding he could depend on this minister's secrecy, opened to him his whole intentions; but, with his usual caution, refused to commit any thing to paper. In consequence of these, the king left the Spanish territories, where he very narrowly escaped being detained at Breda by the governor, under pretence of treating him with proper respect and formality. From thence he retired to Holland, where he resolved to wait further advice.

The new parliament being assembled, Sir Harbottle Grimstone was chosen speaker, a man known to be a royalist in his heart. The affections of all were turned towards the king; yet such were their fears, and such dangers attended a freedom of speech, that no one dared for some days to make any mention of his name. At length Monk gave directions to Annesly, president of the council, to inform them that one Sir John Granville, a servant of the king's, had been sent over by his majesty, and was now at the door with a letter to the house of commons. This message was received with the utmost joy. Granville was called in, the letter read, and the king's proposals immediately accepted of. He offered a general amnesty to all persons whatsoever, and that without any exceptions but what should be made by parliament. He promised to indulge scrupulous consciences with liberty in matters of religion; to leave to the examination of parliament the claims of all such as possessed lands with contested titles; to confirm all these concessions by act of parliament; to satisfy the army under general Monk with respect to their arrears, and to give the same rank to his officers when they should be enlisted in the king's army.

In consequence of this good agreement between king and parliament, Montague the English admiral waited on his majesty to inform him that the fleet expected his orders at Scheveling. The duke of York immediately went on board, and took the command as lord high admiral. The king embarked, and landing at Dover, was received by the general, whom he tenderly embraced. He entered London in 1660, on the 29th of May, which was his birth-day; and was attended by an innumerable multitude of people, who testified their joy by the loudest acclamations.

Charles II. was 30 years of age at the time of his restoration. Being naturally of an engaging countenance, and possessed of an open and affable disposition, he was the favourite of all ranks of his subjects. They had now felt the miseries of anarchy, and in proportion to these miseries was the satisfaction they felt on the accession of their young monarch. His first measures were calculated to give universal satisfaction. He seemed desirous of losing the memory of past animosities, and of uniting every party in affection for their prince and country. He admitted into his council the most eminent men of the nation, without regard to former distinctions. The presbyterians shared this honour equally with the royalists. Calamy and Baxter, presbyterian clergymen, were even made chaplains to the king. Admiral Montague was created earl of Sandwich, and general Monk duke of Albemarle. Morrice, the general's friend, was created secretary of state. But what gave the greatest contentment to the nation was the judicious choice which the king at first made of his principal ministers and favourites. Sir Edward Hyde, created

¹⁹⁶ Monk takes up his quarters at Westminster.

¹⁹⁷ Punished the city of London.

¹⁹⁸ Restores the secluded members of parliament.

¹⁹⁹ New parliament assembled.

²⁰⁰ Charles II. leaves Spain.

²⁰¹ His message to the parliament.

²⁰² He lands in England.

²⁰³ His first measures popular.

^{Britain.} created earl of Clarendon, was prime minister and chancellor. The marquis, created duke of Ormond, was steward of the household; the earl of Southampton high-treasurer; Sir Edward Nicholas secretary of state. These men, united together in the strictest friendship, and combining in the same laudable inclinations, supported each others credit, and pursued the interests of the public.

The parliament having been summoned without the king's consent, received at first only the title of a *convention*; and it was not till after an act passed for that purpose, that they were acknowledged by the name of *parliament*. Both houses owned the guilt of the former rebellion, and gratefully received in their own name, and in that of all the subjects, his majesty's gracious pardon and indemnity. The king had before promised an indemnity to all criminals, but such as should be excepted by parliament: he now issued a proclamation, declaring, that such of the late king's judges as did not surrender themselves within 14 days should receive no pardon. Nineteen surrendered themselves; some were taken in their flight; others escaped beyond sea. The peers seemed inclined to great severity on this occasion; but were restrained by the king, who in the most earnest terms pressed the act of general indemnification.

²⁰⁴
Regicides
punished.

After repeated solicitations, the act of indemnity passed both houses, with the exception of those who had an immediate hand in the king's death. Even Cromwell, Ireton, and Bradshaw, though dead, were considered as proper objects of resentment: their bodies were dug from their graves; dragged to the place of execution; and, after hanging some time, buried under the gallows. Of the rest who sat in judgment on the late monarch's trial, some were dead, and some thought worthy of pardon. Ten only, out of 80, were doomed to immediate destruction; and these were enthusiasts who had all along acted from principle, and who, in the general spirit of rage excited against them, showed a fortitude that would have done honour to a better cause.

This was all the blood that was shed at the restoration. The rest of the king's judges were reprimed, and afterwards dispersed into several prisons. The army was disbanded, that had for so many years governed the nation; prelacy, and all the ceremonies of the church of England, were restored; at the same time that the king pretended to preserve the air of moderation and neutrality. In fact, with regard to religion, Charles, in his gayer hours, was a professed deist; but in the latter part of his life he showed an inclination to the Catholic persuasion, which he had strongly imbibed in his infancy and exile.

²⁰⁵
Death of the
duke of
Gloucester.

On the 13th of September this year, died the young duke of Gloucester, a prince of great hopes. The king was never so deeply affected by any incident in his life. The prince of Orange, having come to England, in order to partake of the joy attending the restoration of her family, with whom he lived in great friendship, soon after sickened and died. The queen-mother paid a visit to her son, and obtained his consent to the marriage of the princess Henrietta with the duke of Orleans, brother to the French king. The parliament having met on the 6th of November, and carried on business with the greatest unanimity and dif-

²⁰⁶
Parliament
dissolved.

patch, were dissolved by the king on 29th of December 1660.

^{Britain.}

During the reign of Charles II. the spirit of the people seemed to take a turn quite opposite to that in the time of Charles I. The latter found his subjects animated with a ferocious though ignorant zeal for liberty. They knew not what it was to be free, and therefore imagined that liberty consisted in throwing off entirely the royal authority. They gained their point: the unhappy monarch was dethroned and murdered; but instead of liberty, they found themselves involved in much worse tyranny than before. Being happily freed from this tyranny by the restoration, they ran into the contrary extreme; and instead of an unbounded spirit of opposition, there was nothing now to be found but as unbounded a spirit of submission; and through the slavish submissions and concessions of the people in this reign, Charles found means to render himself at last almost quite absolute, and to govern without requiring, or indeed without having any occasion for parliament.

²⁰⁷
General
state of the
nation dur-
ing Charles
II's reign.

A like revolution took place with regard to religious matters. During the former reigns, a spirit of the most gloomy enthusiasm had overspread the whole island, and men imagined that the Deity was only to be pleased by their denying themselves every social pleasure, and refusing every thing that tended to make life agreeable. The extreme hypocrisy of Cromwell and his associates, and the absurd conduct of others, showed that this was not religion; but, in avoiding this error, they ran into one equally dangerous; and every thing religious or serious was discountenanced. Nothing but riot and dissipation took place every where. The court set them the example; nothing but scenes of gallantry and festivity were to be seen; the horrors of the late war became the subject of ridicule; the formality of the sectaries was displayed on the stage, and even laughed at from the pulpit. In short, the best mode of religion now was to have as little as possible; and to avoid not only the hypocrisy of the sectaries, but even the common duties of morality.

In the midst of this riot and dissipation, the old and faithful followers of the royal family were left unrewarded. Numbers who had fought both for the king and his father, and who had lost their whole fortunes in his service, still continued to pine in want and oblivion; while in the mean time their persecutors, who had acquired fortunes during the civil war, were permitted to enjoy them without molestation. The wretched royalists petitioned and murmured in vain; the monarch fled from their expostulations to scenes of mirth and festivity; and the act of indemnity was generally said to have been an act of *forgiveness* to the king's enemies, and of *oblivion* to his friends.

²⁰⁸
Ingratitude
of Charles.

In 1661, the Scots and English parliaments seemed to vie with each other in their prostrations to the king. In England, monarchy and episcopacy were raised to the greatest splendour. The bishops were permitted to resume their seats in the house of peers; all military authority was acknowledged to be vested in the king. He was empowered to appoint commissioners for regulating corporations, and expelling such members as had intruded themselves by violence, or professed principles dangerous to the constitution. An act of uniformity was passed, by which it was required that e-

²⁰⁹
Submissive
disposition
of both par-
liaments.

very.

Britain. very clergyman should be re-ordained, if he had not before received episcopal ordination; that he should declare his assent to every thing contained in the book of Common prayer, and should take the oath of canonical obedience. In consequence of this law, above 2000 of the presbyterian clergy resigned their cures at once. In Scotland the right of the king was asserted in the fullest and most positive terms to be hereditary, divine, and indefeasible. His power was extended to the lives and possessions of his subjects, and from his original grant was said to come all that they enjoyed. They voted him an additional revenue of 40,000 l.; and all their former violences were treated with a degree of the utmost detestation.

210
The nation
disgusted
with the
king's ex-
travagance.

This intoxication of loyalty, however, began soon to wear off. The king's profusion and extravagance in his pleasures, together with his indolence in administration, furnished opportunities of making very disadvantageous comparisons between him and Oliver Cromwell. These animosities were heightened by the ejected clergy, especially when they saw Dunkirk, which had been acquired during the usurper's vigorous administration, sold to the French for 40,000 l. and that merely to supply the king's extravagance. From this time (August 17th 1662), Charles found himself perpetually opposed, and his parliaments granted supplies much more reluctantly than before.

211
Marriage
with the in-
fanta of
Portugal.

A few months before, the continual exigencies of the king had forced him to conclude a marriage with the Infanta of Portugal for the sake of her portion, which was 500,000 l. in money, together with the fortresses of Tangier in Africa, and of Bombay in the East Indies. The chancellor Clarendon, the dukes of Ormond and Southampton, urged many reasons against this match, particularly the likelihood of her never having any children; but all their objections could not prevail, and therefore Clarendon set himself to promote it as far as lay in his power. Still, however, the king's necessities were greater than his supplies. He therefore resolved to sacrifice his minister the great Clarendon to the resentment of the parliament, to whom he was become obnoxious, in order to procure some more supplies for himself. In 1663, an extraordinary supply was demanded: the king sent for the commons, on the 12th of June, to Whitehall. He complained of their inattention; and by acquainting them of a conspiracy to seize the castle of Dublin, he hoped to furnish a reason for demanding a present supply. Four subsidies were immediately granted, and the clergy in convocation followed the example of the commons. On this occasion the earl of Bristol ventured to impeach the chancellor in the house of peers; but as he did not support his charge, the affair was dropped for the present.

212
War with
the Dutch.

With a view probably of having the money to be employed for that purpose in his hands, Charles was induced to declare war against the Dutch in 1664. In this war the English, under the command of Sir Robert Holmes, expelled the Dutch from Cape-Corse castle on the coast of Africa, and likewise seized on their settlements of Cape Verd and the isle of Goree. Sailing from thence to America, the admiral possessed himself of Nova Belgia, since called *New York*; and which has ever since continued subject to Britain. On the other hand, De Ruyter, the Dutch admiral, dispossessed

the English of all their settlements in Guinea except Cape Corfe. He afterwards failed to America, where he attacked Barbadoes and Long Island, but was repulsed. Soon after, the two most considerable fleets of each nation met; the one under the duke of York, to the number of 114 sail; the other commanded by Opdam admiral of the Dutch navy, of nearly equal force.

The engagement began at four in the morning and both sides fought with equal intrepidity. The duke of York was in the hottest part of the engagement, and behaved with great spirit and composure, while many of his lords and attendants were killed beside him. In the heat of the action the Dutch admiral's ship blew up; which so discouraged and disheartened them, that they fled towards their own coast, having 30 ships sunk and taken, while the victors lost only one. This success of the English so much excited the jealousy of the neighbouring states, that France and Denmark immediately resolved to protect the republic from such formidable enemies. De Ruyter the great Dutch admiral, on his return from Guinea, was appointed, at the head of 76 sail, to join the duke of Beaufort the French admiral, who it was supposed was then entering the British channel from Toulon. The duke of Albemarle and prince Rupert now commanded the British fleet, which did not exceed 74 sail. Albemarle detached prince Rupert with 20 ships to oppose the duke of Beaufort; against which piece of rashness Sir George Ayscue protested in vain. The fleets thus engaging upon unequal terms, a most memorable battle ensued. The first day, the Dutch admiral Evertzen was killed by a cannon-ball, one of their ships was blown up, and three of the English ships taken; the combatants were parted by darkness. The second day they renewed the battle with incredible fury. Sixteen fresh ships joined the Dutch; and the English were so shattered, that their fighting ships were reduced to 28. Upon retreating towards their own coast, the Dutch followed them; where another dreadful conflict was beginning, but parted by the darkness of the night as before. The morning of the third day the English continued their retreat, and the Dutch their pursuit. Albemarle came to the desperate resolution of blowing up his own ship rather than submit to the enemy, when he found himself happily reinforced by prince Rupert with 16 ships of the line. By this time it was night; and the next day the fleets came again to a close combat, which was continued with great violence, till they were parted by a mist. Sir George Ayscue having the misfortune to strike on the Galoper sands, was taken, with a ship of 100 guns.

Both sides claimed the victory, but the Dutch certainly had the advantage in this engagement. A second, however, equally bloody, happened soon after, with larger fleets on both sides, commanded by the same admirals. In this the Dutch were vanquished; but they were soon in a condition to face their enemies, by the junction of Beaufort the French admiral. The Dutch fleet appeared in the Thames, conducted by their great admiral. The English were thrown into the utmost consternation: a chain had been drawn across the river Medway; and some fortifications had been added to the forts along the bank. But all these were unequal to the present force: Sheerness was soon taken; the Dutch passed forward and broke the chain, though

Britain. fortified by some ships sunk by Albemarle's orders. Destroying the shipping in their passage, they still advanced, with six men of war and five fire-ships, as far as Upnore castle, where they burned three men of war. The whole city of London was in consternation; it was expected that the Dutch might sail up next tide to London-bridge, and destroy not only the shipping, but even the buildings of the metropolis. The Dutch, however, were unable to prosecute that project from the failure of the French who had promised them assistance. Spreading therefore an alarm along the coast, and having insulted Norwich, they returned to their own coasts.

215
Plague and
fire at Lon-
don.

During these transactions abroad, happened a great plague at London, which destroyed 100,000 of the inhabitants. This calamity was soon followed by another, still more dreadful if possible. A fire broke out in a baker's house in Pudding-lane near the bridge, and spread with such rapidity, that no efforts could extinguish it, till it laid in ashes the most considerable part of the city. This calamity, though it reduced thousands to beggary, proved in the end both beneficial and ornamental to the city. It rose from its ruins in greater beauty than ever; the streets being widened, and the houses built of brick instead of wood, became thus more wholesome and secure. In so great a calamity it is remarkable that not a single life was lost.

These complicated misfortunes did not fail to excite many murmurs among the people: the blame of the fire was laid on the Papists: the Dutch war was exclaimed against as unsuccessful and unnecessary, as being an attempt to humble that nation who were equal enemies to Popery with themselves. Charles himself also began to be sensible, that all the ends for which he had undertaken the Dutch war were likely to be entirely frustrated. Instead of being able to lay up money for himself, the supplies of parliament had hitherto been so scanty, that he found himself considerably in debt. A treaty therefore was set on foot, which was concluded at Breda on the 21st of July 1667. By this treaty the only advantage gained by Britain was, the cessation of the colony of New York. It was therefore judged disgraceful, and the blame of it thrown upon the unhappy earl of Clarendon. Along with this, he was charged with the sale of Dunkirk; the bad payment of the sea-men; the disgrace by the Dutch fleet; and his own ambition. His daughter, while yet in Paris, had commenced an amour with the duke of York; and under a solemn promise of marriage had admitted him to her bed. Her lover, however, either of his own accord, or through the persuasions of his brother Charles, afterwards married her; and this too was imputed as a crime to Clarendon. On these accusations, the king, who on account of his rigid virtue had never much loved this nobleman, ordered the seals to be taken from him, and given to Sir Orlando Bridgemen. Clarendon was again impeached; and though the charges were manifestly frivolous, yet so strong was the popular torrent against him, that he thought proper to withdraw into France. Soon after, the king formed an alliance with Holland and Sweden, in order to prevent the French king from completing his conquest of the Netherlands. The greatest part of this country he had already subdued, when he was unexpectedly stopped by this league; in which it was agreed by the contracting

216
Peace with
Holland
concluded.

217
Clarendon
disgraced.

218
Alliance
with Hol-
land and
Sweden.

Britain. powers, that they would constitute themselves arbiters of the differences between France and Spain, and check the exorbitant pretensions of either.

219
Arbitrary
proceedings
of Charles.

The king now began to act in a very arbitrary manner. He had long wished to extend his prerogative, and to be able to furnish himself with whatever sums he might want for his pleasures, and therefore was most likely to be pleased with those ministers who could flatter both his wishes at once. These he found in Clifford, Ashley, Buckingham, Arlington, and Lauderdale, a junto distinguished by the name of the *cabal*; a word formed by the initials of their names. The first effects of their advice was a secret alliance with France, and a rupture with Holland. Soon after this, the duke of York declared himself a Papist; and liberty of conscience was proclaimed to all sectaries, whether dissenters or Papists: a proclamation was issued containing very rigorous clauses in favour of pressing; another full of menaces against those who should speak undutifully of his majesty's measures; and even against those who heard such discourses, unless they informed in due time against the offenders. All these things gave very great and just offence to the people; but they were especially alarmed at the alliance with France, and justly afraid of the treachery of that nation.

220
New war
with Hol-
land.

221
A desperat
naval en-
gagement.

On the 28th of May 1672, the English fleet under the duke of York was surprised by the Dutch in Southwold bay. About eight in the morning began a most furious engagement. The gallant Sandwich, who commanded the English van, drove his ship into the midst of the enemy, beat off the admiral that ventured to attack him, sunk another ship that attempted to board him, and three fire ships that offered to grapple with him. Though his vessel was torn with shot, and out of 1000 men there only remained 400, he still continued to fight. At last, a fire-ship, more fortunate than the rest, having laid hold of his vessel, her destruction became inevitable, and the earl himself was drowned in attempting to swim to some other ship. Night parted the combatants; the Dutch retired, and were not followed by the English. The loss sustained by the two maritime powers was nearly equal; but the French suffered very little, not having entered into the heat of the engagement. It was even supposed that they had orders for this conduct, and to spare their own ships, while the Dutch and English should weaken each other by their mutual animosities.

222
Succes- of
Louis XIV.
against the
Dutch.

The combined powers were much more successful against the Dutch by land. Louis conquered all before him, crossed the Rhine, took all the frontier towns of the enemy, and threatened the new republic with a final dissolution. Terms were proposed to them by the two conquerors. Louis offered them such as would have deprived them of all power of resisting an invasion from France by land. Those of Charles exposed them equally to every invasion by sea. At last the murmurs of the English at seeing this brave and industrious people, the supporters of the Protestant cause, totally sunk and on the brink of destruction, were too loud not to reach the king. He was obliged to call a parliament, to take the sense of the nation upon his conduct; and he soon saw how his subjects stood affected.

223
A pallia-
ment. alled.

The parliament met on the 4th of February 1673. They began with repressing some of the king's extraordinary stretches of prerogative, and taking means for uniformity

uniformity in religious matters. A law was passed entitled the *test act*, imposing an oath on all who should enjoy any public benefice. Besides the taking the oaths of allegiance and the king's supremacy, they were obliged to receive the sacrament once a-year in the established church, and to abjure all belief in the doctrine of transubstantiation. As the dissenters also had seconded the efforts of the commons against the king's declaration of indulgence to Roman Catholics, a bill was passed for their ease and relief, which, however, went with some difficulty through the house of peers. The Dutch in the mean time continued to defend themselves with such valour, that the commons began to despair of success. They therefore resolved that the standing army was a grievance; they next declared, that they would grant no more supplies to carry on the Dutch war, unless it appeared that the enemy were so obstinate as to refuse all reasonable conditions. To cut short these disagreeable altercations, the king resolved to prorogue the parliament; and, with that intention, went unexpectedly to the house of peers, from whence he sent the usher of the black-rod to summon the house of commons to attend. It happened that the usher and the speaker met nearly at the door of the house; but the speaker being within, some of the members suddenly shut the door, and cried "To the chair." Upon which the following motions were instantly made in a tumultuous manner: That the alliance with France was a grievance; that the evil counsellors of the king were a grievance; that the earl of Lauderdale was a grievance; and then the house rose in great confusion. The king soon saw that he could expect no supply from the commons for carrying on the war which was so disagreeable to them; he resolved, therefore, to make a separate peace with the Dutch, on terms which they had proposed by the Spanish ambassador. For form's sake, he asked the advice of his parliament; who concurring heartily in his intentions, a peace was concluded accordingly.

The prepossession which Charles had all along shown for France, and his manifest inclination upon all occasions to attach himself to that kingdom, had given great offence to his people. Along with this, other circumstances conspired to raise a general discontent. The toleration of Catholics, so much wished for by the king; the bigotry of the duke of York, the heir apparent to the crown, and his zeal for the propagation of the Catholic religion; excited a consternation not altogether without foundation, as if the Protestant religion was in danger. This fear and discontent was carefully kept up and fomented by wicked and designing men, who to promote their own interests would not scruple to advance the grossest falsehoods. In 1678, an account of a plot formed by the papists for destroying the king and the protestant religion, was given in by one Kirby a chemist, Dr Tong, a weak credulous clergyman, and Titus Oates, who had likewise been a clergyman, but one of the most abandoned miscreants that can be imagined. The circumstances attending this pretended discovery were so perfectly incredible, that it appears amazing how any person of common sense could give ear to them. Nevertheless, so much were the minds of the nation in general inflamed against the Catholics at this time, that it not only produced the destruction of individuals of the Romish persuasion, but an universal massacre of that unhappy sect was apprehended. The

parliament, who ought to have repressed these delusions, and brought back the people to calm deliberate inquiry, were found more credulous than even the vulgar themselves. The cry of plot was immediately echoed from one house to the other; the country party could not slip so favourable an opportunity of managing the passions of the people; the courtiers were afraid of being thought disloyal if they should doubt the guilt of those who were accused of designs against the king's person. Danby, the prime minister, himself entered into it very furiously, and persisted in his inquiries notwithstanding all the king's advices to the contrary. Charles himself, who was the person that ought to have been most concerned; was the only one who treated it with contempt. Nothing, however, could stop the popular fury; and for a time the king was obliged to give way to it.

During the time of this general uproar and persecution, the lord treasurer Danby was impeached in the house of commons by Seymour the speaker. The principal charge against him was, his having written a letter to Montague the king's ambassador at Paris, directing him to sell the king's good offices at the treaty of Nimeguen, to the king of France, for a certain sum of money; contrary to the general interests of the confederates, and even of those of his own kingdoms. Tho' the charge was just, yet Danby had the happiness to find the king resolved to defend him. Charles assured the parliament, that, as he had acted in every thing by his orders, he held him entirely blameless; and though he would deprive him of all his employments, yet he would positively insist on his personal safety. The lords were obliged to submit; however, they went on to impeach him, and Danby was sent to the Tower, but no worse consequences followed.

These furious proceedings had been carried on by an house of commons that had continued undissolved for above 17 years. They were now dissolved, and another parliament was called; which, however, proved as unmanageable as the preceding. The members resolved to check the growth of Popery by striking at the root of the evil; and therefore brought in a bill for the total exclusion of the duke of York from the crown of England and Ireland, which passed the lower house by a majority of 79. They next voted the king's standing army and guards to be illegal. They proceeded to establish limits to the king's power of imprisoning to delinquents at will. It was now also that the celebrated statute called the *habeas corpus act* was passed, which confirms the subject in an absolute security from oppressive power.

During these troubles the duke of York had retired to Brussels; but an indisposition of the king led him back to England, to be ready, in case of any sinister accident, to assert his right to the throne. After prevailing upon his brother to disgrace his natural son the duke of Monmouth, who was now become very popular, he himself retired to Scotland, under pretence of quieting the apprehensions of the English nation, but in reality to strengthen his interests in that part of the empire. This secession served still more to inflame the country party, who were strongly attached to the duke of Monmouth, and were resolved to support him against the duke of York. Mobs, petitions, pope-burnings, were artifices employed to keep up the terrors of Popery, and alarm the court. The parliament had shown favour to the various tribes of informers, and that served to in-

Britain

227
Lord Danby impeached.228
Exclusion bill brought in.

crises

^{Britain.} crease the number of these miscreants; but plots themselves also became more numerous. Plot was set up against plot; and the people were kept suspended in the most dreadful apprehension.

But it was not by plots alone that the adverse parties endeavoured to supplant each other. Tumultuous petitions on the one hand, and flattering addresses on the other, were sent up from all quarters. Wherever the country party prevailed, petitions were sent to the king filled with grievances and apprehensions. Wherever the church or court party prevailed, addresses were framed, containing expressions of the highest regard to his majesty, and the deepest abhorrence of those who endeavoured to disturb the public tranquillity. Thus the nation came to be distinguished into *petitioners* and *abhorers*. *Whig* and *Tory*, also, were now first used as terms of reproach. The whigs were so denominated from a cant name given to the four presbyterian conventicles, (*whig* being *milk turned sour*). The tories were denominated from the Irish banditti so called, whose usual manner of bidding people deliver was by the Irish word *Toree*, or "Give me."

²²⁹ ^{Petitioners and abhorers, who.} All this time the king had tyrannized over the Scots in a very cruel manner. Being apprized of the tendency of presbyterian principles to a republican form of government, Charles, like his predecessors, had endeavoured to introduce episcopacy there, but in a much more violent manner than had been formerly attempted. The rights of patrons had for some years been abolished; and the power of electing ministers had been vested in the kirk-session and lay elders; but it was now enacted, that all incumbents who had been admitted upon this title should receive a presentation, and be instituted anew by the bishop, under the penalty of deprivation. In consequence of this, 350 parishes were at once declared vacant. New ministers were sought for all over the kingdom, and none was so vicious or ignorant as to be rejected. The people, as might have been expected, were displeased to the highest degree; they resolved, however, to give no sign of mutiny or sedition, notwithstanding their discontent. This submission made their case still worse; it being foolishly imagined, that, as they did not complain for a little ill usage, they would submit altogether if they were worse treated.

²³⁰ ^{Attempt to establish episcopacy in Scotland.} Affairs remained in a peaceable situation, till, in 1664, a very severe act was passed in England against conventicles; and this severity was imitated by the Scots parliament, who passed an act of the same kind. Military force was next let loose. Wherever the people had generally forsaken their churches, the guards were quartered throughout the country. They were commanded by Sir James Turner, a man of a very furious temper and dissolute life. He went about and received lifts from the clergy of those who absented themselves from the churches, or were supposed to frequent conventicles. Without any proof, or legal conviction, he demanded a fine from them; and quartered soldiers on the supposed criminals till he received payment. An insurrection being dreaded during the Dutch war, new forces were levied, and entrusted to the command of Dalziel and Drummond, two men of very cruel dispositions, and the Scots parliament gave full scope to all their enmities.

Representations were now made to the king, who

promised some redress. But his lenity came too late. The people, in 1668, rose in arms. They surpris'd Turner in Dumfries, and resolved to have put him to death; but finding his orders to be more violent than his execution of them, they spared his life. At Lanark they renewed the covenant, and published their manifesto; where they professed their submission to the king, and only desired the re-establishment of presbytery, and of their former ministers. Their force never exceeded 2000 men; and though the country in general bore them great favour, mens spirits were so subdued, that the insurgents could expect no farther increase of numbers. Dalziel took the field to oppose them. The number of the covenanters was now reduced to 800, and these no way capable of contending with regular forces. Having advanced near Edinburgh, they attempted to find their way back into the west by Pentland hills. Here they were attacked by the king's troops, and received the first charge very resolutely; but that was all the action. Immediately they fell into confusion, and fled. About 40 were killed on the spot, and 130 taken prisoners.

²³¹ ^{Occasions of discontent.} So long ago as the year 1661, the presbyterians had deputed one Sharpe to lay their grievances before the king. Instead of this, their deputy abandoned the cause altogether, became their violent enemy, and as a reward of his treachery was made archbishop of St Andrew's. After the battle of Pentland-hills, this man was the foremost to take vengeance on the unhappy insurgents, whose oppressed state and inoffensive behaviour had made them objects of universal compassion. Ten were hanged on one gibbet in Edinburgh; 35 before their own doors in different places. They might all have saved their lives, if they would have renounced the covenant; but this they absolutely refused. The executions were going on, when the king wrote a letter to the privy council, in which he ordered that such of the prisoners as should simply promise to obey the laws for the future should be set at liberty, and that the incorrigible should be sent to the plantations. This letter was brought to the council by Burnet, but was not immediately delivered by Sharpe. What his motives were for this delay, we pretend not to say; but certain it is, that no action of his life will bear a worse construction than this. It had been customary to put these poor creatures to very severe tortures, in order to make them confess that to be falsehood which they believed to be true. By Sharpe's delay, one Hugh Maccail had been tortured, who would otherwise have escaped; and so violent were the torments he endured, that he expired under them. He seemed to die in an ecstasy of joy. His last words were uttered with an accent which struck all the bystanders with astonishment. "Farewell (said he) sun, moon, and stars; farewell world and time; farewell weak frail body; welcome eternity; welcome angels and saints; welcome Saviour of the world; and welcome God the judge of all."

²³² ^{Presbyterians persecuted.} In 1670, an act against conventicles was passed, seemingly with a design of mitigating the former persecuting laws; though even this was severe enough. By this act, the hearer in a conventicle (that is, in a dissenting assembly where more than five beside the family were present) was fined 5s. for the first offence, and 10s. for the second; the preacher L. 20 for the first offence,

^{Britain.} The people, in 1668, rose in arms. They surpris'd Turner in Dumfries, and resolved to have put him to death; but finding his orders to be more violent than his execution of them, they spared his life. At Lanark they renewed the covenant, and published their manifesto; where they professed their submission to the king, and only desired the re-establishment of presbytery, and of their former ministers. Their force never exceeded 2000 men; and though the country in general bore them great favour, mens spirits were so subdued, that the insurgents could expect no farther increase of numbers. Dalziel took the field to oppose them. The number of the covenanters was now reduced to 800, and these no way capable of contending with regular forces. Having advanced near Edinburgh, they attempted to find their way back into the west by Pentland hills. Here they were attacked by the king's troops, and received the first charge very resolutely; but that was all the action. Immediately they fell into confusion, and fled. About 40 were killed on the spot, and 130 taken prisoners.

²³³ ^{An insurrection.} So long ago as the year 1661, the presbyterians had deputed one Sharpe to lay their grievances before the king. Instead of this, their deputy abandoned the cause altogether, became their violent enemy, and as a reward of his treachery was made archbishop of St Andrew's. After the battle of Pentland-hills, this man was the foremost to take vengeance on the unhappy insurgents, whose oppressed state and inoffensive behaviour had made them objects of universal compassion. Ten were hanged on one gibbet in Edinburgh; 35 before their own doors in different places. They might all have saved their lives, if they would have renounced the covenant; but this they absolutely refused. The executions were going on, when the king wrote a letter to the privy council, in which he ordered that such of the prisoners as should simply promise to obey the laws for the future should be set at liberty, and that the incorrigible should be sent to the plantations. This letter was brought to the council by Burnet, but was not immediately delivered by Sharpe. What his motives were for this delay, we pretend not to say; but certain it is, that no action of his life will bear a worse construction than this. It had been customary to put these poor creatures to very severe tortures, in order to make them confess that to be falsehood which they believed to be true. By Sharpe's delay, one Hugh Maccail had been tortured, who would otherwise have escaped; and so violent were the torments he endured, that he expired under them. He seemed to die in an ecstasy of joy. His last words were uttered with an accent which struck all the bystanders with astonishment. "Farewell (said he) sun, moon, and stars; farewell world and time; farewell weak frail body; welcome eternity; welcome angels and saints; welcome Saviour of the world; and welcome God the judge of all."

²³⁴ ^{Insurrection defeated by Sharpe.} So long ago as the year 1661, the presbyterians had deputed one Sharpe to lay their grievances before the king. Instead of this, their deputy abandoned the cause altogether, became their violent enemy, and as a reward of his treachery was made archbishop of St Andrew's. After the battle of Pentland-hills, this man was the foremost to take vengeance on the unhappy insurgents, whose oppressed state and inoffensive behaviour had made them objects of universal compassion. Ten were hanged on one gibbet in Edinburgh; 35 before their own doors in different places. They might all have saved their lives, if they would have renounced the covenant; but this they absolutely refused. The executions were going on, when the king wrote a letter to the privy council, in which he ordered that such of the prisoners as should simply promise to obey the laws for the future should be set at liberty, and that the incorrigible should be sent to the plantations. This letter was brought to the council by Burnet, but was not immediately delivered by Sharpe. What his motives were for this delay, we pretend not to say; but certain it is, that no action of his life will bear a worse construction than this. It had been customary to put these poor creatures to very severe tortures, in order to make them confess that to be falsehood which they believed to be true. By Sharpe's delay, one Hugh Maccail had been tortured, who would otherwise have escaped; and so violent were the torments he endured, that he expired under them. He seemed to die in an ecstasy of joy. His last words were uttered with an accent which struck all the bystanders with astonishment. "Farewell (said he) sun, moon, and stars; farewell world and time; farewell weak frail body; welcome eternity; welcome angels and saints; welcome Saviour of the world; and welcome God the judge of all."

²³⁵ ^{Last words of Mr Maccail.} In 1670, an act against conventicles was passed, seemingly with a design of mitigating the former persecuting laws; though even this was severe enough. By this act, the hearer in a conventicle (that is, in a dissenting assembly where more than five beside the family were present) was fined 5s. for the first offence, and 10s. for the second; the preacher L. 20 for the first offence,

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tain. offence, and L.40 for the second. The person in whose house the conventicle met was fined a like sum with the preacher. One remarkable clause was, that if any dispute should arise with regard to the interpretation of any part of the act, the judges should always explain the doubt in the sense least favourable to conventicles, it being the intention of parliament entirely to suppress them.

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As the violent methods used by the king were found ineffectual to obtain his purpose in Scotland, in 1678 a scheme of comprehension was tried, by which it was proposed to diminish greatly the authority of the bishops, to abolish their negative voice in the ecclesiastical courts, and to leave them little more than the right of precedency among the presbyters: but this too was rejected by the people, who well knew its tendency. The next scheme was an indulgence. By this, the most popular of the expelled preachers, without requiring any terms of submission to the established religion, were settled in vacant churches; and small salaries of about L.20 a-year were offered to the rest, till they should be otherwise established. This bounty was rejected as the wages of criminal silence, and the replaced ministers soon repented of their compliance; conventicles multiplied, and the covenanters daily met in arms at their places of worship, though they usually dispersed themselves after divine service.

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These mild methods being rejected, a renewal of the persecution commenced under the administration of the duke of Lauderdale, and in which archbishop Sharpe had a principal hand. It was an old law, and but seldom put in execution, that a man who was accused of any crime, and did not appear to take his trial, might be *intercommuned*; that is, he might be publicly outlawed; and whoever afterwards, either on account of business, relation, or charity, had the least intercourse with him, was subjected to the same penalties which the law could inflict on the criminal himself. A great many writs of intercommuning were now issued against the covenanters; by which absurd method of proceeding, crimes and punishments were multiplied to an extreme degree.

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uldered.

Application was made to Charles for some redress of these grievances: but he was too much taken up with his pleasures to take any effectual means of putting a stop to them; nay, even while he retracted them, he was persuaded to avow and praise them in a letter to the privy council. The consequence of all this was, that the covenanters were at last so much enraged against Sharpe, whom they considered as an apostate, and experienced to be an unrelenting persecutor, that, on the 3d of May 1679, he was way-laid and murdered with all the circumstances of unrelenting cruelty. The murder of Sharpe produced a persecution still more violent, which at last brought on another insurrection.

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The covenanters finding themselves obliged to meet in large bodies, and bring arms along with them for their own security, set forth a declaration against prelacy, which they published at Rutherglen, a small borough near Glasgow; and in the market-place there they burned several acts of parliament which had established that mode of ecclesiastical government, and had prohibited all conventicles. For this purpose they chose the 29th of May, the anniversary of the restoration;

and previously extinguished the bonfires that had been kindled on that occasion. Count Graham, afterwards viscount Dundee, an active and enterprising officer, attacked a great conventicle upon Loudon-hill, but was repulsed with the loss of 30 men. The covenanters then finding themselves unwarily engaged in rebellion, were obliged to persevere; and therefore pushed on to Glasgow, which, though repulsed at first, they afterwards made themselves masters of. Here they dispossessed the established clergy, and issued proclamations, in which they declared that they fought against the king's supremacy, against Popery and Prelacy, and against a Popish successor.

Charles, being now alarmed, dispatched against the covenanters a small body of English cavalry under the duke of Monmouth. He joined the Scots guards, and some regiments of militia levied from the well-affected counties; and with great celerity marched in quest of the insurgents. They had taken post at Bothwell-bridge between Hamilton and Glasgow; where there was no access but by the bridge, and where a small body was able to defend it against the king's army. The whole army of the covenanters never exceeded 8000 men, and they had in reality no other generals than their clergymen. Monmouth attacked the bridge, and the covenanters maintained their post as long as their ammunition lasted. When they sent for more, they received orders to quit their post and retire; and this imprudent measure occasioned an immediate defeat. Monmouth passed the bridge without opposition, and drew up his forces opposite to the enemy. His cannon alone put them to the rout. About 700 were killed in the pursuit; for, properly speaking, there was no action. Twelve hundred were taken prisoners, and treated with humanity by Monmouth. Such as promised to live peaceably under the present government were dismissed; and about 300 who refused this condition were shipped for Barbadoes, but unfortunately perished by the way. Two of their clergymen were hanged. Soon after, an act of indemnity was passed: but Lauderdale took care that it should afford little protection to the unhappy covenanters; for though orders were given to connive thenceforward at all conventicles, he found means under a variety of pretences to elude the execution of them.

It is now certainly known, that king Charles II. had formed a scheme of overturning the established religion, and substituting Popery in its place; as also of rendering himself absolute. In this, however, he met with violent opposition from his parliaments; and as this one of 1679 seemed even to surpass their predecessors in violence, the king was induced to dissolve them and call another in 1680. By this step, however, he was no gainer. They voted the legality of petitioning the king; and fell with extreme violence on the abhorers, who in their addresses to the crown had expressed their disapprobation of those petitions. Great numbers of these were seized by their order in all parts of England, and committed to close custody: the liberty of the subject, which had been so carefully guarded by their own recent law, was every day violated by their arbitrary and capricious imprisonments. One Stowel of Exeter put a stop to their proceedings: he refused to obey the serjeant at arms who was sent to apprehend him; he stood upon his defence, and said he knew no

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Insurgents
defeated at
Bothwell-
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Violent
proceedings
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Britain. law by which the house of commons pretended to commit him. The house, finding it equally dangerous to proceed or recede, got off by an evasion. They voted that Stowel was indisposed: and a month's time was allowed him for his recovery. It is happy for the nation, that should the commons at any time overleap the bounds of their authority, and capriciously order men to be put in prison, there is no power, in case of resistance, that can compel the prisoners to submit to their decrees.

The chief point, however, laboured by the present parliament was, to obtain the exclusion bill, which, though the former house had voted, was never yet passed into a law. It passed by a great majority in the house of commons, but was thrown out by the house of peers. All the bishops except three voted against it; for they were of opinion that the church of England was in much greater danger from the prevalence of presbyterianism than Popery. The commons were extremely mortified at the rejection of their favourite bill: in revenge, they passed several other disagreeable acts, among which one was, That, till the exclusion bill was passed, they could not, consistent with the trust reposed in them, grant the king any manner of supply; and that whoever should hereafter lend, by way of advance, any money upon any branches of the king's revenue, should be responsible to parliament for his conduct. Charles, therefore, finding that there were no hopes of extorting either money or obedience from the commons, came to a resolution of once more dissolving the parliament. His usher of the black rod accordingly came to dissolve them while they were voting that the dissenters should be encouraged, and that the Papists had burned the city of London.

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Parliament
dissolved.

It was for some time a doubt whether the king would ever call another parliament: his necessities, however, surmounted all his fears of their violence; and, in 1681, he summoned his parliament to meet him at Oxford, that he might thus have an opportunity of punishing the city of London by showing his suspicions of their loyalty. In this, as in all former parliaments, the country party predominated; and they trode exactly in the same paths with their predecessors. The same speaker was chosen, and the exclusion bill urged more fiercely than before. Ernely, one of the king's ministers, proposed that the duke should be banished 500 miles from England; and that on the king's decease the next heir should be constituted regent with regal power. Yet even this expedient, which left the duke the bare title of king, could not obtain the attention of the house. Nothing but a total exclusion could satisfy them.

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New one
called at
Oxford.

Each party had now for some time reviled and ridiculed each other in pamphlets and libels; and this practice at last was attended with an incident that deserves notice. One Fitzharris, an Irish Papist, employed a Scotsman named *Everhard* to write a libel against the king and the duke of York. The Scot was actually a spy for the contrary party; and supposing this a trick to entrap him, he discovered the whole to Sir William Waller, an eminent justice of the peace; and, to convince him of the truth of his information, posted the magistrate and two other persons privately, where they heard the whole conference between Fitzharris and himself. The libel composed between them was replete with the utmost rancour and scurrility. Waller carried

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Case of Fitz-
harris.

the intelligence to the king, and obtained a warrant for committing Fitzharris, who happened at that very time to have a copy of the libel in his pocket. Seeing himself in the hands of a party from whom he expected no mercy, he resolved to side with them, and throw the odium of the libel upon the court, who, he said, were willing to draw up a libel which should be imputed to the exclusioners, and thus render them hateful to the people. He enhanced his services to the country-party by a new Popish plot more tremendous than any of the foregoing, and in which he brought in the duke of York as a principal accomplice.

The king imprisoned Fitzharris; the commons avowed his cause. They voted that he should be impeached by themselves, to screen him from the ordinary forms of justice: the lords rejected the impeachment; the commons asserted their right: a commotion was likely to ensue; and the king, to break off the contest, went to the house and dissolved the parliament, with a fixed resolution never to call another.

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From this moment the king ruled with despotic power. His temper, which had always been easy and merciful, now became arbitrary and cruel; he entertained spies and informers round the throne, and imprisoned all such as he thought most daring in their designs. He resolved to humble the presbyterians: they were divested of their employments and their places; and their offices given to such as held with the court, and approved the doctrine of non-resistance. The clergy began to testify their zeal and their principles by their writings and sermons; but though among these the partizans of the king were the most numerous, those of the opposite faction were the most enterprising. The king openly espoused the cause of the former; and thus placing himself at the head of a faction, he deprived the city of London, which had long headed the popular party, of their charter. It was not till after an abject submission that he restored it to them, having previously subjected the election of their magistrates to his immediate authority.

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London.
privied of
charter.

Terrors also were not wanting to confirm this new species of monarchy. Fitzharris was brought to a trial before a jury, and condemned and executed. The whole gang of spies, witnesses, informers, suborners, which had long been encouraged and supported by the leading patriots, finding now that the king was entirely master, turned short upon their ancient drivers, and offered their evidence against those who first put them in motion. The king's ministers gave them encouragement; and in a short time the same injustice and the same cruelties were practised against presbyterian schemes that had formerly been practised against Catholic treasons. The king's chief resentment was levelled against the earl of Shaftesbury; and, indeed, not without reason, as he had had a very active hand in the late disturbances. No sums were spared to seek for evidence, or even to suborn witnesses, against this intriguing and formidable man. A bill of indictment being presented to the grand jury, witnesses were examined, who swore to such incredible circumstances as must have invalidated their testimony, even if they had not been branded as perjured villains. Among his papers, indeed, a draught of an association was found, which might have been construed into treason; but it was not in the earl's hand-writing, nor could it be

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proved that he had ever communicated this scheme to any body, or signified his approbation of any such project. The sheriffs had summoned a jury, whose principles coincided with those of the earl; and that probably, more than any want of proof, procured his safety.

and noted party-man; Ferguson, an independent minister; and several attorneys, merchants, and tradesmen of London. But Rumsey and Ferguson were the only persons that had access to the great leaders of the conspiracy. These men undertook the desperate resolution of assassinating the king in his way to New-market; Rumbold, one of the party, possessed a farm upon that road, called the *Rye-house*, and from thence the conspiracy was called the *Rye-house plot*. They deliberated on a scheme of stopping the king's coach by overturning a cart on the high way at this place, and shooting him through the hedges. The house in which the king lived at New-market accidentally took fire, and he was obliged to leave New-market eight days sooner than it was expected; to which circumstance he owed his safety. Soon after this the conspiracy was discovered; Russel, Sidney, and Walcot, were executed; Essex cut his own throat; Hamden was fined 40,000*l.*; and scarce one escaped who had been in any manner concerned, except the duke of Monmouth, who was the most culpable of all.

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Other corporations refused theirs.

In 1683, the city of London was deprived of its charter; which was restored only upon terms of the utmost submission, and giving up the nomination of their own magistrates. This was so mortifying a circumstance, that all the other corporations in England soon began to fear the same treatment, and were successively induced to surrender their charters into the hands of the king. Considerable sums were exacted for restoring these charters; and all the offices of power and profit were left at the disposal of the crown. Resistance now, however justifiable, could not be safe; and all prudent men saw no other expedient but submitting patiently to the present grievances.

251
Conspiracy against the king.

There was a party, however, in England, that still cherished their former ideas of freedom, and resolved to restore liberty to their country by dethroning the king who acted in such a despotic manner. The principal conspirators were Monmouth, Shaftesbury, Russel, Essex, Howard, Algernon Sidney, and John Hamden grandson to the great man of that name. Monmouth engaged the earl of Macclesfield, Lord Brandon, Sir Gilbert Gerard, and other gentlemen in Cheshire. Lord Russel fixed a correspondence with Sir William Courtney, Sir Francis Knowles, and Sir Francis Drake, who promised to raise the west. Shaftesbury, with one Ferguson, an independent clergyman, and a restless plotter, managed the city, upon which the confederates chiefly relied. These schemes had been laid in 1681: but the caution of Lord Russel, who induced the duke of Monmouth to put off the enterprize, saved the kingdom from the horrors of a civil war; while Shaftesbury was so struck with a sense of his impending danger, that he left his house, and, lurking about the city, attempted, but in vain, to drive the Londoners to an open insurrection. At last, enraged at the numberless cautions and delays which clogged and defeated his projects, he threatened to begin with his own friends singly. However, after a long struggle between fear and rage, he abandoned all hopes of success, and fled to Amsterdam, where he soon after died.

The loss of Shaftesbury, though it retarded, did not suppress, the designs of the conspirators. The remaining six formed a council; they corresponded with Argyle and the malecontents in Scotland; and resolved to prosecute the scheme of the insurrection, tho' they widely differed in principles from one another. Monmouth aspired at the crown; Russel and Hamden proposed to exclude the duke of York from the succession, and redress the grievances of the nation; Sidney was for restoring the republic, and Essex joined in the same wish. Lord Howard was an abandoned man, who, having no principles, sought to embroil the nation, to gratify his private interest in the confusion.

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Design of assassinating the king.

Besides these, there was a set of subordinate conspirators, who frequently met together, and carried on projects quite unknown to Monmouth and his council. Among these was colonel Rumsey, an old republican officer; lieutenant-colonel Walcot, of the same stamp; Goodenough, under sheriff of London, a zealous

This was the last blood that was shed on account of plots or conspiracies, which continued during the greatest part of this reign. Severe punishments, however, were inflicted on many who treated the duke of York unworthily. The famous Titus Oates was fined 100,000*l.* for calling him a Popish traitor; and he was imprisoned till he should pay it, which he was absolutely incapable of. A similar sentence was passed upon Dutton Colt. Sir Samuel Barnadiston was fined 10,000*l.* for having, in some private letters, reflected on the government. The government of Charles was now as absolute as that of any prince in Europe; but, to please his subjects by an act of popularity, he judged it proper to marry the lady Anne, his niece, to prince George brother to the king of Denmark. This was the last remarkable transaction of this extraordinary reign. On February 2d 1685, about eight in the morning, the king was seized with a fit of the apoplexy; being dressed, and just come out of his closet, where he had been for some time after he rose from bed. By being blooded, he was restored perfectly to his senses; and there were great hopes of his recovery the next day. On the fourth day the physicians despaired of his life, and therefore sent for the queen. He was in his perfect senses when she arrived. She threw herself on her knees, and asked his pardon for all her offences. He replied, that she had offended in nothing; but that he had been guilty of offences against her, and asked her pardon. He spoke with great affection to the duke of York, and gave him excellent counsel for his future conduct. He advised him to adhere to the laws with strictness, and invariably to support the church of England. The duke seemed anxious to convince him before he died how little he intended to follow his advice. Having removed the bishops, and several of the lords who attended the bed of the king, he sent for Huddleston, a Romish priest. In the presence of the duke, the earl of Bath, and Trevannion a captain in the guards, Huddleston gave the extreme unction to the king, and administered to him the sacrament according to the rites of the church of Rome. All this was done in the space of half an hour. The doors were then thrown open. Six prelates, who had before attended the king, were sent for to give him the sacrament.

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Death of Charles II.

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sacrament. Kenn, bishop of Bath and Wells, read the visitation of the sick; and, after he said that he repented of his sins, the absolution. The king assisted with seeming devotion at the service; but his mouth being distorted with fits, and his throat contracted, he could not swallow the elements. He professed, however, his satisfaction in the church of England; and expired on the 6th of February, between 11 and 12 o'clock; having reigned 27 years, and lived 55.

The first act of James II.'s reign was to assemble the privy council: where, after some praises bestowed on the memory of his predecessor, he made professions of his resolution to maintain the established government both in church and state; and as he had heretofore ventured his life in defence of the nation, he would still go as far as any man in maintaining all its just rights and privileges.

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Servile addresses to James II.

This discourse was received with great applause, not only by the council, but by the whole nation. Addresses came from all quarters, full of duty, nay of the most servile adulation. From this charge, however, we must except those of the Quakers, which is remarkable for its good sense and simplicity. "We are come (said they) to testify our sorrow for the death of our good friend Charles, and our joy for thy being made our governor. We are told that thou art not of the persuasion of the church of England no more than we: wherefore we hope that thou wilt grant us the same liberty which thou allowest thyself. Which doing, we wish thee all manner of happiness."

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Quakers address.

257
Imprudent behaviour of the new king.

The king, however, soon showed, that he either was not sincere in his promises, or that he entertained so lofty an idea of his own legal power, that even his utmost sincerity could tend very little to the security of the liberties of the people. All the customs, and the greater part of the excise, which had been voted to the late king for his life only, were levied by James without a new act for that purpose. He went openly to mass with all the ensigns of his dignity; and even sent one Caryl as his agent to Rome to make submissions to the Pope, and to pave the way for the re-admission of England into the bosom of the Catholic church. From the suggestions of these men all his measures were undertaken. One day when the Spanish ambassador ventured to advise his majesty against putting too much confidence in such kind of people, "Is it not the custom in Spain (said James), for the king to consult with his confessor?" "Yes (answered the ambassador), and that is the reason why our affairs succeed so very ill."

James's first parliament, which was composed mostly of zealous tories, was strongly inclined to comply with the measures of the crown. They voted unanimously, that they should settle on the present king, during life, all the revenue enjoyed by the late king till the time of his decease. For this favour, James assured them, that he would secure them in the full enjoyment of their laws; but with regard to religion, no answer could be extorted, for that he was resolved to alter. In every thing, however, religion excepted, James merited every praise. He applied himself to business with unremitting attention. He managed his revenue with the strictest economy. He retrenched superfluous expences, and showed himself zealous for the glory of the nation. He endeavoured to expel from court the vice which had prevailed so much during the former reign, and to restore

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In some respects he behaves well

decency and morality. He presided daily at the council, at the boards of admiralty and treasury. He even entered into the whole detail of the concerns of the great departments of the state. But his bigotry for the Romish religion sullied all his good qualities, and rendered him feared for his violence, where he was not despised for his weakness.

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But whilst every thing was submitted in tranquillity to James at home, a storm was gathering abroad to disturb his repose. For a long time the prince of Orange had entertained hopes of ascending the British throne, and had even used all his endeavours to exclude James from it. Monmouth, who, since his last conspiracy, had been pardoned, but ordered to depart the kingdom, had retired to Holland. He was received by the prince of Orange with the highest marks of distinction, and even became his chief favourite through whom all favours were to be obtained. When the news of Charles's death arrived, indeed, the prince made a show of altering his note, and dismissed Monmouth, though he still kept a close correspondence with him. The duke retired to Brussels, where, under the auspices of the prince of Orange, he resolved to invade England, with a design of seizing the crown for himself. He was seconded by the duke of Argyle, who formed the scheme of an insurrection in Scotland; and while Monmouth attempted to make a rising in the west of England, it was resolved that Argyle should also try his endeavours in the north. The generosity of the prince of Orange, however, did not correspond with the warmth of his professions. The unfortunate duke derived from his own plate and jewels his whole supply for the war; and the enthusiasm of a rich widow supplied Argyle with 10,000*l.* wherewith he purchased three vessels, which he loaded with arms and ammunition.

Argyle was the first who landed in Scotland, where he published his manifestoes, put himself at the head of 2500 men, and strove to influence the people in his favour. But a formidable body of the king's forces coming against him, his army fell away; and he himself, after being wounded in attempting to escape, was taken prisoner by a peasant who found him standing up to the neck in water. He was from thence carried to Edinburgh, where after suffering many indignities he was publicly executed.

260
Defeat and death of Argyle.

By this time Monmouth had landed in Dorsetshire with scarce 100 followers. His name, however, was so popular, and so great was the hatred of the people to James on account of his religion, that in four days he had assembled a body of above 2000 men. They were indeed all of them the lowest of the people, and his declarations were suited entirely to their prejudices. He called the king the duke of York; and denominated him a traitor, a tyrant, a murderer, and a Popish usurper. He imputed to him the fire of London, and even affirmed that he had poisoned the late king.

261
Monmouth's landing in England.

Monmouth continued to make a rapid progress, and in a short time found himself at the head of 6000 men; but was daily obliged to dismiss great numbers for want of arms. The king was not a little alarmed at his invasion. Six regiments of British troops were called over from Holland; and a body of regulars, to the number of 3000, were sent, under the command of the earl of Feversham and Churchill, to check the progress.

Britain. grefs of the rebels. They took poft at Sedgemore, a village in the neighbourhood of Bridgewater, and were joined by confiderable numbers of the country militia. Here Monmouth refolved, by a desperate effort, to lofe his life, or gain the kingdom. He drove the royal infantry from their ground, and was on the point of gaining a complete victory, when the cowardice of Gray, who commanded the horfe, brought all to ruin. This nobleman fled at the firft onfet; and the rebels, being charged in flank, gave way after a three-hours conteft. About 300 were killed in the engagement, and 1000 in the purfuit. Monmouth fled above 20 miles from the field of battle, till his horfe funk under him. He then alighted; and, exchanging clothes with a shepherd, fled on foot, attended by a German count who had accompanied him from Holland. Being quite exhaufted with hunger and fatigue, they both lay down in a field, and covered themfelves with fern. The shepherd, being found in Monmouth's clothes by the purfuers, increafed the diligence of the fearch; and by the means of blood-hounds he was detected in his miferable fituation, with raw peafe in his pocket, on which he had lived for fome days. He hurft into tears when feized by his enemies; and petitioned, with the moft abject fubmiffions, for his life. On his way to London, he wrote a fubmiffive letter to the king, promifing difcoveries, fhould he be admitted into his prefence. The curiofity of James being excited by the letter, he fent Sheldon a gentleman of the bed-chamber to meet Monmouth. In his converfation with Sheldon, he asked who was in chief confidence with the king; and being answered that it was Sunderland, Monmouth knocked his breaft in a fuprize, and faid, "Why then, as I hope for falvation, he promifed to meet me." He defired Sheldon to inform the king, that feveral of his accomplices in rebellion were in the confidence of his majefty; and he gave him a particular account of the part which the prince of Orange had acted in this whole affair.

Sheldon, on his return from the duke of Monmouth, began to give an account to the king of what he had learned from the unhappy prifoner. Sunderland, pretending bufinefs, came into the room. Sheldon ftopped, and fignified his defire to fpeak in private with the king. James told him he might fay any thing before that lord. Sheldon was in great perplexity; but being urged, he told all that Monmouth had afferted. Sunderland appeared, for fome time, confused: at length he faid, with a laugh, "If that is all he can difcover to fave his life, he will derive little good from his information." Monmouth himfelf was foon after brought before the king. Sunderland by an artifice enured the death of the unfortunate duke, to fave himfelf and the other adherents of the prince of Orange. When he faw Monmouth's letter to James, and heard the difcoveries made by Sheldon, he is faid to have advifed him, that, as he could affure him of the certainty of a pardon, he ought to deny what he had faid in prejudice of his friends, who could ferve him on fome other more favourable occafion. The credulous duke, fwayed by the advice of Sunderland, fuppreffed what he had faid to Sheldon, when he was examined by the king. He mentioned nothing of the concern which the prince of Orange had taken in the invafion; though a point on which James was already fufficiently inform-

ed. D'Avaux, the French minifter to the States, had given a circumftantial account of the whole conduct of the prince to Louis XIV. who had ordered it to be privately communicated to the king of England. The minifter who had been fent from Holland to congratulate James on the fuppreffion of Argyle's rebellion, was in a grievous agony when he heard that the king was refolved to fee Monmouth. "Though he found that he faid nothing of his matter (faid James), he was never quiet till Monmouth was dead."

The unfortunate duke made various attempts to obtain mercy. He wrote to the queen dowager; he fent a letter to the reigning queen, as well as to the king himfelf. He begged his life, when admitted into his prefence, with a meanness unfuitable to his pretentions and high rank. But all his entreaties and fubmiffions were of no avail. James told him, that he was much affected with his misfortunes, but that his crime was too dangerous in its example to be left unpunifhed. In his laft moments he behaved with a magnanimity worthy of his former courage. When he came to the fcafold, he behaved with decency and even with dignity. He fpoke little; he made no confeffion; nor did he accufe any of his friends. Circumftances are faid to have attended his death that created a horror among the fpectators. The executioner miffed his blow, and ftruck him flightly on the foulder. Monmouth raifed his head from the block, and looked him full in the face, as if reproaching him for his miftake. He ftruck him twice again, but with feeble ftrokes; and then threw the axe from his hands. The fheriff forced him to renew his attempt; and the head of the duke, who feemed already dead, was at laft fevered from his body.

Those concerned in the duke of Monmouth's confpiracy were punifhed with the utmoft feverity. Immediately after the battle of Sedgemore, Feversham hanged up above 20 prifoners; and was proceeding in his executions, when the bifhop of Bath and Wells informed him that thefe unhappy men were now by law intitled to a trial, and that their execution would be deemed a real murder. Nineteen were put to death in the fame manner at Bridgewater, by colonel Kike, a man of a favage and bloody difpofition. This vile fellow, praftifed in the arts of flaugter at Tangier, where he ferved in garrifon, took pleafure in committing inftances of wanton barbarity. He ravaged the whole country, without making any diftinction between friend and foe. His own regiment, for their peculiar barbarity, went under the ironical title of *Kirke's lanchs*. It doth not, however, appear that thefe cruelties were committed by the direction, or even with the approbation, of James; any more than the legal flaugters that were committed by judge Jefferies, who was fent down to try the delinquents. The natural brutality of this man's temper was inflamed by continual intoxication. No fewer than 80 were executed by his orders at Dorehefter; and on the whole, at Exeter, Taunton, and Wells, 250 are computed to have fallen by the hand of juftice as it was called; nor were women exempted from the general feverity, but fuffered for harbouring their neareft kindred. Jefferies on his return was immediately created a peer, and foon after velted with the dignity of chancellor. In juftice to the king, however, it muft be owned, that in his memoirs he complains, with apparent indignation, of "the

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defeated at
Sedgemore.

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taken in
moft mi-
ferable fi-
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tempt-
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in to ob-
in mercy.

265
Terrorly
mangle! by
the execu-
tioner.

266
Rebel's cru-
elty treated.

Britain. strange havock made by Jefferies and Kirke in the west; and that he attributed the unpopularity, which afterwards deprived him of the crown, to the violence and barbarity of those pretended friends of his authority. He even ascribes their severities, in some degree, to a formed design of rendering his government odious to his subjects; and from hence it is probable, that no exact or impartial accounts of these cruelties had reached his ears, at least till long after they were committed.

²⁶⁷ James endeavours to establish Popery. James now began to throw off the mask, and to endeavour openly to establish Popery and arbitrary power. He told the house of commons, that the militia were found by experience to be of no use; that it was necessary to augment the standing army; and that he had employed a great many Catholic officers, in whose favour he had thought proper to dispense with the test required to be taken by all who were employed by the crown. He found them useful, he said, and he was determined to keep them employed. These stretches of power naturally led the lords and commons into some degree of opposition; but they soon acquiesced in the king's measures, and then the parliament was dissolved for their tardy compliance. This was happy for the nation; for it was perhaps impossible to pick out another house of commons that could be more ready to acquiesce in the measures of the crown; but the dissolution of this parliament was generally looked upon as a sign that James never intended to call another.

²⁶⁸ Parliament dissolved. The parliament being dismissed, James's next step was, to secure a Catholic interest in the privy council. Accordingly four Catholic lords were admitted, viz. Powis, Arundel, Belasis, and Dover. Sunderland, who saw that the only way to gain preferment was by Popery, became a convert. Rochester, the treasurer, was turned out of his office, because he refused to conform. Even in Ireland, where the duke of Ormond had long supported the royal cause, this nobleman was displaced as being a Protestant; and the lord Tyrconnel, a furious Roman-catholic, was placed in his stead. In his zeal for Popery, it is said, that James stooped so low as even to attempt the conversion of colonel Kirke: but the daring soldier told him, that he was pre-engaged; for he had promised the king of Morocco, when he was quartered at Tangiers, that, if ever he changed his religion, he would turn Mahometan.

²⁷⁰ English clergy oppose the court measures. At last the clergy of the church of England began to take the alarm, and commenced an opposition to court measures. The pulpits now thundered out against Popery; and it was urged, that it was more formidable from the support granted it by the king. It was in vain that James attempted to impose silence on these topics; instead of avoiding the controversy, the Protestant preachers pursued it with greater warmth.

To effect his designs, the king determined to revive the high commission court, which had formerly given the nation so much disgust, and which had been abolished for ever by act of parliament. An ecclesiastical commission was issued out anew, by which seven commissioners were invested with a full and unlimited authority over the whole church of England.—The next step was to allow a liberty of conscience to all sectaries; and he was taught to believe that the truth of the Catholic

Britain. religion would then, upon a fair trial, gain the victory. In such a case, the same power that granted liberty of conscience might restrain it; and the Catholic religion alone be allowed to predominate. He therefore issued a declaration of general indulgence, and asserted that non-conformity to the established religion was no longer penal. In Scotland, he ordered his parliament to grant a toleration only to the Catholics, without interceding in the least for the other dissenters who were much more numerous. In Ireland, the Protestants were totally expelled from all offices of trust and profit, and Catholics put in their places. These measures sufficiently disgusted every part of the British empire; but to complete the work, James publicly sent the earl of Castlemaine ambassador extraordinary to Rome, in order to express his obedience to the Pope, and reconcile his kingdoms to the Catholic communion. This proceeding was too precipitate to be relished even by the Pope himself; and therefore the only return he made to this embassy was the sending a nuncio into England. The nuncio made a public and solemn entry into Windsor; which did not fail to add to the general discontent; and because the duke of Somerset refused to attend the ceremony, he was dismissed from his employment of one of the lords of the bed-chamber.

²⁷¹ James sends an ambassador to Rome. Soon after this, the Jesuits were permitted to erect colleges in different parts of the kingdom, and to exercise the Catholic worship in the most public manner. Father Francis, a benedictine monk, was recommended by the king to the university of Cambridge, for the degree of master of arts. The university rejected him on account of his religion; and presented a petition to the king, beseeching him to recal his mandate. James disregarded their petition, and denied their deputies a hearing; the vice-chancellor himself was summoned to appear before the high commission court, and deprived of his office: yet the university persisted, and father Francis was refused. The place of president of Magdalen college being vacant, the king sent a mandate in favour of one Farmer, a new convert, and a man of bad character in other respects. The fellows of the college made very submissive applications for recalling his mandate; but the election day coming on before they received an answer, they chose Dr Hough, a man of learning, integrity, and resolution. The king was incensed at their presumption; an inferior ecclesiastical court was sent down, who finding Farmer a man of scandalous character, issued a mandate for a new election. The man now recommended by the king was doctor Parker; a man of an abandoned character, but very willing to embrace the Catholic religion. The fellows refused to comply with this injunction; which so irritated the king, that he came down to Oxford in person, and ordered the fellows to be brought before him. He reproached them with their insolence and disobedience; and commanded them to choose Parker without delay. Another refusal on their side served still more to exasperate him; and finding them resolute in the defence of their privileges, he ejected them all except two from their benefices, and Parker was put in possession of the place. Upon this, the college was filled with Catholics; and Charnock, one of the two that remained, was made vice-president.

²⁷² Dispute with the university of Cambridge. In 1688, a second declaration for liberty of conscience

²⁷³ College filled with Catholics.

Britain. science was published almost in the same terms with the former; but with this peculiar injunction, that all divines should read it after service in their churches. The clergy resolved to disobey this order. Loyde bishop of St. Asaph, Kenn of Bath and Wells, Turner of Ely, Lake of Chichester, White of Peterborough, and Trelawney of Bristol, together with Sancroft the primate, concerted an address in form of a petition to the king, which, with the warmest expressions of zeal and submission, remonstrated that they could not read his declaration consistent with their consciences, or the respect they owed the Protestant religion. The king received their petition with marks of surprize and displeasure. He said he did not expect such an address from the church of England, particularly from some amongst them; and persisted in his orders for their obeying his mandate.

As the petition was delivered in private, the king summoned the bishops before the council, and there questioned them whether they would acknowledge it. They for some time declined giving an answer; but being urged by the chancellor, they at last owned the petition. On their refusal to give bail, an order was immediately drawn for their commitment to the Tower, and the crown lawyers received directions to prosecute them for a seditious libel. The king gave orders that they should be conveyed to the Tower by water, as the whole city was in commotion in their favour. The people were no sooner informed of their danger, than they ran to the river-side in prodigious multitudes, craving their blessing; calling upon heaven to protect them, &c. The very soldiers by whom they were guarded, knelt down before them, and implored their forgiveness.

The 29th of June 1688 was fixed for the trial of the bishops; and their return was still more splendidly attended than their imprisonment. Twenty-nine peers, a great number of gentlemen, and an immense crowd of people, waited upon them to Westminster-hall. The dispute was learnedly managed by the lawyers on both sides. The jury withdrew into a chamber where they passed the whole night; but next morning they returned into court, and pronounced the bishops not guilty. Westminster-hall instantly rang with loud acclamations, which were communicated to the whole extent of the city. They even reached the camp at Hounslow, where the king was at dinner in lord Feversham's tent. His majesty demanding the cause of those rejoicings, and being informed that it was nothing but the soldiers shouting for the delivery of the bishops; "Call you that nothing! (cried he); but so much the worse for them." Immediately after this, the king struck out two of the judges, Powel and Holloway, who had appeared to favour the bishops. He issued orders to prosecute all those clergymen who had not read his declaration, and all had refused it except 200. He sent also a mandate to the new fellows, whom he had obtruded on Magdalen college, to elect for president, in the room of Parker lately deceased, one Gifford, a doctor of the Sorbonne, and titular bishop of Madaga.

As the king found the clergymen every where averse to his measures, he was willing next to try what he could do with the army. He thought if one regiment should promise implicit obedience, their example would soon induce others to comply. He therefore ordered

one of the regiments to be drawn up in his presence, and desired that such as were against his late declaration of liberty of conscience should lay down their arms. He was surprized to see the whole battalion ground their arms, except two officers and a few Roman-catholic soldiers.—A fortunate circumstance happened about this time in his family. A few days before the acquittal of the bishops, the queen was brought to bed of a son, who was baptised by the name of JAMES. This would, if any thing could at that time, have served to establish him on the throne: but so great was the animosity against him, that a story was propagated that the child was supposititious; and so great was the monarch's pride, that he scorned to take any precautions to refute the calumny.

Though the enthusiasm of James himself bordered upon madness, the most wild of his religious projects seem to have been suggested by his enemies to accomplish his ruin. The earl of Sunderland, whom he chiefly trusted, was a man of abandoned principles, insatiable avarice, and fitted by nature for stratagem, deception, and intrigue. The love of money was his ruling passion, and he sold his influence to the highest bidder. To such a degree was he mercenary, that he became at once the pensioner of the prince of Orange and of the king of France. The former, who had long fixed his eye on the English throne, watched James's motions, and took every advantage of his errors. He had laid his schemes so extensively, that nothing but the birth of a male heir to the crown of England could possibly prevent him from an almost immediate possession of the kingdom. He had the address to render two thirds of the powers of Europe interested in his success. The treaty of Augsburg, formed to break the power of France, could not accomplish its object without the accession of England. The house of Austria, in both its branches, preferred their political views to their zeal for the Roman faith, and promoted the dethronement of James as the only means to humble Louis XIV. Odescalchi, who under the name of Innocent XI. filled then the papal chair, was gained to the measures of the prince of Orange by other considerations, as well as through his fixed aversion to France. The prince of Orange sent his intimate friend the prince of Vaudemont to Rome, to procure the aid of the Pope. He explained to his Holiness, that the Catholic princes were in the wrong to expect any advantage to their faith from James, as his being a declared Papist rendered his people averse to all his measures. As for himself, should he have the good fortune to mount the throne of England, he might take any step in favour of the Roman-catholics without jealousy; and he promised to procure a toleration for the Papists, should the Pope, the emperor, and the king of Spain, favour his attempt. This negotiation procured the desired effect. Innocent contributed, with the money of the church, to expel a Roman-catholic prince from his throne.

Though the contest with the bishops had completed the king's unpopularity, he derived the suddenness of his ruin from the birth of a prince of Wales. That circumstance increased the fears of his subjects in proportion as it raised his security and hopes. In the reign of a prince to be educated under the prejudices of such a father nothing but a continuance of the same unconstitutional measures could be expected. So low indeed

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Birth of a prince of Wales.

2-6
Treachery of Sunderland.

2-5
Schemes of the prince of Orange.

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shop imprisoned.

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the whole city in commotion in their favour.

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they are acquitted.

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Attachment of the army to the Protestant religion.

Britain. was his credit sunk among his people at this time, and such preference they all seemed to have of his fate, that the child had like to have died before a wet nurse could be procured to suckle him.

281
He applies to James's subjects.

The prince of Orange, seeing the national discontent now raised to the highest pitch, resolved to take advantage of it. He began by giving one Dykevelt, his envoy, instructions to apply in his name to every religious sect in the kingdom. To the church-party he sent assurances of favour and regard; and protested, that his education in Holland had no way prejudiced him against episcopacy. To the non-conformists he sent exhortations, not to be deceived by the insidious caresses of their known enemy, but to wait for a real and sincere protector, &c. In consequence of these insinuations, the prince soon received invitations from the most considerable persons in the kingdom. Admirals Herbert and Russel assured him in person of their own and the national attachment. Henry Sidney, brother to Algernon, and uncle to the earl of Sunderland, came over to him with assurances of an universal combination against the king. Lord Dumblaine, son to the earl of Danby, being master of a frigate, made several voyages to Holland, and carried from many of the nobility tenders of duty and even considerable sums of money to the prince of Orange. Soon after, the bishop of London, the earls of Danby, Nottingham, Devonshire, Dorset, and several other lords, gentlemen, and principal citizens, united in their addresses to him, and intreated his speedy descent. The people, though long divided between whig and tory, now joined against their unhappy sovereign as a common enemy. William therefore determined to accept of their invitations; and this the more readily, as he perceived the malecontents had conducted themselves with prudence and secrecy. Having the principal servants of James in pay, he was minutely informed of the most secret actions and even designs of that prince. His intelligence came, through Sidney, from Sunderland, who betrayed the very measures which he himself had advised. The prince had a fleet ready to sail, and troops provided for action, before the beginning of June 1688.

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James warned of his danger by Louis XIV.

The king of France was the first who gave James warning of his danger, and offered to assist him in repelling it. But he declined this friendly offer, lest it should be said that he had entered into a private treaty with that monarch to the prejudice of the Protestant religion. Being also deceived and betrayed by Sunderland, he had the weakness to believe, that the reports of an invasion were invented in order to frighten him into a strict connection with France. He gave credit to the repeated assurances of the states, that the armament prepared in their ports was not designed against England. Nay, he even believed the assertions of the prince himself, whose interest it was to deceive. Sunderland descanted against the possibility of an invasion, and turned to ridicule all who believed the report. Having by the prior consent of James taken possession of all the foreign correspondence, he suppressed every intelligence that might alarm; and even all others whom James trusted, except Dartmouth, affected long to give no faith to the reports of an invasion.

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He rejects all assistance.

Louis finding his first offers rejected, next proposed to march down his army to the frontiers of the Dutch provinces, and thus detain their forces at home for

their own defence. But this proposal met with no better reception than the former. Still Louis was unwilling to abandon a friend and ally whose interest he regarded as closely connected with his own. He ventured to remonstrate with the Dutch against the preparations they were making to invade England. The Dutch treated his remonstrance as an officious impertinence, and James himself declined his mediation.

The king of England, having thus rejected the assistance of his friends, and being left to face the danger alone, was astonished with an advice from his minister in Holland, that an invasion was not only projected, but avowed. When he first read the letter containing this information, he grew pale, and the letter dropt from his hand. He saw himself on the brink of destruction, and knew not to whom to apply for protection. In this emergency, Louis wrote to James in his own hand, that to divert the Dutch from their intended invasion of England, he would lay siege to Maestricht with 30,000 men. James communicated this intelligence to Sunderland, and he to the prince of Orange. Six thousand men were thrown into Maestricht: and the design of Louis, as being impracticable, was laid aside. On this, Louis, being disgusted with James, turned his arms towards Germany. The dauphin laid siege to Philippsburgh on the 5th of October; and prince Clement of Bavaria, by throwing a strong garrison into Cologne, effectually secured the states of Holland from any sudden danger from the arms of France.

James had now no resource but in retreating from those precipitate measures which had plunged him into inextricable distress. He paid court to the Dutch, and offered to enter into any alliance with them for their common security. He replaced in all the counties of England all the deputy lieutenants and justices who had been deprived of their commissions for their adherence to the test and penal laws. He restored the charters of such corporations as he had possessed himself of; he annulled the high commission court; he reinstated the expelled president and fellows of Magdalen college; and was even reduced to caress those bishops whom he had so lately persecuted and insulted.

All these concessions, however, were now too late; they were regarded as the effects of fear, and not of repentance. Indeed, it is said, he very soon gave proofs of his insincerity: for, hearing that the Dutch fleet was dispersed, he recalled those concessions he had made in favour of Magdalen college; and to show his attachment to the Romish church, at the baptism of the prince of Wales, he appointed the pope one of the sponsors.

In the mean time, William set sail from Helvoetsluys with a fleet of near 500 vessels, and an army of above 14,000 men. Fortune, however, seemed at first every way unfavourable to his enterprize. He was driven back by a dreadful storm; but he soon resisted his fleet, and again set sail for England. It was given out that this invasion was designed for the coasts of France; and many of the English, who saw the fleet pass along their coasts, little suspected the place of its destination. It happened that the same wind which sent the Dutch to their place of destination, detained the English fleet in the river: so that the Dutch passed the straits of Dover without molestation; and after a voyage

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His attention: the news of an intended invasion.

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He is again betrayed by Sunderland.

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James attempts to pacify his subjects.

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But in vain.

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William lands in England.

of

Britain. of two days, landed at Broxholme in Torbay, on the 5th of November, the anniversary of the gunpowder treason.

But though the invitation from the English was very general, the prince for some time had the mortification to find himself joined by very few. He continued for ten days in expectation of being joined by the malecontents, and at last was going to despair of success. But just when he began to deliberate about reembarking his forces, he was joined by several persons of consequence, and the whole country soon after flocked to his standard. The first person that joined the prince was major Burrington, and he was quickly followed by the gentry of the counties of Devon and Somerset. Sir Edward Seymour made proposals for an association, which was signed by great numbers; and every day there appeared some effect of that universal combination into which the nation had entered against the measures of the king.

This was followed by the defection of the army. Lord Colchester, son to the earl of Rivers, first deserted to the prince. Lord Cornbury, son to the earl of Clarendon, carried off the greatest part of three regiments of cavalry at once; and several officers of distinction informed Feversham their general, that they could not in honour fight against the prince of Orange. Soon after this the unhappy monarch found himself deserted by his own servants and creatures. Lord Churchill had been raised from the rank of a page, and had been invested with an high command in the army; he had been created a peer, and owed his whole fortune to the king's bounty: yet even he deserted among the rest; and carried with him the duke of Grafton natural son to the late king, colonel Berkly, and some others.

In this universal defection, James, not knowing where to turn, began to think of requesting assistance from France when it was now too late. He wrote to Leopold emperor of Germany: but in vain; that monarch only returning for answer, That what he had foreseen had happened. James had some dependance on his fleet; but they were entirely disaffected. In a word, his interests were deserted by all, for he had long deserted them himself. He still found his army, however, to amount to 20,000 men; and had he led them immediately to battle, it is possible they might then have fought in his favour. But James's misfortunes had deprived him of his natural firmness and resolution; and, seeing himself deserted by those in whom he thought he could have placed most confidence, he became suspicious of all, and was in a manner deprived even of the power of deliberation. In this extremity of distress, the prince of Denmark, and Anne James's favourite daughter, perceiving the desperation of his circumstances, cruelly resolved to take part with the prince of Orange. When the king was informed of this, he was stung with the most bitter anguish. "God help me (cried he), my own children have forsaken me." To add to his distresses as a parent, he was accused of being accessory to the death of his own child. Her nurse, and her uncle the earl of Clarendon, went up and down like distracted persons, affirming that the Papists had murdered the princess. They publicly asked the queen's servants whither they had conveyed her? and they contributed to inflame the populace, whose zeal had already inflamed them to tumult and disorder. It was, however,

soon known that she fled, under the conduct of the bishop of London, to Northampton.

On the 30th of November 1688, James sent three of his noblemen to treat with the prince of Orange. But though the latter knew very well that the king's commissioners were in his interests, his behaviour showed plainly that he now thought the time of treating was past. For some time he would not admit them to an audience; and, when he did, would give no satisfactory answer. James now began to be afraid of his personal safety. But what most affected him was the terror of the queen for herself and her infant son. He therefore resolved to send them abroad. They crossed the river in a boat, at Whitehall, in a stormy and rainy day. They were carried to Gravesend in a coach, under the conduct of the count de Lauzun. A yacht, commanded by captain Gray, which lay there ready for the purpose, soon transported them in safety to Calais.

The king was now so dispirited and distracted, that he resolved to leave the kingdom at once, and thus throw every thing into confusion. He threw the great seal into the Thames; he left none with any authority to conduct affairs in his absence; and he vainly hoped to derive advantage to his affairs from anarchy and disorder. About twelve at night, on the 10th of December, he disguised himself, took a boat at Whitehall, and crossed the river. Sir Edward Hales, with another friend, met him at Vauxhall with horses. He mounted; and being conducted through by-ways, by a guide, he passed in the night-time to the Medway, which he crossed by Ailesford-bridge. At Woolpeck he took fresh horses, sent thither before by Sheldon one of his equerries who was in the secret of his flight. He arrived at ten o'clock at Embyseury near Feversham, where a customhouse hoy, hired by Sir Edward Hales, lay ready to receive them on board. But the wind blew fresh, and the vessel had no ballast. The master, therefore, easily persuaded the king to permit him to take in ballast at Shilness. It being half ebb when they ran ashore, they designed to sail as soon as the vessel should be afloat. But when the vessel was almost afloat,

she was boarded by three siber-boats belonging to Feversham, containing 50 men. They seized the king and his two companions, under pretence of their being Papists that wanted to escape from the kingdom. They turned up Feversham water with the tide; but still the king remained unknown. Sir Edward Hales placed privately 50 guineas in the hands of the captain, as an earnest of more should he permit them to escape. He promised: but was so far from keeping his word, that he took what money they had, under pretence of securing it from the seamen; and, having put himself of their all, he left them to their fate. The unfortunate fugitives were at length carried in a coach to Feversham, amid the insults, clamours, and thouts, of the sailors. When the king was brought to the inn, a seaman, who had served under him, knew him, and melted into tears; and James himself was so much moved at this instance of his affection, that he wept. The other sibermen, who had treated him with such indignity before, when they saw his tears, fell upon their knees. The lower inhabitants of the whole village gathered round him; but the better sort fled from his presence. The seamen, however, formed themselves into a guard round him,

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of William.

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His Great
orders.

him, and declared that "a hair of his head should not be touched." In the mean time, Sir James Oxendon, under the pretence of guarding him from the rabble, came with the militia to prevent his escape. The king found a change in his condition when he was taken out of the hands of the sailors. The commanders of the militia showed him no respect. He was even insulted by the common soldiers. A letter which he intended to send to London for clothes, a change of linen, and some money, was stopped by those who pretended to protect his person.

All things in the mean time ran into confusion at London, and the prince of Orange exercised in his own person all the functions of royalty. He issued a declaration to the disbanded army to reassemble themselves. He ordered the secretary at war to bring him a list of the king's troops. He commanded the lord Churchill to collect his troop of horse-guards. He sent the duke of Grafton to take possession in his name of Tilbury fort. The assembly of peers adjourned to the council-chamber at Whitehall; and, to give the appearance of legality to their meeting, chose the marquis of Halifax for their president. While this assembly was sitting, on the 13th of December, a poor countryman, who had been engaged by James, brought an open letter from that unfortunate prince to London. It had no superscription; and it was addressed to none. It contained, in one sentence only, his deplorable condition when in the hands of a desperate rabble. This poor messenger of their fallen sovereign had long waited at the council door, without being able to attract the notice of any who passed. The earl of Mulgrave at length, apprised of his business, had the courage to introduce him to the council. He delivered his open letter, and told the state of the king with tears. The assembly were so much moved, that they sent the earl of Feversham with 200 of the guards towards Feversham. His instructions were to rescue him first from danger, and afterwards to attend him to the sea-coast, should he choose to retire. He chose, however, to return to London; but the prince of Orange sent a message to him, desiring him to advance no nearer the capital than Rochester. The messenger missed James by the way. The king sent Feversham with a letter to the prince of Orange, requesting his presence in London to settle the nation. He himself proceeded to that place, and arrived on the 16th of December. Doubting the fidelity of the troops who were quartered at Westminster, he chose to pass through the city to Whitehall. Never prince returning with victory to his capital was received with louder acclamations of joy. All the streets were covered with bonfires. The bells were rung, and the air was rent with repeated shouts of gladness. All orders of men crowded to his coach; and, when he arrived at Whitehall, his apartments were crowded with people who came to express their joy at his return.

The prince of Orange received the news of his return with an haughty air. His aim from the beginning was to force him by threats and severities to relinquish the throne. The Dutch guards were ordered to take possession of Whitehall, and to displace the English. The king was soon after commanded by a message, which he received in bed at midnight, to leave his palace next morning, and to depart for Ham, a seat of the duchess of Lauderdale's. He desired,

N^o 56.

however, permission to retire to Rochester, a town not far from the sea-coast, and opposite to France. This was readily granted; and it was now perceived that the harsh measures of the prince had taken effect, and that the king meditated an escape to France.

The king, surrounded by the Dutch guards, arrived at Rochester on the 19th of December. The restraint put upon his person, and the manner in which he had been forced from London, raised the indignation of many, and the compassion of all. The English army, both officers and soldiers, began to murmur; and had it not been for the timidity and precipitation of James himself, the nation had certainly returned to their allegiance. He remained three nights at Rochester, in the midst of a few faithful friends. The earls of Arran, Dumbarton, Ailesbury, Litchfield, and Middleton, were there; and, with other officers of merit, the gallant lord Dundee. They argued against his flight with united efforts. Several bishops, some peers, and many officers, intreated his stay in some part of England. Message followed message from London. They represented that the opinions of men began to change, and that events would daily rise in favour of his authority. Dundee added his native ardour to his advice. "The question, Sir, (said he), is, Whether you shall stay in England, or fly to France? Whether you shall trust the returning zeal of your native subjects, or rely on a foreign power? Here you ought to stand. Keep possession of a part, and the whole will submit by degrees. Resume the spirit of a king. Summon your subjects to their allegiance. Your army, though disbanded, is not dispersed. Give me your commission. I will gather 10,000 of your troops. I will carry your standard at their head through England, and drive before you the Dutch and their prince." The king replied, "that he believed it might be done; but that it would raise a civil war, and he would not do so much mischief to a nation that would so soon come to their senses again." Middleton urged his stay, though in the remotest part of the kingdom. "Your majesty, (said he), may throw things into confusion by your departure; but it will be but the anarchy of a month: a new government will soon be settled, and you and your family will be ruined." These spirited remonstrances had no effect upon James. He resolved to quit the kingdom; and having communicated his design to a few of his friends, he passed at midnight through the back-door of the house where he lodged, and with his son the duke of Berwick, and Biddulph one of his servants, went in a boat to a smack, which lay waiting for him without the fort of Sheerness. By reason of a hard gale they were forced to bear up toward Leigh, and to anchor on the Essex-side, under the lee of the land. When the gale slackened, they reached the Buoy of the Narrows without tacking; but not being able to weather the Goodwin, they were forced to fail through the downs. Seven ships lay there at anchor; but the smack passed unquestioned along. Unable to fetch Calais, she bore away for Boulogne, and anchored before Ambleteuse. The king landed at three o'clock in the morning of Tuesday, December 25th; and tacking post, soon joined his queen at St Germans.

James having thus abandoned his dominions, the prince of Orange remained master of them of course. By the advice of the house of lords, the only member

Britain.

298
He is pre-
sented to
stay in the
kingdom;

299
But refuses.

300
He lands in
France.

296
James re-
turns to
London.

297
Commanded
by Wil-
liam to
leave his
palace.

Britain of the legislature remaining, he was desired to summon a parliament by circular letters; but the prince, unwilling to act upon so imperfect an authority, convened all the members who had sat in the house of commons during any parliament of Charles II. and to these were added the mayor, aldermen, and fifty of the common council of London; and the prince, being thus supported by an assembly deriving its authority from himself, wrote circular letters to the counties and corporations of England to call a new parliament.

301 The throne declared vacant. The house being met, which was mostly composed of the Whig party, thanks were given to the prince of Orange for the deliverance he had brought them; after which they proceeded to settle the kingdom. A vote soon passed both houses, that king James II. having endeavoured to subvert the constitution of the kingdom, by breaking the original contract between the king and his people, and having by the advice of Jesuits and other wicked persons violated the fundamental laws, and withdrawn himself out of the kingdom, had abdicated the government; and that the throne was thereby vacant.

302 William raised the sovereignty. The king being thus deposed, it was easy for William to get himself appointed as his successor. Proposals were made for electing a regent. Others were for investing the prince of Orange with regal power, and declaring the young prince supposititious. To these proposals, however, William opposed the following decisive argument, *viz.* that "he had been called over to defend the liberties of the British nation, and that he had happily effected his purpose; that he had heard of several schemes proposed for the establishing of the government; that, if they chose a regent, he thought it incumbent upon him to inform them that he would not be that regent; that he would not accept of the crown under the prince's his wife, though he was convinced of her merits: that therefore, if either of these schemes was adopted, he could give them no assistance in the settlement of the nation; but would return home to his own country, satisfied with his aims to secure the freedom of theirs." Upon this, after a long debate in both houses, a new sovereign was preferred to a regent by a majority of two voices. It was agreed that the prince and princess of Orange should reign jointly as king and queen of Britain; while the administration of government should be placed in the hands of the prince only. The marquis of Halifax, as speaker of the house of lords, made a solemn tender of the crown to their Highnesses, in the name of the peers and commons of Britain. The prince accepted the offer; and that very day, February 13th 1689, William and Mary were proclaimed king and queen of Great Britain.

Though Mary was comprehended in the royal title, she never possessed either the authority of a queen, or the influence of a wife. Her easy temper had long been subdued by the stern severity of a husband who had very few amiable qualities. Being brought up in a manner under the tuition of her spouse, and in some degree confined by his orders, she was accustomed to adopt implicitly his political maxims and even his thoughts; and in consequence of her want of importance with him, she ceased to be an object of consequence in the eyes of the nation.

William began his reign with issuing a proclamation

for continuing in office all protestants that had been in place on the first of the preceding December. On the 17th of the month he formed his privy council, which consisted chiefly of such persons as had been most active in raising him to the throne. To gratify as many as possible of his friends, the several boards, and even the chancery, were put into commission. The benches of the exchequer and common law were filled with persons who had distinguished themselves against the measures of the late king. The earl of Nottingham who had violently opposed the elevation of William, and the earl of Shrewsbury who had adhered to his views, were made secretaries of state. The marquis of Halifax, and the earl of Danby, though rivals in policy, were admitted into the cabinet; the first as lord privy seal, the second as president of the council. His Dutch friends in the mean time were not forgotten by the king. Bentinck, his favourite, was made a privy counsellor, groom of the stole, and privy purse. Auverquerque was appointed master of the horse. Zuylstein received the office of maller of the robes. Schomberg was placed at the head of the ordnance.

303 National discontent. Though these instances of gratitude were no doubt necessary to William, the generality of the nation were displeased. The Tories were offended at being excluded from his favour, especially as they had departed from their principles in order to serve him. The nation in general were much prejudiced against foreigners, and universal discontent ensued upon seeing them preferred. The king, who had been bred a Calvinist, was also very strongly inclined to favour that sect; and his prejudices in favour of Calvinism were almost equal to those of James in favour of Popery. Finding, therefore, the clergy of the church of England little inclined to take the oaths to the new government, he began openly to indulge his own prejudices in favour of dissenters. Having come to the house of lords to pass some bills, on the 16th of March, he made a speech, urging the necessity of admitting all Protestants indiscriminately into the public service. He told his parliament, that he had something to communicate, which would conduce as much to their settlement as to the disappointment of their enemies. He informed them, that he was employed in filling up the vacancies in offices of trust; and he hoped that they were sensible of the necessity of a law to settle the oaths to be taken by such persons as should be admitted into place. As he doubted not, he said, that they would sufficiently provide against Papists, so he hoped that they would leave room for the admission of all Protestants that were able and willing to serve.

304 His scheme in favour of dissenters rejected. This proposition was rejected with vehemence. The adherents of the church complained that the ruin which they feared from the Papists in the preceding reign was now to be dreaded from the Protestant dissenters. They affirmed, that if the established religion was to be destroyed, it mattered little by whose hands it must fall. A bill brought in by the ministry for abrogating the former oaths of supremacy and allegiance was rejected.

An attempt to dispense with the sacramental test was made without success in another form. The court party proposed that any man should be sufficiently qualified for an office by producing a certificate of his having received the sacrament in any Protestant congregation.

^{Britain.} gation. But this motion was also rejected in the house of lords by a great majority. William repeated his attempts of a comprehension; but he was ultimately unsuccessful, and in the coronation-oath the church-party inserted a clause highly favourable to themselves, viz. that the king should maintain the Protestant religion "as established by law." To this clause William is said to have discovered an apparent unwillingness to swear.

³⁰⁵ Tottering condition of William's government For these and other reasons the government of William was for some time but in a very tottering condition. The king, either through want of health or inclination, interfered but little in the affairs of the nation. Ireland was strangely neglected. Halifax and Danby, who had in a manner raised the king to the throne, caballed with his enemies. They perceived that the people, with the same levity that induced them to desert their former sovereign, were beginning to be discontented with their new prince. Every thing seemed to tend to a change. Halifax himself declared, that were James to conform with the Protestants, he could not be kept four months from reascending his throne. Danby averred, that, were the late king to give satisfaction for the security of religion, it would be difficult to oppose his restoration. From these apparent discontents of the nation, the friends and emissaries of James assumed more boldness. They tampered with the servants of the crown, and inflamed the army. The former they alarmed with the prospect of a sudden change; the latter they roused into indignation by the manifest preference given by William to his countrymen the Dutch.

³⁰⁶ He is acknowledged king in Scotland. Though the kingdom of Scotland did not at first recognize the authority of William, yet the party of James never attained sufficient strength to be of any effectual service to him in that kingdom. Thirty Scots peers, and near 80 gentlemen, then in London, had waited in the beginning of January on the prince of Orange. Without any authority from the regency still subsisting in Edinburgh, they formed themselves into a kind of convention. The prince of Orange in a formal manner asked their advice. He withdrew, and they adjourned to the council-chamber at Whitehall. The duke of Hamilton being chosen president, explained the distracted state of Scotland. He represented, that disorders, anarchy, and confusion, prevailed; and he urged the necessity of placing the power somewhere till a convention of states should be called to form a lasting and solid settlement. When the heads of their address to the prince of Orange were settled, and ordered to be engrossed, the earl of Arran unexpectedly arose, and proposed to invite back the king. The meeting, however, adhered to the prince of Orange; and waited on him in a body, requesting him to take the administration into his hands. He thanked them for the trust they had reposed in him; and a convention was ordered to meet at Edinburgh on the 14th of March, and it was provided that no exception or limitation whatever should be made, except that the members should be Protestants.

A secession, however, was made from this convention, in favour of James. The archbishop of Glasgow, the earl of Balcarras, and the viscount Dundee, were authorized by an instrument signed by the late king, at that time in Ireland, to call a convention of

the states at Stirling. But this measure was disappointed, first by the wavering disposition of the marquis of Athol, and afterwards by the delay and folly of the party. At last, the viscount Dundee, being alarmed by an information of a design formed by the covenanters to assassinate him, left Edinburgh at the head of 50 horse. When he passed under the walls of the castle, the duke of Gordon, who held that place, and favoured the cause of James, called him to a conference. He scrambled up the precipice, and informed the duke of his designs in favour of the late king. He conjured him to hold out the castle, under a certainty of being relieved. The novelty of the sight collected multitudes of spectators. The convention were alarmed. The president ordered the doors to be locked, and the keys to be laid upon the table. The drums were beat to alarm in the town. A parcel of ill-armed retainers were gathered together in the street by the earl of Leven. Dundee in the mean time rode off with his party. But when they found themselves secure, the duke of Hamilton adjourned the convention, which relieved the adherents of James from dreadful apprehensions for their own safety. Fifty members retired from Edinburgh; and that circumstance procured an unanimity in all the succeeding resolutions of the convention. Soon after this it was determined in a committee, that James had *forfeaulted* his right to the crown, by which was meant that he had perpetually excluded himself and his whole race from the crown, which was thereby become vacant. This resolution was approved by the convention, and another was drawn up for raising William and Mary to the vacant throne; in consequence of which they were proclaimed at Edinburgh on the 11th of April 1689.

The castle of Edinburgh was still kept, in the name of James, by the duke of Gordon: but despairing of any relief, and pressed by a siege, he surrendered it on the 13th of June, upon honourable terms. The adherents of James, terrified with this unexpected misfortune, now turned their eyes to the viscount Dundee. That nobleman having been in vain urged by the convention to return, they had declared him a fugitive, an outlaw, and a rebel. General Mackay had been sent to Scotland by William with four regiments of foot, and one of dragoons; and Dundee being apprised of his design to surprize him, retired to the Grampian mountains with a few horse. He marched from thence to Gordon castle, where he was joined by the earl of Dunfermline with 50 gentlemen. He then passed through the county of Murray to Inverness. Macdonald of Keppoch lay with 700 men before that town; after having ravaged, in his way from his own country, the lands of the clan of Macintosh. Dundee, having promised to the magistrates of Inverness to repay, at the king's return, the money extorted from them by Macdonald, induced the latter to join him with all his men. He could not prevent them, however, from first returning home with their spoil. He accompanied them to Lochaber, and on the 8th of May arrived in Badenoch. From thence he wrote letters to the chiefs of all the clans, appointing them to meet at a general rendezvous in Lochaber, on the 18th of the same month. In the mean time, passing suddenly through Athol, he surprized the town of Perth. In hopes of gaining to his party the two troops of Scots dragoons

^{Britain}

³⁰⁷ Attempts of lord Dundee in favour of James.

who

^{Britain.} who lay at Dundee, he marched suddenly to that place: but the fidelity of captain Balfour, who commanded them, disappointed his views. Having raised the land-tax as he passed, Dundee returned through Athol and Rannoch to hold the diet of rendezvous at Lochaber. Here he was reinforced by several Highland chieftains, so that his army amounted to 1500 men. He pursued Mackay for four days, who had advanced to Inverness, but afterwards retreated to Strathbogie, leaving the whole Highlands exposed to the enemy.

Soon after, however, Dundee found himself surrounded with many difficulties. The officers of the Scots dragoons, who held a secret correspondence with him, wrote him false intelligence, as an excuse for their own fears. They informed him that a party of Irish, who had endeavoured to land in Scotland, under the duke of Berwick, were driven back, and the duke himself taken prisoner; and that Mackay had been reinforced with a regiment of English horse, and another of foot. On this intelligence, Dundee retreated to Badenoch. The natives of the low country who served in his army quitted him without leave; and the Highlanders plundered the country wherever they came: at last he himself fell sick, while Mackay hovered on his rear. A slight skirmish happened, in which the Highlanders prevailed; but they lost their baggage during the action. Dundee at length arrived at Ruthven; but Mackay being reinforced with a body of 1200 men advanced against him, and other regiments had arrived at Perth and Dumblain. The Highlanders now deserted every night by hundreds; their gallant leader himself was forced to retire to Lochaber, where only 200 of his whole force remained with him; and, to complete his misfortunes, he received at the same time news of the surrender of the castle of Edinburgh.

On the 23d of June, letters arrived from king James, with a promise of immediate succours from Ireland; upon which Dundee ordered the neighbouring clans to assemble round his standard. But still he had scarce any thing but the mere bodies of his men with which he could prosecute the war. The Highlanders were armed only with their own proper weapons, and he had no more than 40 pounds of powder in his whole army. All difficulties, however, were surmounted by the active spirit of the general, for whom the army entertained an enthusiastic zeal. On the 17th of July, he met the king's forces under general Mackay, near the pass of Killieranky. An engagement ensued, in which the Highlanders were victorious. Two thousand of Mackay's men were lost either in the field or in the pursuit; but the victory cost the Highlanders very dear, for their brave general was mortally wounded. He survived the battle, however; and wrote an account of the victory to king James: he even imagined his wound was not mortal; but he died the next morning at Blair. With him ended all the hopes of James in Scotland. Colonel Cannon, who succeeded Dundee in the command, possessed neither his popularity nor his abilities. After some insignificant actions, in which the valour of the soldiers was more conspicuous than the conduct of their leader, the Highlanders dispersed themselves in disgust; and the war soon after ended favourably for William, without any repulse given to his enemies.

During the troubles in England, which had terminated in placing William on the throne, the two parties

in Ireland were kept in a kind of tranquillity by their mutual fears. The Protestants were terrified at the prospect of another massacre; and the Papists expected every day to be invaded by the joint force of the English and Dutch. Their terrors, however, were ill founded; for though Tyrconnel sent several messages to the prince, that he was ready to deliver up the kingdom to any force that might make a surrender decent, his offers were always rejected. William was persuaded by the marquis of Halifax, that, should Ireland yield, no pretence could remain for keeping an army in pay; that then, having no army to protect his authority, he might as easily be turned out as he had been brought in; that the English nation could never remain long in a state of good humour; and that he might perceive they already began to be discontented. These insidious arguments induced William to neglect Ireland in such a manner as is justly looked upon to be one of the greatest blemishes in his whole reign. His enemies, indeed, though perhaps without any good foundation, assign a worse cause: *viz.* that should England be confirmed under his government, Ireland could not long hold out; and that the obstinacy of his Irish enemies would give a pretence for forfeitures to gratify his English, but especially his foreign friends.

Tyrconnel, disappointed in his views of surrendering Ireland to the prince of Orange, affected to adhere to James. The whole military force of the kingdom at that time amounted only to 4000 men, and of these only 600 were in Dublin; and what was still worse, all of them were so much disposed to quit the service, that the lord deputy was obliged to issue commissions for levying new forces. Upon this, an half-armed rabble, rather than army, rose suddenly in various parts of the kingdom. Having no pay from the king, they subsisted by depredation, and regarded no discipline. The Protestants in the north armed themselves in their own defence; and the city of Londonderry, relying on its situation, and a slight wall, shut its gates against the new-raised army. Protestant parties in the mean time rose every where, declaring their resolution to unite in self-defence, to preserve the Protestant religion, to continue their dependence on England, and to promote the meeting of a free parliament.

To preserve appearances, William now sent general Hamilton, an Irishman and a Roman catholic, to treat with Tyrconnel; but instead of persuading that lord to yield to William, this messenger advised him to adhere to James. In the mean time James himself assured the lord deputy, that he was ready to sail from Brest with a powerful armament. Hamilton, assuming spirit from the hopes of this aid, marched against the northern insurgents. They were routed with considerable slaughter at Drumore; and Hillsborough, where they had fixed their head-quarters, was taken without resistance: the city of Londonderry, however, resolved to hold out to the last extremity.

On the 7th of March 1689, James embarked at Brest. The whole force of his expedition consisted of 14 ships of war, 6 frigates, and 3 fire-ships. Twelve hundred of his native subjects in the pay of France, and 100 French officers, composed the whole army of James. He landed at Kinsale without opposition on the 12th of the month, where he was received with the utmost demonstrations of joy. His first care was to secure, in

Britain.

309
Ireland neglected by William.

310
An insurrection in favour of James.

311
Protestants take arms in their own defence.

312
They are defeated at Drumore.

313
James lands in Ireland.

Britain.

308
He is slain at Killieranky.

Britain. the fort of Kinfale, the money, arms, and ammunition, which he brought from France; and put the town in some posture of defence: which having done, he advanced to Corke. Tyrconnel arrived at this place soon after, and brought intelligence of the rout at Drumore. The king was so much pleased with his attachment and services, that he created him a duke; after which, he himself advanced towards Dublin. The condition of the rabble, who poured round him under the name of an *army*, was not calculated to raise his hopes of success. The most of them were only provided with clubs; some had sticks tipped with iron; and even of those who were best armed, scarce two in a hundred had muskets fit for service. Their very numbers distressed their sovereign, and ruined the country; inso-much that James resolved to disband the greatest part of them. More than 100,000 were already on foot in the different parts of the island. Of these he reserved 14 regiments of horse and dragoons, and 35 regiments of foot; the rest he ordered to their respective homes, and armed those that were retained in the best manner he could.

Being received at Dublin with an appearance of universal joy, James proceeded immediately to business. He ordered, by proclamation, all Protestants who had abandoned the kingdom to return. He commanded, in a second proclamation, all Papists, except those in his army, to lay up their arms, and put an end to the robberies and depredations which they had committed in the violence of their zeal. He raised the value of the currency by a proclamation; and he summoned a parliament to meet on the 7th of May, to settle the affairs of the kingdom. The Protestant clergy represented their grievances in an address; and the university of Dublin appeared with complaints and congratulations. He assured the first of his absolute protection, and a full redress; and he promised the latter not only to defend, but even to enlarge, their privileges.

³¹⁴ Is forced to raise the siege of Londonderry. † See Londonderry.

On the 8th of April, James left Dublin, resolving to lead his army against the insurgents in person. They retired before him, and the king laid siege to Londonderry. The besieged made such a vigorous resistance as has made the place remarkable ever since†: but being reduced to the last extremity, they would have been obliged to surrender, had not they been relieved on the 28th of July, by seven ships laden with provisions; upon which the siege was immediately raised.

³¹⁵ Is driven in to disagreeable measures.

In the mean time, the distressed situation of James, and his absolute dependence upon France, drove him into measures which otherwise he would never have thought of. His soldiers for some time had been supported by their officers, or subsisted by depredation. The funds of the officers were at last exhausted, and the country itself could no longer bear the riot and injustice of the soldiers. Pressed by these difficulties, James, by the advice of his council, resolved to coin pieces of copper, which should be received for silver. He saw well enough the inconveniences of this measure; but all Ireland possessed not the means of paying the army, in current coin, to the middle of June. Of the French remittances only 200,000 livres remained; and the king found it absolutely necessary to reserve that sum, to forward his measures with regard to Britain, and to procure intelligence of the motions of his enemies. The army was satisfied even with this ap-

pearance of money, and the people received the fictitious coin in hopes of being repaid in a more favourable state of affairs. A tax of 20,000*l.* a month, granted for 13 months by the parliament, furnished government with an appearance of resources; and in the mean time the king endeavoured to support the former revenue. He opened a trade with France to supply the want of commerce with England. But the French, knowing their own importance, and the necessity of the unfortunate monarch's affairs, claimed and obtained advantages in traffic which offended his own subjects.

To add to the distress of James, Ireland was now invaded by 10,000 men under the command of the duke of Schomberg. They appeared on the 12th of August 1689, in 90 transports, on the coast of Donaghadee, in the county of Down. Next day Schomberg landed without opposition his army, horses, and train of artillery. Having marched to Belfast on the 15th, he continued in that place four days to refresh his troops. He invested Carrickfergus, and threw into it 1000 bombs, which laid the houses in ashes. The garrison having expended their powder to the last barrel, marched out with all the honours of war. But Schomberg's soldiers broke the capitulation. They disarmed and stripped the inhabitants, without any regard to sex or quality; even women, stark naked, were publicly whipped between the lines; and all this under pretence of cruelties of the same kind having been committed by the Papists.

Though Schomberg was an experienced general, who had passed a life of 80 years almost continually in the field, he found himself at a loss how to carry on the war in Ireland. He did not consider the dangers that threatened the health of his troops by confining them too long in one place; and he kept them in a low moist camp near Dundalk, almost without firing of any kind; so that the men fell into fevers and fluxes, and died in great numbers. The enemy were not less afflicted with similar disorders. Both camps remained for some time in sight of each other; and at last, the rainy season approaching, both armies quitted their camps at the same time, and retired into winter quarters.

The bad success of the campaign, and the miserable situation of the Protestants in Ireland, at length induced William to attempt their relief in person. Accordingly he left London on the 4th of June 1690, and arrived at Carrickfergus on the 14th of that month. From thence he passed to Lisburn, the head quarters of the duke of Schomberg. He reviewed at Lough-Bridland his army, which consisted of 36,000 men, and was composed of English, Dutch, Germans, Danes, and French. Being supplied with every necessary, and in high health and spirits, they seemed absolutely certain of victory. The Irish army, having abandoned Ardee at their approach, fell back to the south of the Boyne. On the banks of that river they were joined by James, who had marched from Dublin at the head of his French auxiliaries. The banks of the Boyne were steep; the south side hilly, and fortified with ditches. The river itself was deep, and it rose very high with the tide. These advantages induced James, contrary to the opinion of his officers, to keep possession of this post. His army was inferior in numbers, discipline, and every thing, to

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³¹⁶ Ireland invaded by William's army;

³¹⁷ And by William in person.

³¹⁸ Battle at the Boyne.

his enemies : but flight, he thought, would dispirit his troops, and tarnish his own reputation ; he therefore resolved to put the fate of Ireland on the issue of a battle. Urged by his friends in England, and encouraged by a projected invasion of that kingdom by France, he had resolved to quit Ireland ; and to this he was farther encouraged by the assurance of aid from a powerful fleet that had already entered the narrow seas. But the strength of his situation, and the sudden appearance of the enemy, which made even a retreat dangerous, induced him to defer his purpose.

William was no sooner arrived, than he rode along the river's side, in sight of both armies, to make proper observations on the plan of battle ; but in the mean time, being perceived by the enemy, a cannon was privately brought out and planted against him where he was sitting. The shot killed several of his followers, and he himself was wounded in the shoulder. The news of his being slain was instantly propagated thro' the Irish camp, and even sent off to Paris ; but William, as soon as his wound was dressed, rode through the camp, and quickly undeceived his army.

The next day, (June 30th), the battle began at six in the morning. James's forces behaved with great resolution, but were at last defeated with the loss of 1500 men. The Protestants lost but about one third of that number ; but among these was their brave general the duke of Schomberg. He was killed by a discharge from his own troops, who, not knowing that he had been accidentally hurried into the midst of the enemy, fired upon the body of men who surrounded him. During the action, James stood on the hill of Dunmore, surrounded with some squadrons of horse ; and at intervals was heard to exclaim, when he saw his own troops repelling those of the enemy, " O spare my English subjects ! " While his troops were yet fighting, he quitted his station ; and leaving orders to guard the pass at Duleek, made the best of his way to Dublin. He advised the magistrates of that city to make the best terms they could with the victors ; and he himself set out for Waterford, where he immediately embarked for France. When he first deserted his troops at the Boyne, O'Regan, an old Irish captain, was heard to say, " That if the English would exchange generals, the conquered army would fight them over again. "

The victory at the Boyne was by no means decisive, and the friends of James resolved to continue their opposition to William. Sarsfield, a popular and experienced general, put himself at the head of the army that had been routed at the Boyne, and went farther into the country to defend the banks of the river Shannon. James appointed one St Ruth to command over Sarsfield, which gave the Irish universal discontent. On the other hand, general Ginecke, who had been appointed to command the English army in the absence of William, who was gone over to England, advanced towards the Shannon to meet the enemy. The only place where it was fordable was at Athlone, a strong walled town built on both sides of the river, and in the hands of king James's party. The English soon made themselves masters of that part which was on the hither side of the river ; but the part on the opposite bank being defended with great vigour, was for a long while thought impregnable. At length it was resolved in a council of war, that a body of forlorn hope should ford

the stream in the face of the enemy ; and this desperate enterprize was performed with great resolution ; the enemy were driven from their works, and the town surrendered at discretion. St Ruth marched his army to its relief, but he came too late ; for he no sooner approached, than his own guns were turned against him : upon which he instantly marched off, and took post at Aughrim, at ten miles distance, where he determined to wait the English army. Ginecke did not decline the combat, though he had only 18,000 men, while the Irish were above 25,000 strong. A desperate engagement ensued ; but at last St Ruth being killed, his troops gave way on all sides, and retreated to Limerick, where they determined to make a final stand, after having lost near 5000 of their best men.

Ginecke, wishing to put an end to the war at once, suffered as many of the Irish as chose, to retire to Limerick. In this last retreat the Irish forces made a brave defence. The siege commenced August 25th 1691. Six weeks were spent before the place without any decisive effect. The garrison was well supplied with provisions, and provided with all means of defence. The winter was approaching, and Ginecke had orders to finish the war upon any terms. He therefore offered such conditions as the Irish, had they been victors, could scarce have refused with prudence. He agreed, that all in arms should receive their pardon : that their estates should be restored, their attainders annulled, and their outlawries reversed : that none should be liable for debts incurred through deeds done in the course of hostilities : that all Roman catholics should enjoy the same toleration with regard to their religion, as in the reign of Charles II. : that the gentry should be permitted to make use of arms : that the inferior sort should be allowed to exercise their callings and professions : that no oaths but that of allegiance should be required of high or low : that should the troops, or any number of them, choose to retire into any foreign service, they should be conveyed to the continent, at the expence of the king. Sarsfield, who had obtained the title of *earl of Lucan* from James after his abdication, was permitted to retain a dignity which the laws could not recognize. The lords justices had arrived from Dublin on the first of October. They signed the articles together with Ginecke ; and thus the Irish Papists put a happy period to a war which threatened their party with absolute ruin. In consequence of this treaty, about 14,000 of those who had fought for king James went over to France, having transports provided by government for conveying them thither. When they arrived, James thanked them for their loyalty, and told them that they should still fight for their old master ; and that he had obtained an order from the king of France, for their being new clothed, and put into quarters of refreshment. In this manner all James's expectations from Ireland were entirely frustrated, and the kingdom submitted quietly to the English government.

In the beginning of the year 1692, an action of unexampled barbarity disgraced the government of William in Scotland. In the preceding August, in consequence of a pacification with the Highlanders, a proclamation of indemnity had been issued to such insurgents as should take the oaths to the king and queen, on or before the last day of December. The chiefs of the few tribes who had been in arms for James complied soon after with the proclamation : but Macdonald of

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St Ruth,
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Glenco failed in submitting within the limited time ; more, however, from accident than design. In the end of December, he came to colonel Hill, who commanded the garrison in fort William, to take the oaths of allegiance to the government. Hill, having furnished Macdonald with a letter to Sir Colin Campbell, sheriff of the county of Argyle, directed him to repair immediately to Inverary, to make his submission in a legal manner before that magistrate. The way to Inverary lay through almost impassable mountains; the season was extremely rigorous, and the whole country covered with a deep snow. So eager, however, was Macdonald to take the oaths, before the limited time should expire, that, tho' the road lay within half a mile of his own house, he would not stop to visit his family. After various obstructions, he arrived at Inverary. The time was elapsed, and the sheriff hesitated to receive his submission; but Macdonald prevailed on him by his importunities, and even tears. Sir John Dalrymple, afterwards earl of Stair, attended king William as secretary of state for Scotland. He took advantage of Macdonald's neglecting to take the oaths within the time prescribed, and procured from the king a warrant of military execution against him and his whole tribe. As a mark of his own eagerness, or to save Dalrymple, William signed the warrant, both above and below, with his own hand. The secretary, in letters expressive of a brutal ferocity of mind, urged the officers who commanded in the Highlands to execute their orders with the utmost rigour. Campbell of Glenlyon, a captain in Argyle's regiment, and two subalterns, were ordered, with 120 men, to repair to Glenco on the first of February. Campbell, being uncle to young Macdonald's wife, was received by the father with all manner of friendship and hospitality. The men were treated in the houses of his tenants with free quarters and kind entertainment. Till the 13th of the month, the troops lived in good humour and familiarity with the people. The officers, on the very night of the massacre, passed the evening and played at cards in Macdonald's house. In the night, lieutenant Lindsay, with a party of soldiers, called in a friendly manner at his door. He was instantly admitted. Macdonald, as he was rising to receive his guest, was shot dead behind his back, with two bullets. His wife had already put on her clothes; but she was stripped naked by the soldiers, who tore the rings off her fingers with their teeth. The slaughter was become general. To prevent the pity of the soldiers to their hosts, their quarters had been changed the night before. Neither age nor infirmity was spared. Some women, in defending their children, were killed. Boys, imploring mercy, were shot by officers, on whose knees they hung. In one place, nine persons, as they sat enjoying themselves at table, were shot dead by the soldiers. At Inveiggen, in Campbell's own quarters, nine men were first bound by the soldiers, and then shot at intervals, one by one. Near 40 persons were massacred by the troops. Several, who fled to the mountains, perished by famine and the inclemency of the season. Those who escaped owed their lives to a tempestuous night. Lieutenant colonel Hamilton, who had the charge of the execution from Dalrymple, was on his march with 400 men, to guard all the passes from the valley of Glenco; but was obliged to stop by the severity of the weather, which proved the safety

of the unfortunate tribe. He entered the valley next day; laid all the houses in ashes; and carried away all the cattle and spoil, which were divided among the officers and soldiers.

It can scarce be imagined that a massacre attended with such circumstances of treachery and breach of the laws of hospitality, could pass without some animadversion; though the expressions of Cunningham, a writer very partial to the character of king William, seem to account it a fault that it should ever have been inquired into. "Mr James Johnstone, one of the secretaries of state (says he), from motives of revenge, caused the affair of Glenco to be laid before parliament. This being somewhat disingenuously managed, was the occasion of much trouble to many people. The earl of Breadalbin was committed to the castle of Edinburgh: but the lord viscount Stair, who lay under some suspicion on that account, in a very artful speech endeavoured to resolve the whole matter into a misapprehension of dates; which, he alleged, had led both the actor in the slaughter complained of, and those who now accused him, into mistakes. In conclusion he affirmed, that neither the king nor any other person was to be blamed, save only the misled captain, who did not rightly understand the orders that had been given him." The most disgraceful circumstances of the massacre are by the same author concealed; as he only tells us, that "it unhappily fell out, that the whole clan of Glenco, being somewhat too late in making their submission to king William, were put to the sword by the hands and orders of captain Campbell; which gave great offence to the king. It is certain the king had cause of resentment against some of his courtiers on account of this foul action; but he thought fit not to question them for it till he could settle himself more firmly on the throne."

It is not improbable, that partly to efface the remembrance of this massacre, and the sham inquiry above mentioned, the king now caused his commissioner to declare in the Scots parliament (the same that had inquired into the affair of Glenco), "That if the members found it would tend to the advancement of trade that an act should be passed for the encouragement of such as should acquire and establish a plantation in Africa, America, or any other part of the world where plantations might be lawfully acquired, that his majesty was willing to declare he would grant to the subjects of this kingdom, in favour of these plantations, such rights and privileges as he granted, in like cases, to the subjects of his other dominions." Relying on this and other flattering promises, the nobility and gentry of Scotland advanced L. 400,000 towards the establishment of a company for carrying on an East and West India trade; and 1200 veterans who had served in king William's wars were sent to effect a settlement on the peninsula of Darien, which lies between the Atlantic and Pacific oceans, and in the narrowest place is not above 60 miles over; and of consequence is equally well adapted for trading with both the Indies.

The new colony were well received by the natives, and matters began to wear a promising aspect, when the king, on the earnest solicitations of the English and Dutch East India Companies, resolved to gratify the latter at the expence of his Scottish subjects; and knowing that

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the new colony must want supplies of provisions, he sent orders to the governor of Jamaica and the English settlements in America to issue proclamations, prohibiting, under the severest penalties, all his majesty's subjects from holding any correspondence with the Scottish colony, or assisting it in any shape with arms, ammunition, or provisions: "Thus (says Mr Knox) the king's heart was hardened against these new settlers, whom he abandoned to their fate, though many of them had been covered with wounds in fighting his battles.

"Thus vanished all the hopes of the Scottish nation, which had engaged in this design with incredible alacrity, and with the most sanguine expectations that the misfortunes of their country would, by this new channel of commerce, be completely healed.

"The distresses of the people, upon receiving authentic accounts of the fortune of their colony, scarcely admit of any description. They were not only disappointed in their expectations of wealth and a renewal of their commerce; but hundreds, who had ventured their all, were absolutely ruined by the miscarriage of the design.

"The whole nation seemed to join in the clamour that was raised against their sovereign. They taxed him with double dealing, inhumanity, and base ingratitude, to a people who had lavished their treasure and best blood in support of his government, and in the gratification of his ambition; and had their power been equal to their acrimony, in all probability the island would have been involved in a civil war."

Such is the account of this transaction given by Mr Knox; on the other hand, Mr Cunningham tells us, that "the same parliament (which had inquired into the Glenco affair) also had under their consideration a scheme for settling a trade and planting a colony in America, which proved afterwards an occasion of manifold evils, and was matter of great complaint both to the English and the Spaniards. The Scots, carrying on the settlement of the colony which has been just mentioned with extravagant parade, and noise, and subscriptions, filled not only England, but all other countries also, with apprehensions lest Scotland should, in process of time, become the emporium of all the trade of Europe. But they never considered how few would trust their fortunes to the disposal of such a numerous nobility, nor calculated the frauds of their own managers; by which means the whole affair was afterwards ruined. Discords arising on this head between the two kingdoms, old hostilities were recalled to mind; the cattle were driven off from the borders; the customs were defrauded, and other injuries committed; and at last the Spaniards complained of the Scots. Therefore, to prevent the mischiefs which might arise to both kingdoms, the king had nothing so much at heart as to bring about an union upon as fair terms as he could," &c.

"The total reduction of Ireland, and the dispersion and extermination of the Highland chieftains who favoured his cause, did not entirely put an end to the hopes of James. His chief expectations next were founded on a conspiracy among his English adherents, and in the succours promised him by the French king. A plot was first formed in Scotland by Sir James Montgomery; a person who, from being an adherent to

William, now turned against him: but as the project was ill contrived, so it was as lightly discovered by the instigator. To this another succeeded, which seemed to threaten more serious consequences, as it was managed by the whig party, who were the most formidable in the state. A number of these joined themselves to the Tories, and both made advances to the adherents of the late king. They assembled together; and the result of their deliberations was, that the restoration of James was to be effected entirely by foreign forces: that he should sail for Scotland, and be there joined by 5000 Swedes; who, because they were of the Protestant religion, would, it was thought, remove a part of the odium which attended an invasion by foreigners: it was concerted that assistance should at the same time be sent from France, and that full liberty of conscience should be proclaimed throughout the kingdom. In order to lose no time, it was resolved to send over to France two trusty persons to consult with the banished monarch; and lord Preston and Mr Ashton were the two persons appointed for this embassy. Both of them, however, were seized when they least expected it, by order of lord Caermarthen. Both were condemned, and Ashton was executed without making any confession; but lord Preston had not the same resolution. Upon an offer of pardon, he discovered a great number of associates; among whom the duke of Ormond, lord Dartmouth, and lord Clarendon, were foremost.

The French at last became sensible of their bad policy in not having better supported the cause of James, and therefore resolved to make a descent upon England in his favour. In pursuance of this scheme, the French king supplied James with an army consisting of a body of French troops, some English and Scots refugees, and the Irish regiments, which had been transported into France from Limerick, and were now become excellent soldiers by long discipline and severe duty. This army was assembled between Cherbourg and La Hogue, and commanded by king James in person. More than 300 transports were provided for landing it on the opposite coast; and Tourville, the French admiral, at the head of 63 ships of the line, was appointed to favour the descent. His orders were, at all events, to attack the enemy, in case they should oppose him; so that every thing promised the banished king a change of fortune.

These preparations on the side of France were soon known at the English court, and every precaution taken for a vigorous opposition. All the secret machinations of the banished king's adherents were discovered to the English ministry by spies; and by these they found that the Tories were more faithful than even the Whigs who had placed king William on the throne. The duke of Marlborough, lord Godolphin, and even the princess Anne herself, were violently suspected of disaffection. Preparations, however, were made, with great tranquillity and resolution, to resist the growing storm. Admiral Russel was ordered to put to sea with all possible expedition; and he soon appeared with 99 ships of the line, besides frigates and fire-ships. At the head of this formidable fleet he set sail for the coast of France; and, near La Hogue, he discovered the enemy under Tourville, who prepared to give him battle. The engagement began between the two admirals with great

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He is sup-
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the French.

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Who are
defeated.

great fury, and the rest of the fleet soon followed their example. The battle lasted for ten hours; but at last victory declared on the side of numbers: the French fled for Conquet road, having lost four ships in the first day's action. The pursuit continued for two days following: three French ships of the line were destroyed the next day; and 18 more, which had taken refuge in the bay of La Hogue, were burnt by Sir George Rooke. In this manner were all the French preparations frustrated; and so decisive was the blow, that from this time France seemed to relinquish all claims to the ocean.

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James offered the
crown of
Poland;332
Which he
refuses.

This engagement, which happened on the 21st of May 1692, put a final period to the hopes of James. No further attempts were made in his favour, except some plots to assassinate king William, which ended only in the destruction of those who formed them. But it was never thoroughly proved that James countenanced these plots in the least; it rather appears, that in all cases he expressed the utmost abhorrence of such attempts. In 1697, the abbe de Polignac, ambassador from France in Poland, wrote to his master, that thoughts were entertained of the late king of Britain, in the new election which happened on the death of John Sobieski king of Poland; and that James had been already named by some of the diets as his successor. Louis was eager to seize an opportunity of ridding himself with honour of a prince whose pretensions he could no longer support. The friends of James were also sanguine for the project; but he himself refused it. He told them, that "he would ever retain a grateful remembrance of his friends in Poland. That, however, he would not accept of the crown, had it actually been offered; much less would he endeavour to obtain by solicitation any crown which was not actually his due. That his acceptance of any other sceptre would amount to an abdication indeed of that which he deemed his right. That therefore he was resolved to remain in his present forlorn condition, possessing less hopes than ever of being restored, rather than to do the least act of prejudice to his family." The same year, at an interview between king William and Louis XIV. it was proposed that the prince of Wales (James's son) should succeed to the throne of England after the death of William. The king with little hesitation agreed to this request. He even solemnly engaged to procure the repeal of the act of settlement; and to declare, by another, the prince of Wales his successor to the throne. Even this proposal was rejected by James. He told the king of France, that though he could suffer with patience the usurpation of his nephew upon his right, he would never permit his own son to be guilty of the same injustice. He urged, that should the son reign in his father's lifetime, that circumstance would amount to a formal renunciation. That the prince of Wales, by succeeding to the prince of Orange, would yield his sole right, which was that of his father, &c.

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William engaged to
own James's
son for his
own successor;334
Which
James re-
fuses.335
His death.

From this time James lost every hope of being restored to the throne, and resigned himself entirely to the austerities of religious enthusiasm. His constitution, though vigorous and athletic, had for some time begun to yield to the infirmities of age, and to that melancholy which superstition as well as his uncommon misfortunes had impressed on his mind. In the beginning

of September 1701, when he was, according to his daily custom, at public prayers, he fell suddenly into a lethargy; and though he recovered his senses soon after, he languished for some days, and expired on the 6th of September. The French king, with great humanity, paid him several visits during his sickness; and exhibited every symptom of compassion, affection, and even respect.

Louis, being under a difficulty how to proceed upon the unexpected death of James, called a council to take their advice, whether he should own the prince of Wales as king of Great Britain and Ireland. The king himself had hesitated long in this delicate point. But the dauphin, the duke of Burgundy, and all the princes of the blood, declared, that it was unbecoming the dignity of the crown of France not to own that the titles of the father devolved immediately upon the son. Louis approved of this resolution, and determined to acquaint the dying king with it in person. When he arrived at St Germain's, he acquainted first the queen, and then her son, of his design. He then approached the bed in which James lay almost insensible with his disorder. The king, rousing himself, began to thank his most Christian majesty for all his favours; but Louis interrupted him. "Sir (said he), what I have done is but a small matter; but what I have to say is of the utmost importance." The people then began to retire. "Let no person withdraw (said Louis). I come to acquaint you, Sir, that when God shall please to call your majesty from this world, I shall take your family into my protection, and acknowledge your son, as he then will certainly be, king of Great Britain and Ireland."

Though the defeat of the French fleet at La Hogue had put king William out of all danger from any further attempts from that quarter, he by no means possessed his throne with any kind of tranquillity. The want of a common enemy produced dissensions among the people, and William began to find as much uneasiness from his parliament at home as from an enemy in the field. The uneasiness he felt from the refractory disposition of his subjects was not a little heightened by the death of his queen, who was taken off by the small-pox on the 28th of December 1694. For some time he was under a sincere concern for her loss; but as politics had taken entire possession of his mind, he lost all other concerns in the greatness of his apprehensions for the balance of power and the fluctuating interests of Europe.

His chief motive for accepting the crown was to engage England more deeply in the concerns of Europe. His great object had been to humble the French, and all his politics consisted in forming alliances against them. On the other hand, many of the English had no such animosity against the French: and these, therefore, considered the interest of the nation as sacrificed to foreign connections; and complained that the continental war fell most heavily on them, though they had the least interest in its success. These complaints were heard by William with the most phlegmatic indifference; he employed all his attention only on the balance of power, and the interests of Europe. He became unmindful of the cultivation of internal polity; and, as he formed alliances abroad, increased the influence of party at home. Patriotism began to be ridiculed

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The king, upon accepting the crown, was resolved to preserve as much of the prerogative as possible; and he sometimes exerted a branch of it which his predecessors had never chosen to make use of, viz. the power of refusing his assent to some bills that had passed both houses. From this and other causes there were perpetual bickerings between him and his parliaments. At last William became fatigued with opposition. He admitted every restraint upon the prerogative in England, upon condition of being properly supplied with the means of humbling France. Provided the parliament supplied him with the means of executing this, he permitted them to rule the internal polity as they pleased. For the prosecution of the French war, the sums granted were indeed incredible. The nation, not contented with furnishing him such sums of money as they were capable of raising by the taxes of the year, mortgaged those taxes, and involved themselves in debts which they have never since been able to discharge.

The war with France continued during the greatest part of this king's reign; but at length the treaty of Ryfwiek, in 1697, put an end to those contentions in which England had engaged without policy, and came off at last without advantage. In the general pacification, her interests seemed entirely deserted; and for all the treasures she had sent to the continent, and all the blood which had been shed there, the only equivalent received was an acknowledgment of William's title from the king of France.

The king, being now freed from a foreign war, set himself to strengthen his authority at home. As he could not bear the thoughts of being a king without military command, he conceived hopes of keeping up, in the time of a profound peace, those forces which had been granted during the time of danger. The commons, however, to his great mortification, passed a vote, that all the forces in the English pay, exceeding 7000 men, should be forthwith disbanded; and that those retained should be natural-born subjects of England. With this vote the king was exceedingly displeased. His indignation, indeed, was kindled to such a degree, that he actually conceived a design of abandoning the government. From this, however, his ministers diverted him, and persuaded him to consent to the passing of the bill.

These altercations continued during the remainder of this reign. William considered the commons as a body of men desirous of power for themselves, and consequently bent upon obstructing all his projects to secure the liberties of Europe. He seemed but little attached to any particular party in the house, all of whom he found at times deserted or opposed him. He therefore veered to whigs and Tories indiscriminately, as interest or the immediate exigence demanded. He considered England as a place of labour, anxiety, and altercation. If he had any time for amusement or relaxation, he retired to Loo in Holland, where, among a few friends, he gave a loose to those coarse festivities which he alone was capable of relishing. Here he plan-

ned the different succession of the princes of Europe, and laboured to undermine the schemes and the power of Louis his rival in politics and fame.

But however feeble William's desire of other amusements might be, he could scarce live without being at variance with France. Peace had scarce been made with that nation, when he began to think of resources for carrying on a new war, and for insisting his English subjects in the confederacy against that nation. Several arts were used for inducing the people to second his aims; and the whole nation seemed at last to join in desiring a French war. He had been in Holland concerting with his allies operations for a new campaign. He had engaged in a negotiation with the prince of Hesse: who assured him, that if he would besiege and take Cadiz, the admiral of Castile and several other grandees of Spain would declare for the house of Austria. The elector of Hanover had resolved to concur in the same measures; the king of the Romans, and prince Lewis of Baden, undertook to invest Laudan, while the emperor promised to send a powerful reinforcement into Italy: but death put a period to his projects and his ambition.

William was naturally of a very feeble constitution; and it was by this time almost quite exhausted by a series of continual disquietude and action. He had endeavoured to repair his constitution, or at least to conceal its decays, by exercise and riding. On the 21st of February 1702, in riding to Hampton-court from Kensington, his horse fell under him; and he was thrown with such violence, that his collar-bone was fractured. His attendants conveyed him to the palace at Hampton-court, where the fracture was reduced; and in the evening he returned to Kensington in his coach. The jolting of the carriage disunited the fracture; and the bones were again replaced by Bidloo his physician. This, in a robust constitution, would have been a trifling misfortune; but to him it was fatal. For some time he appeared in a fair way of recovery; but falling asleep on his couch, he was seized with a shivering, which terminated in a fever and diarrhoea, that soon became dangerous and desperate. Perceiving his end approaching, the objects of his former care lay next his heart; and the fate of Europe seemed to remove the sensations he might be supposed to feel for his own. The earl of Albemarle arriving from Holland, he conferred with him in private on the posture of affairs abroad. Two days after, having received the sacrament from archbishop Tennison, he expired, on Sunday March 8th; having lived 52 years, and reigned 13. He was in his person of a middle stature, a thin body, and a delicate constitution. He had an aquiline nose, sparkling eyes, a large forehead, and a grave solemn aspect. He left behind him the character of a great politician, though he had never been popular; and of a formidable general, tho' he had been seldom victorious. His deportment was grave, phlegmatic, and sullen; nor did he ever show any fire but in the day of battle.

Cunningham says, that "at the very last moment, when his mind was otherwise oppressed, he retained a full sense of the redemption of his sinking, and the remembrance of his poor subjects. Thus he lay so quietly and composed, with his eyes fixed upon heaven, when his speech failed him, that no man could die either better prepared or with greater constancy and

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piety, than this prince; of whose just praises no tongue shall be silent, and no time unmindful. And if any king be ambitious of regulating his councils and actions by the bright examples of the most famous great men, he may form to himself the idea of a great prince and a grand empire, not only from the king's life, but from the public records of the English and Dutch nations."

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Accession
of queen
Anne.

William was succeeded by the princess Anne, who had married George prince of Denmark. She ascended the throne in the 38th year of her age, to the general satisfaction of all parties. William had died at the eve of a war with France: and the present queen, who generally took the advice of her ministry on every important occasion, was now urged by opposite councils; a part of her ministry being inclined to war, and another to peace. At the head of those who opposed a war with France was the earl of Rochester, lord lieutenant of Ireland, first cousin to the queen, and the chief of the tory faction. At the head of the opposite party was the earl afterwards duke of Marlborough, and since so much renowned for his victories over the French. After giving the reasons for both their opinions, that of Marlborough preponderated: the queen resolved to declare war; and communicating her intentions to the house of commons, by whom it was approved, war was proclaimed accordingly. In this declaration of war, Louis was taxed with having taken possession of a great part of the Spanish dominions; with designing to invade the liberties of Europe, to obstruct the freedom of navigation and commerce; and with having offered an unpardonable insult to the queen and her throne, by acknowledging the title of the pretender: he was accused of attempting to unite the crown of Spain to his own dominions, by placing his grandson upon the throne of that kingdom, and thus of endeavouring to destroy the equality of power that subsisted among the states of Europe. This declaration of war on the part of England was seconded by similar declarations by the Dutch and Germans, all on the same day.

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War declared
against
France.

Louis XIV. whose power had been greatly circumscribed by William, expected, on the death of the latter, to enter on a field open for new conquests and fame. At the news of the English monarch's death, therefore, he could not suppress his rapture; the people of Paris, and indeed through the whole kingdom, testified their joy in the most public manner. At seeing, therefore, such a combination against him, the French monarch was filled with indignation; but his resentment fell chiefly on the Dutch. He declared with great emotion, that as for those gentlemen pedlars the Dutch, they should one day repent their insolence and presumption in declaring war against him whose power they had formerly felt and dreaded. By these threats, however, the affairs of the allies were no way influenced. Marlborough was appointed general of the British forces, and by the Dutch he was chosen generalissimo of the allied army; and indeed his after conduct showed, that no person could possibly have been chosen with greater propriety. He had learned the first rudiments of war under the famous marshal Turenne, having been a volunteer in his army; and by that general his future greatness was prognosticated.

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Duke of
Marlbo-
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pointed ge-
neral.

The first attempt that Marlborough made to deviate from the general practices of the army was to advance the subaltern officers, whose merits had been hitherto neglected. Regardless of seniority, wherever he found abilities, he was sure to promote them; and thus he had all the upper ranks of commanders rather remarkable for their skill and talents than for their age and experience. In his first campaign, in the beginning of July 1702, he repaired to the camp at Nimeguen, where he found himself at the head of 60,000 men well provided with all necessaries, and long disciplined by the best officers of the age. He was opposed on the part of France by the duke of Burgundy, a youth of very little experience in the art of war; but the real acting general was the marshal Boufflers, an officer of courage and activity. But wherever Marlborough advanced, the French were obliged to retire before him, leaving all Spanish Guelderland at his discretion. The duke of Burgundy finding himself obliged to retreat before the allied army, rather than expose himself longer to such a mortifying indignity, returned to Versailles, leaving Boufflers to command alone. Boufflers retired to Brabant: and Marlborough ended the campaign by taking the city of Liege; in which was found an immense sum of money, and a vast number of prisoners.

Britain.

345
His success
in his first
campaign.

This good fortune seemed to console the nation for some unsuccessful expeditions at sea. Sir John Munden had permitted a French squadron of 14 ships to escape him by taking shelter in the harbour of Corunna; for which he was dismissed the service by prince George. An attempt was made upon Cadiz by sea and land, Sir George Rooke commanding the navy, and the duke of Ormond the land forces; but this also miscarried. At Vigo, however, the British arms were attended with better success. The duke of Ormond landed with 2500 men at the distance of six miles from the city, while the fleet forcing their way into the harbour, the French fleet that had taken refuge there were burned by the enemy to prevent their falling into the hands of the English. Eight ships were thus burned and run ashore; but ten ships of war were taken, together with eleven galleons, and above a million of money in silver. In the West Indies, admiral Bembow had been stationed with ten ships to distress the enemy's trade. Being informed that Du Casse the French admiral was in those seas with a force equal to his own, he resolved to attack him; and soon after discovered the enemy's squadron near St Martha, steering along the shore. He quickly gave orders to his captains, formed the line of battle, and the engagement began. He found, however, that the rest of the fleet had taken some disgust at his conduct; and they permitted him to sustain, almost alone, the whole fire of the enemy. Nevertheless, the engagement continued till night, and he determined to renew it next morning. But he had the mortification to perceive that all the rest of his ships had fallen back, except one, who joined him in urging the pursuit of the enemy. Four days this intrepid seaman, assisted by only one ship, pursued and engaged the enemy, while his cowardly officers remained at a distance behind. His last day's battle was more furious than any of the former: alone, and unsupported by any of the rest, he engaged the whole French squadron; when his leg was shattered by a cannon-ball, and he himself died soon

346
Losses at
sea.

347
Bravery and
death of ad-
miral Bem-
bow.

^{Britain.} after of his wounds. Two of his cowardly associates were shot on their arrival in England; one died on his passage thither; the rest were disgraced.

Thence he proceeded to negotiate for succours at the court of Hanover; and soon after returned to England; where he was received with every possible demonstration of joy.

³⁴⁸ The next parliament, which was convened by the queen, were highly pleased with the success of the British arms on the continent. The house of commons was composed chiefly of tories, who voted 40,000 seamen, and the like number of land-forces, to act in conjunction with those of the allies. Soon after, the queen informed her parliament, that she was pressed by the allies to augment her forces; and upon this it was resolved that 10,000 more men should be added to the continental army, but on condition that the Dutch should immediately break off all commerce with France and Spain; a condition which was very readily complied with.

The arms of Britain, in the mean time, were not less fortunate by sea than by land. The town of Gibraltar was taken by the prince of Hesse and Sir George Rokee: but so little was the value of the conquest at that time understood, that it was for some time in debate whether it was a capture worth thanking the admiral for; and at last it was considered as unworthy of public gratitude. Soon after, the British fleet, to the number of 53 ships of the line, came up with that of France, consisting of 52 men of war, commanded by the count de Thoulouse, off the coast of Malaga. This was the last great naval engagement in which the French ventured to face the British on equal terms. The battle began at ten in the forenoon, and continued with great fury for six hours; when the van of the French began to give way. The British admiral, for two days, attempted to renew the engagement; but this was as cautiously declined by the French, who at last disappeared totally. Both sides claimed the victory, but the consequences decided it in favour of the British.

³⁴⁹ In the beginning of April 1703, the duke of Marlborough crossed the sea, and, assembling the allied army, opened the campaign with the siege of Bonn, the residence of the elector of Cologne. This held out but a short time. He next retook Huy; the garrison of which, after a vigorous defence, surrendered prisoners of war. Limburgh was next besieged, and surrendered in two days; and thus the campaign concluded, the allies having secured the country of Liege and the electorate of Cologne from the designs of the enemy.

In the mean time, the Spaniards, alarmed at the taking of Gibraltar, sent the marquis of Villadurias with a large army to retake it. France also sent a fleet of 13 ships of the line; but part of them were dispersed by a tempest, and part taken by the British. Nor was the land army more successful. The siege continued for four months; during which time the prince of Hesse, who commanded the town for the English, gave many proofs of valour. At length, the Spaniards having attempted to scale the rock in vain, finding no hopes of taking the place, were contented to draw off their men and abandon the enterprize.

In the campaign of 1704, the Duke of Marlborough informed the Dutch that it was his intention to march to the relief of the empire, which had been for some time oppressed by the French forces; and the states gave him full powers to march as he thought proper, with assurances of their assistance in all his endeavours. The French king, finding Boufflers no longer capable of opposing Marlborough, appointed the marshal de Villeroy to command in his place. But Marlborough, who, like Hannibal of old, was remarkable for studying the disposition of his antagonists, having no great fears from Villeroy, immediately flew to the assistance of the emperor. Taking with him about 13,000 British troops, he advanced by hasty marches to the banks of the Danube; he defeated a body of French and Bavarians stationed at Donavert to oppose him; then passed the river, and laid under contribution the dukedom of Bavaria which had sided with the enemy. Villeroy, who at first attempted to follow his motions, seemed all at once to have lost sight of the enemy; nor was he apprised of his route, till informed of his successes. But, in the mean time, marshal Tallard prepared by another route to obstruct Marlborough's retreat, with an army of 30,000 men. He was soon after joined by the duke of Bavaria's forces; so that the French army in that part of the continent amounted to 60,000 veterans, commanded by the two best reputed generals then in France.

While the British were thus victorious by land and sea, a new scene of contention was opened on the side of Spain. Philip IV. grandson of Louis XIV. had been placed on the throne of that kingdom, and received with the joyful concurrence of the greatest part of his subjects. He had also been nominated successor to the crown by the late king of Spain's will. But in a former treaty among the powers of Europe, Charles, son of the emperor of Germany, was appointed heir to that crown; and this treaty had been guarantee'd by France herself, though she now resolved to reverse that consent in favour of a descendant of the house of Bourbon. Charles was still farther led on to put in for the crown of Spain, by the invitation of the Catalonians, who declared in his favour; and, with the assistance of the British and Portuguese, promised to arm in his cause. Upon his way to his newly assumed dominion, he landed in England; where he was received on shore by the dukes of Somerset and Marlborough, who conducted him to Windsor. He was kindly received by the queen; and furnished with 200 transports, 30 ships of war, and 9000 men, for the conquest of that extensive empire. The earl of Peterborough, a man of romantic bravery, offered to conduct them; and his single service was reckoned equivalent to armies.

³⁵⁰ To oppose these powerful generals, the duke of Marlborough was joined by a body of 30,000 men under the celebrated prince Eugene. The allied army, with this reinforcement, amounted to about 52,000. After various marches and countermarches, the two armies met at Blenheim*. A terrible engagement ensued, in which the French were entirely defeated, and a country of 100 leagues extent fell into the hands of the conquerors. Soon after finishing the campaign, the duke repaired to Berlin, where he procured a reinforcement of 8000 Prussians to serve under prince Eugene in Italy.

The first attempt of this general was on the city of Barcelona, at that time defended by a garrison of 5000 men. The fort Monjue, situated on a hill that commanded the city, was attacked; the outworks were taken.

³⁵¹ French defeated at Blenheim.
³⁵² See Blenheim.

^{Britain.}
³⁴⁸ Gibraltar taken.
³⁵² French defeated at sea.
³⁵³ Intellectual attempt of the Spaniards on Gibraltar.
³⁵⁴ Charles appointed king of Spain.
³⁵⁵ He supported by queen Anne.
³⁵⁶ Barcelona taken.

Britain. ken by storm, and the powder-magazine was blown up by a shell; upon which the fort immediately surrendered, and the city capitulated in a short time after. The conquest of all Valencia succeeded the taking of Barcelona. Charles became master of Arragon, Cartagena, Grenada, and Madrid. The British general entered the capital in triumph, and there proclaimed Charles king of Spain without opposition.

357 French defeated at Ramillies.

* See Ramillies.

358 Louis sued in vain for peace.

359 Revolution in the councils of queen Anne.

360 English defeated at Almanza

† See Almanza.

To these successes, however, very little regard was paid in Britain. The victories of the duke of Marlborough alone engrossed their attention. In 1706, he opened the campaign with an army of 80,000 men. He was met by the French under Villeroy near the village of Ramillies*. An engagement ensued, in which the duke gained a victory almost as complete as that of Blenheim had been; and the whole country of Brabant was the reward of the victors. The French troops were now dispirited; the city of Paris was in confusion; Louis, who had long been flattered with conquest, was now humbled to such a degree as almost to excite the compassion of his enemies. He intreated for peace, but in vain; the allies carried all before them; and his very capital began to dread the approach of the conquerors. But what neither his armies nor his politics could effect, was brought about by a party in England. The dissension between the whigs and tories saved France that now seemed tottering on the brink of ruin.

The councils of the queen had hitherto been governed by a whig ministry; for though the duke of Marlborough started in the interest of the opposite party, he soon joined the whigs, as he found them most sincere in the design of humbling France. The people, however, were now in fact beginning to change, and a general spirit of toryism to take place. The queen's personal virtues, her successes, her deference for the clergy, and their great veneration for her, began to have a prevailing influence over the whole nation. People of every rank were not ashamed to defend the most servile tenets, when they tended to flatter or increase the power of the sovereign. They argued in favour of strict hereditary succession, divine right, and non-resistance to the regal power. The tories, though joining in vigorous measures against France, were never ardently their enemies: they rather secretly hated the Dutch, as of principles very opposite to their own; and longed for an opportunity of withdrawing from their friendship. They began to meditate schemes of opposition to the duke of Marlborough. Him they considered as a self-interested man, who sacrificed the real advantages of the nation, in protracting a ruinous war for his own private emolument and glory. They saw their country oppressed with an increasing load of taxes, which by a continuance of the war must inevitably become an intolerable burden. Their discontents began to spread, and the tories wanted only a few determined leaders to assist them in removing the present ministry.

In the mean time a succession of losses began to dissipate the conquering frenzy that had seized the nation in general, and to incline them to wish for peace. The earl of Galway, who commanded the army in Spain, was utterly defeated at Almanza† by the duke of Berwick; and in consequence of this victory, all Spain, except the province of Catalonia, returned to their duty to Philip their lawful sovereign. An attempt was made upon Toulon, by the duke of Savoy and

prince Eugene by land, and an English fleet by sea; but to no purpose. The fleet under Sir Cloudesley Shovel, having set sail for England, was driven by a violent storm on the rocks of Scilly. His own ship was lost, and every person on board perished. Three more ships met with the same fate; while three or four others were saved with the utmost difficulty. In Germany, marshal Villars the French general carried all before him, and was upon the point of restoring the elector of Bavaria. The only hopes of the people lay in the activity and conduct of the duke of Marlborough, who opened the campaign of 1707, about the middle of May; but even here they were disappointed. The duke declined an engagement; and after several marchings and countermarchings, both armies retired into winter quarters about the end of October. The French made vigorous preparations for the next campaign; and the duke returned to England to meet with a reception he did not at all expect, and which, as far as appears, he did not deserve.

The most remarkable transaction, however, of this year, and indeed of this whole reign, was the union between the two kingdoms of Scotland and England. Though governed by one sovereign since the time of James I. of England, yet each nation continued to be ruled by its respective parliament; and often professed to pursue opposite interests to those of its neighbour. The union had often been unsuccessfully attempted before, and had indeed been the cause of the bloody wars in the time of Edward I. and III. of England. In all the former proposals on that head, both nations were supposed to remain free and independent; each kingdom having its own parliament, and subject only to such taxes and other commercial regulations as those parliaments should judge expedient for the benefit of their respective states. After the destruction of the Darien colony, in the manner already related, King William had endeavoured to allay the national ferment by refusing the affair of an union with as much assiduity as his warlike disposition would allow. The terms proposed were the same with those formerly held out, viz. a federal union, somewhat like that of the states of Holland. With this view the Scots were prevailed on to send 20 commissioners to London; who, with 23 on the part of England, met at Whitehall in the month of October 1702. Here they were honoured with a visit from the queen, in order to enliven their proceedings and stimulate them to a more speedy dispatch of business: but the treaty was entirely broken off at this time by the Scottish commissioners insisting, that the rights and privileges of their countrymen trading to Africa and the Indies should be preserved and maintained. It was, however, resumed in the year 1706, when the commissioners again met on the 16th of April, in the council chamber of Whitehall. The Scottish commissioners still proposed a federal union; but the English were determined on an incorporation, which should not afterwards be dissolved by a Scottish parliament. Nothing but this, they said, could settle a perfect and lasting friendship betwixt the two nations. The commissioners from Scotland, however, still continued to resist that article which subjected their country to the same customs, excises, and regulations of trade as England; but the queen being persuaded to pay two visits in person to the commissioners,

Britain. 361 Shipwreck of Sir Cloudesley Shovel.

362 Union between Scotland and England.

commissioners,

Britain. missioners, exerted herself so vigorously that a majority was at last gained over; and all the rest yielded, though with reluctance, excepting Lockhart of Carnwath, who could not by any means be persuaded either to sign or seal the treaty.

363 The articles being fully prepared on the 22d of July, they were presented next day to her majesty by the lord-keeper, in the name of the English commissioners; at the same time that a sealed copy of the instrument was likewise delivered by the lord chancellor of Scotland. They were most graciously received; and the same day the queen dictated an order of council, threatening with prosecution such as should be concerned in any discourse or libel, or in laying wagers with regard to the union. Notwithstanding all this harmony, however, the treaty was received with the utmost disapprobation in Scotland. The terms had been carefully concealed, so that nothing transpired till the whole was at once laid before parliament. The ferment was then so general, that all ranks of people, however divided in other respects, united against this detested treaty. The nobility and gentry were exasperated at the annihilation of parliament, and the consequent loss of their influence and credit. The body of the people cried out, that the independence of the nation was sacrificed to treachery and corruption. They insisted that the obligation laid on their members to stay so long at London, in their attendance on the British parliament, would drain the country of its money, impoverish the members themselves, and subject them to the temptation of being corrupted. Nor was the commercial part of the people better satisfied. The dissolution of the India company, the taxes laid on the necessaries of life, the vast number of duties, customs, and restrictions, laid upon trade, were all of them matter of complaint. Before this time the trade of Scotland had been open to the Levant, the Baltic, France, Spain, Portugal, Holland, and the Dutch plantations; and it seemed difficult to conceive how the commerce of the country could be advanced by laying restrictions upon it to these places, especially as the compensation allowed, *viz.* the privilege of trading to the English plantations in America, must have been a very trifling advantage, when the amount of the whole exports to these places did not near equal the expence of defending them. The most violent disputes took place in the parliament. The lord Belhaven made a most pathetic speech, enumerating the miseries that would attend this treaty; which drew tears from the audience, and to this day is reckoned prophetic by many of the Scottish nation. Almost every article of the treaty was the subject of a protest; addresses against it were presented to parliament by the convention of royal boroughs, the commissioners of the general assembly, the company trading to Africa and the Indies, as well as from shires, stewartries, boroughs, towns, and parishes, without distinction of whig, tory, presbyterian, or episcopal.

Nor was the resentment of the common people without doors less than that of the members within. A coalition was formed betwixt the presbyterians and cavaliers: and to such a height did the resentment of the people arrive, that they chose officers, formed themselves into regiments, provided horses and ammunition, burnt the articles of union, justified their conduct by a

public declaration, and resolved to take the route to Edinburgh and dissolve the parliament.

In the mean time the privy council issued a proclamation against riots, commanding all persons to retire from the streets whenever the drum should beat; ordering the guards to fire on those who should disobey this command, and indemnifying them from all prosecution for maiming or slaying the lieges. Even these precautions were insufficient. The duke of Queensberry, the chief promoter of the union, though guarded by double lines of horse and foot, was obliged to pass through the streets at full gallop, amidst the curses and imprecations of the people, who pelted his guards, and even wounded some of his friends who attended him in the coach. In opposition to all this fury, the duke of Queensberry and others attached to the union magnified the advantages that would accrue to the kingdom from the union; they took off the resentment of the clergy, by promoting an act to be inserted in the treaty, by which the presbyterian discipline was to be the only government of the church of Scotland, unalterable in all succeeding times, and a fundamental article of the union. emissaries were employed to disunite the Cameronians from the Cavaliers, by demonstrating the absurdity, sinfulness, and danger, of such a proceeding. The India company was flattered with the prospect of being indemnified for the losses they had sustained, and individuals by sharing an equivalent. Their last manœuvre was to bring over a party in the Scots parliament, nicknamed the *Squadronne Volante*, from their fluctuating between ministry and opposition, without attaching themselves to any party till the critical moment, which was either to cement both kingdoms by a firm union, or involve them in the calamities of war. By this unexpected stroke, the ministry obtained a decisive victory, and all opposition was vain. The articles of treaty were ratified by parliament, with some trifling variations, on the 25th of March 1707; when the duke of Queensberry finally dissolved that ancient assembly, and Scotland ceased to be a separate independent kingdom.

On the conclusion of the treaty, the queen informed both houses of the English parliament that the treaty of union, with some additions and alterations, was ratified by an act of the parliament of Scotland; that she had ordered it to be laid before them, and hoped it would meet their approbation. She observed, that they had now an opportunity of putting the last hand to a happy union of the two kingdoms: and that she should look upon it as a particular happiness if this great work, so often attempted before without success, could be brought to perfection in her reign. Objections, however, were started by the tory party; but they were at that time too weak to be heard with any attention. Sir John Parkington compared the new treaty to the marriage of a woman without her consent. It was an union carried on by corruption and bribery within doors, and by force and violence without. The promoters of it had basely betrayed their trust, by giving up their independent constitution; and he would leave it to the judgment of the house, whether or not men of such principles were fit to be admitted into their house of representatives. Lord Haverham, in the upper house, said, the question was, Whether two nations, independent in their sovereignty,

Britain.

Britain. ties, that had their distinct laws and interests, different forms of worship, church-government and order, should be united into one kingdom? He supposed it an union made up of so many incongruous ingredients, that should it ever take effect, it would require a standing power and force to keep them from falling asunder, and breaking in pieces every moment. Above an hundred Scottish peers, and as many commoners, he said, were excluded from sitting and voting in parliament, though they had as much right to sit there as any English peer had to sit and vote in the parliament of England. The union, he said, was contrary to the sense of the Scottish nation, the murmurs of the people had been so loud as to fill the whole kingdom, and had reached even the doors of parliament. That the government had issued a proclamation pardoning all slaughter, bloodshed, and maiming committed upon those who should be found in tumults; and from all these circumstances he concluded, that the people of Scotland were averse to an incorporating union, which, he supposed, would be a most dangerous expedient to both nations. All these arguments, however, were answered by those of the opposite party with such success, that the union was unalterably completed on the first of May 1707; and the island took the name of "The United Kingdom of Great Britain." The queen expressed the highest satisfaction when it received the royal assent, and said, "She did not doubt but it would be remembered and spoke of hereafter, to the honour of those who had been instrumental in bringing it to such an happy conclusion. She desired that her subjects of both kingdoms should, from henceforward, behave with all possible respect and kindness towards one another; that so it might appear to all the world they had hearts disposed to become one people." The first of May was appointed a day of public thanksgiving; and congratulatory addresses were sent up from all parts of England, excepting the university of Oxford. The Scots, however, were totally silent on the occasion.

364
The union at first dis-
advantage-
ous to Scot-
land.

In this treaty, it must be observed, that the commissioners on the part of England were not only able statesmen, but, for the most part, well skilled in trade, which gave them an evident advantage over those of Scotland, who consisted of lords and gentlemen who had no commercial knowledge. Hence they were over-matched by the former in the great objects which were to give the turn to national prosperity; though they were very careful to preserve all their heritable offices, superiorities, jurisdictions, and other privileges and trappings of the feudal aristocracy. Had the English commissioners made a liberal use of the advantages afforded them at this time, it would have been in their power greatly to have enriched themselves as well as the inhabitants of Scotland; "but instead of this (says Mr Knox), in negotiating with a ruined kingdom, they were influenced by the then narrow, short-sighted principle of commercial monopoly; and the consequences were such as might, with a small degree of reflection, have been foreseen. Instead of a solid compact, affording, upon the whole, reciprocal advantages, and which it would have been the inclination as well as interest of both nations to preserve inviolate, the concessions on the part of Scotland, and the restrictions on their trade, were so quickly and severely felt, that about the

Britain. sixth year after the ratification of the treaty, the sixteen peers who first represented Scotland in the upper house, though most of them had been the supporters of administration in promoting the union, unanimously moved for its dissolution. The motion was followed by a violent debate, in which, however, the Scottish peers were at last over-ruled, and thenceforth the nation submitted reluctantly to its fate. The metropolis, having no manufactures, now beheld itself deprived of its only support by the translation of the parliament to London. The trading towns pined under the duties and restrictions on their commerce; the whole kingdom, after so many fatal disasters, seemed completely ruined beyond recovery, and all degrees of men sunk under the weight of these complicated misfortunes. The first fruits of the treaty in Scotland was a board of customs and another of excise, with the appointment of commissioners, collectors, &c. with other necessary officers, who were immediately distributed over the several sea-ports and districts of the nation. In many parts they were roughly used, particularly the excise officers; and, in the Orkneys, the officers were so frightened by the country people, that for some time the business was obliged to be postponed."

In 1708, there was a warm debate in the grand committee of the house of lords, occasioned by a bill passed by the commons for rendering the union of the two kingdoms more entire and complete, whereby it was enacted, that, "from the first of May 1708, there should be but one privy council in the kingdom of Britain."—Of this affair Mr Cunningham gives a particular account, and informs us that he himself had a hand in the affair, and that he had "from his youth borne a just hate to the privy council of Scotland." The arguments for the dissolution were its enormous stretches of power and acts of cruelty; that it could now be of no other use in Scotland, than that the court might thereby govern every thing at pleasure, and procure such members of parliament as they thought proper; against which both Scots and English ought now carefully to guard themselves. On the other hand, it was argued, that the abuse of the power complained of was no argument for the entire dissolution of the council, though it was for a restriction and limitation of it; that it was necessary that a privy council should remain in Scotland, out of regard to the ancient customs of the country, and to restrain the rage of the people which was then ready to break out beyond all bounds. The dissolution, however, was carried by 50 against 40; after which the nation, being deprived of this last fragment of their ancient government, the opposers of the union raised the animosities of the people to a dangerous height; but the ferment abated after an ineffectual attempt in favour of the pretender.

366
French de-
feated at
Oudenard

We must now return to the duke of Marlborough, who had gone over to Flanders, where he seemed resolved to push his good fortune. Peace had been offered more than once; treaties entered upon, and as often frustrated. After the battle of Ramillies, the king of France had employed the elector of Bavaria to write letters in his name to the duke of Marlborough, containing proposals for opening a congress. He offered to give up either Spain and its dominions, or the kingdoms of Naples and Sicily, to Charles of Austria, and to give a barrier to the Dutch in the Netherlands. But these terms were

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Dissolution
of the Scot
privy coun-
cil.

Britain. were rejected. The two armies once more met in numbers nearly equal at * Oudenarde (A). An engagement ensued, in which the French were defeated, and Lille (B) the strongest town in Flanders, Gent, Bruges, and all the other towns in that country, soon after fell into the hands of the victors. The campaign ended with fixing a barrier to the Dutch provinces, and it now only remained to force a way into the provinces of the enemy.

The French king, being now in a manner reduced to despair, again sued for peace; but the demands of the allies were so high, that he was obliged to reject them, and prepare for another campaign. This was in the year 1709. The first attempt of the allies was on the city of Tournay, garrisoned by 12,000 men, and exceedingly strong both by nature and art. After a terrible siege of 21 days, the town capitulated; and a month afterwards the citadel, which was still stronger than the town. Next followed the bloody battle of Malplaquet †; where the allied army, consisting of 110,000 men, attacked the French consisting of 120,000, strongly posted and fortified in such a manner that they seemed quite inaccessible. Nothing, however, was able to stand before the allied army; they drove the French from their fortifications: but their victory cost them dear; 20,000 of their best troops lay dead on the field of battle (C). The consequence of this victory was the surrender of the city of Mons, which ended the campaign.

The last campaign of the duke of Marlborough, which happened in the year 1711, is said to have excelled all his former exploits. He was opposed by the marshal Villars, the same who had commanded the French in the battle of Malplaquet. He contrived his measures so, that, by marching and countermarching, he induced the enemy to quit a strong line of entrenchments without striking a blow, which he came afterwards and took possession of. This enterprize was followed by the taking of Bouchain, which was the last military achievement of this great general. By a continuance of conduct and success almost unparalleled, he had gained to the allies a prodigious tract of country. From the beginning of the war, which had now continued nine years, he had perpetually advanced, and never retreated before his enemies, nor lost an advantage he had obtained over them. He most frequently gained the enemy's posts without fighting; but where

he was obliged to attack, no fortifications were able to resist him. He had never besieged a city which he did not take, nor engaged in a battle in which he did not come off victorious. Thus the allies had reduced under their command Spanish Guelderland, Limbourg, Brabant, Flanders, and Hainault; they were masters of the Scarpe, the capture of Bouchain had opened for them a way into the heart of France, and another campaign might have made them masters of Paris: but on the duke's return from this campaign, he was accused of having taken a bribe of 6000 l. a-year from a Jew who had contracted to supply the army with bread; and the queen thought proper to dismiss him from all his employments.

On the removal of this great general the command of the British forces was given to the duke of Ormond. The transactions which followed, as represented by Mr Cunningham, are by no means favourable to the character of the British nation. He represents the people at large as blinded by an headstrong and furious clergy, who wished to revive the absurdities of the Romish religion, and to unite the English and Gallian churches; the general of the army acting a most insidious part, by giving the enemy intelligence of the designs of the allies before he declared that he was not to act in concert with them; and the queen herself as commanding him to act such a shameful part, nay as acting in a similar manner herself. Prince Eugene complained much of the inactivity of the English general, though he seemed to be unacquainted with his treachery; while the whole army loaded him with execrations, calling him "a stupid tool, and a general of straw." All this, however, was in vain; the duke continued to prefer the commands of his sovereign to every other consideration.

The disgrace of the duke of Marlborough had been owing to the prevalence of the tory party, who had now got the whig ministry turned out: the consequence of this was, that in spite of all the remonstrances, memorials, &c. of the allies, the British army in Flanders was ordered not to act offensively. Hence the operations languished, a considerable body of the allies was cut off at Denain, and the French re-took some towns. A peace was at last concluded in 1713, between France and Britain. In this treaty it was stipulated, that Philip, now acknowledged king of Spain, should renounce all right

Britain.

370
He is dismissed from all his employments.

371
Peace with France.

(A) In this engagement the electoral prince of Hanover, afterwards George I. of Britain, greatly distinguished himself, and gained the whole glory of the first attack. In the engagement his horse was killed under him, and colonel Lufchki close by his side. "On that day (says Cunningham), this excellent young prince discovered such courage as no man living ought to forget, and as all posterity will never surpass."

(B) At the siege of Lille, Cunningham relates the following anecdote of the magnanimity of a common soldier. "This man had the good fortune to take prisoner major general Colbert, brother to the marquis de Torey. The prisoner, greatly taken with the clemency, humanity, and good behaviour of the soldier, offered him 200 louis d'ors, and a captain's post for life, if he would give him his liberty. The soldier, however, resisted the temptation, alleging the dishonour that would attend such conduct; and asking him at the same time, how, when raised to the rank of a captain, he could look his general in the face for whom he had fought for so many years?—This instance of fidelity weighed so much with prince Eugene and the duke of Marlborough, that the former made him a present, and the latter gave him a captain's commission."

(C) Cunningham differs prodigiously from this account. His computation being no more than 6000 killed and 9000 wounded on the part of the allies, and 7000 killed and 10,000 wounded on the part of the French.

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to the crown of France, the union of two such powerful kingdoms being thought dangerous to the liberties of Europe. It was agreed, that the duke of Berry, Philip's brother, and after him in succession, should also renounce his right to the crown of Spain, in case he became king of France. It was stipulated, that the duke of Savoy should possess the island of Sicily, with the title of *king*; together with Fenestrelles, and other places on the continent; which increase of dominion was in some measure made out of the spoils of the French monarchy. The Dutch had the barrier granted them which they so much desired; and if the crown of France was deprived of some dominions to enrich the duke of Savoy, on the other hand the house of Austria was taxed to supply the wants of the Hollanders, who were put in possession of the strongest towns in Flanders. The fortifications of Dunkirk were demolished. Spain gave up Gibraltar and the island of Minorca. France resigned her pretensions to Hudson's bay, Nova Scotia, and Newfoundland; but was left in possession of Cape Britain, and the liberty of drying fish upon the shore. Among the articles glorious to the British nation, their settling free the French Protestants confined in the prisons and galleys for their religion, was not the least meritorious. For the emperor it was stipulated, that he should possess the kingdom of Naples, the duchy of Milan, and the Spanish Netherlands. The king of Prussia was to have Upper Guelder; and a time was fixed for the emperor's acceding to these articles, as he had for some time obstinately refused to assist at the negotiation. This famous treaty was signed at Utrecht on the last day of March 1713.

This year was also remarkable for an attempt of the Scottish peers and commons to dissolve the union, which, as has been observed, had proved exceedingly disagreeable and distressful to the nation. During the debates on this subject, the earl of Peterborough endeavoured to prove the impossibility of dissolving the treaty, which he compared to a marriage, that, being once contracted, could not be dissolved by any power on earth. He observed, that though England, who, in the national marriage, must be supposed to represent the husband, had in some instances been unkind to the lady, she ought not presently to sue for a divorce; and added, when the union was termed a mere political expedient, that it could not have been made more solemn, unless, like the ten commandments, it had come from heaven. The duke of Argyle also, who had originally promoted the union, now declared against it, and said, that unless it were dissolved he did not long expect to have either property left in Scotland or liberty in England. By some other peers it was alleged that the union had not produced its intended effect; that it had been designed to promote friendship between the two nations; but, so far from answering the purpose, the animosities between them were never so great as then; and if they were separated again they would be better friends. This motion was over-ruled in the house; but the discontent of the people still continued, and addresses were prepared throughout the kingdom, and matters were in danger of coming to the worst extremities, when the attempt of the pretender in 1715 so divided the minds of the people, that no unanimous effort could ever afterwards be made; though the union was long generally

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considered, and still is by some individuals, as a national grievance. Britain.

The history of the latter part of this reign consists entirely of the intrigues of the whigs and Tories against each other; which, as they are now of no importance, it is needless to take up time in relating, further than that the Tory influence continued to prevail. Whether the ministry at this time wished to alter the succession from the Hanoverian line, cannot now be clearly made out; but certain it is, that the whigs firmly believed it, and the Tories but faintly denied the charge. The suspicions of the former became every day stronger, particularly when they saw a total removal of the whigs from all places of trust and confidence throughout the kingdom, and their employments bestowed on professed Tories, supposed to be maintainers of an unbroken hereditary succession. 372
Attempt to
dissolve the
union.

The violent dissensions between these two parties, their unbounded licentiousness, cabals, and tumults, made the queen's situation very disagreeable; her health declined; and on the 28th of July 1714, she fell into a lethargic insensibility. Notwithstanding all the medicines the physicians could prescribe, the distemper gained ground so fast, that next day they despaired of her life. All the members of the privy council, without distinction, were now summoned from the different parts of the kingdom; and they began to provide for the security of the constitution. A letter was sent to the elector of Hanover, informing him of the queen's desperate situation, and desiring him to repair to Holland, where he would be attended by a British squadron to convey him to England. At the same time they dispatched instructions to the earl of Strafford at the Hague, to desire the States-general to be ready to perform the guaranty of the Protestant succession. Precautions were taken to secure the sea-ports; and the command of the fleet was bestowed upon the earl of Berkeley, a professed whig. These measures, which were all dictated by that party, answered a double end. They argued the alacrity of the whigs in the cause of their new sovereign, and seemed to imply that the state was in danger from the disaffection of the opposite party. 373
Death of
the queen.

On the 30th of July the queen seemed to be somewhat relieved by the medicines which had been given her. She rose from her bed about eight in the morning, and walked a little. After some time, casting her eyes on a clock that stood in her chamber, she continued to gaze at it for some minutes. One of the ladies in waiting asked her what she saw there more than usual? to which the queen only answered by turning her eyes upon her with a dying look. She was soon after seized with an apoplectic fit; from which, however, she was somewhat recovered by the assistance of Dr Mead. She continued all night in a state of stupor. She gave some signs of life betwixt twelve and one the next day; but expired the following morning, a little after seven o'clock, having lived 49 years, and reigned upwards of 12. This princess was remarkable neither for her learning nor her capacity. Like all the rest of her family, she seemed rather fitted for the duties of private life than a public station; being a pattern of conjugal fidelity, a good mother, a warm friend, and an indulgent mistress; and to her honour it certainly must be recorded, that during her

reign

Britain. reign none suffered on the scaffold for treason. In her ended the line of the Stuarts; a family who never rewarded their friends, nor ever avenged them of their adversaries; a family whose misfortunes and misconducts are not to be paralleled in history.

The queen had no sooner resigned her breath than the privy-council met, and three instruments were produced, by which the elector of Hanover appointed several of his known adherents to be added as lords justices to the seven great officers of the kingdom. Orders also were immediately issued out for proclaiming George king of England, Scotland, and Ireland. The regency appointed the earl of Dorset to carry him the intimation of his accession to the crown, and to attend him in his journey to England. They sent the general officers, in whom they could confide, to their posts; they reinforced the garrison of Portsmouth, and appointed the celebrated Mr Addison secretary of state. No tumult, no commotion, arose against the accession of the new king; and this gives a strong proof that the Tories, had they really intended to exclude him, never took any rational measures to accomplish their purpose.

The king first landed at Greenwich; where he was received by the duke of Northumberland, captain of the life-guard, and the lords of the regency. From the landing-place he walked to his house in the park, accompanied by a great number of the nobility and other persons of distinction, who expected to make their court in this reign in consequence of their turbulence and opposition to the reigning party in the last. George I. was 54 years old when he ascended the British throne. His mature age, his sagacity and experience, his numerous alliances, and the general tranquillity of Europe, all contributed to establish his interests, and promise him a peaceable and happy reign. His virtues, though not shining, were solid; and he was of a very different disposition from the Stuart family whom he succeeded. These were known to a proverb for leaving their friends in extremity; George, on the contrary, soon after his arrival in England, was heard to say, "My maxim is, never to abandon my friends, to do justice to all the world, and to fear no man." To these qualities of resolution and perseverance, he joined great application to business. One fault, however, with regard to England, remained behind: he studied the interests of the kingdom he had left more than of those he came to govern.

The new king soon discovered his inclination to support those who had raised him to the throne, that is, the whig party. When he retired to his bed-chamber, after his first landing, he sent for such of the nobility as had distinguished themselves by their zeal for his succession. He expressed the greatest regard for the duke of Marlborough just then arrived from the continent, whither he had been driven by the violence of the Tories. The same friendship he professed for the other leaders of the Whigs; but the Tories found themselves excluded from the royal favour. The king did not seem sensible that the monarch of a faction rules but one half of his subjects. It was his misfortune, and consequently that of the nation, that he was hemmed round by men who soured him with all their own interests and prejudices. The Whigs, while they pretended to secure the crown for the king, were using all

their art to confirm their own interests, extend their connections, and give laws to their sovereign. An instantaneous change was made in all the offices of trust, honour, or advantage. The names of the contending parties were changed into those of *Hanoverians* and *Jacobites*. The former governed the senate and court, oppressed whom they would, bound the lower orders of people by severe laws, and kept them at a distance by vile distinctions; and then taught them to call this *liberty*.

In consequence of these partialities, the highest discontent was raised through the whole kingdom. The Tories or Jacobites raised the most terrible outcries; and had the pretender been a man of any judgment or abilities, a fair opportunity was now offered him of striking a decisive blow. Instead of this, he continued a calm spectator on the continent, and only sent over his emissaries to disperse ineffectual manifestoes and delude the unwary. In these papers he observed, that the late queen had intentions of calling him to the crown. He expostulated with his people upon the injustice they had done themselves in proclaiming a foreign prince for their sovereign, contrary to the laws of the country, that gave him alone the real claim. Copies of a printed address were sent to the dukes of Shrewsbury, Marlborough, Argyle, and other noblemen of the first distinction; vindicating his right to the crown, and complaining of the injustice of his people. Yet, though he still complained of their conduct, he never took any step to correct his own, or remove that obstacle by which his father had lost his throne. He still continued to profess the truest regard to the Catholic religion; and, instead of concealing his sentiments on that head, gloried in his principles.

But, however much the Popish religion was at that time hated in England, the principles of the dissenters were not in the least more agreeable to the generality. The Tories affirmed, that, under a Whig administration, heresy and impiety were daily gaining ground. The lower orders of the clergy joined in these complaints, and pointed out several tracts published in favour of Arianism and Socinianism. The ministry not only refused to punish the delinquents, but silenced the clergy themselves, and forbade their future disputations on these topics.—The parliament was now dissolved, and another called by a very extraordinary proclamation. In this the king complained of the evil designs of men disaffected to his succession; and of their having misrepresented his conduct and principles. He expressed his hopes, that his subjects would send up to parliament the fittest persons to redress the present disorders. He intreated that they would elect such in particular as had expressed a firm attachment to the Protestant succession when it was in danger. In the election of this important parliament, uncommon vigour was exerted on both sides; but by dint of the moneyed interest that prevailed in corporations, and the activity of the ministry, a great majority of Whigs was returned both in England and Scotland.

Upon the first meeting of this new parliament, the most violent measures were resolved upon against the late ministry. Part of them kept away from business. A committee was appointed to inspect all the papers relative to the late treaty, and to pick out such of them as might serve for grounds of accusation against

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National
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Britain. the late ministry. The earl of Oxford was impeached of high treason, and sent to the Tower. The violence of the commons was answered with equal violence without doors. Tumults became every day more frequent, and every tumult served only to increase the severity of the legislature. They now passed an act, declaring, that if any persons to the number of 12, unlawfully assembled, should continue together one hour after being required to disperse by a justice of peace or other officer, and after hearing the act against riots read in public, they should be deemed guilty of felony without benefit of clergy. This is a very severe act, and one of the greatest restrictions on the liberty of the subject that has passed during this century; as, by it, all meetings of the people, either for the purposes of amusement or redress, are rendered criminal, if it shall please any magistrate to consider them as such.

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Rebellion
in Scotland.

These vindictive proceedings excited the indignation of the people, who perceived that the avenues of royal favour were closed to all but a faction. A rebellion commenced in Scotland, where to their other grievances they joined that of the union, which they were taught to consider as an oppression. The malcontents of this country had all along maintained a correspondence with their friends in England, who were now driven by resentment and apprehension into a system of politics they would not otherwise have dreamed of. Some of the tory party, who were men attached to the Protestant religion, and of moderate principles in government, began to associate with the Jacobites, and to wish in earnest for a revolution. Scotland first showed them the example. The earl of Mar, assembling 300 of his vassals in the Highlands, proclaimed the pretender at Castleton; and setting up his standard at Braemar, assumed the title of *lieutenant-general of his majesty's forces*. To second these attempts, two vessels arrived from France, with arms, ammunition, and a number of officers, together with assurances to the earl, that the pretender himself would shortly come over to head his own forces. In consequence of this promise, the earl soon found himself at the head of 10,000 men well armed and provided. He secured the pass of Tay at Perth, where his head-quarters were established; and made himself master of the whole province of Fife, and all the sea-coast on that side of the frith of Forth. He marched from thence to Dumblain, as if he had intended to cross the Forth at Stirling-bridge; but there he was informed that the duke of Argyle, who on this occasion was appointed commander in chief of all the forces in North Britain, was advancing against him from Stirling with all his own clans, assisted by some troops from Ireland. Upon this, he thought proper at first to retreat; but being soon after joined by some of the clans under the earl of Seaforth, and others under general Gordon, an experienced officer, who had signalized himself in the Russian service, he resolved to face the enemy, and directed his march towards the south.

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Battle near
Dumblain.

The duke of Argyle, apprized of his intentions, and at the same time willing to prove his attachment to the present government, resolved to give him battle in the neighbourhood of Dumblain, though his forces did not amount to half the number of the enemy. In the morning, therefore, he drew up his army, which did not exceed 3500 men, in order of battle; but he soon found

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In the mean time, the rebellion was still more unsuccessfully prosecuted in England. From the time the pretender had undertaken this wild project at Paris, in which the duke of Ormond and lord Bolingbroke were engaged, lord Stair, the English ambassador there, had penetrated all his designs, and sent faithful accounts of all his measures and of all his adherents to the ministry at home. Upon the first rumour, therefore, of an insurrection, they imprisoned several lords and gentlemen, of whom they had a suspicion. But these precautions were not able to stop the insurrection in the western counties, where it was already begun. All their preparations, however, were weak and ill conducted; every measure was betrayed to government as soon as projected, and many revolts were repressed in the very outset. The university of Oxford was treated with great severity on this occasion. Major-general Pepper, with a strong detachment of dragoons, took possession of the city at day-break, declaring that he would instantly shoot any of the students who should presume to appear without the limits of their respective colleges.

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Bad conduct
of James's
party.

The insurrection in the northern counties came to greater

Britain. greater maturity. In the month of October 1715, the earl of Derwentwater, and Mr Forster, took the field with a body of horse, and, being joined by some gentlemen from the borders of Scotland, proclaimed the pretender. Their first attempt was to seize upon Newcastle, in which they had many friends; but finding the gates shut against them, they retired to Hexham. To oppose these, general Carpenter was detached by government with a body of 900 men, and an engagement was hourly expected. The rebels had two methods by which they might have conducted themselves with prudence and safety. The one was to march directly into the western parts of Scotland, and there join general Gordon, who commanded a strong body of Highlanders. The other was to cross the Tweed, and boldly attack General Carpenter, whose forces did not exceed their own. From the insatiation attendant on the measures of that party, neither of these counsels was pursued. They took the rout to Jedburgh, where they hoped to leave Carpenter on one side, and penetrate into England by the western border. This was the effectual means to cut themselves off either from retreat or assistance. A party of Highlanders, who had joined them by this time, at first refused to accompany them in such a desperate incursion, and one half of them actually returned to their own country. At Brampton, Mr Forster opened his commission of general, which had been sent him by the earl of Mar, and there he proclaimed the pretender. They continued their march to Penrith, where the body of the militia that was assembled to oppose them fled at their appearance. From Penrith they proceeded by the way of Kendal and Lancaster to Preston, of which place they took possession without any resistance. But this was the last stage of their ill-advised excursion: for general Wills, at the head of 7000 men, came up to attack them; and from his activity there was no escaping. They now, therefore, began to raise barricades about the town, and to put the place in a posture of defence, repulsing the first attacks of the royal army with success. Next day, however, Wills was reinforced by Carpenter, and the town was invested on all sides. In this deplorable situation, to which they were reduced by their own rashness, Forster hoped to capitulate with the general; and accordingly sent colonel Oxburgh, who had been taken prisoner, with a trumpeter to propose a capitulation. This, however, Wills refused; alleging that he would not treat with rebels, and that the only favour they had to expect was to be spared from immediate slaughter. These were hard terms, but no better could be obtained. They accordingly laid down their arms, and were put under a strong guard. All the noblemen and leaders were secured, and a few of their officers tried for deserting from the royal army, and shot by order of a court-martial. The common men were imprisoned at Chester and Liverpool; the noblemen and considerable officers were sent to London, and led through the streets pinioned and bound together, to intimidate their party.

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conduct of
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arty in
ance.

Though the schemes of the pretender appear to have been foolishly enough conducted in Britain, yet they were much more so in France. Bolingbroke had been made his secretary at Paris, and Ormond his prime minister. But these statesmen quickly found that no-

thing could be done in favour of his cause. The king of France, who had ever espoused the interest of the abdicated family, was just dead; and the duke of Orleans, who succeeded in the government of the kingdom, was averse to lending the pretender any assistance. His party, however, which was composed of the lowest and the most ignorant exiles from the British dominions, affected the utmost confidence, and boasted of a certainty of success. The deepest secrets of his cabinet, and all his intended measures, were bandied about in coffee-houses by persons of the lowest rank both in fortune and abilities. Subaltern officers resolved to be his generals; and even prostitutes were entrusted to manage his negotiations. Little therefore could be expected from such assistants and such councils.

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Pretender
lands in
Scotland;

Though, by this time, the pretender might easily have seen that his affairs were desperate; yet, with his usual insatiation, he resolved to hazard his person among his friends in Scotland, at a time when such a measure was too late for success. Passing, therefore, through France in disguise, and embarking in a small vessel at Dunkirk, he arrived, after a voyage of a few days, on the coasts of Scotland, with only six gentlemen in his train. He passed unknown through Aberdeen to Peterhead, where he was met by the earl of Mar, and about 30 noblemen and gentlemen of the first quality. There he was solemnly proclaimed; and his declaration, dated at Comerey, was printed and dispersed. He went from thence to Dundee, where he made a public entry; and in two days more he arrived at Scoon, where he intended to have the ceremony of his coronation performed. He ordered thanksgivings to be made for his safe arrival; he enjoined the ministers to pray for him in their churches; and without the smallest share of power, went through the ceremonies of royalty, which threw an air of ridicule on all his conduct. Having thus spent some time in unimportant parade, he resolved to abandon the enterprise with the same levity with which it was undertaken. Having made a speech to his grand council, he informed them of his want of money, arms, and ammunition, for undertaking a campaign, and therefore deplored that he was obliged to leave them. He once more embarked on board a small French ship that lay in the harbour of Montrose, accompanied with several lords, his adherents; and in five days arrived at Graveline.

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And again
leaves it.

General Gordon, who was left commander in chief of the forces, with the assistance of earl Marschal, proceeded at their head to Aberdeen, where he secured three vessels to sail northward, which took on board such persons as intended to make their escape to the continent. He then continued his march through the Highlands, and quietly dismissed his forces as he went forward. This retreat was made with such expedition, that the duke of Argyle, with all his activity, could never overtake his rear, which consisted of 1000 horse.

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Crust
ment of the
tribes.

The rebellion being ended, the law was put in force with all its terrors; and the prisons of London were crowded with those deluded persons, whom the ministry seemed resolved not to pardon. The commons, in their address to the crown, declared they would prosecute, in the most rigorous manner, the authors of the late rebellion; and their measures were as vindictive as their resolutions were speedy. The earls of

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Derwentwater, Nithsdale, Carnwath, and Wintown, the lords Widrington, Kenmuir, and Nairne, were impeached; and, upon pleading guilty, all but lord Wintown, received sentence of death. No intreaties could prevail upon the ministry to spare these unhappy men. The house of lords even presented an address to the throne for mercy, but without effect; the king only answered, that on this, as on all other occasions, he would act as he thought most consistent with the dignity of the crown and the safety of the people. Orders were accordingly dispatched for executing the lords Derwentwater, Nithsdale, and Kenmuir, immediately; the rest were reprieved to a farther time. Nithsdale, however, had the good fortune to escape in woman's clothes that were brought him by his mother the night before his execution. Derwentwater and Kenmuir were brought to the scaffold on Tower-hill at the time appointed. Both underwent their sentence with calm intrepidity, and seemingly less moved than those who beheld them.

An act of parliament was next made for trying the private prisoners in London, and not in Lancashire where they were taken in arms. This was considered, by some of the best lawyers, as an alteration of the ancient constitution of the kingdom, by which it was supposed, that every prisoner should be tried in the place where the offence was committed, as a jury of neighbours would be best qualified to enter into the nature of the offence. In the beginning of April, commissioners for trying the rebels met in the court of common pleas, when the bills were found against Mr Forster, Mr Macintosh, and 20 of their confederates. Forster escaped from Newgate, and reached the continent in safety; the rest pleaded not guilty. Pitts the keeper of Newgate, being suspected of having connived at Forster's escape, was tried for his life, but acquitted. After this, Macintosh, and several other prisoners, broke from Newgate, after having mastered the keeper and turnkey, and disarmed the sentinel. The court proceeded to the trial of those that remained; four or five were hanged, drawn, and quartered, at Tyburn. The judges appointed to try the rebels at Liverpool found a considerable number of them guilty of high treason. Two-and-twenty were executed at Manchester and Preston; about 1000 experienced the king's mercy, if such it may be called, to be transported to North America.

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Duration
of the par-
liament
lengthened.

The rebellion being thus extinguished, the danger of the state was made a pretence for continuing the parliament beyond the term fixed for its dissolution. An act, therefore, was made by their own authority, repealing that by which they were to be dissolved every third year, and the term of their duration was extended to seven years. This attempt in any delegated body of people to increase their own power by extending it, is contrary to the first principles of justice. If it was right to extend their duration to seven years, they might also perpetuate their authority; and thus cut off even the shadow of a nomination. The bill, however, passed both houses, and all objections to it were considered as disaffection. The people might murmur at this encroachment, but it was too late for redress.

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Britain
threatened
with an in-
vasion by
Charles XII.

Domestic concerns being thus adjusted, the king resolved upon a voyage to the continent. He foresaw a storm gathering from Sweden. Charles XII. was

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highly provoked against him for having entered into a confederacy with the Russians and Danes during his absence at Bender, and for having purchased from the king of Denmark the towns of Bremen and Verden, which constituted a part of his dominions. In consequence of this, Charles maintained a close correspondence with the dissatisfied subjects of Great Britain; and a scheme was formed for landing a considerable body of Swedish forces, with the king at their head, in some part of the island, where it was expected they would be joined by all the malecontents in the kingdom. Count Gyllenburg, the Swedish minister in London, was peculiarly active in the conspiracy; but being seized, with all his papers, by order of the king, the confederacy was broke for that time. A bill, however, was passed by the commons, forbidding all commerce with Sweden; the trade with which country was at that time of the utmost consequence to the English merchants. George having passed through Holland to Hanover, in order to secure his German dominions, entered into a new treaty with the Dutch and the regent of France, by which they agreed mutually to assist each other in case of an invasion; and for his further security, the commons granted him 250,000*l*. But the death of the Swedish monarch, who was soon after killed at the siege of Frederichshall in Norway, put an end to all disquietude from that quarter.

Among the many treaties for which this reign was remarkable, one had been concluded, which was called the *quadruple alliance*. It was agreed between the emperor, France, Holland, and Britain, that the emperor should renounce all pretensions to the crown of Spain, and exchange Sardinia for Sicily with the duke of Savoy; that the succession to the duchies of Tuscany, Parma, and Placentia, should be settled on the queen of Spain's eldest son, in case the present possessors should die without male issue. This treaty, however, was by no means agreeable to the king of Spain; and consequently it became prejudicial to the English, as it interrupted the commerce with that kingdom. A war soon after commenced between Spain and the emperor, who was considered as the principal contriver of the treaty; and a numerous body of Spanish forces were sent into Italy to support Philip's pretensions in that quarter. The regent of France attempted in vain to dissuade him, and the king of Britain offered his mediation with the like bad success; their interposition was considered as partial and unjust. A Spanish war was then resolved on. A squadron of 22 ships was equipped with all expedition, the command of which was given to Sir George Byng, and ordered to sail for Naples, at that time threatened with a Spanish army. He was received with the greatest joy by the Neapolitans; who informed him that the Spaniards, to the amount of 30,000, were then actually landed in Sicily. In this exigence, as no assistance could be given by land, he resolved to sail thither, fully determined to pursue the Spanish fleet on which the army was embarked. Upon coming round Cape Faro, he perceived two small Spanish vessels; and pursuing them closely, they led him to their main fleet, which, before noon, he discovered in line of battle, amounting in all to 27 sail. The Spaniards, however, notwithstanding of their superiority in number, attempted to sail away: but finding it impossible to make their escape, they kept

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War with
Spain.

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up a running fight, and the commanders behaved with great courage and activity; in spite of which they were all taken except three, which were preserved by the conduct of one Cammoe, their vice-admiral, a native of Ireland. Sir George Byng behaved on this occasion with great prudence and resolution; and the king wrote him a letter with his own hand, approving his conduct.

nine millions and an half of money; for which they granted at the rate of 6 per cent. interest. As this company was not the only one to which government was indebted, Sir Robert Walpole formed a design of lessening the national debts, giving the several companies an alternative either of accepting a lower interest, namely 5 per cent. or of being paid the principal. The different companies chose rather to accept of the diminished interest than to be paid the principal. The South-sea company, in particular, having augmented their loan to ten millions, were contented to receive 500,000*l.* annually as interest, instead of 600,000*l.* which they usually received. In the same manner, the governors and company of the bank, and other companies, were contented to receive a diminished annual interest for their respective loans; all which greatly lessened the debts of the nation.

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intended
invasion by
the Spaniards.

The rupture with Spain was thought to be favourable to the interests of the pretender; and it was hoped that by the assistance of cardinal Alberoni the Spanish minister, a new insurrection might be excited in England. The duke of Ormond was the person fixed upon to conduct this expedition; and he obtained from the Spanish court a fleet of ten ships of war and transports, having on board 6000 regular troops, with arms for 12,000 more. But fortune was still as unfavourable as ever. Having set sail, and proceeded as far as Cape Finisterre, he was encountered by a violent storm, which disabled his fleet, and frustrated the expedition. This misfortune, together with the bad success of the Spanish arms in Sicily and other parts of Europe, induced Philip to wish for a cessation of arms; and he at last consented to sign the quadruple alliance, by which means peace was again restored to Europe.

In this situation of things, one *Blount* a scrivener proposed to the ministry, in the name of the South-sea company, to buy up all the debts of the different companies, and thus for the South-sea company to become the sole creditors of the state. The terms he offered to government were extremely advantageous. The South-sea company was to redeem the debts of the nation out of the hands of the private proprietors who were creditors to the government, upon whatever terms they could agree on; and for the interest of this money which they had thus redeemed and taken into their own hands, they would be contented to be allowed by government 5 per cent. for six years; after which the interest should be reduced to 4 per cent. and should at any time be redeemable by parliament. For these purposes a bill passed both houses. But now came the part of the scheme big with fraud and ruin. As the directors of the South-sea company could not of themselves be supposed to possess so much money as was sufficient to buy up the debts of the nation, they were empowered to raise it by opening a subscription to an imaginary scheme for trading in the South seas; from which commerce immense advantages were promised, and still greater expected by the rapacious credulity of the people. All the creditors of government, therefore, were invited to come in, and exchange their securities, *viz.* the security of government, for that of the South-sea company. The directors books were no sooner opened for the first subscription, than crowds came to make the exchange of government stock for South-sea stock. The delusion was artfully continued and spread. Subscriptions in a few days told for double the price they had been bought at. The scheme succeeded beyond even the projector's hopes, and the whole nation was infected with a spirit of avaricious enterprize. The insatiation prevailed; the stock increased to a surprising degree, even to near ten times the value of what it was first bought for.

393
Irish parliament
made
dependent
on that of
Britain.

Tranquillity being thus established, the ministry proceeded to secure the dependency of the Irish parliament on that of England. One Maurice Annesley had appealed to the house of peers of England from a decree made by the Irish peers, and their decree was reversed. The British peers ordered the barons of exchequer in Ireland to put Mr Annesley in possession of the lands he had lost by the decree of the lords in that kingdom. The barons obeyed this order; and the Irish peers passed a vote against them, as having attempted to diminish the just privileges of the parliament of Ireland; and at the same time ordered the barons to be taken under the custody of the black rod. On the other hand, the house of lords in England resolved, that the barons of the exchequer in Ireland had acted with courage and fidelity; and addressed the king to signify his approbation of their conduct, by some marks of his favour. To complete their intention, a bill was prepared, by which the Irish house of lords was deprived of all right of final jurisdiction. This bill was opposed in both houses, but particularly by the commons. It was there asserted by Mr Pitt, that it would only increase the power of the English peers, who were already but too formidable. Mr Hungerford demonstrated, that the Irish lords had always exerted their power of finally deciding causes. Notwithstanding all opposition, the bill was carried by a great majority, and soon after received the royal assent.

394
South-sea
scheme.

This blow was severely felt by the Irish; but was by no means so great as that which the English about this time felt from the *South-sea scheme*, which commenced in the year 1721. To explain this as concisely as possible, it must be observed, that ever since the revolution under king William, the government not having sufficient supplies granted by parliament, or what was granted requiring time to be collected, they were obliged to borrow money from several different companies of merchants; and among the rest from that company which traded to the South-sea. In the year 1716, the government was indebted to this company about

After a few months, however, the people waked from their dream of riches; and found that all the advantages they expected were merely imaginary, while thousands of families were involved in one common ruin. Many of the directors, by whole arts the people were taught to expect such great benefits from a traffic to the South seas, had amassed considerable fortunes by the credulity of the public. It was some consolation, however, to the people to find the parliament sharing in the general indignation, and resolving to strip those

395
Directors
penished.

unjust.

Britain.

unjust plunderers of their possessions. Orders were first given to remove all the directors of the South-sea company from their seats in parliament, and the places they possessed under government. The principal delinquents were punished by a forfeiture of all such possessions and estates as they had acquired during the continuance of this popular frenzy. The next care was to redress the sufferers. Several just and useful resolutions were taken by parliament, and a bill was speedily prepared for repairing the late sufferings as far as the inspection of the legislature could extend. Of the profit arising from the South-sea scheme, the sum of seven millions were given back to the original proprietors; several additions were also made to their dividends out of what was possessed by the company in their own right; and the remaining capital stock was also divided among the old proprietors at the rate of 33 per cent.—In the mean time, petitions from all parts of the kingdom were presented to the house demanding justice; and the whole nation seemed exasperated to the highest degree. Public credit sustained a terrible shock. Some principal members of the ministry were deeply concerned in these fraudulent transactions. The bank was drawn upon faster than it could supply; and nothing was heard but the ravings of disappointment, and the cries of despair.

396
Unsuccessful expedition of admiral Hosier.

By degrees, however, the effects of this terrible calamity wore off, and matters returned to their former tranquillity. A new war with Spain commenced. Admiral Hosier was sent to South America to intercept the Spanish galleons; but the Spaniards, being apprized of his design, relanded their treasure. The greatest part of the British fleet sent on that expedition was rendered entirely unfit for service. The seamen were cut off in great numbers by the malignity of the climate and the length of the voyage, while the admiral himself is said to have died of a broken heart. In order to retaliate these hostilities, the Spaniards undertook the siege of Gibraltar; but with as little success on their side. In this dispute France offered her mediation; and such a reconciliation as treaties could procure was the consequence: a temporary peace ensued; both sides only watching an opportunity to renew hostilities with advantage.

397
Death of King Geo. I.

Soon after the breaking up of the parliament in the year 1727, the king resolved to visit his electoral dominions of Hanover. Having appointed a regency in his absence, he embarked for Holland, and lay, upon his landing, at a little town called *Voet*. Next day he proceeded on his journey; and in two days more, between ten and eleven at night, arrived at Delden, to all appearance in perfect health. He supped there very heartily, and continued his journey early the next morning; but between eight and nine ordered his coach to stop. It being perceived that one of his hands lay motionless, monsieur Fabrice, who had formerly been servant to the king of Sweden, and who now attended king George, attempted to quicken the circulation, by chafing it between his own. As this had no effect, the surgeon who followed on horseback was called, and he rubbed it with spirits. Soon after, the king's tongue began to swell, and he had just strength enough to bid them hasten to Osnaburgh. Then, falling insensible into Fabrice's arms, he never recovered; but expired about 11 o'clock the next morning, in the 68th year

Britain.

of his age, and 13th of his reign. His body was conveyed to Hanover, and interred among his ancestors.

On the accession of George II. the two great parties into which the nation had so long been divided, again changed their names, and were now called the *court* and *country* parties. Throughout the greatest part of this reign, there seem to have been too objects of controversy, which rose up in debate at every session, and tried the strength of the opponents; these were the national debt, and the number of forces to be kept in pay. The government on the present king's accession owed more than 30,000,000 of money; and tho' there was a long continuance of profound peace, yet this sum was found constantly increasing. It was much wondered at by the country party how this could happen, and it was as constantly the business of the court to give plausible reasons for the increase. Thus, demands for new supplies were made every session of parliament, either for the purposes of securing friends upon the continent, of guarding the kingdom from internal conspiracies, or of enabling the ministry to act vigorously in conjunction with the powers in alliance abroad. It was vainly alleged that those expences were incurred without preference or necessity; and that the increase of the national debt, by multiplying and increasing taxes, would at last become an intolerable burden to the poor. These arguments were offered, canvassed, and rejected; the court party was constantly victorious, and every demand was granted with cheerfulness and profusion.

398
George II. succeeds.
399
Contentions between the court and country parties.

The next thing worthy of notice in the reign of George II. is the *charitable corporation*. A society of men had united themselves into a company by this name; and their professed intention was to lend money at legal interest to the poor upon small pledges, and to persons of higher rank upon proper security. Their capital was at first limited to L. 30,000, but they afterwards increased it to L. 600,000. This money was supplied by subscription, and the care of conducting the capital was intrusted to a proper number of directors. This company having continued for more than 20 years, the cashier, George Robinson, member for Marlow, and the warehouse-keeper, John Thomson, disappeared in one day. Five hundred thousand pounds of capital were found to be sunk or embezzled by means which the proprietors could not discover. They therefore, in a petition, represented to the house the manner in which they had been defrauded, and the distress to which many of the petitioners were reduced. A secret committee being appointed to examine into this grievance, a most iniquitous scene of fraud was soon discovered, which had been carried on by Thomson and Robinson, in concert with some of the directors, for embezzling the capital and cheating the proprietors. Many persons of rank and quality were concerned in this infamous conspiracy; and even some of the first characters in the nation did not escape censure. No less than six members of parliament were expelled for the most fordid acts of knavery. Sir Robert Sutton, Sir Archibald Grant, and George Robinson, for their frauds in the management of the charitable corporation scheme; Dennis Bond, and serjeant Burch, for a fraudulent sale of the late unfortunate earl of Derwentwater's estate; and lastly, John Ward, of Hackney, for forgery. It was at this time asserted in the house of Lords, that not one shilling of the forfeited estates was ever applied to

400
Account of the charitable corporation.

the

Britain. the service of the public, but became the reward of fraudulence and venality.

401
the
re-
led.

This happened in the year 1731; and in 1732, a scheme was formed by Sir Robert Walpole of fixing a general excise. He introduced it by recounting the frauds practised by the factors in London that were employed in selling the American tobacco. To prevent these frauds, he proposed, that instead of having the customs levied in the usual manner upon tobacco, all hereafter to be imported should be lodged in warehouses appointed for that purpose by the officers of the crown; and should from thence be sold, upon paying the duty of 4d. per pound, when the proprietor found a purchaser. This proposal raised a violent ferment, both within doors and without. At last, the fury of the people was worked up to such a pitch, that the parliament-house was surrounded by multitudes, who intimidated the ministry, and compelled them to drop the design. The miscarriage of the bill was celebrated with public rejoicings in London and Westminster, and the minister was burned in effigy by the populace at London.

402
parliament
dissolved.

On this occasion an attempt was made to repeal the septennial bill, and bring back triennial parliaments, as settled at the Revolution. But notwithstanding the warmth of the opposition, the ministry, exerting all their strength, were victorious, and the motion was suppressed by the majority. However, as on this occasion the country party seemed to have gained strength, it was thought proper to dissolve the parliament; and another was called by the same proclamation.

The same disputes were carried on in this parliament as in the former. New subjects of controversy offered every day, and both sides were eager to seize them. A convention agreed on by the ministry, at the Prado, with Spain, became an object of warm altercation. By this the court of Spain agreed to pay 95,000l. to the English, as a satisfaction for all demands; and to discharge the whole in four months from the day of ratification. This, however, was considered as not equivalent to the damages that had been sustained, which were said to amount to 340,000l. On this occasion the minister was provoked into unusual vehemence, and branded the opposite party with the appellation of traitors. The ministry, as usual, were victorious; and the country party finding themselves out-numbered and out-voted in every debate, resolved to withdraw for ever: Walpole, being thus left without opposition, took the opportunity of passing several useful laws in their absence, in order to render the opposite party odious or contemptible.

403
war with
Spain.

In 1739, a new war commenced with Spain. Ever since the treaty of Utrecht, the Spaniards in America had insulted and distressed the commerce of Great Britain; and the British merchants had endeavoured to carry on an illicit trade in their dominions. As a right of cutting logwood in the bay of Camaguey, claimed by the British, gave them frequent opportunities of pushing in contraband commodities upon the continent, the Spaniards resolved to put a stop to the evil by refusing liberty to cut logwood in that place. The Spanish guarda-costas continued their severities upon the British, and many British subjects were sent to dig in the mines of Potosi. One remonstrance followed another to the court of Madrid; but the only an-

swers given were promises of inquiry, which produced no reformation. In 1739, war was declared with all proper solemnity; and soon after, admiral Vernon, with six ships only, destroyed all the fortifications of Porto Bello, and came away victorious, with scarce the loss of a man.

As the war was thus successfully begun, supplies were cheerfully granted to prosecute it with all imaginable vigour. Commodore Anson was sent with a squadron of ships to distress the enemy in the South seas, and to co-operate occasionally with admiral Vernon across the isthmus of Darien. This squadron was designed to act a subordinate part to a formidable armament that was to be sent against New Spain; but through the mismanagement of the ministry both these schemes were frustrated. Anson was detained till too late in the season; he then set out with five ships of the line, a frigate, and two store-ships, with about 1400 men. Coming into the stormy South seas at a very wrong season of the year, he encountered the most terrible storms; his fleet was dispersed, and his crew deplorably afflicted with the scurvy; so that with much difficulty he gained the delightful island of Juan Fernandez. Here he was joined by one ship and a frigate of seven guns. From thence sailing along the coast of Chili, he plundered and burnt the town of Paita. He next traversed the great Pacific ocean, in hopes of meeting with one of the immensely rich galleons that trade from the Philippine islands to Mexico. Having refreshed his men at the island of Tinian, he set forward for China; and returning the same way he came, at last discovered the galleon. Her he engaged, and took; and with this prize, valued at 313,000l. together with other captures to the value of about as much more, he returned home after a voyage of three years. By this expedition the public sustained the loss of a fine squadron of ships, but a few individuals became possessed of immense fortunes.

405
Unsuccessful
attempt
on Carthage-
na.

The other expedition ended still more unfortunately. The armament consisted of 29 ships of the line, and almost an equal number of frigates, furnished with all kinds of warlike stores, near 15,000 seamen, and as many land forces. The most sanguine hopes of success were entertained; but the ministry detained the fleet without any visible reason, till the season for action in America was almost over. At last, however, they arrived before the wealthy city of Carthage. They soon became masters of the strong forts which defended the harbour. But though by this means they advanced a good deal nearer the town, they found great difficulties still before them. It was asserted, that the fleet could not lie near enough to batter the town, and therefore the remaining forts must be attempted by sea. This dangerous experiment was tried; the guides were slain by the enemy's fire, and then the forces mistook their way. Instead of attempting the weakest place of the fort, they attacked the strongest, and where they were exposed to the fire of the whole town. Their scaling ladders were too short; and, at last, after bearing a dreadful fire with great resolution for some hours, they retreated, leaving 600 men dead on the spot. The tempests of the climate now began to be more dreadful than those of war. The rainy season commenced with such violence, that it was impossible for the troops to continue their encampment. To these calamities were

Britain. added the diffension between the sea and land commanders; who blamed each other, and at last could be only brought to agree in one mortifying measure, *viz.* to re-embark the troops, and withdraw them as quick as possible.

407
Resignation
of Sir Robert
Walpole.
The miscarriage of this enterprize produced the greatest discontents; especially as other causes of complaint were now joined with it. Sir John Norris had twice failed to the coast of Spain at the head of a very powerful squadron, without doing any thing to the purpose. The commerce of Britain was greatly annoyed by the Spanish privateers, who had taken 407 ships since the commencement of the war; while the British fleets seemed to be quite inactive, and to suffer one loss after another, without endeavouring in the least to make proper reprisals. These discontents burst all at once upon Sir Robert Walpole; a majority in the house of commons was formed against him; he was created earl of Orford, the parliament being adjourned for a few days for that purpose; and he resigned all his employments.

The removal of this minister gave universal satisfaction. His antagonists entertained great hopes of seeing him punished: but he had laid his schemes too well to be under any apprehensions on that account; and what was worse, the new ministry were no sooner got in, than they trod in the footsteps of those they had so much exclaimed against. The nation had now become disgusted with naval operations. The people wished for a renewal of their victories in Flanders, and the king ardently joined in the same wish. An army of 16,000 men was therefore shipped over into Flanders, to take part in the quarrels that were then beginning on the continent. Immense triumphs were expected from this undertaking; but they forgot that the army was not now commanded by the duke of Marlborough.

408
An army
sent into
Flanders.
In order to give some notion of the origin of these continental quarrels, it is necessary to go back for some years. After the duke of Orleans, who had been regent of France, died, cardinal Fleury undertook to settle the confusion in which the kingdom was then involved. Under him France repaired her losses, and enriched herself by commerce. During the long interval of peace which this minister's councils had procured for Europe, two powers, till now unregarded, began to attract the notice and jealousy of the neighbouring nations. These were Russia and Prussia. The other states were but little prepared to renew war. The empire remained under the government of Charles VI. who had been placed on the throne by the treaty of Utrecht. Sweden continued to languish from the destructive projects of Charles XII. Denmark was powerful enough, but inclined to peace; and part of Italy still remained subject to those princes who had been imposed upon it by foreign treaties.

409
Origin of
the conti-
nental war.
All these states, however, continued to enjoy a profound peace, until the death of Augustus king of Poland, by which a general flame was once more kindled in Europe. The emperor, assisted by the arms of Russia, declared for the elector of Saxony, son to the deceased king. On the other hand, France declared for Stanislaus, who had long since been nominated king of the Poles by Charles of Sweden, and whose daughter the king of France had since married. Stanislaus was gladly received at Dantzic, and acknowledged king of
N^o 56.

Britain. Poland; but here he was besieged by 10,000 Russians, the city taken, and he himself with difficulty made his escape. France, however, still resolved to assist him, as this, it was thought, would be the most effectual method of distressing the house of Austria. These views of France were seconded by Spain and Sardinia, both of which hoped to grow rich by the spoils of Austria. A French army, therefore, over-ran the empire, under the conduct of the old marshal Villars; while the duke of Montemar, the Spanish general, was equally victorious in the kingdom of Naples. The emperor was soon obliged to sue for peace; which was granted, but Stanislaus was neglected in the treaty. It was stipulated that he should renounce all claim to the kingdom of Poland; for which the emperor gratified France with the duchy of Lorraine, and some other valuable territories,

410
Desperate
situation of
the queen of
Hungary.
The emperor dying in the year 1740, the French began to think this a favourable opportunity for exerting their ambition. Regardless of treaties, therefore, particularly that called the *Pragmatic Sanction*, by which the late emperor's dominions were settled upon his daughter, they caused the elector of Bavaria to be crowned emperor. Thus the queen of Hungary, daughter of Charles VI. was at once stripped of her inheritance, and was left for a whole year deserted by all Europe, and without any hopes of succour. At the same time she lost the province of Silesia by an irruption of the young king of Prussia, who took the opportunity of her defenceless state to renew his pretensions to that province, of which his ancestors had been unjustly deprived. France, Saxony, and Bavaria, attacked the rest of her dominions: Britain was the only ally that seemed willing to assist her; in which, however, Sardinia, Holland, and Russia, soon after concurred.

It must be owned that Britain had no other reason for interfering in these disputes, than that the security of the electorate depended upon nicely balancing the different interests of the empire; and the ministry were willing to gratify the king. His majesty informed the parliament, that he had sent a body of British forces into the Netherlands, which he had augmented by 16,000 Hanoverians, to make a diversion upon the dominions of France, in favour of the queen of Hungary. When the supplies came to be considered by which this additional number of Hanoverian troops was to receive pay from Britain for defending their own cause, most violent parliamentary debates ensued; but the ministry carried their point by the strength of numbers.

411
Relieved by
the British
forces.
But, however prejudicial these continental measures might be to the true interests of Great Britain, they effectually retrieved the queen of Hungary's desperate affairs, and soon began to turn the scale of victory on her side. The French were driven out of Bohemia. Her general, prince Charles, at the head of a large army, invaded the dominions of Bavaria. Her rival, the nominal emperor, was obliged to fly before her; and being abandoned by his allies, and stripped even of his hereditary dominions, retired to Frankfort, where he lived in obscurity.

412
Battle of
Dettingen.
In the mean time, the British and Hanoverian army advanced, in order to effect a junction with that of prince Charles of Lorrain, in which case they would have outnumbered their enemies. To prevent this, the French opposed an army of 60,000 men, under the command of the marshal de Noailles, who posted his troops on
the

Britain.

the east side of that river. The British army was commanded by the earl of Stair, who had learned the art of war under the great prince Eugene; nevertheless, he suffered himself to be inclosed by the enemy on every side, near a village called *Dettingen*. In this situation, the whole army, with the king himself, who had by this time arrived in the camp, must have been taken, had the French behaved with prudence. Their impetuosity, however, saved the whole army. They passed a defile, which they ought to have contented themselves with guarding; and, under the conduct of the duke of Gramont, their horse charged the British foot with great fury. They were received with great resolution; and at last obliged to repass the Mayne with precipitation, and the loss of about 5000 men.

Though the British were victorious in this engagement, the French were very little disconcerted by it. They opposed prince Charles, and interrupted his attempts to pass the Rhine. In Italy they also gained some advantages; but their chief hopes were placed on an intended invasion of England. From the violence of parliamentary disputes in England, France had been persuaded that the country was ripe for a revolution, and only wanted the presence of the pretender to bring about a change. An invasion was therefore actually projected. The troops destined for the expedition amounted to 15,000; and preparations were made for embarking them at Dunkirk, and some of the ports nearest to England, under the eye of the young pretender. The duke de Roqueville, with 20 ships of the line, was to see them safely landed on the opposite shore, and the famous count Saxe was to command them when landed. But the whole project was disconcerted by the appearance of Sir John Norris, who with a superior fleet made up to attack them. The French fleet was obliged to put back; a very hard gale of wind damaged their transports beyond redress; and the French, now frustrated in their scheme of a sudden descent, thought fit openly to declare war.

The national joy for Sir John Norris's success, however, was soon damped by the miscarriage of admirals Matthews and Lestock; who, thro' a misunderstanding between themselves, suffered a French fleet of 34 sail to escape them near Toulon. In the Netherlands the British arms were attended with still worse success. The French had there assembled an army of 120,000 men, commanded by count Saxe, natural son to the late king of Poland, an officer of great experience. The English were headed by the duke of Cumberland, who had an inferior army, and was much inferior in the knowledge of war to the French general. Count Saxe, therefore, carried all before him. In 1743, he besieged Fribourg; and in the beginning of the campaign 1744, invested the strong city of Tournay. To save this place, if possible, the allies resolved to hazard an engagement; and on this ensued the bloody battle of Fontenoy, in which the allies left on the field of battle near 12,000 men, and the French almost an equal number. In consequence of this victory, Tournay was soon after taken by the French. To balance the bad success, however, admirals Rowley and Warren had retrieved the honour of the British flag, and made several rich captures at sea. The fortress of Louisburg, a place of great consequence to the British commerce, surrendered to general Pepperell; while, a short time after, two French East-

India ships, and a Spanish ship from Peru laden with treasure, put into the harbour, supposing it still their own, and were taken.

Britain.

During this gleam of returning success, Charles Edward, the son of the old pretender to the British crown, resolved to make an attempt to recover what he called his right. Being furnished with some money from France, he embarked for Scotland aboard a small frigate, accompanied by the marquis of Tullibardine, Sir Thomas Sheridan, and some others; and for the conquest of the whole British empire only brought with them seven officers, and arms for 2000 men.

Fortune, however, seemed no way more favourable to this attempt than to others similar to it. His convoy, a ship of 60 guns, was so disabled in an engagement with an English man of war, that it was obliged to return to Brest, while he continued his course to the western parts of Scotland. On the 27th of July 1745, he landed on the coast of Lochaber, and was in a little time joined by the highlanders, to the number of 1500: the ministry at first could scarcely be induced to credit his arrival; but when they could no longer doubt of it, they sent Sir John Cope with a small body of forces to oppose his progress.

By this time the young adventurer was arrived at Perth, where he performed the ceremony of proclaiming his father king of Great Britain. From thence, descending towards Edinburgh, and his forces continually increasing, he entered the capital without opposition; but was unable, for want of cannon, to reduce the castle. Here he again proclaimed his father; and promised to dissolve the union, which was considered as one of the national grievances. In the mean time, Sir John Cope, being reinforced by two regiments of dragoons, resolved to give the enemy battle. The rebels attacked him near Prestonpans, and in a few minutes put him and his troops to flight, with the loss of 500 men.

This victory gave the rebels great influence; and had the pretender marched directly to England, the consequence might have been fatal to freedom. But he was amuted by the promise of succours which never came; and thus induced to remain in Edinburgh till the season for action was lost. He was joined, however, by the earl of Kilmarnock, lord Balmerino, lords Cromarty, Elcho, Ogilvy, Pitligo, and the eldest son of lord Lovat, who with their vassals considerably increased his army. Lord Lovat himself, so remarkable for his treachery, was an enthusiast in favour of the pretender, but was unwilling to act openly for fear of the ministry. But while Charles was thus trifling away his time at Edinburgh, the British ministry were taking effectual methods to oppose him. Six thousand Dutch troops, that had come over to the assistance of the crown, were dispatched northward under the command of general Wade; but, as it was then said, these could lend no assistance, being prisoners of France upon their parole, and under engagements not to oppose that power for a year. But however this be, the duke of Cumberland soon after arrived from Flanders, and was followed by another detachment of dragoons and infantry, well disciplined and trained to action; and besides these, volunteers offered themselves in every part of the kingdom.

At last, Charles resolved upon an irruption into

413
intended
invasion
of Britain
by the
French.

416
Young
pretender
lands
in Scotland.

417
Gains the
battle of
Preston-
pans.

414
Battle of
Fontenoy.

415
Louisburg
taken.

Britain. England. He entered that country by the western border, and took the town of Carlisle; after which he continued his march southwards, having received assurances that a considerable body of forces would be landed on the northern coasts to make a diversion in his favour. He established his head-quarters at Manchester, where he was joined by about 200 English formed into a regiment, under the command of colonel Townley. From thence he pursued his march to Derby, intending to go by the way of Chester into Wales, where he hoped to be joined by a great number of malecontents; but in this he was prevented by the factions among his followers.

418 Invades England.
419 Great con-
sternation
at London.
420 Rebels re-
solve to
return.

Being now advanced within 100 miles of London, that capital was in the utmost consternation: and had he proceeded with the same expedition he had hitherto used, perhaps he might have made himself master of it. But he was rendered incapable of pursuing this, or any other rational plan, by the discontents which began to prevail in his army. In fact, the young pretender was but the nominal leader of his forces; his generals, the Highland chiefs, being averse to subordination, and ignorant of command. They were now unanimous in their resolution to return to their own country, and Charles was forced to comply. They retreated to Carlisle without any loss; and from thence crossing the rivers Eden and Solway, entered Scotland. They next marched to Glasgow, which was laid under severe contributions. From thence advancing to Stirling, they were joined by lord Lewis Gordon at the head of some forces which had been assembled in his absence. Other clans likewise came in; and from some supplies of money received from Spain, and some skirmishes with the royalists, in which he was victorious, the pretender's affairs began to wear a more promising aspect. Being joined by lord Drummond, he invested the castle of Stirling, in the siege of which much time was consumed to no purpose. General Hawley, who commanded a considerable body of forces near Edinburgh, undertook to raise this siege, and advanced towards the rebel army as far as Falkirk. After two days spent in mutually examining each others strength, an engagement ensued, in which the king's forces were entirely defeated, with the loss of their tents and artillery.

421 Gain the
battle of
Falkirk.

422 Entirely de-
feated at
Culloden.

* See Cul-
loden.

This was the end of all the triumphs of the rebel army. The duke of Cumberland having arrived, was put at the head of the troops at Edinburgh, which amounted to about 14,000 men. With these he advanced to Aberdeen, where he was joined by several of the nobility attached to the house of Hanover; the enemy in the mean time retreating before him. He next advanced to the banks of the Spey, a deep and rapid river, where the rebels might have disputed his passage; but their contentions with one another were now risen to such a height, that they could scarce agree in any thing. At last they resolved to wait their pursuers. An engagement ensued at Culloden*, near Inverness; in which the rebels were defeated with great slaughter, and a final period was put to all the hopes of the young adventurer. The conquerors behaved with the greatest cruelty; refusing quarter to the wounded, the unarmed, and the defenceless; some were slain who had only been spectators of the combat, and soldiers were seen to anticipate the base employment of the executioner. The duke, imme-

diately after the action, ordered 36 deserters to be executed: the conquerors spread terror wherever they came; and after a short space, the whole country round was one dreadful scene of plunder, slaughter, and desolation.

Immediately after the engagement, the young pre-
423 Adven-
tures of
the young
pretender.

tender fled away with a captain of Fitzjames's cavalry; and when their horses were fatigued, they both alighted, and separately sought for safety. There is a striking resemblance between the adventures of Charles II. after the battle of Worcester, and those of the young pretender after the battle of Culloden. For some days he wandered in the country. Sometimes he found refuge in caves and cottages, without any attendants at all. Sometimes he lay in forests with one or two companions of his distress, continually pursued by the troops of the conqueror, there being a reward of 30,000*l.* offered for taking him either dead or alive. In the course of his adventures, he had occasion to trust his life to the fidelity of above 50 individuals; not one of whom could be prevailed upon by so great a reward as was offered, to betray him whom they looked upon to be their king's son.

For six months the unfortunate Charles continued to wander in the frightful wilds of Glengary, often hemmed round by his pursuers, but still rescued by some providential accident from the impending danger. At length, a privateer of St Maloes, hired by his adherents, arrived in Lochranach, in which he embarked in the most wretched attire. He was clad in a short coat of black frize, thread-bare; over which was a common Highland plaid, girt round him by a belt, from which hung a pistol and dagger. He had not been shifted for many weeks; his eyes were hollow, his visage wan, and his constitution greatly impaired by famine and fatigue. He was accompanied by Sullivan and Sheridan, two Irish adherents who had shared all his calamities; together with Cameron of Lochiel, his brother, and a few other exiles. They set sail for France; and, after ha-
424 He escapes
to France.

ving been chased by two English men of war, arrived in safety at a place called *Roseau* near Morlaix in Bretagne.

425 Rebels exe-
cuted.

While the pretender was thus pursued, the scaffolds and gibbets were preparing for his adherents. Seventeen officers were hanged, drawn, and quartered, at Kennington-common in the neighbourhood of London; nine were executed in the same manner at Carlisle, and eleven at York. A few obtained pardons, and a considerable number of the common men were transported to America. The earls of Kilmarnock and Cromarty, and lord Balmerino, were tried and found guilty of high treason. Cromarty was pardoned: but Kilmarnock and Balmerino were executed; as was also Mr Radcliffe brother to the late earl of Derwentwater, who was sentenced upon a former conviction. Lord Lovat was tried, and suffered some time after.

426 New regu-
lations in
Scotland.

Immediately after the suppression of the rebellion, the legislature undertook to establish several regulations in Scotland, which were equally conducive to the happiness of the people and the tranquillity of the united kingdoms. The Highlanders had till that time continued to wear the military dress of their ancestors, and never went without arms. In consequence of this, they considered themselves as a body of people distinct from the rest of the nation, and were ready, upon the shortest notice,

Britain. notice, to second the insurrections of their chiefs. Their habits were now reformed by an act of legislature, and they were compelled to wear clothes of the common fashion. But what contributed still more to their real felicity was the abolition of that hereditary jurisdiction which their chieftains exerted over them. The power of their chieftains was totally destroyed, and every subject in that part of the kingdom was granted a participation in the common liberty.

Soon after the battle of Culloden, the duke of Cumberland returned to Flanders, where he resumed the command of an army to which he was by no means equal. The French carried every thing before them; and they reduced under their dominion all those strong towns which had been taken by the duke of Marlborough, and formed a barrier to the United Provinces. They gained a considerable victory at Roucroux; which, however, cost them as many men as they destroyed of the enemy; but these they could more easily spare, as they were much more numerous. Another victory which they obtained at La Feldt, served to depress the allied army still lower. But the taking of Bergeen-op-zoom, the strongest fortification of Brabant, reduced the Dutch to a state of desperation.

These victories and successes in Flanders were, however, counterbalanced by almost equal disappointments. In Italy, the marshal Belleisle's brother, attempting to penetrate, at the head of 34,000 men, into Piedmont, was defeated and killed. A fleet was fitted out for the recovery of Cape Breton, but without success. Two others were fitted out, the one to make a descent upon the British colonies in America, and the other to carry on the operations in the East Indies; but these were attacked by Anson and Warren, and nine of their ships taken. Soon after this, commodore Fox, with six ships of war, took above 40 French ships richly laden, from St Domingo; and soon after this the French fleet was defeated by admiral Hawke, who took seven ships of the line and several frigates.

For a long time Louis had been desirous of a general tranquillity; and this desire he had even expressed to Sir John Ligonier, who was taken prisoner at the battle of La Feldt. But now the bad success of his admirals at sea, his armies in Italy, the frequent bankruptcies of his merchants at home, and the election of a stadtholder in Holland who gave spirit to the opposition; all these contributed to make him weary of the war, and to propose terms of accommodation. This was what the allies had long wished for, but had been ashamed to demand. A congress, therefore, was held at Aix-la-Chapelle, where a treaty was concluded on the following terms. 1. That all prisoners on each side should be mutually given up, and all conquests restored. 2. That the duchies of Parma, Placentia, and Guastalla, should be ceded to Don Philip, heir apparent to the Spanish crown; after whom these dominions should return to the house of Austria. 3. That the fortifications of Dunkirk towards the sea should be demolished; and that the British ship annually sent with slaves to the coast of New Spain, should have this privilege continued for four years. 4. That the king of Prussia should be confirmed in the possession of Silesia, and that the queen of Hungary should be secured in the possession of her patrimonial dominions. But the most mortifying clause was, that the king of Great Britain should immediately,

after the ratification of this treaty, send two persons of rank to France as hostages, until restitution should be made of Cape Breton and all other British conquests made during the war. No mention was made of the searching British vessels in the American seas, though this was the original cause of the quarrel. The limits of their respective possessions in North America were not ascertained; nor did they receive any equivalent for those forts which they restored to the enemy.

In the year 1751, died Frederic prince of Wales, of a pleurisy thought at first to be no way dangerous. He was greatly regretted; for his good-nature had rendered him popular, and those who opposed the present administration had grounded all their hopes of redress upon his accession to the throne.

Some time before this, viz. in the year 1749, a scheme was entered upon, which the nation in general imagined would be very advantageous. This was the encouraging those who had been discharged the army or navy to become settlers in Nova Scotia. This country is cold, barren, and almost incapable of cultivation.

Nevertheless, on account of this barren spot, the English and French renewed the war, which soon after spread with such terrible desolation over every part of the globe. The possession of this country was reckoned necessary to defend the English colonies to the north, and to preserve their superiority in the fisheries in that part of the world. The French, however, who had been long settled in the back parts, resolved to use every method to dispossess the new comers, and spirited up the Indians to begin hostilities. Another source of dispute also sprung up soon after in the same part of the world. The French, pretending to have first discovered the mouth of the river Mississippi, claimed the whole adjacent country towards New Mexico on the east, quite to the Apalachian mountains on the west. In order to assert their claims, as they found several English who had settled beyond these mountains, they dispossessed them of their new settlements, and built such forts as would command the whole country round about.

Negotiations, mutual accusations, and hostilities, first took place between the two powers; at length, in 1756, four operations were undertaken by the British in America at once. Colonel Monkton had orders to drive the French from their encroachments upon the province of Nova Scotia. General Johnston was sent against Crown Point; General Shirley against Niagara, to secure the forts on the river; and General Braddock against Fort du Quesne. In these expeditions, Monkton was successful; Johnston also was victorious, though he failed in taking the fort against which he was sent; Shirley was thought to have lost the season of operation by delay; and Braddock was defeated and killed.

In return for this bad success, the British made reprisals at sea; and in this they were so successful, that the French navy was unable to recover itself during the continuance of the war that was shortly after declared on both sides. The first step of the French was to threaten an invasion. Several bodies of their troops were sent down to the coasts that lay opposite to the British shores; these were instructed in the manner of embarking and relanding from flat-bottomed boats, which were made in great numbers for that expedition.

427
Allies de-
feated in
Flanders.

428
Losses of
the French
in other
parts.

429
Peace of
Aix la Cha-
pelle.

Brit'ns.

430
Death of
the prince
of Wales.

431
Hostilities
renewed.

Britain. The number of men amounted to 50,000: but all discovered the utmost reluctance to the undertaking. The ministry were greatly alarmed. They applied to the Dutch for 6000 men, which they were by treaty obliged to furnish in case of an invasion. This supply was refused; the Dutch alleging, that their treaty was to send the troops in case of an actual, and not a threatened, invasion. The king, therefore, finding he could not have the Dutch forces till their assistance would be too late, desisted entirely from his demand; and the Dutch with great amity returned him thanks for withdrawing his request. Upon this, 10,000 Hessians and Hanoverians were brought over. But this occasioned great discontent. The ministry were reviled for such disgraceful condescension, as if the nation was unable to defend itself. The people only demanded a vigorous exertion of their own internal strength, and then feared no force that could be led to invade them.

432
Minorca
invaded.

The British invasion, however, never took place: but a French army landed in Minorca, and invested the citadel of St Philip's, which was reckoned the strongest in Europe; but the garrison was weak, and no way fitted to stand a vigorous siege. To raise this siege, admiral Byng was dispatched with a squadron of ten men of war, with orders to relieve Minorca, or at any rate to throw a body of troops into the garrison. This last he reckoned too hazardous an undertaking; nor did he even attempt it. Soon after, a French fleet appeared nearly equal in force to his own; but the admiral resolved to act only upon the defensive. The French advanced; a slight engagement ensued with part of the English fleet; after which, the French slowly sailed away, and another opportunity never occurred of coming to a closer engagement. After this, it was resolved in a council of war to return to Gibraltar to resist, and that the relief of Minorca was impracticable. For this conduct Byng was brought home under arrest, tried, and sentenced to death. His sentence was to be shot; and he suffered with the greatest resolution, after delivering a paper filled with protestations of his innocence as to any treacherous intention.

433
Admiral
Byng executed.

434
Treaty with
Russia.

After the conquest of Minorca, the French declared that they would revenge all injuries they should sustain in their colonies on the king of Britain's dominions in Germany. Upon this, the court of London, eager to preserve Hanover, entered into a treaty with the court of Russia, by which it was stipulated, that a body of 50,000 Russians should be ready to act in the British service, in case Hanover should be invaded by the French. For this the czarina was to receive 100,000 l. annually, to be paid in advance. This treaty was opposed by the king of Prussia. He had long considered himself as guardian of the interests of Germany, and was therefore alarmed at a treaty which threatened to deluge the empire with an army of barbarians. Besides, he was already apprized of an agreement between the Austrians and Russians, by which the latter were to enter the empire and strip him of his late conquest of Silesia. He therefore declared, that he would not suffer any foreign forces to enter the empire, either as auxiliaries or principals. The king of Britain now found himself obliged to drop his Russian connection, and conclude a treaty with the king of Prussia. As both monarchs wished only to prevent the invasion of

435
Opposed by
the king of
Prussia.

Germany, they soon came to an agreement to assist each other mutually. From this alliance a new combination took place among the European powers, quite opposite to the former; and their forces were drawn out in the following manner. Britain opposed France in America, Asia, and on the ocean. France attacked Hanover; which the king of Prussia undertook to protect, while Britain promised him troops and money to assist his operations. Austria had their aims on the dominions of Prussia, and drew the elector of Saxony into the same designs. In these views the Austrians were seconded by France, Sweden, and Russia, who had hopes of acquiring a settlement in the west of Europe.

Britain.
436
New combination
of the European
powers.

Thus the king of Prussia lanced into the tumult of war, having only the king of Britain for his ally, while the most potent states of Europe were his antagonists. He now performed exploits perhaps unequalled in the annals of modern ages; for a particular account of which, see the article PRUSSIA. The British ministry, in order to procure a diversion in his favour, planned an enterprize against the coast of France. The destination of the fleet equipped for this purpose was kept a profound secret. At last it appeared before Rochford; where the commanders, having trifled away their time in deliberating how to proceed, secured the little island of Aix, an easy and an useless conquest: soon after which, they returned home, without attempting any thing else. By this miscarriage the ministry were so discouraged, that they had thoughts of abandoning the king of Prussia to his fate; and the king was actually meditating a negotiation of this nature, when he was prevented by the expostulations of his distressed ally. From motives of generosity, therefore, more than of interest, it was resolved to continue to assist him; and success, which had long fled from the British arms, once more began to return with double splendour.

437
Unsuccessful
expedition
against
France.

It was in the East Indies where this returning success first began to appear (for an account of which see the article INDOSTAN); and their conquests in the western part of the world were about this time still more splendid than those in the east. But these successes must, partly at least, be ascribed to the vigorous administration of Mr William Pitt, who about this time came into power. An expedition was set on foot against Cape Breton, under general Amherst and admiral Boscawen; another, under general Abercrombie, against Crown Point and Ticonderago; and a third, under brigadier-general Forbes, against Fort du Quesne. The fortrefs of Louisburg, which defended the island of Cape Breton, was very strong both by nature and art; the garrison was numerous, the commander vigilant, and every precaution had been taken to prevent a landing. But the activity of the British surmounted every obstacle; the place was surrendered by capitulation, and its fortifications were demolished. The expedition against Fort du Quesne was equally successful; but that against Crown Point once more miscarried. General Abercrombie attacked the French in their entrenchments, was repulsed with great slaughter, and obliged to retire to his camp at Lake George. But though in this respect the British arms were unsuccessful, yet, upon the whole, the campaign of 1758 was greatly in their favour. The taking of Fort du Quesne

438
British suc-
cess in the
East Indies.

439
Mr Pitt
comes into
power.

Britain. Quebec served to remove from their colonies the terror of the incursions of the Indians, while it interrupted the correspondence along a chain of forts with which the French had environed the British settlements in America, so that the succeeding campaign promised great success.

40
Quebec
Canada
redu-
441
The British
capitu-
with
French.

In 1759, it was resolved to attack the French in several parts of their empire at once. General Amherst with a body of 12,000 men was commanded to attack Crown Point; General Wolfe was to undertake the siege of Quebec; while general Prideaux and Sir William Johnson were to attempt a French fort near the cataracts of Niagara. This last expedition was the first that succeeded. The siege was begun with vigour, and promised an easy conquest; but general Prideaux was killed in the trenches by the bursting of a mortar, so that the whole command devolved on general Johnson. A body of French troops, sensible of the importance of the place, attempted to relieve it; but were utterly defeated and dispersed; soon after which, the garrison surrendered prisoners of war. On his arrival at the forts of Crown Point and Ticonderago, general Amherst found them deserted and destroyed. There now remained, therefore, but one decisive blow to reduce all North America under the British dominion; and this was by the taking of Quebec* the capital of Canada. This expedition was commanded by admiral Saunders and general Wolfe. The enterprize was attended with difficulties which appeared unsurmountable; but all these difficulties were got over by the conduct of general Wolfe, and the bravery of his men. He engaged and put to flight the French under Montcalm; but, to the great regret of the British, their general was killed in the action. The surrender of Quebec was the consequence of this victory, which was soon followed by the cession of all Canada. The following season, indeed, the French made a vigorous effort to recover the city; but by the resolution of governor Murray, and the appearance of a British fleet under the command of lord Colville, they were obliged to abandon the enterprize. The whole province was soon after reduced by the prudence and activity of general Amherst, who obliged the French army to capitulate, and it has since remained annexed to the British empire. About the same time also the island of Guadaloupe was reduced by commodore More and general Hopson.

The British affairs in Germany had at the beginning of the war worn a very unfavourable aspect. The Hanoverians were commanded by the duke of Cumberland, who was greatly outnumbered by the enemy. He was driven beyond the Weser, the passage of which might have been disputed with some appearance of success; but the French were suffered to pass it unmolested. The Hanoverians were driven from one part of the country to another, till at length they made a stand near a village called *Hastenback*, where it was hoped the numbers of the enemy would have the least opportunity of coming to a general engagement. The Hanoverians, however, left the field of battle to the French, after a faint resistance. Their enemies pursued, and the duke retired towards Stade; by which means he marched into a country from whence he could neither procure provisions, nor attack the enemy with any hopes of success. Here, being unable either to

escape or advance, he was compelled to sign a capitulation by which the whole army laid down their arms, and were dispersed into different quarters of cantonment. By this remarkable capitulation, which was called the *capitulation of Clesfer Seven*, Hanover was obliged to submit quietly to the French, who were now determined to turn their arms against the king of Prussia.

Soon after this capitulation, both sides began to complain that the treaty was not strictly observed. The Hanoverians exclaimed against the rapacity of the French general, and the brutality of his soldiers. The French retorted the charge against them; accused them of insolence and insurrection; and, being sensible of their own superiority, resolved to bind them strictly to their terms of agreement. The Hanoverians only wished for a pretence to take arms, and a general to head them. Neither were long wanting. The oppressions of the tax-gatherers whom the French had appointed, were considered as so severe, that the army rose to vindicate the freedom of their country, while Ferdinand, prince of Brunswick, put himself at their head. As soon as this was known in Britain, large supplies were granted both for the service of the king of Prussia, and to enable the Hanoverian army to act vigorously in conjunction with him. A small body of British forces was sent over to join prince Ferdinand under the duke of Marlborough. After some inconsiderable successes at Crevelt, the duke of Marlborough dying, the command of the British forces devolved on lord George Sackville. A misunderstanding arose between him and prince Ferdinand, which appeared at the battle of Minden that was fought shortly after. Lord George pretended that he did not understand the orders sent him by the prince, and of consequence did not obey them. The allies gained the victory, which would have been more decisive had the British commander obeyed his orders. He was soon after recalled, tried by a court-martial, found guilty of disobedience, and declared incapable of serving in any military command for the future.

After this victory it was imagined, that one reinforcement more of British troops would terminate the war in favour of the allies; and that reinforcement was quickly sent. The British army in Germany was augmented to upwards of 30,000 men, and sanguine hopes of conquest were generally entertained. These hopes, however, were soon found to be ill founded. The allies were defeated at Corbach; but retrieved their honour at Exdorf. A victory at Warborough followed shortly after, and another at Zierenberg; but then they suffered a defeat at Compen; after which, both sides retired into winter-quarters.

On the 25th of October 1760, happened the death of king George II. He had risen at his usual hour, and observed to his attendants, that as the weather was fine, he would take a walk into the gardens of Kensington, where he then resided. In a few minutes after his return, being left alone, he was heard to fall down upon the floor. The noise of this bringing his attendants into the room, they lifted him into bed; where he desired with a faint voice, that the princess Amelia might be sent for: but before she could reach the apartment, he expired, in the 77th year of his age, and 33d of his reign. An attempt was made to bleed

Britain.

442
The Hanoverians
take up arms.443
French defeated at
Minden.444
German war continued with various success.445
Death of king George II.

Britain. him, but without effect; and afterwards the surgeons, upon opening him, discovered that the right ventricle of the heart was ruptured, and a great quantity of blood discharged through the aperture.

426
Great suc-
cess of the
British
arms.

King George III. ascended the throne amidst the greatest successes both by sea and land. At this time, indeed, the efforts of Britain in every quarter of the globe were truly astonishing. The king of Prussia received a subsidy; a large body of English forces commanded the extensive peninsula of India; another army of 20,000 men confirmed their conquests in North America; 30,000 men were employed in Germany; and a great many more were dispersed in the different garrisons in different parts of the world: but all this was surpassed by the astonishing naval force, which carried command wherever it came, and had totally annihilated the French maritime power. The courage and conduct of the English admirals excelled everything that had been heard of before; neither superior force nor number, nor even the terrors of the tempest, could intimidate them. Admiral Hawke gained a complete victory over an equal number of French ships, in Quiberon bay on the coast of Bretagne, in the midst of a tempest, during the darkness of night, and, what a seaman fears still more, in the neighbourhood of a rocky shore.

As soon as his present majesty had met with his parliament, which was on November 18th 1760, he confirmed the hopes of his allies, and gave assurances of his intentions to prosecute the war with vigour. By this time, however, the people were in some measure weary with conquests; especially with those in Germany, from which they could never hope for any solid advantage, and which were gained at an immense expence to the nation. Disputes concerning the propriety of the German war were carried on, and the general run of popular opinion seemed to be rather against than for it. For some time, however, no change took place in the method of carrying on the war. In 1761, proposals of peace were made between the belligerent powers of Europe; and for this purpose Mr Stanley was sent to Paris, and Mr Bussy to London: but the French, designing to draw Spain into a confederacy with them, seem not to have been sincere in their intentions; and thus the treaty came to nothing. An enterprize was projected against the island of Belleisle, near the coast of France, which was conducted by commodore Keppel and general Hodgson †. The place was conquered, with the loss of 1800 men killed and wounded on the part of the British; and however unimportant this conquest might be, the rejoicings on account of it were great. In Germany, the campaign was unsuccessful on the part of the allies. At first, indeed, they drove the French quite out of the territory of Hesse, and laid siege to the city of Cassel; but being defeated at Stangerode, they were forced to raise the siege, retire behind the Dymel, and again abandon Hesse to their enemies. Here they were followed and attacked by the French; who, tho' defeated in that attempt, were with difficulty prevented from making themselves masters of Munster and Brunwick.

All this time an appearance of negociation had been carried on; but at last the French having brought their designs with the court of Spain to a bearing, Mr

Bussy, delivered to Mr Pitt a private memorial, signifying, that, in order to establish the peace on a lasting foundation, the king of Spain might be induced to guaranty the treaty; and to prevent the differences which then subsisted between Britain and Spain from producing a fresh war in Europe, he proposed, that in this negociation, the three points which had been disputed between the crowns of England and Spain might be finally settled. First, the restitution of some captures made upon the Spanish flag. Secondly, the privilege of the Spanish nation to fish upon the banks of Newfoundland. Thirdly, the demolition of the English settlements made in the bay of Honduras. This memorial was returned as wholly inadmissible. Mr Pitt declared, that it would be looked upon as an affront to the dignity of his master, and incompatible with the sincerity of the negociation, to make any further mention of such a circumstance.

Mr Pitt being now thoroughly convinced of the Spanish designs of Spain, proposed immediately to declare war against that kingdom. But this proposal being rejected, he resigned his employment of secretary of state; after which, he was created earl of Chatham, and had a pension of 3000*l.* per annum settled upon him for three lives.

Soon after this, however, the new administration found that Mr Pitt was in the right, and war was declared between Great Britain and Spain. As Portugal was an useful ally of Britain, it was resolved by the French and Spaniards to attack that kingdom, which was then in no capacity of defending itself. The Portuguese monarch was by the most haughty memorials commanded to accede to the confederacy against Britain, and threatened with the vengeance of France and Spain in case of a refusal. It was in vain that he promised to observe a strict neutrality, and urged the obligations he was under to the king of Britain; this moderate and reasonable reply only drew on more haughty and insulting answers. His Portuguese majesty, however, continued to reject their proposals in the most resolute manner; and concluded his last declaration with these words, that "it would affect him less, though reduced to the last extremity of which the great Judge is the sole arbiter, to let the last tile of his palace fall, and to see his faithful subjects spill the last drop of their blood, than to sacrifice, together with the honour of his crown, all that Portugal holds most dear; and to submit, by such extraordinary means, to become an unheard of example to all pacific powers, who will no longer be able to enjoy the benefit of neutrality, whenever a war shall be kindled between other powers with which the former are connected by defensive treaties." This declaration was made on the 27th of April 1762; and soon after, France and Spain jointly declared war against Portugal.

As the design of the courts of France and Spain in making war with Portugal, was professedly to prevent Great Britain from the military and commercial use of the ports of that kingdom, their principal endeavours were aimed at the two great ports where the British used to reside, *viz.* Oporto and Lisbon. With this view, three inroads were to be made; one to the north; another more to the south; while the third was made in the middle provinces, in order to sustain these two bodies, and preserve a communication between them.

448
Spanish
proposed
Mr Pitt

449
He resign-
and is cre-
ated earl
Chatham

450
War wit-
Spain.

451
France and
Spain de-
clare war
against
Portugal.

452
Portugal
invaded.

447
Proposals
of peace.

† See Belle
isle.

tain. The first body of troops was commanded by the marquis of Savria; and entered the north east angle of Portugal, marching towards Miranda. This town might possibly have retarded their progress, had not a powder-magazine been blown up by accident; and the Spaniards entered on the 9th of May by the breaches made by this explosion. From thence they marched to Braganza, which surrendered six days after Miranda. Moncorvo was taken in like manner; every thing was clear before them to the banks of the Douro; and they became masters of almost the whole extensive province of Tralos Montes. Oporto was given up for lost, and the admiralty prepared transports to carry off the effects of the British merchants. On the banks of the Douro, however, the career of this body was stopped. The peasants, animated, and guided by some British officers, seized a difficult pass, and drove the enemy back to Moncorvo.

The second body of Spaniards entered the province of Beira, at the villages called *Val de Mula* and *Val de Coelha*. They were joined by strong detachments amounting to almost the whole army in Tralos Montes; and immediately laid siege to Almeida, the strongest and best provided place on the frontiers of Portugal. This place was defended with sufficient resolution; but, like the rest, was obliged to surrender on the 25th of August. The Spaniards then over-ran the whole territory of Castel Branco, a principal district of the province of Beira, making their way southward until they approached the banks of the Tagus. During the whole of their progress, and indeed during the whole of the campaign, the allied troops of Great Britain and Portugal had nothing that could be called an army in the field, and they could not think of opposing the enemy in a pitched battle. All that could be done was by the defence of passes, skirmish, and surprise.

By this time the count of La Lippe Buckeburg had arrived in Portugal, to the inexpressible joy of the whole nation. The third Spanish army had assembled on the frontiers of Eltramadura, with a design to invade the province of Alentejo; and had this body of troops been joined to the others, they would probably, in spite of all opposition, have forced their way to Lisbon itself; had it acted separately, it might have greatly distracted the defendants, so as to enable some other body of forces to penetrate to that city. The count, therefore, resolved to prevent their entrance into the kingdom; and with this view dispatched brigadier-general Burgoyne to attack an advanced body of Spaniards which lay on their frontiers, in a town called *Valentia de Alicantara*. On the 27th of August, the town was surpris'd; the general was taken who intended to have commanded in the invasion, together with one colonel, two captains, and 17 subaltern officers. One of the best regiments in the Spanish service was also entirely destroyed; and thus the enemy were in all probability prevented from entering Alentejo.

That part of the Spanish army which acted in the territory of Castel Branco had made themselves masters of several important passes, which they obliged some bodies of Portuguese to abandon. The combined army of British and Portuguese pretended to retire before them, in order to draw them into the mountainous

tract. They attacked the rear of the allies, but were repulsed with loss. Still, however, they continued masters of the country, and nothing remained but the passage of the Tagus to enable them to take up their quarters in the province of Alentejo. This the court designed to prevent; and in this service general Burgoyne was employed, who formed a design of surprising them. The execution was committed to colonel Lee, who, in the night of October 6th, fell upon their rear, dispersed the whole body with considerable slaughter, destroyed their magazines, and returned with scarce any loss. The season was now far advanced; immense quantities of rain fell; the roads were destroyed; and the Spaniards, having seized no advanced posts where they could maintain themselves, and being unprovided with magazines for the support of their horse, every where fell back to the frontiers of Spain.

No less successful were the British arms in America and the East Indies. From the French were taken the islands of Martinico, St Lucia, St Vincent, and Granada; from the Spaniards, the strong fortress called *Havannah*, in the island of Cuba. By the acquisition of the first mentioned islands, the British became the sole and undisturbed possessors of all the Caribbees, and held that chain of innumerable islands which forms an immense bow, extending from the eastern point of Hispaniola almost to the continent of South America. The conquest of the Havannah cost a number of brave men; more of whom were destroyed by the climate than the enemy*. It was in this place that the fleets

from the several parts of the Spanish West Indies, called the *galloons* and *flota*, assembled, before they finally set out on their voyage for Europe. The acquisition of this place, therefore, united in itself all the advantages which can be acquired in war. It was a military advantage of the highest class: it was equal to the greatest naval victory, by its effect on the enemy's marine; and in the plunder it equalled the produce of a national subsidy. Nine of the enemy's men of war, with four frigates, were taken; three of their capital ships had been sunk in the harbour at the beginning of the siege; two more were on the stocks in great forwardness, and these were destroyed. In money and valuable merchandises, the plunder did not fall short of 3,000,000l. sterling. To this success in the western part of the world may be added the capture of the Spanish register-ship called the *Hermione*, by the *Active* and *Favourite* king's ships. This happened on the 21st of May 1762, just as she was entering one of the ports of Old Spain, and the prize was little short of 1,000,000l. sterling.

In the East Indies an expedition was undertaken against the Philippine islands, which was committed to colonel Draper, who arrived for this purpose at Madras in the latter end of June 1762. The 79th regiment was the only regular corps that could be spared for this service. Every thing was conducted with the greatest celerity and judgment. The British forces landed on Manilla on the 24th of September; on the 6th of October the governor was obliged to surrender at discretion; and soon after, the galloon bound from Manilla to Acapulco, laden with rich merchandise, to the value of more than half a million, was taken by two frigates called the *Argo* and *Panther*. By the conquest

Britain

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And by colonel Lee.455
Havannah, &c. taken.

* See Hist. of the Caribbees.

456
Immense plunder found in the place.457
Capture of the Hermione.458
Philippines red. accd.459
Manilla taken.

Britain. of Manilla, 14 considerable islands fell into the hands of the British; which from their extent, fertility, and convenience of commerce, furnished the materials of a great kingdom. By this acquisition, joined to our former successes, we secured all the avenues of the Spanish trade, and interrupted all communications between the parts of their vast but unconnected empire. The conquest of the Havannah had cut off, in a great measure, the intercourse of their wealthy continental colonies with Europe; the reduction of the Philippines excluded them from Asia: and the plunder taken was far more than sufficient to indemnify the charges of the expedition; a circumstance not very common in modern wars. It amounted to upwards of a million and a half; of which the East India company, on whom the charge of the enterprize in a great measure lay, were by contract to have a third part.

460
Vast extent of the British dominions.

All this time the war in Germany had continued with the utmost violence; the allies under prince Ferdinand had continued to give the highest proofs of their valour, but no decisive advantage could be obtained against the French. It was, however, no longer the interest of Britain to continue a destructive war. There never had been a period so fortunate or glorious to this island. In the course of this war she had conquered a tract of continent of immense extent. Her American territory approached to the borders of Asia, and came near to the frontiers of the Russian and Chinese dominions. She had conquered 25 islands, all of them distinguishable for their magnitude, their riches, or the importance of their situation. By sea or land she had gained 12 battles, had reduced nine fortified cities, and near 40 castles and forts. She had taken or destroyed above 100 ships of war from her enemies, and acquired at least L. 10,000,000 in plunder.

461
Articles of the peace in 1763.

By such unexampled and wide extended conquests, it is no wonder that the French and Spaniards were desirous of a peace; which was at length concluded at Paris on the 10th of February 1763. The terms granted them were by many thought too favourable. The principal of them were, That the French king should relinquish all claims to Nova Scotia: that he should likewise give up all the country of Canada; and that for the future the boundary betwixt the British and French dominions in America should be fixed by a line drawn along the middle of the river Mississippi from its source to the river Ibberville, and from thence drawn by a line along the middle of this river, and the lakes Maurepas and Pontchartrain, to the sea. The islands of St Pierre, Miquelon, Martinico, Guadaloupe, Marigalante, Desirade, St Lucia, and Belleisle, were restored to France; Minorca, Granada, and the Grenadines, St Vincent, Dominica, and Tobago, were ceded to Britain. In Africa, the island of Goree was restored to France; and the river Senegal, with all its forts and dependencies, ceded to Great Britain. In the East Indies, all the forts and factories taken from the French were restored. In Europe, the fortifications of Dunkirk were to be destroyed; and all the countries, fortresses, &c. belonging to the electorate of Hanover, the duke of Brunswic, and the count of La Lippe Buckeburg, restored. With regard to Spain, the British fortifications on the bay of Honduras were to be demolished; and the Spaniards were to desist from their claim of a right to

fish on the Newfoundland bank. The Havannah was restored; in consequence of which, Florida, St Augustine, and the bay of Pensacola, were ceded to Britain, and the Spaniards were to make peace with Portugal: all other countries not particularly mentioned were to be restored to their respective owners at the beginning of the war.

The conclusion of the war did not by any means tend to heal those divisions which had arisen on the resignation of Mr Pitt; on the contrary, it furnished abundant matter of complaint for the discontented party; whose views seem at that time only to have been the embarrassment and disturbance of an administration which they were not able to subvert. At the time the treaty was under consideration, however, only some faint attempts were made to oppose it; but it soon appeared, that though this opposition had proved so feeble, the spirit of the party was far from being exhausted. The state of affairs at that time indeed greatly favoured the views of those who delighted in turbulence and faction. A long and expensive war had drained the national treasure, and greatly increased the public debt. Heavy taxes had already been imposed, and it was still as necessary to keep up these, and even to impose new ones, as though the war had not ceased. Thus the bulk of the nation, who imagined that conquest and riches ought to go hand in hand, were easily induced to believe that administration arbitrary and oppressive, which continued to load them with fresh taxes after such great successes as had attended the British arms for some years past.

It must indeed be owned, that the new administration appear not to have been sufficiently wary in this respect. Among other methods of raising the supplies for 1763, they had thought proper to lay a duty of four shillings per hoghead upon cyder, payable by the maker, and to be collected in the same manner as other excises. The other articles of supply furnished also matter of declamation for the members in opposition; but this inflamed the popular fury to a great degree, and made them readily imbibe as truth whatever was thrown out by the minority in their parliamentary debates. Besides the usual declamations that it was oppressive, unconstitutional, and injurious to the landholder and farmer, the smallness of the sum to be raised by it was now urged. This was said to indicate that the supplying the wants of government could not be the sole motive for imposing such a duty. It was farther urged, with much show of lamentation, that now the houses of all orders of people, noblemen of the first rank not excepted, were liable to be entered and searched at the pleasure of excisemen, a proceeding which they denominated in express terms "a badge of slavery." Thus it was spoken of throughout all the cyder counties, by the city of London, and by most of the incorporations throughout the kingdom. The city had been displeas'd by the late changes in administration, and had not yet recovered their good humour. They instructed their representatives to oppose the passing of the bill with all possible vigour, and gave in petitions against it to every branch of the legislature; a measure till that time totally unprecedented; two proclams were also entered against it in the house of lords; and in short the kingdom of England was thrown into an almost universal ferment.

463
Great clamour raised by the cyder-tax.

Britain.

It is not to be doubted that the friends of administration were able to bring arguments sufficiently plausible in favour of their scheme; but the utmost force of reason will go but a very little way in quieting popular clamour; and, while opposition was railing against ministry within doors, every method was taken to excite the fury of the people without. Virulent libels, the audacity of which far exceeded any thing known in former times, now made their appearance; and such was the general intemperance in this respect, that it would be difficult to determine which side paid least regard to any kind of decency or decorum.

464

Resignation of the earl of Bute.

In the midst of this general ferment the earl of Bute unexpectedly resigned his place of first lord of the treasury. His resignation quickly became an object of general speculation; by some he was highly censured for leaving his friends at the time when a little perseverance might have defeated all the designs of his enemies, and established his own power on the most solid foundation. Such conduct, they said, must discourage the friends of government, and at the same time give proportionable encouragement to its adversaries to insult it, as they perceived ministry unable to resist the first gust of popular fury. Others contended, that the earl was, perhaps, the least influenced by popular opinion of any man in the world. He had demonstrated his firmness by taking a lead in the dangerous but necessary affair of concluding peace; and, this being accomplished, he had fully obtained his end, and performed the service to his country which was desired. He now resolved that the factious party should not have even the pretence of objecting his personal ambition as the cause of disturbances which they themselves had excited; and thus his resignation would tend to put an end to these troubles, at the same time that it showed the authors of them in their proper colours.

465

Popular ferment still continues.

The event, however, showed that the former reasoning was, in the present case, nearest the truth. The popular resentment was not in the least abated by the resignation. His lordship, though now withdrawn from the ostensible administration of affairs, was still considered as principal director of the cabinet; and this opinion gained the more ground that none of the popular leaders were yet taken in, nor any apparent change made in the conduct of the new administration.

466

Characters of the new ministers.

No reasonable objection could now be made to those who filled the great offices of state. Mr Grenville, who succeeded the earl of Bute in the treasury, was a man of approved integrity, understanding, and experience. Lord Holland was universally considered as a very able man in office, and had already filled many high employments with a great degree of reputation. The other secretary lord Egremont, though he had not been long in office, was in every respect of an unexceptionable character. The other departments were filled in a similar manner, yet the discontents and public clamours were not diminished. It was now said that the new ministers were not chosen on account of any superior gifts of nature or fortune, but merely because they had the art of insinuating themselves into favour at court in such a manner that any inconvenience would be submitted to rather than part with them. The sole reason of their appointment therefore was, that they

might act as the passive instruments of the late minister, who, though, from considerations of his own personal safety, he had thought proper to retire from business, yet had not abandoned his ambitious projects, but continued to direct every thing as though he had still been present. Opposition to the new ministers was therefore opposition to him; and it became those who understood the true interest of their country, and had a real regard for it, not to suffer such a scheme of clandestine administration.

Bute's

47
Bute
supposed
still to be
at the head
of an admini-
stration.

468

Different
political
principles
of the two
parties.

Whether the party who made these assertions really believed them or not cannot be known; but the effect was exactly the same as though they had. The great object of both parties most probably was power; but their different situations required that they should profess different political principles. The friends of lord Bute and of the succeeding administration were for preserving to the crown the full exercise of a power which could not be disputed, *viz.* that of choosing its own servants. Their opponents, without denying this power, contended, that, according to the spirit of the constitution, the crown should be directed to the exercise of this public duty only by motives of national utility, and not by private friendship. In appointing the officers of state, therefore, they insisted, that respect should be paid to those possessed of great talents, who had done eminent services to the nation, enjoyed the confidence of the nobility, and had influence amongst the landed and mercantile interests. The observance of this rule, they contended, was the only proper balance which could be had against the enormous influence of the crown arising from the disposal of so many places; nor could the nation be reconciled to this power by any other means than a very popular use of it. Men might indeed be appointed according to the strict letter of the law; but unless these were men in whom the majority of the nation already put confidence, they never would be satisfied, nor think themselves secure against attempts on the constitution of the kingdom. When ministers also found themselves recommended to the royal favour, and as it were presented to their places by the esteem of the people, they would be studious to deserve, and secure themselves in it; and upon these (which they called the principles of whigs) they said that the government had been honourably conducted since the revolution, and the nation would never be at peace till they were again established on the same basis.

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Mr Wilkes
apprehend-
ed on a gen-
eral war-
rant.

In the mean time the disposition to libel and invective seemed to have gone beyond all bounds. The peace, the Scots, and Scottified administration, afforded such subjects of abuse to the pretended patriots, that ministry resolved at last to make an example of one of them by way of deterring the rest from such licentiousness. For this purpose the paper called the North Briton was made choice of, which, in language much superior to any other political work of the time, had abused the king, the ministry, and the Scots in an extravagant manner. One particular paper (N^o XLV.) was deemed by those in power to be actionable, and Mr Wilkes, member of parliament for Aylesbury, was supposed to be the author. A warrant was therefore granted for apprehending the author, publishers, &c. of this performance, but without mentioning Wilkes's name. In consequence of this, however, three

⁴⁷⁰ ^{Britain.} messengers entered his house on the night between the 29th and 30th of April 1763, with an intention to seize him. He objected, however, to the legality of the warrant, because his name was not mentioned in it, and likewise to the lateness of the hour; and, on threatening the messengers with violence, they thought proper to retire for that night. Next morning he was apprehended without making any resistance, though some violence was necessary to get him into an hackney coach, which carried him before the secretaries of state for examination.

⁴⁷⁰ ^{Legal pro-} ^{ceedings} ^{against him.} On the first intimation of Mr Wilkes being in custody, application was made for an *habeas corpus*; but as this could not be sued out till four in the afternoon, several of his friends desired admittance to him, which was peremptorily refused on pretence of an order from the secretaries of state. This order, however, though repeatedly demanded, could not be produced, or at least was not so; on which account the gentlemen, conceiving that they were not obliged to pay any regard to messengers acting only by a verbal commission, entered the place where he was without farther question.

⁴⁷¹ ^{He is com-} ^{mitted to} ^{the tower.} This illegal step was quickly followed by several others. Mr Wilkes's house was searched, and his papers seized in his absence; and though it was certain that an *habeas corpus* was now obtained, he was nevertheless committed to the Tower. Here not only his friends, but even several noblemen and gentlemen of the first distinction, were denied access, nor was his own brother allowed to see him more than others. On the third day of May he was brought before the court of common pleas, where he made a most patriotic speech, setting forth the love he had for his majesty, the bad conduct of ministry, not forgetting his own particular grievances, and that he had been treated "worse than a Scotch rebel." His case being learnedly argued by several eminent lawyers, he was remanded to the Tower for three days; after which he was ordered to be brought up, that the affair might be finally settled.

⁴⁷² ^{Deprived} ^{of his com-} ^{mission as} ^{colonel of} ^{the Buck-} ^{ingham-} ^{shire mili-} ^{tia.} Next day lord Temple received a letter from secretary Egremont, informing him, that the king judged it improper that Mr Wilkes should continue any longer a colonel of the Buckinghamshire militia; and, soon after, Temple himself was removed from being lord lieutenant of that county. Mr Wilkes then being brought to Westminster Hall at the time appointed, made another flaming speech; after which the judges took his case into consideration. Their opinion was, that the warrant of a secretary of state was in no respect superior to that of a common justice of peace; and, on the whole, that Mr Wilkes's commitment was illegal. It was likewise determined that his privilege as member of parliament was infringed: this could not be forfeited but by treason, felony, or breach of the peace; none of which was imputed to him; for a libel, even though it had been proved, had only a tendency to disturb the peace, without any actual breach of it. Thus it was resolved to discharge him; but, before he quitted the court, a gentleman of eminence in the profession of the law stood up and acquainted the judges, that he had just received a note from the attorney and solicitor general, intreating his lordship not to give Mr Wilkes leave to depart till they came, which would be instantly, as they had

⁴⁷³ ^{is discharged,} ^{and his} ^{commit-} ^{ment de-} ^{clared il-} ^{legal.}

something to offer against his plea of privilege. This motion, however, being rejected, the prisoner was set at liberty. ^{Britain.}

⁴⁷⁴ ^{Endeavours} ^{to raise a} ^{general ani-} ^{mosity a-} ^{gainst ad-} ^{ministra-} ^{tion.} Mr Wilkes had no sooner regained his freedom than he showed himself resolved to make all the advantage he could of the errors committed by the ministry, and to excite as general a ferment as possible. For this purpose he wrote a very impudent letter to the earls of Egremont and Halifax, informing them, that his house had been robbed, and that the *stolen goods* were in the possession of one or both of their lordships, insisting upon immediate restitution. This letter was printed, and many thousand copies of it dispersed; soon after which an answer by the two noblemen was published in the newspapers, in which they informed him of the true cause of the seizure of his papers, that his majesty had ordered him to be prosecuted by the attorney general, and that such of his papers as did not lead to a proof of his guilt should be restored. This was quickly succeeded by a reply, but the correspondence ceased on the part of their lordships. Mr Wilkes, however, erected a printing press in his own house, where he advertised the proceedings of the administration with all the original papers, at the price of a guinea. The North Briton now again made its appearance; the popular party were elated beyond measure with their success; those who had suffered by general warrants sought redress at law, and commonly obtained damages far beyond not only their real sufferings, but even beyond their most sanguine expectations. During the whole summer, the minds of the people were kept in continual agitation by political pamphlets and libels of various kinds, while the affair of general warrants so engrossed the general attention, that by the time the parliament sat down, November 15th 1763, scarce any other subject of conversation could be started in company.

⁴⁷⁵ ^{Proceed-} ^{ings against} ^{him in par-} ^{liament.} On the meeting of parliament his majesty mentioned in his speech the attempts that had been made to divide the people; and before the addresses could be made in return, a message was sent to the commons, informing them of the supposed offence of Mr Wilkes, and of the proceedings against him, the exceptionable paper being also laid before the house. After warm debates, the North Briton was deemed a false, scandalous, and seditious libel, tending to excite traitorous insurrections, &c. This was followed by another, that the privilege of parliament does not extend to the writing and publishing of seditious libels, nor ought to obstruct the ordinary course of the laws in the speedy and effectual prosecution of so heinous and dangerous an offence. It did not, however, pass the house of commons without a vigorous opposition, and seventeen members of the upper house protested against it.

⁴⁷⁶ ^{Disturban-} ^{ces on burn-} ^{ing the} ^{North Bri-} ^{ton.} The North Briton N^o XLV. being condemned as already mentioned, was ordered to be burnt by the hangman; but this could not be done without great opposition from the mob. The executioner, constables, officers, and even the chief persons concerned, were pelted with filth and dirt, and some of them insulted in the grossest manner. Mr Harley, one of the high sheriffs and member of parliament for London, was wounded by a billet taken from the fire; the staves of the constables were broken; and the whole officers and executioner driven off the field, while the remains of the

Britain.

the paper were carried off in triumph from the flames, and in return, a large jack-boot was burnt at Temple-bar, while the half-burnt North Briton was displayed amidst the acclamations of the populace.

477
The under
secretary
ined for
seizing Mr
Wilkes's
papers.

Mr Wilkes, in the mean time, determined to make the best use of the victory he had already gained, and therefore commenced a prosecution in the court of common pleas against Robert Wood, Esq; the under secretary of state, for seizing his papers. The cause was determined in his favour, and Wood condemned in 1000 l. damages, with full costs of suit.

478
Mr Wilkes
prosecuted,
wounded in
a duel, and
outlawed.

The prosecution with which Mr Wilkes had been threatened was now carried on with great vigour; but in the mean time, having grossly affronted Samuel Martin, Esq; member for Camelford, by his abusive language in the North Briton, he was by that gentleman challenged, and dangerously wounded in the belly with a pistol bullet.—While he lay ill of his wound, the house of commons put off his trial from time to time; but beginning at last to suspect that there was some collusion betwixt him and his physician, they enjoined Dr Heberden, and Mr Hawkins an eminent surgeon, to attend him, and report his case. Mr Wilkes, however, did not think proper to admit a visit from these gentlemen; but soon after took a journey to France to visit his daughter, who, as he gave out, lay dangerously ill at Paris.

The commons having now lost all patience, and being certified that he had refused to admit the physician and surgeon sent by them, proceeded against him in his absence. The evidence appearing quite satisfactory, he was expelled the house, and a prosecution afterwards commenced against him before the house of lords, on account of an obscene and blasphemous pamphlet, in which he had mentioned a reverend and learned bishop in a most shameful manner. The event of all was, that, failing to appear to answer the charges against him, he was outlawed, which, it was then supposed, would for ever consign his patriotism to oblivion.

479
A general
spirit of li-
centiousness
will pre-
vail.

The extreme severity shown to Mr Wilkes did not at all extinguish the spirit of the party. A general insatiation in favour of licentious and abusive writings seemed to have taken place; and to publish libels of this kind without the least regard to truth or justice was called *liberty*. At the very time that Mr Wilkes was found guilty of publishing the infamous pamphlet above mentioned, the common council of London presented their thanks to the city representatives for their zealous and spirited endeavours to assert the rights and liberties of the subject, "by their laudable attempt to obtain a reasonable and parliamentary declaration, That a general warrant for apprehending and seizing the authors, printers, and publishers of a seditious libel, together with their papers, is not warranted by law." Their gratitude they showed to lord chief justice Pratt, for his decision in Wilkes's affair, by presenting him with the freedom of the city, and desiring him to sit for his picture to be placed in Guildhall. These extravagant proceedings, however, did not pass without strong opposition, and were considered by the sober part as highly unjust and improper, as well as indecent.

The violent clamours which had been excited and still continued, though in a less violent degree, did not prevent administration from paying that attention to

the exigencies of the nation which its present situation undoubtedly required. The practice of franking blank covers to go free *per post* to any part of Great Britain or Ireland, had arisen to an incredible height, and greatly prejudiced the revenue. The hands of members of parliament were not only counterfeited, but the covers publicly sold without the least scruple; and, besides this, the clerks of the post office claimed a privilege of franking, which extended even farther than that of the members of the house; the latter being restricted to a certain weight, but the former denying that they were subject to any restriction of this kind. The matter, however, was attended with considerable difficulty when it came to be examined in the house of commons. It was found, that though the vast increase of franks was detrimental to one branch of the revenue, it was serviceable to another by the immense consumption of stamps it occasioned; but at last the following act was passed as an effectual remedy, viz. That from the 1st of May 1764, no letters or packets should be exempted from postage, except such as were sent to or from the king; or such as, not exceeding two ounces in weight, should be signed by a member of either house, the whole of the superscription being in his own hand-writing; or such as should be directed to members of parliament, or other persons specified in the act. It was likewise enacted, that printed votes and proceedings in parliament, sent without covers, or in covers open at the files, and only signed on the outside by a member, should go free, though such packets were liable to be searched; and to give the greater force to these regulations, it was made felony and transportation for seven years to forge a frank. At this time it was proved, that the annual postage of letters sent free would amount to 70,000 l. and that the profits accruing to the clerks of the post office amounted to between 800 and 1700 l. each.

Other plans for augmenting the revenue were that for settling the island of St John, and for the sale of the lately acquired American islands. The former was proposed by the earl of Egremont, who presented a memorial to his majesty on the subject. In this he desired a grant of the whole island of St John's, in the gulf of St Lawrence, to hold the same in fee of the crown for ever; specifying particularly the various divisions, government, &c.; but, for reasons unknown, the plan was never put in execution. The sale of the conquered lands took place in March 1764. These were particularly the islands of Grenada, the Grenadines, Dominica, St Vincent, and Tobago. Sixpence an acre was to be paid as a quit-rent for cleared lands, and a penny a foot for ground-rent of tenements in towns, and sixpence an acre for fields; but no person was to purchase more than 300 acres in Dominica, or 500 in the other islands.

One of the most remarkable transactions of this year was the renewal of the charter of the bank, for which the latter paid the sum of 1,100,000 l. into the exchequer as a present to the public, besides the advancing a million to government upon exchequer bills. Another, and, by its consequences, still more momentous affair, however, was the consideration of methods to raise a revenue upon the American colonies. This had been formerly proposed to Sir Robert Walpole; but that prudent minister wisely declined to enter into

Britain.
480
Abuse of
franking
increases cor-
rupted.

481
Plan for set-
tling the
island of St
John, and
selling the
conquered
lands.

482
Renewal
of the char-
ter of the
bank.
483
Taxation of
America.

Britain.

such a dangerous affair, saying, that he would leave the taxation of the colonies to those who came after him in office. The reason given for such a proceeding was the defraying the necessary charges of defending them, which, though extremely reasonable in itself, was done in such a manner as excited a flame not to be extinguished but by a total loss of the authority of the parent state. Before this time, indeed, hints had been thrown out, that it was not impossible for the colonists to withdraw their dependence on Britain; and some disputes had taken place betwixt the different provinces, which were quieted only by the fear of the French, and seemed to prognosticate no good. It was thought proper therefore now, when the colonies were not only secured but extended, to make the experiment whether they would be obedient or not. They contained more than two millions of people, and it was evidently necessary to raise a revenue from such a numerous body. Some thought it might be dangerous to provoke them; but to this it was replied by administration, that the danger must increase by forbearance; and as taxation was indispensable, the sooner the experiment was made, the better. The fatal trial being thus determined, an act was passed for preventing smuggling, so that the duties laid on the American trade might come into the hands of government. At this time an illicit trade was carried on betwixt the British and Spanish colonies, which seemed to bid defiance to all law and regulation; and was no less disagreeable to the Spanish than to the British court. In some respects, however, the suppression of this was very inconvenient, and even intolerable, to the colonists; for as the balance of trade with Britain was against them, it was impossible they could procure any specie, except by trading with the Spaniards, from whom they were paid for their goods in gold and silver. This, and another act requiring them to pay certain duties in cash, was probably the reason of that excessive resentment shown by the Americans to government, and their absolute refusal to submit to the stamp-act which was also passed this year.

484
Act against
illicit trade
with the
Spaniards.

485
Stamp act
passed.

486
Isle of Man
purchased
by govern-
ment.

The augmentation of the revenue being the principal object of administration at this time, the suppression of smuggling at home, as well as in America, was taken into consideration. Though the great number of cutters and other vessels fitted out by government for this purpose had produced very salutary effects, the *isle of Man*, which belonged to the duke of Athol, and was not subject to the custom-house laws, lay so conveniently for the purposes of smuggling, that the utmost vigilance of government was not sufficient to suppress it. The event was a treaty betwixt government and the duke, by which the latter, for a sum of money, ceded all the sovereignty in the island he could claim, and cutters were placed on the coasts and in the harbours of the island as in other places of the kingdom.

487
A general
animosity
against go-
vernment
both in Bri-
tain and A-
merica.

This disposition to augment the revenue by all possible methods, seems to have served to keep up the general opinion of the oppressive and arbitrary measures about to be pursued by government. The ill humour of the British patriots still continued; and the stamp bills were received in America with the utmost indignation. The arguments for and against American taxation are now of no importance; and the particulars of their opposition are related under the article *United States of America*. Here we shall only take

Britain

notice, that the opposition of the colonists proved very distressing to the mother country, on account of the vast sums they owed. At this time they were indebted to the merchants of London four millions Sterling; and so ready were the latter to give them credit, that some of the American legislatures passed acts against incurring such credit for the future. A petition on the subject was presented to the house of commons; but, as it denied the parliamentary right of taxation, it was not allowed to be read. It was then proposed, on the part of administration, that the agents should join in a petition to the house for their being heard by counsel in behalf of their respective colonies against the tax. The agents, however, not thinking themselves empowered to grant such a petition, the negotiation was broken off, and matters went on in America as we have elsewhere related.

488
Vigorous
conduct of
administra-
tion.

In other respects, the ministry took such steps as were undeniably proper for supporting the honour and dignity of the nation. Some encroachments having been made by the French and Spaniards, such remonstrances were made to their respective courts, that satisfaction was quickly made; and though every trifle was sufficient to open the mouths of the popular party, it was impossible as yet to find any just cause of complaint. The disposition to tumult and insurrection, however, seems to have been now very general. The silk-weavers residing in *Spitalfields* being distressed for want of employment, which they supposed to proceed from the clandestine importation of French silks, laid their case before his majesty in the year 1764, who graciously promised them relief. The sufferers were relieved by the bounty of the public; but this seemed to render the matter worse, by confirming them in habits of indolence and idleness. At the same time, a bill, which was supposed to tend to their relief, being thrown out, they began to assemble in vast numbers, which, gradually increasing, are said to have amounted at last to 50,000; several disorders were committed, and it was not without the assistance of the soldiery, and the utmost vigilance of the magistrates, that the riot could be suppressed.

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Insurrec-
tion of the
Spitalfield
weavers.

During this insurrection the ferment betwixt the court and popular parties continued with unabated vigour. The ministers were still attacked in numberless publications, and accused as being merely dependents and substitutes to the earl of Bute; nor could the utmost care on the part either of that nobleman or the ministers blunt the shafts of calumny and misrepresentation. An accident, however, now produced a considerable revolution at court, though it had very little effect in calming the minds of the people. This was an illness with which the king was seized in the beginning of the year, which filled the public with apprehensions, and produced a bill for settling the affairs of the kingdom in case of the crown falling into the hands of a minor. In settling this bill, ministers were said to have behaved with very little respect to the princess-dowager of Wales, and industriously to have excluded her from a share of the government. These proceedings were thought in a great measure to have alienated the affection of his majesty from the ministry, who had hitherto been in great favour: Nor did their subsequent conduct show them to be at all desirous of regaining what they had lost. They now contrived to

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Illness of
the king
and regen-
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Change of
ministry.

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have the earl of Bute's brother turned out of a very lucrative post which he enjoyed in Scotland, and in which he had never given the least cause of complaint. A step of this kind could not be agreeable to his majesty, nor could it recommend them to the popular party in England, who always manifested a perfect indifference as to what passed in Scotland. On this occasion lord Chatham is said to have been solicited again to accept the office which he had formerly filled so much to the satisfaction of the nation, and to have declined it. A new ministry, however, was soon formed, at the recommendation of the duke of Cumberland. The duke of Grafton and the honourable Mr Conway, brother to the earl of Hertford, were appointed secretaries of state, the marquis of Rockingham first lord of the exchequer, and Mr Dowdeswell chancellor and under treasurer of the exchequer. The office of lord privy seal was conferred on the duke of Newcastle, and all other places were filled with men not only of known integrity, but such as were agreeable to the people. These changes, however, were not yet able to give satisfaction. The opinion that affairs were still managed by the earl of Bute continued to prevail, and was industriously kept up by the political writers of the time. The city of London expressed their discontent on the occasion of addressing his majesty on the birth of a third son. They now took the opportunity of assuring him of "their faithful attachment to his royal house, and the true honour of his crown, whenever a happy establishment of public measures should present a favourable occasion; and that they would be ready to exert their utmost abilities in support of such wise councils as apparently tended to render his majesty's reign happy and glorious."

These expressions showed such an evident disapprobation of his majesty's choice, that it could not fail to offend both king and ministry; but before the latter could show any token of resentment, they lost their great friend and patron the duke of Cumberland. His death happened on the 31st of October 1765. He had been that evening assisting at one of those councils frequently held in order to put matters in a way of being more speedily dispatched by the privy council; where being seized with a sudden disorder of which he had some symptoms the evening before, he fell senseless in the arms of the earl of Albemarle, and expired almost instantaneously. His death was greatly lamented, not only by their majesties, but by the whole nation, being universally esteemed not only as a brave commander, but an excellent member of society, an encourager of industry, and an active promoter of the arts of peace.

In the mean time, the discontents which inflamed the American colonies continued also to agitate the minds of the people of Great Britain; nor indeed was it reasonable to expect that they could be satisfied in their present condition; commerce being almost entirely destroyed, manufactures at a stand, and provisions extravagantly dear. The vast sums owing to the British merchants by the Americans also severely affected the trading and manufacturing part of the country. These, amounting to several millions, the colonies absolutely refused to pay, unless the obnoxious laws should be repealed. Administration were therefore under the necessity of instantly enforcing the stamp act by fire and sword, or of procuring its imme-

diately repeal in parliament. The loss of the duke of Cumberland was now severely felt, as he had been accustomed to assist administration with his advice, and was highly respected by the nation for his good sense. At this period, however, it is doubtful if human wisdom could have prevented the consequences which ensued. Administration endeavoured, as much as perhaps was possible, to avoid the two extremes, either of rushing instantly into a civil war, or of sacrificing the dignity of the crown or nation by irresolution or weakness. They suspended their opinion until they should receive certain intelligence from the American governors how affairs stood in that country; and their letters on that occasion still do them honour. The opposite party animadverted severely on this conduct. They insisted on having the most coercive methods immediately put in execution for enforcing the laws in which they themselves had so great a share; and it is probable that they wished matters to come to extremities before the sitting down of parliament. Pacific measures, however, at this time prevailed: the stamp act was repealed; but at the same time another was made, declaring the right of parliament not only to tax the colonies, but to bind them in all cases whatsoever.

The repeal of the stamp act occasioned universal joy both in Britain and America, though, as parliament insisted upon their right of taxation, which the opposite party denied, matters were still as far from any real accommodation as ever. This ill humour of the Americans was soon after augmented by the duties laid upon glass, painters colours, and tea, imported into their country, while at home the dearth of provisions, and some improper steps taken by ministry to remedy the evil, kept up the general outcry against them. A general disposition to tumult and riot still continued; and unhappily the civil power now seemed to lose its force, and a general anarchy, under the name of liberty, to be approaching.

In this state of affairs administration were once more disturbed by the appearance of Mr Wilkes, who had returned from his exile, and, on the dissolution of parliament in 1768, though an outlaw, stood candidate for the city of London. He was received by the populace with loud acclamations, and several merchants and people of large property espoused his cause, and a subscription was entered into for the payment of his debts. He failed, however, in his design of representing the city of London, but instantly declared himself a candidate for Middlesex. The tumults and riots which now took place were innumerable; and such was the animosity betwixt the two parties, that a civil war seemed to be threatened. Our limits will not allow of any particular detail of these transactions. It will be sufficient to take notice, that on a legal trial the outlawry of Mr Wilkes was reversed, and he was condemned for his offences to pay a fine of 1,000*l*, and to be imprisoned for twelve months. Being idolized by the people, however, and powerfully supported, he was repeatedly chosen member for Middlesex, and a often rejected by the house of commons. The tumults on this occasion were not always seduced without bloodshed; and the interposition of the military was construed by the patriots as an indication of a design to establish ministerial authority by the most barbarous methods. In short, the behaviour of the people of England and America was at this time so very much alike, that

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Return of
Mr Wilkes,
his election.

Britain. both seemed to be actuated by one spirit, and the rage of the English patriots undoubtedly contributed to confirm the colonists in their disobedience.

⁴⁹⁹ Difference with Spain concerning Falkland's islands. The dissensions which had so long prevailed in the kingdom did not pass unnoticed by the other European powers, particularly the French and Spaniards. Both had applied themselves with assiduity to the increase of their marine; and many began to prognosticate an attack from one or other of both of these nations. The Spaniards first showed an inclination to come to a rupture with Britain. The subject in dispute was a settlement formed on Falkland's islands*, near the southern extremity of the American continent. A scheme of this kind had been thought of as early as the reign of Charles II. but it was not till after lord Anson's voyage that much attention had been paid to it. In the printed account of it, his lordship showed the danger incurred by our navigators through the treachery of the Portuguese in Brazil; and that it was a matter of the greatest importance to discover some place more to the southward, where ships might be supplied with necessaries for their voyage round Cape Horn; and, among others, he pointed out Falkland's islands as eligible for this purpose. When at the head of the admiralty, his lordship also forwarded the scheme as much as possible; and some preparations were made for putting it in execution: but as it met with opposition at home, and gave offence to the court of Madrid, it was laid aside till the year 1764, when it was revived by lord Egmont. Commodore Byron being then sent out with proper necessaries, took possession of them in the name of his majesty, and represented them in a favourable light; while his successor, captain M^r Bride, affirmed, that the soil was utterly incapable of cultivation, and the climate intolerable.

⁵⁰⁰ An English settlement formerly proposed on these islands. Be this as it will, the islands in question had attracted also the notice of the French. So low, however, had the nation been reduced by the late war, that no project of the kind could yet be put in execution at the public expence. M. Bougainville, therefore, with the assistance of his friends, undertook to form a settlement on Falkland's islands at their own risk. The scheme was put in execution in the beginning of the year 1764; and a settlement formed on the eastern part of the same island where commodore Byron had established an English colony on the western side. His account of the country was still more favourable than that of the English commander; but as the project had been undertaken with a view to other discoveries and advantages, which probably did not turn out according to expectation, the French adventurers soon became weary of their new colony; to which also the displeasure of the Spaniards, who were greatly offended, did not a little contribute. M. Bougainville, therefore, being reimbursed in his expences, and the French having given up every claim of discovery or right of possession, the Spaniards landed some troops in 1766, took possession of the fort built by the French, and changed the name of the harbour from Port Louis to Port Solidad.

⁵⁰¹ A French colony settles there. In the year 1769, captain Hunt of the Tamar frigate, happening to be on a cruize off Falkland's islands, fell in with a Spanish schooner which had been at Port Solidad. During all this time, it is uncertain whether the British and Spanish settlers knew of one

another or not. From the behaviour of captain Hunt we should suppose that they did not; as he charged the commander of the schooner to depart from that coast, being the property of his Britannic majesty. The schooner, however, soon returned, bringing an officer from the governor of Buenos Ayres, who gave the like warning to captain Hunt to depart from the coast, as belonging to the king of Spain. Some altercation ensued; but captain Hunt, not choosing to carry matters to extremities, set sail for England, where he arrived in June 1770.

At the departure of captain Hunt, two frigates were left at Falkland's islands. One of these was lost in a short time after; and on the fourth of June 1770, a Spanish frigate arrived at the English settlement named *Fort Egmont*, with a number of guns and other warlike utensils for carrying on a regular siege. In three days, four other frigates arrived, laden in the same manner; so that the English commander, captain Farmer, finding all resistance vain, was obliged to capitulate. The English were ordered to depart within a limited time, carrying with them what stores they could; and the Spanish commander declared himself answerable for what they should leave on the island. The time allowed them to remain at Port Egmont was to be determined by the governor; and for the greater security, the rudder was taken off from captain Farmer's ship, and kept on shore till the appointed period; after which the frigate was permitted to depart, and in 70 days arrived at Portsmouth.

An insult to the British flag, so audacious, seemed to render war inevitable unless proper reparation was very speedily made. It was accordingly mentioned in the speech from the throne, November 13th 1770; and an immediate demand of satisfaction for the injury was promised, and that the necessary preparations for war, which had been begun, should not be discontinued. The affairs of America were also taken notice of, where grounds of complaint still existed, notwithstanding the cessation of those combinations which had distressed the commerce of this country. These promises, with regard to the affair of Falkland's islands, however, were far from giving general satisfaction. The speech, as the work of ministry, was most violently attacked by opposition; and an address in answer to it, it was said, would be an eulogium on ministers who did not deserve it. News had arrived, they said, from Falkland's islands in June, which sufficiently demonstrated the designs of Spain; and Gibraltar and Minorca were left open to the attacks of that power, without any preparation being made on our part to resist them. The whole conduct of the ministry was said to be pusillanimous; and the love of peace, which was given out as the reason of their unwillingness to resent the injury, was treated with contempt.

A motion was now made in both houses for an inquiry into the conduct of the Spaniards on this occasion, and that all the papers and letters relative to it should be laid before parliament. The demand, however, was opposed by ministry, who insisted that the laws of negotiation precluded the idea of exposing any letters or papers sent in confidence while the negotiation was depending; and they asserted that the king of Spain had disavowed the conduct of his officer, and promised satisfaction. It would have been rash, they said,

tain. said, to proceed to extremities betwixt the two crowns, when perhaps the officer only was to blame; but if, after remonstrance, the court of Spain refused satisfaction, we were then authorised to force that justice which was refused in an amicable manner.

Some time before this, Mr Harris, the English minister at the court of Madrid, dispatched a letter to lord Weymouth, informing him that a ship had arrived from Buenos Ayres with an account of the intended expedition against Port Egmont, the number of men to be employed, and the time fixed for its departure; at the same time that it was asserted by prince Masferans, the Spanish ambassador, that he had every reason to believe that the governor of Buenos Ayres had employed force at Port Egmont without any orders; and hoped that, by disavowing this proceeding, he might prevent any misunderstanding betwixt the two kingdoms. To this his lordship replied in a spirited manner, asking, among other things, Whether the prince had any orders to disavow the proceedings of the governor? And, on his reply in the negative, a formal disavowal was demanded. After some time, his lordship was informed that the prince had orders to disavow any particular orders given to Mr Bucarelli, the governor of Buenos Ayres, and at the same time to say, that he had acted agreeably to his general instructions and oath as governor; that the island should be restored; and that it was expected the king of Britain would, on his part, disavow the conduct of captain Hunt, whose menace had induced the governor to act as he did.

This reply did not by any means prove agreeable; and soon after the conduct of the court of Spain became so suspicious, that Mr Harris was ordered to quit the court of Madrid; and the correspondence between prince Masferans and the court of England was no longer continued. About this time lord Weymouth resigned his office, and was succeeded by the earl of Rochford; and the affair of Falkland's islands was no longer openly spoken of. On the sitting down of the parliament, January 22d 1771, however, it was again brought before the house, and the declaration of the Spanish ambassador, with Rochford's acceptance, were announced. Prince Masferans then disavowed, in the name of his master, the violence used at Port Egmont; to the restitution of which he agreed, and hoped that this restitution would be looked upon as ample satisfaction, and at the same time as not affecting the question concerning the prior sovereignty of the islands. This produced a new demand for copies of all papers, letters, and declarations of every kind relative to Falkland's islands: but though it was now seemingly complied with, the opposite party affirmed that it was still only in part; for besides a chasm of near two months, during which time there was no account whatever, none of the copies of the claims or representations made by the court of Spain, since the first settlement of the islands, were given up. Thus a suspicion was produced, that the concealment of these papers, and the deficiencies in the order of their dates, might proceed from some misconduct during the periods in question; and which administration was willing to conceal from the world. To these objections it was replied, that every paper which could be found in the several offices had been presented; and that if there had been any correspondence between the two courts, of which no

notice was taken in them, it must have been verbal; but, at any rate, there were papers sufficient to enable the house to determine the propriety or impropriety of their conduct throughout the whole transaction; for every thing decisive or explicit was in writing, and every writing was laid before them.

All these excuses, however, could not yet satisfy opposition. It was reported, and generally believed, that France had interposed in the affair; in consequence of which, a motion was made to address his majesty for information whether any such interference had taken place, and of what nature it was, or in what manner it had been conducted. The minister denied that there had been any such interference; but it was insisted that this was insufficient; that the word of the king was requisite, as that of the minister could not be satisfactory, even supposing him to be upright. It did not, however, appear that any correspondence in writing had taken place betwixt the two courts; and when the minister was asked, whether France had ever interposed as mediator? he answered, that "England had not employed France in that capacity; but that the word *interposed* was of a meaning too vague for direct explanation; and it was unusual to demand verbal negotiations, while papers were laid before them: That as all Europe had an eye to the compromising of differences betwixt states, it was not to be supposed that France would be altogether silent; but nothing (says he) dishonourable has ever passed." Opposition still insisted that they had a right to have an account of verbal negotiations as well as others; and that if this right was given up, a minister had no more to do, when he wished to promote an insidious measure, than to conduct it by verbal correspondence. The motion, however, was lost by a great majority in both houses.

This manner of deciding the question was so far from allaying the general ferment, that it rendered it much worse. The transaction was considered as entirely disgraceful to the British nation; nor were all the arguments that could be used by the ministerial party in any degree sufficient to overthrow the general opinion. The restitution of the island was thought to be an inadequate recompense for the affront that had been offered; and the objections to it were urged on a motion for an address to return thanks for the communication of the Spanish declaration, and to testify their satisfaction with the redress that had been obtained. This address was not carried without considerable difficulty, and produced a protest from 19 peers. On the part of Spain, however, every part of the agreement was ostensibly fulfilled; Port Egmont was restored, and the British once more took possession of it, though it was in a short time after evacuated, according to a private agreement, as was suspected, between ministry and the court of Spain; but of this no evidence ever appeared to the public.

In other respects, the greatest discontents raged throughout the kingdom. A fire which happened at Portsmouth in the year 1770 excited numberless jealousies, and was by some imputed to our enemies on the continent. The affair of the Middlesex election was never forgot; and, notwithstanding many republics, the city of London still ventured to present new petitions to the throne. In one presented this year by Mr Beckford, the lord mayor at that time, they lamented the

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Britain. the heavy displeasure under which they seemed to have fallen with his majesty, and renewed a petition, frequently presented before, concerning a dissolution of parliament. This, however, met with a very unfavourable answer: his majesty informed the lord mayor, that his sentiments on that subject continued unchanged; and that "he should ill deserve the title of Father of his people, should he suffer himself to be prevailed on to make such an use of his prerogative as he could not but think inconsistent with the interest, and dangerous to the constitution, of the kingdom." Mr Beckford was so far from being disheartened by this answer, that he demanded leave to speak to the king; which being obtained, he made a speech of considerable length, and concluded with telling his majesty, that "whoever had already dared, or should hereafter endeavour, by false insinuations and suggestions, to alienate his majesty's affections from his loyal subjects in general, and the city of London in particular, was an enemy to his majesty's person and family, a violator of the public peace, and a betrayer of our happy constitution as it was established at the glorious revolution." To this no answer was made, though it gave great offence: and when Mr Beckford went afterwards to St James's with an address on the queen's safe delivery of a princess, he was told, that "as his lordship had thought fit to speak to his majesty after his answer to the late remonstrance; as it was unusual, his majesty desired that nothing of the kind might happen for the future."

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Remarkable speech of Mr Beckford to his majesty.

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Gives offence.

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His death.

511
Proposals for reducing the powers of the attorney general.

This behaviour of Mr Beckford was by many of the court party censured in an extreme degree, as indecent, unprecedented, impudent, and little short of high treason; while, on the other hand, he was on the same account raised to the highest pinnacle of popular favour. He did not long, however, enjoy the applause of the people, dying within a short time after he made the celebrated speech above mentioned, and his death was reckoned an irreparable loss to the whole party. Several other petitions were presented on the subject of popular grievances; but the perpetual neglect with which they were treated at last brought that mode of application into disuse. A new subject of contention, however, now offered itself. The navy was in a bad condition, and the sailors every where avoided the service. Towards the end of August 16 ships of the line were ready to put to sea; but the legality of press warrants being questioned, the manning of them became a matter of great difficulty. The new lord Mayor, Brals Crosby, refused to back the warrants; which proved a vexatious matter to the ministry. They were further provoked by the unbounded liberty to which the press had been carried, and the mode of proceeding against some libellers had produced many complaints regarding the powers of the attorney general. He had filed informations and carried on prosecutions *ex officio*, without going through the forms observed in all other cases.—"This (it was said by the patriotic party) was inconsistent with the nature of a free government. No power can be more dangerous to private liberty, nor to the virtue or principles of him who enjoys it. The attorney acts under a minister, and his sense of duty must be very strong, or his independence very thoroughly secured by contentment, if

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he is at no time tempted to swear from the laws of conscience and equity. It is in his power to give what name he pleases to a paper, and call it seditious or treasonable; then, without the interference of a jury, he proceeds to try the offender; who, though he may be acquitted, may nevertheless be ruined by the expences attending his justification." Examples were cited on this occasion of very flagrant oppression and injustice from this very power: the laws, it was said, were become changeable at the pleasure of a judge; and the liberty of the subject was taken from him, whenever he became obnoxious to his superiors. As these proceedings had therefore been the cause of very general complaint, a motion was made in the house of commons to bring in a bill for explaining and amending an act of the 4th and 5th of William and Mary to prevent invidious informations, and for the more easy reversal of outlawries in the court of king's bench. This motion was rejected by a great majority; the ministerial party urging, that the power of the attorney general was the same that ever it had been, and founded on common law. The abuse of power was no argument against the legal exercise of it; it was dangerous to overthrow established customs; the actions of the attorney-general were cognizable by parliament, which controul must for ever prevent a licentious exertion of his power, &c.

These arguments, however, even with the rejection of the motion, did not put an end to the disputes on this head. The courts of justice themselves were at this time held up in a very despicable light, on account of some late decisions which had been deemed contrary to law and usual practice. By these the judges had assumed a power of determining whether a paper was a libel or not; and the business of the jury was confined to the determination of the fact regarding its publication; and thus it was said to have appeared, that the judges had it in their power to punish a man who had been found guilty of publishing a paper, whether seditious or not. Lord Chatham, in a speech on the Middlesex election, took occasion to mention these abuses; and was answered by lord Mansfield, who looked upon himself to be particularly pointed at. The former, however, was so little convinced by his answer, that he drew from it an additional confirmation of his own arguments; and moved that a day should be appointed for taking into consideration the conduct of the judges; in which he was ably seconded by the late lord chancellor. A committee was accordingly moved for on December 6th 1776, to inquire into the matter; but, after much debate, was rejected by 184 to 76. The affair, however, did not yet seem to be terminated. Lord Mansfield gave notice next day, that on Monday he would communicate to the house of lords a matter of the utmost importance; but, when that day came, he produced nothing but a paper containing the case of Woodfall the printer as tried in the court of king's bench, that whoever pleased might read or take copies of it. This was looked upon as exceedingly frivolous, and greatly disappointed the expectations of the whole house. His lordship was asked, whether he meant that the paper should be entered on the journals of the house or not? To which he answered, that he had no such intention, but

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Rejected.

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Dispute concerning the behaviour of the judges.

Britain. but only that it should be left in the hands of the clerk: on which the affair would probably have been overlooked altogether, had not the late lord chancellor, who all along strongly supported the motion, stood up to accuse lord Mansfield, from the very paper to which he appealed, of a practice repugnant to the law of England. Hence he took occasion to propose some queries relative to the power of juries, and challenged his antagonist to a debate either at that time or soon after. But this method of proceeding was complained of as too precipitate, and an excuse was likewise made for not assigning a day for the debate at any other time; so that the matter soon sunk into oblivion. It was, however, loudly talked of without doors; and the judges, who had already fallen much in the estimation of the people, now became much more obnoxious. Pamphlets were printed containing the most severe accusations; comparisons were made betwixt some of the law lords and their predecessors, and even the print-shops were filled with ridiculous and satirical pictures.

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mult in
the house
of lords.

An accident which took place soon after contributed also greatly to lessen the character not only of the ministerial party, but even that of both houses of parliament taken collectively, in the eyes of the vulgar, to an extreme degree; and indeed it must be owned that nothing could be more derogatory to the honour of the first assembly of the nation, or to that of the individuals who composed it. A motion was made on the 10th of December 1770 by the duke of Manchester, that an address be presented to his majesty, that he would be graciously pleased to give orders for quickening our preparations for defence in the West Indies and in the Mediterranean; and particularly for securing the posts of Gibraltar and Minorca. But while his grace was descending on the negligence of ministry in leaving posts of such importance in a defenceless state, he was suddenly interrupted by lord Gower, who insisted on having the house immediately cleared of all but those who had a right to sit there. "When motions (said he) are thus brought in by surprise, and without the knowledge of the house as to their contents, it is impossible but such things may be spoken as are improper for the general ear; especially as the enemy may have spies in the house, in order to convey secret intelligence, and expose the nakedness of our possessions." His lordship was answered by the duke of Richmond, who complained of the interruption given to the duke of Manchester as a proceeding both irregular and insidious. This produced a considerable degree of altercation, and the cry of "Clear the house!" resounded from all quarters. Several members attempted to speak, but finding it impossible, and piqued at this shameful behaviour, 18 or 19 of them left the house in a body. The members of the house of commons then present were not only commanded to depart, but some of the lords went personally to the bar, and insisted on their leaving the house immediately. These unfortunate members alleged in excuse, that they attended with a bill, and were there in the discharge of their duty; but this availed nothing, they were peremptorily ordered to withdraw till their message should be delivered; and, after going through the usual forms, were turned out of doors amidst the greatest tumult and up-

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Members
of the house
of commons
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which occasions
a misunderstanding
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roar. In the mean time the lords, who had just left the house of peers, had gone to the lower house, where they were listening to the debates, when the commons, who had been turned out of the house of lords, arrived full of indignation, and making loud complaints of the assent they had received. This was resented by turning out indiscriminately all the spectators; among whom were the 18 peers just mentioned, who were thus shut out from both houses. The affair terminated in a misunderstanding betwixt the two houses, which continued during the whole session. Sixteen lords joined in a protest, and in the warmest terms censured the treatment they had met with, as well as the unprecedented behaviour of administration, who had thus attempted to suppress the freedom of argument, and render the conduct of the house an object of censure and ridicule to the whole world.

After the discussion of the affair of Talkind's islands in the manner already related, a most unheard of instance of corruption was laid before parliament in the borough of New Shoreham in Suffex. The contest was occasioned by the returning officer, Mr Roberts, having returned a candidate with only 37 votes, when the other had 87; and, on bringing him to trial for this strange proceeding, the following scene of villany was laid open. A great number of the freemen of the borough had formed themselves into a society called the *Christian Society or Club*; but, instead of keeping up the character indicated by this title, it was clearly proved by the returning officer, who formerly belonged to it, that it was employed only for the purposes of venality. A select committee of the members were appointed to sell the borough to the highest bidder. The committee men never appeared at elections themselves, but gave orders to the rest, and directed them how to vote; and, after the election was over, shared the profits among themselves. Though all this was clearly proved, the returning officer was dismissed with only a reprimand from the speaker of the house of commons, for having trespassed upon the forms to be sacredly observed by a returning officer. A more severe punishment, however, was reserved for the borough, and those wretches who had assumed the name of the *Christian Club*. A motion for an inquiry being carried unanimously, a bill was brought in to incapacitate 81 freemen of this borough, whose names were mentioned, from ever voting at parliamentary elections; and, for the more effectually preventing bribery and corruption, the attorney general was ordered to prosecute the committee belonging to the Christian club: the members were allowed counsel, and many different opinions were offered regarding the mode of punishment. Some were mercifully inclined only to reprimand them, while others proposed to disfranchise the borough; however, the bill for incapacitation was passed at length, though it did not receive the royal assent till the last day of the session.

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Mistress
instance of
corruption
in New
Shoreham.

The unbounded licentiousness of the press now called the attention of parliament, though the evil appeared in a manner incapable of being checked. At this time neither rank nor character were any security against the voice of calumny from one party or other; and indeed it was hard to say on what side the most intemperate violence appeared. The ministry, how-

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Extreme
licentiousness
of the
press.

Britain.

ever, provoked by a long course of opposition, made the loudest complaints of the freedoms taken with their names; while it was retorted by opposition, that the abuse from one quarter was as great as from the other. Some members of the house of commons complained that their speeches had been misrepresented in the papers, and endeavoured to put a stop to the practice of printing them. It was now considered as a matter contrary to the standing order of the house to print the speeches of the members of parliament at all; and a motion for calling two of the principal printers to account was carried by a considerable majority. The printers, however, did not attend the summons of the messenger; and a final order for their appearance was directed to be left at their houses, and declared to be sufficient notice when left at their houses. The disobedience of the printers on this occasion was undoubtedly heightened by the favour they hoped to obtain from the popular party; and indeed it was not without the most severe animadversions that the ministry were able to carry their motions against them. This opposition increased by its being farther moved that they should be taken into custody by the serjeant at arms for contempt of the orders of the house. The temper and disposition of the people towards the house was now objected, and the great impropriety of adding to their alarms by any unnecessary stretch of the executive power; but the majority urged the necessity of preserving the dignity of the house, and putting an end to those offensive freedoms which had been taken with its members. The serjeant at arms next complained, that not being able to meet with the printers at their houses, he had been treated with indignity by their servants; on which a royal proclamation was issued for apprehending Wheble and Thomson, the two obnoxious printers, with a reward of L.50 annexed. But in the mean time six other printers, who had rendered themselves equally obnoxious on a similar account, were ordered to attend the house, though the motion was not carried without great opposition, during which time the house divided between 20 and 30 times. Some of the delinquents were reprimanded at the bar, and one who did not attend was ordered to be taken into custody for contempt. Wheble being apprehended in consequence of the proclamation, was carried before Mr Alderman Witkes, by whom he was discharged. To this magistrate it appeared that Mr Wheble had been apprehended in direct violation of his rights as an Englishman, as well as of the chartered privileges of a citizen of London; which opinion he declared in a letter to the earl of Halifax, one of the secretaries of state. Thomson was discharged in the same manner; but the captors received certificates from the magistrates, in order to obtain the promised rewards. J. Miller, one of the six who had refused to attend, was taken into custody from his own house by the messenger of the house of commons. On this he sent for a constable, and was carried along with the messenger before the lord mayor, and aldermen Wilkes and Oliver at the mansion house. The lord mayor refused to deliver up the printer and messenger at the request of the serjeant at arms; and after some disputes the messenger was committed to prison, as he had been accused by Miller of assault and false imprisonment, and

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Contest of
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commons
with some
printers.

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Lord Mayor
or sets Miller
at liberty and im-
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messenger
of the house
of commons.

the serjeant had refused to find bail; however, he was immediately released upon the bail being given.

By this affront, not only the majority, but many of the popular party also were greatly irritated: however, the members in opposition took care to lay all the blame on the absurd conduct of administration with regard to the Middlesex election; in consequence of which they had incurred such a general odium, that the people thwarted every measure proposed by them, and eluded and despised their power on every occasion. The lord mayor was ordered to attend the house next day; at which time he pleaded that he had acted in no manner of way inconsistent with the duties of his office; as, by an oath which he took when entering upon it, he was bound to preserve the franchises of the city, and his conduct was farther to be vindicated from the terms of the city charters, as recognised by act of parliament. It was then moved that he should be allowed counsel; the question appearing to belong to the lawyers, as his lordship did not pretend to deny the privileges of the house, though he contended for an exemption from that privilege by virtue of charters and an act of parliament. This motion, however, was over-ruled, it being insisted that no counsel could ever be permitted against the privileges of the house. This refusal of counsel took its rise from a transaction in the reign of Henry VIII. and was now pleaded as the custom of parliament. Some proposed that the lord mayor should be heard by counsel, provided the privilege of the house was not affected; but it was considered as absurd to the last degree that his lordship should be heard by counsel on every point except the very one in question. At the same time a motion was carried, that the lord mayor's clerk should attend with the book of minutes; and notwithstanding all opposition, he was obliged to expunge out of it the recognizance of Whittam the messenger. This was followed by a resolution that there should be no more proceedings at law in the case; a great altercation ensued, and several of the minority at last left the house in the utmost rage.

Though it was now one o'clock in the morning, the ministerial party were so ardent in the prosecution of their victory, that they refused to adjourn; proceeding now to the trial of Mr Oliver, who, as well as the lord mayor, was far from expressing any sorrow for what he had done. Some proposed to censure his conduct, others were for expulsion; but when it was proposed to send him to the Tower, the utmost confusion and mutual reproach took place; some members declared that they would accompany him to the place of his confinement; others left the house, while mildly used their utmost endeavours to persuade him into some kind of apology or concession for what he had done; but finding that to no purpose, they at last carried the motion for his imprisonment, and he was committed accordingly. Ample amends, however, were made for this punishment by the unbounded popular applause heaped on both the lord mayor and alderman on this occasion, and which indeed threatened very serious consequences. Some days after the commitment of Mr Oliver, when the lord mayor attended at the house of commons, several very alarming insults were offered to many of the members, particu-
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Proceed-
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him.

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And against
alderman
Oliver.

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Both com-
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the tower.

lately lord North; who, on this occasion, lost his hat, and narrowly escaped with his life. Some of the members of the minority interposed, and expostulated with the mob on the impropriety of their conduct, by which means all further disturbance was prevented; and had it not been for this timely interference, it is supposed that the fray would not have ended without much bloodshed.

After the confusion was in some measure dispersed, the debates concerning the lord mayor again took place. Many arguments were brought against proceeding farther in the matter; but being disregarded, the minority members left the house. His lordship refused the favour offered him of being committed to the custody of the serjeant at arms, upon which it was resolved to commit him to the Tower; the motion for this purpose being carried by 200 against 39. Mr Wilkes, on being ordered to attend, wrote a letter addressed to the speaker of the house, in which he observed, that no mention had been made of his being a member; and that if his seat in parliament, to which he had been duly elected, was to be granted him, he would attend and justify his conduct. Administration, however, were too wise now to encounter this hero, and at the same time were under no little embarrassment how to get off; so at last they were reduced to the miserable shift of ordering him to attend on the 8th of April 1771, at the same time that they adjourned the house to the 9th.

The many affronts and indignities which administration had of late been obliged to put up with now rendered it absolutely necessary to fall upon some method to show that their authority was not altogether lost. For this purpose a committee was appointed by ballot to inquire into the reason why there had been so many obstructions to the authority of the house of commons. This committee having sat from the 28th of March to the 30th of April, at last gave in the following report. "Your committee beg leave to observe, that in the diligent search they have made in the journals, they have not been able to find an instance that any court or magistrate has presumed to commit, during the sitting of parliament, an officer of the house for executing the orders of the house. They further beg leave to observe, that they have not been able to find, that there ever has been an instance wherein this house has suffered any person, committed by order of this house, to be discharged, during the same sessions, by any authority whatever, without again committing such persons. As therefore, with regard to J. Millar, who was delivered from the custody of the messenger by the lord mayor, who, for the said offence, is now under the censure of the house, it appears to your committee, that it highly concerns the dignity and power of the house to maintain its authority in this instance, by retaking the said J. Millar, the committee recommend to the consideration of the house, whether it may not be expedient, that the house should order that the said J. Millar should be again taken into custody of the serjeant at arms; and that his deputy or deputies be strictly enjoined to call upon the magistrates, officers of the peace, and other persons, who by the speaker's warrant are required to be aiding and assisting to him in the execution thereof, for such assistance as the said serjeant, his deputy or deputies,

shall find necessary, to enable him or them to take into custody the said J. Millar."

Nothing could have been more impudent than the urging with such violence a contest against such contemptible adversaries; and in which they were finally baffled. What they intended for punishment really afforded the criminals matter of triumph and exultation. Every honour that the city of London could bestow was conferred upon the magistrates, while the complaints and execrations of the people at large became louder than ever. Every step taken about this time by administration seemed calculated to add to the public ill humour. Towards the end of the session a bill was brought in "for enabling certain persons to inclose and embank part of the river Thames, adjoining to Durham yard, Salisbury-street, Cecil-street, and Beaufort buildings, in the county of Middlesex." This bill was opposed, as appearing contrary to the ancient rights and privileges of the city of London; but was easily carried through both houses, though it produced a protest in the upper house; and a few days before the rising of the session, the city of London petitioned against it. In this petition it was complained of as a violent and unjust transaction, totally unprecedented, being an invasion of the property which the city claimed in the soil or bed of the river. It was afterwards complained of in a remonstrance, as an infringement of the rights of the people, and urged as a reason for the dissolution of parliament.

The only other transaction of moment during this session related to the East India company. It was now proposed to raise 2000 men in England for the service of the company, the officers to be appointed by the king, and to be paid by the company. But after much speculation, it was rejected as unconstitutional and dangerous to keep an armed force in the kingdom which was not paid by government; and that, however inconsiderable the number proposed was at present, it might soon be increased on any frivolous pretence. It was likewise urged, that it would prove an obstruction to the recruiting service for our own army, on account of the superior advantages of enlisting in the company's service. The advocates for the bill urged the inconvenience of sending out a sufficient number of men annually to recruit the Indian forces; and that, unless parliament should adhere to the promise they formerly made of assisting the company in recruiting, they would be daily exposed to vast loss and expence from the tricks of recruiting parties. The session rose on the 8th of May. In the speech from the throne, it was observed, that the satisfaction obtained from his Catholic majesty for the injury done to this kingdom, and the proofs of the pacific disposition which the courts of France and Spain had given by laying aside their armaments, enabled us to reduce our forces by sea and land. The zeal manifested by parliament could not fail to convince the world of its affectionate attachment to the crown and regard to the interests of the country. His majesty's end avowed were promised to put an end to the trouble which still prevailed in some parts of the continent; thanks were given to the commons for the unanimity, cheerfulness, and public spirit with which they had granted the supplies; and an apology was made for the extraordinary demands which had been made. The speech concluded with

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advising the members to use their best endeavours, in their respective stations and counties, to render the national happiness complete, by discouraging needless suspicions and domestic disturbances. His majesty had no other object, and could have no other interest, than to reign in the hearts of a free and happy people; and it was his earnest wish that his subjects might not be prevented, by mistakes or animosities among themselves, from enjoying the happiness they had in their power.

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Popular
party dis-
couraged.

The many defeats that had been received by opposition during this and the foregoing sessions, now began to discourage them from proceeding such lengths in the cause of patriotism as they had formerly done. Many of them had also lost much of their popularity by taking an active part against the printers; and as every motion had been carried in favour of administration by nearly two to one, a general discouragement and languor began to take place among the popular party. The only gainers indeed by the late contentions were the city magistrates and printers who had been punished by the house of commons. On the rising of the parliament, when the lord mayor and alderman were released from the tower, they were welcomed by every mark of congratulation. The city was illuminated; and the mob, as usual, took vengeance on the refractory by breaking their windows. A committee was even appointed to carry on a prosecution against the speaker of the house of commons; but as this did not seem likely to afford any redress, they determined once more to have recourse to the throne. Accordingly, on the 10th of July 1771, another petition and remonstrance was presented, the subjects of which were the embankments on the Thames, the proceedings against the magistrates, and a speedy dissolution of parliament was requested. But this met with as unfavourable an answer as before. His majesty replied, that he was ready to put an end to the real grievances of his faithful subjects; but was sorry to find that a part of them still renewed requests which he had repeatedly refused to comply with.

In the speech from the throne, when the parliament met, January 21st 1772, his majesty observed, that the performance of the king of Spain's engagements, and the behaviour of the other European powers, promised a continuance of peace; and though the necessity of keeping up a respectable naval force was evident, yet no extraordinary aid for that purpose would be necessary; and he concluded with recommending the most vigilant and active attention to the concerns of the country, with an assurance of the interposition of the crown to remedy abuses or supply defects. Little dispute was made about the addresses in answer to this speech, though an ample subject of altercation very soon occurred. This was a motion made by administration, intimating the necessity of raising 25,000 seamen for the service of the current year; it being always necessary, they said, for us to preserve a superiority to the French in the East Indies, which had not been the case since they sent a considerable fleet thither. "It was equally necessary (they added) to preserve the present strength of the West Indies unimpaired; as the Spaniards knew the importance of our settlements there too well not to make an attack upon them first if ever a rupture should take place. Twenty of the best ships in the navy were also now employed as guard-

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Debates on
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ships, and wanted nothing but men to fit them for actual service."

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A declaration of this kind, coming immediately after the assurances of peace that had been given from the throne, was said to be a contradiction; that the peace-establishment would thus be augmented till we were overburdened by it; 500,000*l.* would thus be added to the national expences; and as the same augmentation might every year be made on similar pretences, we should thus be obliged to submit to the hardships of war in time of a profound peace. If the assurances of peace from the throne were well founded, the force in the East Indies was already too great; if, on the contrary, a war was at hand, it would be too small notwithstanding the proposed augmentation; and the same way Jamaica was likely to suffer from the inferiority.

These remonstrances were by no means sufficient to put a stop to any measure which had at this time been suggested by administration. The question for the augmentation was carried without a division: after which the subject of religion came to be discussed. This was occasioned by the general tendency to Arianism or Socinianism, which had for some time prevailed to a great degree, and had at last infected the established church in such a manner, that the subscription to her standards was reckoned intolerable by many of the clergy. Meetings had been frequently held by the discontented members, in order to consider of some mode of relief; and in the beginning of February 1772, about 250 of them, with several professors of law and physic, joined in a petition to the house of commons, expressing their dissatisfaction with subscription to any human forms, and praying for relief. In this petition they asserted, that they held certain rights and privileges from God alone, without being subject to any other authority; such as the exercise of their own reason and judgment, by which they were instructed and confirmed in their belief of the Christian religion, as contained in the holy scriptures. They accounted it a blessing to live under a government which maintained the sufficiency of the scriptures to instruct in all things necessary to salvation. Hence they concluded, that they had a right from nature, as well as from the principles of the reformed religion, to judge for themselves what was or was not contained in the scriptures. From this invaluable privilege, however, they found themselves in a great measure precluded by the laws relative to subscription; by which they were enjoined to acknowledge certain articles and confessions of faith framed by fallible men as entirely agreeable to scripture. They prayed therefore to be relieved from such an imposition, and to be restored to their undoubted right of interpreting scripture for themselves, without being bound by any human explanation of it, or being required to acknowledge by subscription or declaration the truth of any formulary of religious faith and doctrine whatever excepting the holy scripture itself.

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Petition a-
gainst sub-
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XXXIX.
articles.

The affair of subscription they looked upon to be not only a grievance to themselves, but an encroachment on their rights as men and members of a Protestant establishment, as well as a great hindrance to the spreading of the Christian religion, tending to discourage further inquiry into the true sense of scripture, to divide communions, and to cause a mutual dislike

Britain. dislike betwixt fellow Protestants; giving occasion for unbelievers to reproach and vilify the clergy, by representing them as guilty of prevarication, and of accommodating their faith to lucrative views and political considerations. It afforded also to Papists and others disaffected to the religious establishment of the church of England, an occasion of reflecting upon it as inconsistent, and authorising doubtful and precarious doctrines, at the same time that the scripture alone was acknowledged to be certain and sufficient for salvation. It had likewise a tendency to divide the clergy among themselves; subjecting one part, who asserted their privilege as Protestants, to be reviled, both from the pulpit and the press, by another who seemed to judge the articles they had subscribed to be of equal authority with the scripture itself; and lastly, it occasioned scruples and embarrassments of conscience to those who were about to enter into the ministry, or prevented the cheerful exercise of it to those who were already entered. By reason of these embarrassments the clerical part of the petitioners found themselves under great difficulties, being obliged in some sense to join with the adversaries of revelation, in supposing the one true sense of scripture to be expressed in the present established system of faith; or else to incur the reproach of having deserted their subscription, &c. while such of the petitioners as had been educated with a view to the professions of civil law and physic could not but think it a great hardship to be obliged, as they all were in one of the universities, even at their first matriculation and admission, though at an age very improper for such important disquisitions, to subscribe their assent to a variety of theological tenets, concerning which their private opinions could be of no consequence to the public, in order to intitle them to academical degrees in those faculties; more especially as the course of their studies and attention to their practice did not afford them leisure sufficient to examine how far these tenets were consonant to the word of God.

This petition was presented by Sir William Meredith, who, along with the other members who favoured the cause, enforced it by many arguments drawn from the principles of toleration. They maintained also that nothing but hypocrisy and prevarication could arise from obliging men to subscribe what they did not believe; that the repeal of the laws for subscription would prevent the increase of dissenters, so very conspicuous at this time, and incline many of them to return to the church. The articles themselves were said to have been compiled in a hurry; that they contained doctrines highly controvertible; and that this restraint on the consciences of men was of all others the greatest hardship. The majority of parliament, however, were found inimical to the petition, though some, who opposed it at present, wished for time to consider it more deliberately, or to refer it to a committee of the clergy. By the rest it was urged, that the matter of the petition was a violent infraction of the laws of the English religion; and that, if this was granted, another would soon follow against the liturgy. The conduct of many of the petitioners, instead of being founded in any regard for religion, had its origin in hypocrisy and dissoluteness, and certainly proceeded in many instances from a disbelief of the

Britain. Trinity, and of the divinity of our Saviour. The complaints of men were to be disregarded when they wished to profit by the emoluments of the church without subscribing to its laws; besides, the king was bound by his coronation oath to continue the church-government without alteration. It was likewise urged, that if people were to be restrained by no other article than an assent to the truth of the scriptures, the church would soon be over-run with impiety. Many had already founded blasphemous tenets on the right of private opinion; and though it could not be denied that every man has this right for himself, yet none has a right to obtrude his singularities upon others; and if any of the clergy found the delicacy of their consciences affected after they had accepted of benefices, they were welcome to leave them.

Some of the more moderate opposers of the petition endeavoured to vindicate the character of the clergy from the imputations laid upon them, and contended that the legislature had a controuling power over the articles of the union, and confirmed their assent by mentioning the act against occasional conformity, as well as another against elective patronages, both of them passed since the union; and it seemed to be the general wish of the house that the professors of law and physic might be relieved from subscription, though they did not consider their share in the matter as of any great importance to the public. It was at last thrown out by a majority of near 150.

The rejection of the subscription bill was followed by that of a bill for quieting the possessions of his majesty's subjects from dormant claims of the church; after which the attention of parliament was called to one of the utmost importance, and which was introduced by a message from the king. This was the famous royal marriage bill, occasioned by the marriage of the duke of Cumberland with Mrs Horton, a widow lady, daughter of lord Inham and sister to colonel Luttrell, and that of the duke of Gloucester with the countess-dowager of Waldegrave. By the message it was recommended to both houses to take it into their consideration, whether it might not be expedient to supply the defects of the laws then in being, and by some new regulations more effectually to prevent the descendants of his late majesty (excepting the issue of the princesses who had married, or might hereafter marry into foreign families) from marrying without the consent of his majesty, his heirs, and successors. In consequence of this a bill was brought in, declaring all such marriages, without the consent above mentioned, to be null and void. The descendants of his majesty, however, if above the age of 25 years, might marry without the royal consent, provided they gave intimation, a twelve-month before hand, to the privy council, and no opposition to the match was made by parliament during that interval.

This bill met with the most violent and powerful opposition. The principal arguments against it were expressed in two protests from the upper house, and were to the following purpose: 1. The doctrine that marriages in the royal family are of the highest importance to the state, and that therefore the kings of this realm have ever been trusted with the care thereof, is both absurd and unconstitutional; though it would from that period have the force of a parliamentary declaration.

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Rejected.

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Royal marriage bill.

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Protest against it.

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claration. The immediate tendency of this was to create as many prerogatives to the crown as there are matters of importance in the state; and to extend them in a manner as vague and exceptionable as had ever been done in the most despotic periods. 2. The engaging part of the bill had an inconvenient and impolitic extent; namely, to all the descendants of Geo. II. In process of time, that description might become very general, and comprehend a great number of people; and it was apprehended that it would be an intolerable grievance for the marriages of so many subjects, perhaps dispersed among the various ranks of civil life, to be subject to the restrictions of this act, especially as the abettors of this doctrine had also maintained, that the care and approbation of the marriage also included the education and custody of the person. This extensive power might in time make many of the first families of the kingdom entirely dependent on the crown; and it was regretted that all endeavours to limit, in some degree, the generality of that description, had proved ineffectual. 3. The time of nonage for the royal family appeared to be improperly extended beyond the limit of 21 years; a period which the wisdom of the constitution seems, with great wisdom, to have assigned to minority. 4. The deferring their marriage to the age of 26 might also be attended with other bad consequences, by driving them into a disorderly course of life, which ought to be particularly guarded against in those of such an exalted station. 5. The power given by this bill to a prince to marry after the age of 26, is totally defeated by the proviso which declares the consent of parliament to be ultimately necessary. Thus great difficulties must be laid on future parliaments, as their silence, in such a case, must imply a disapprobation of the king's refusal; and their concurrence with it might prove a perpetual prohibition from marriage to the party concerned. 6. The right of conferring a discretionary power of prohibiting all marriages, appears to be above the reach of any legislature whatever, as being contrary to the inherent rights of human nature; which, as they are not derived from, or held under, the sanction of any civil laws, cannot be taken away by them in any case whatever. The legislature no doubt has a right to prescribe rules to marriage as well as to every other kind of contract; but there is an essential difference between regulating the mode by which a right may be enjoyed, and establishing a principle which may tend entirely to annihilate that right. To disable a man during life from contracting marriage, or, which is the same thing, to make his power of contracting such marriage dependent neither on his own choice nor on any fixed rule of law, but on the arbitrary pleasure of any man, or set of men, is exceeding the power permitted by divine providence to human legislature, and directly contrary not only to the divine command, but also to the rights of domestic society and comfort, &c. 7. This bill has a natural tendency to produce a disputed title to the crown. If those who are affected by it are in power, they will easily procure a repeal of this act, and the confirmation of a marriage made contrary to it; and if they are not, it will at least be the source of the most dangerous faction that can exist in any country, viz. one attached to the pretender to the crown; whose claim, he may assert, has been set aside by no other

authority than that of an act to which the legislature was not competent, as being contrary to the common rights of mankind. 8. The bill provides no security against the improper marriages of princesses married into foreign families, and those of their issue; which may full as materially affect the interest of this nation as the marriages of princes residing in the dominions of Great Britain. It provides no remedy against the improper marriage of the king reigning, though evidently the most important of all others to the public. It provides nothing against the indiscreet marriage of a prince of the blood, being regent at the age of 21; nor furnishes any remedy against his permitting such marriages to others of the blood-royal, being fully invested with the regal power for this purpose, without the assistance of council.

The answer to all these arguments was, that the inconveniences so much talked of were merely imaginary; and if the king should make any improper use of his authority, parliament had it either in their power to prevent the effect, or to punish the minister who advised it. The crown, it was said, was dishonoured by improper connections, and many of the greatest national calamities have proceeded from improper alliances between the royal family and subjects; and that if, from after experience, we should find any material grievances ensue from this act, it could as easily be repealed at that time as thrown out now, and on better grounds. It was very rapidly carried through both houses; in the upper house by 90 to 26; and in the lower by 165 to 115.

Though the late decision concerning subscription to the 39 articles did not seem to promise much success to any innovations in religious matters, yet the case of dissenting ministers was introduced soon after the discussion of the royal marriage act; the advocates for it being encouraged to bring it forward chiefly on account of some favourable hints thrown out in the debates on the subscription-bill. A petition was now presented by a great body of these people, praying to be relieved from the hardship of subscribing to the articles of a church to which they did not belong. This, however, was most violently opposed by the opponents of the former bill, though with very little success in the house of commons, where it was carried through by a prodigious majority. Here it was maintained that nothing can advance the true interest of religion so much as toleration; and if articles of subscription are necessary, it must only be for men destitute of principle, and who would, in compliance with ambition or avarice, as readily subscribe to one set of articles as another. If thus any of the fundamental doctrines of Christianity are impugned, there are abundance of laws in existence to correct the impiety. The dissenters have indeed altered some of their original forms and doctrines, but that only in matters of indifference. It is the effect of learning, leisure, and refinement, to give men many opportunities of altering established forms. This has been the case formerly, and always will be. The dissenters have long been virtually exempted from this subscription; and yet the piety and decency of many of them, particularly in Scotland and Ireland, where no such laws are in being, sufficiently show, that men, whose minds are steadfast in the purity of religion, will not be confined nor influenced by laws

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Bill for the
relief of
dissenters
proposed.

British. laws of human invention. But though the dissenters enjoy full liberty by connivance at present, where is their security against the sudden attacks of malice and envy, which may be backed by the sanction of law? Every neglect of a law by connivance is an additional proof of the necessity of abrogating that law; and liberty is but an empty name, where it is enjoyed by an oversight only, as it were, of our superiors. In the house of lords, however, the bill was rejected by a majority of 70. Here the doctrine of universal toleration was strenuously opposed, as well as the great danger set forth, to which the church of England would be exposed by departing from the laws which guarded its privileges. The dissenters, it was said, had great cause to be satisfied with the favour they enjoyed by connivance; and the laws were only kept on record as a necessary curb, lest in the degeneracy of a declining kingdom, religion should be deliviate of protection against heresy and blasphemy.

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ecl.1.

The only other affairs of this session were some attempts at an inquiry into the affairs of the East India company, which were now in a very critical situation. These, however, did not come under consideration till the next session which took place November 26th 1772, when his majesty gave this situation of the affairs of the company as a reason why he had called them together sooner than usual. The continuance of the pacific disposition of other powers was mentioned, and satisfaction expressed that the continuance of peace had afforded an opportunity of reducing the naval establishment, though a great force must always be necessary for the defence of these kingdoms. Oeconomy was promised with regard to the supplies, and it was recommended to take every method that could be devised to remedy the dearth of provisions.

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India
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The affairs of the East India company took up the greatest part of the present session. It had been projected, as far back as the year 1767, when they were in a very flourishing condition, to bring them under the inspection of government, that the nation might share the immense wealth supposed to be enjoyed by the company. The design, however, did not succeed at that time, nor would it probably have been easily brought to bear, had not the affairs of the company been embarrassed by the bad conduct of their servants. During the last session a bill had been brought in for restraining the governor and council from all kind of trade, as well as for enlarging the power of the company over its servants. The bill, however, was rejected after the second reading, and indeed was thought to have been proposed only to introduce the succeeding business. The debates on the subject procured in a great measure the general belief of two points of much importance to the success of the scheme, viz. that the affairs of the East India company were in a very bad situation, owing to the behaviour of its servants; and that the company was at any rate insufficient for the government of such extensive possessions; of consequence that there was an evident necessity of giving up the management of it to the crown. A motion was now made in parliament, by a gentleman unconnected with administration, for a select committee to inquire into the affairs of the company: but many reasons were urged against this appointment, particularly that the business was too far advanced for a business of

such importance; that the committee, being a secret one, was not accountable for its conduct; and that, as the minister would have it in his power to nominate the members of the committee, considerable partiality might on that account take place. The motion, however, was carried without a division; and the members were chosen by ballot.

The affairs of the East India company proceeded from bad to worse during the recess. The treasury at home was quite exhausted; while bills to a vast amount, drawn on Bengal, were nearly due: which, with their debt to the bank and other public offices, along with the sum to be paid to government, reduced them almost to the brink of bankruptcy. They were therefore reduced to the expedient of borrowing a sum of money from administration: but their application was received with great indifference. The minister desired them to apply to parliament. The reports of the select committee, in the mean time, contrary to the promise of secrecy, were published, and gave the public no favourable opinion of the behaviour of the company's servants. On the meeting of parliament, the minister moved for another committee, under the title of the *committee of secrecy*, to consist of 13 persons, for taking into consideration the state of the company's affairs; which might thus undergo a full investigation, without any thing being known to the world, which had excited such indignation in the former case. The members of this new committee were also to be chosen by ballot; so that no objection could militate against them that did not militate, with equal strength, against the whole house. It was objected, that this mode of secret inquiry, by a small number, was unprecedented and unconstitutional; that the members would in effect be nominated by the minister, and act under his direction; and that a free investigation by the whole parliament was essentially different from that by a secret committee. In the latter case, every information that the minister thought proper to conceal would be withheld: at any rate, a committee of secrecy is an evident absurdity; a committee can be no longer a secret than during the time it takes up for inquiry. Its proceedings must be laid before the public; and in case of unjust accounts, the parliament had no means of being undeceived. These reasons, however, were of no avail at present. The committee of secrecy was carried, as the other had been, without a division; and, as had been predicted, the members, though chosen by ballot, were almost all of them devoted to administration. The select committee was likewise revived, that they might be, as it was said, checks upon one another; so that between them the nation would have every requisite degree of information on the whole affair.

In a very short time after the appointment of the secret committee, a report was given in, stating that the company were in great distress for want of money; and as this was the case, a bill ought to be brought in for restraining them from sending out superfluous to India, a scheme which they had meditated at that time. The minister and his adherents enlarged greatly on the necessity of this bill; which, they said, was by no means. It was the sense wish of parliament to render them a great and glorious company; it was absolutely necessary for this purpose not to allow them to engage in an expensive commission, at a time when their affairs were

Britain.

much embarrassed that they were obliged to apply to government for a loan. It was even doubted whether the company, without the sanction of parliamentary authority, had power to appoint a commission of this kind. On the other hand, the minister's proposal was said by opposition to be unconstitutional and insidious. The want of cash at present experienced by the East India company was not of such great importance, their credit being then as fully established as ever. They had made choice of a set of men in whom they could confide; the many losses occasioned by their servants rendered the commission indispensably necessary; and the expence would be paid from the savings which must undoubtedly arise from so prudent a step. It was unreasonable, because the East India company, or any other, are distressed, to allow them no opportunities of extricating themselves. The company could not be said to want respect for parliament; they had shewed this already by delaying the departure of the commission till the inquiry begun by the house was finished: nor could they be wanting in respect to their own interest, charter, and constitution; which they seemed to show by every possible mark of opposition to this bill. Administration boasted of their intentions and their wishes to render this company great and glorious; but how could we expect greatness or glory to proceed from a quarter where it did not exist? The dignity of parliament was lessened, and its glory effaced, by the conduct of ministers, and the many wanton acts of authority lately committed. It was a curious method of rendering a company great and glorious to plunder the proprietors of immense sums of money by exorbitant grants, or by taking away their charters; for, after this act, it was plain that charters could no longer be depended upon. Two gentlemen belonging to the company, and then present in the house, offered to pledge themselves, that the commission of supervision should not be allowed to depart until, from further reports, a full knowledge of the company's affairs should be acquired. This, however, was instantly rejected, it being said to be defective in security; that the East India company would not scruple to make an agreement of this kind to-day, and break it to-morrow; which could only be prevented by an act of parliament, especially as the ministry had no motives for promoting this measure, but a regard for the welfare of the company, and a desire to restore its affairs to a better state.

538
Ineffectual
attempts of
the company
to prevent the
passing of
the bill.

Notwithstanding all the arguments used by administration in favour of this bill, however, the company were so far from thinking it to their advantage, that they used every endeavour to prevent its passing into a law. They petitioned; and some of their servants were examined in the house of commons in order to show the necessity of supervisors being sent out, who might be qualified to reduce their affairs to some order by being on the spot, and enabled to curb the excesses of which the company's servants had too frequently been guilty. During this examination it appeared, that from the year 1765 to 1773 the expences of the company had increased from 700,000*l.* to 1,700,000*l.* annually, and that government had received near two millions from the company every year; that they had immense profits in extraordinaries, while the proprietors lost considerably of the dividend which

M^o 57.

the profits of their trade alone would have produced. In spite of all opposition, however, the bill for restraining the company from sending out any commission of supervision was carried by a majority of 153 to 28. In the house of lords it met with similar success, being carried by 26 to 6, though the minority thought proper to enter a protest. The reasons given against it in this protest were, that it took away from a great body corporate, and from several free subjects of this realm, the exercise of a legal franchise, without any legal cause of forfeiture assigned. The persons appointing the commissioners had by law a right to elect, and the persons chosen had a legal capacity of being elected. The supervisors had a full right vested in them agreeable to the powers and conditions of their appointment; but though no abuse was suggested nor any delinquency charged upon them, these legal rights and capacities were taken away by a mere arbitrary act of power, the precedent for which leaves no sort of security to the subject for his liberties. The bill seemed likewise a manifest violation of the public faith. The charter of the East India company was granted by the crown, authorized by act of parliament, and purchased for valuable considerations of money lent and paid. By this the company were allowed to manage their own affairs as they thought proper, and by persons of their own appointment; but by this bill the exercise of the power just mentioned was suspended for a time, and by grounding the supervision upon the actual interference of parliament with the affairs of the company, established a principle which might be used for perpetuating the restraint to an indefinite length of time. It is indeed difficult to settle the legal boundary of legislative power, but it is evident, that parliament is as much bound as any individual to observe its own compacts; otherwise it is impossible to understand what is meant by public faith, or how public credit can subsist. It appeared by evidence upon oath at the bar of the house of lords, that the company had received assurances from their chairman and deputy chairman, that the appointment of a commission for superintending and regulating their affairs would be approved by administration; and it was extremely hard that they should be able to find no security for their charter privileges against these very ministers, under whose sanction they had reason to believe they were all along acting. It was also the more incumbent on the company at present to give the most strict attention to their affairs, to enable them to answer the exorbitant demands of government, as it appeared, from the witnesses at the bar, that its exactions amounted to more than the whole profits of the late acquisitions, and the trade ensuing from them; while the proprietors, who had spent so much, and so often risked their all for obtaining these acquisitions, had not been permitted even to divide so much as the profits of their former trade would have afforded.

The secret committee now gave in their second report, containing a statement of the debt, credit, and effects of the company in England; beginning with an account of the cash in the company's treasury on the 1st day of December 1772, and containing a statement of all their debts and claims against them in every part of the world. Thus it appeared that the cash, credit,

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539
Protest against it in
the house of
lords.

540
Second report of the
select committee.

Britain. credit, and effects of the company amounted to L. 6,397,299 : 10 : 6, and their debts to L. 2,032,306, which being deducted from the above account of their effects, left a balance in favour of the company of L. 4,364,993 : 10 : 6, without any violation of the fortifications and buildings of the company abroad. The statement, however, was complained of as unfair; and it was said, that impartiality was not to be expected from a set of men who had it in their power to make what report they pleased for the interest of government measures: but the members protested their innocence; and administration insisted, that, until proof could be brought that the statement was unfair, the house was bound to adhere to it as just.

541
rate of the
company's
affairs
542
the state-
ment unfa-
ctory.
543
application
of the com-
pany to go-
vernment
for a loan.
The business was revived after the holidays by an application from the company to government for a loan of L. 1,500,000 for four years, at 4 per cent. interest, with liberty of repaying the same according to the abilities of the company, in payments of not less than L. 300,000; and that the company should not make a dividend of more than 6 per cent. until the loan should be reduced to L. 750,000; that then they might raise their dividend to 8 per cent. and after the whole loan was discharged, that the surplus of the nett profits arising in England, above the said dividend, should be appropriated to the payment of the company's bond debt, until it was reduced to L. 1,500,000, when the surplus profits should be equally divided between the public and the company. It was also requested, that the company should be released from the heavy penal interest incurred by the non-payment of money owing in consequence of the late acts for the indemnity on teas; and that they should be discharged from the annual payment of the L. 400,000 to the public for the remainder of the five years specified in the agreement. They farther requested, that the accounts of the Duannee revenues, of the charges of collection, expences of Bengal, company's accounts of sales, &c. should be delivered annually to parliament, and that leave might be given to export teas free of all duty to America, and to foreign parts. This request was judged expedient to be granted, and the following resolutions were agreed to,

544
resolutions
admi-
nistration in
consequence
"That the affairs of the East-India company are in such a state as to require the assistance of parliament; that a loan is necessary to reinstate the company's affairs; that the supply be granted; and that care be taken that the company be prevented from experiencing the like exigencies for the future. The two following motions were also founded upon the report of the secret committee, viz. That, supposing the public should advance a loan to the East-India company, it was the opinion of the committee that the dividend should be restrained to 6 per cent. until the payment of the sum advanced; and that the company be allowed to divide no more than 7 per cent. until their bond-debt be reduced to L. 1,500,000.

545
proposed in
by the
company.
These severe restrictions were judged proper by administration for the security of the public, and were such, they said, as every creditor has a right to make before hand with a person who wishes to borrow money from him. The company, however, replied, that these restrictions were contrary to the proposals they had made, and void of foundation, as being built on the erroneous reports of the secret committee. The chairman of the company declared at a general court that the government had agreed, or would agree, to the

proposed increase of dividend, before the participation of profits took place betwixt the government and company; the first lord of the treasury had told him so, and now wished to deny what he had said by using these expressions in private conversation, and when he did not consider the chairman as acting officially. But if this was the case, to what purpose did public men hold conversations, since they were afterwards to deny or forget what passed? Some time was also demanded to consider of these motions; but that being denied, the question was put and carried as ministry wished.

546
Territorial
right of the
company
to their pos-
sessions de-
meant.
The next step was to deprive the company of their territorial right to the countries they possessed in the East Indies. This had been allowed them in the most explicit manner, as appears by some of the papers which passed between the French and English ministers during the negotiations for the treaty of Paris: from one of which papers the following is an extract: "Respecting those territorial acquisitions which the English East India company have made in Asia, every dispute relative thereto must be settled by that company itself, the crown of England having no right to interfere in what is allowed to be the legal and exclusive property of a body corporate belonging to the English nation." This territorial right, however, was now denied. After reading the company's petition, lord North told the house that it was the opinion of several great lawyers, that such territorial possessions as the subjects of any state shall acquire by conquest, are virtually the property of the state, and not of those individuals who acquire them. It was his opinion, however, that it would be more beneficial to the public and to the East India company, to let the territorial acquisitions remain in the possession of the company for a limited time not exceeding six years, to commence from the agreement betwixt the public and the company. At the same time it was moved, that no participation of profits should take place betwixt the public and the company until after the repayment of L. 1,400,000 advanced to the company; and the reduction of the company's bond debt to L. 1,500,000. That after the payment of the loan advanced to the company, and the reduction of their bond-debts to the sum specified, three fourths of the nett surplus profits of the company at home, above the sum of 8 per cent. upon their capital stock, should be paid into the exchequer, for the use of the public, and the remaining fourth be set apart either for reducing the company's bond-debt, or for composing a fund for the discharging of any contingent exigencies the company might labour under.

547
The com-
pany's peti-
tion again
instructed
These proceedings were exceedingly disagreeable to the company. They now presented a petition complaining of the injustice of demanding any farther terms on account of a loan, after that loan was discharged. The limitations of the company's dividend to 7 per cent. after the discharge of the loan, until their bond-debt should be reduced to L. 1,500,000, seemed not to be founded upon any just calculation of their commercial profits; nor could it with reason be alleged that it was necessary either to their credit or that of the public to restrain them in such a manner. The additional dividend of 1 per cent. was an object of some consequence to the proprietor, but very little to the discharge of their debt to the public; and the hardships of being limited in this manner were exceedingly aggravated

Britain.

aggravated by the losses sustained, and the expences they had incurred in acquiring and securing the territorial revenues in India, at the risk of their whole capital, while the public reaped such great advantages. The limitation of the company to a term not exceeding six years for the possession of their Indian territories they looked upon to be entirely arbitrary, as it might be construed into a final decision against the company respecting those territories to which they insisted that they had an undoubted right. Neither could they acquiesce in the resolutions by which three-fourths of the surplus nett profits of the company at home, above the sum of 8 per cent. per annum upon their capital stock, should be paid into the exchequer for the use of the public, and the remainder be employed either in further reducing the company's bond debt, or for composing a fund to be set apart for the use of the company in case of extraordinary emergencies; such unheard of disposal of their property without their consent not being warranted by the largest pretensions ever made against them. It was likewise subversive of all their rights and privileges, by denying them the disposal of their own property after their creditors were properly secured by law. Their petition concluded with assuring ministers, that, rather than submit to these conditions, they desired that any claims against the possessions of the company might receive a legal decision; from which, whatever might be the event, they would at least have the satisfaction to know what they could call their own.

548
They are allowed to export tea duty free.

No regard being shown to this petition, the motions were carried in favour of administration. To make some kind of recompense, however, it was agreed on their part, that as the company had a stock of teas amounting to about 17 millions of pounds in their warehouses, they should be allowed to export as much of it as they thought proper free of duty, and employ the money thence arising for the behoof of their own affairs.

549
East India regulation bill brought in.

This concession in favour of the East India company proved in the event the loss of the American colonies; nor indeed could these arbitrary proceedings with such a considerable body tend to impress the minds of any part of the nation with ideas favourable to the views of administration. In other respects the minister abated nothing of the disposition he had from first to last shown with regard to the company. On the 3d of May 1773 the following resolutions were laid down by him as the foundation of a bill for the establishing certain regulations for the better management of the East India company, as well in India as in Europe. These were, 1. That the court of directors should in future be elected for four years; six members annually, but not to hold their seats longer than four years. 2. That no person should vote at the election of the directors who had not possessed their stock twelve months. 3. That the stock of qualification should for the future be L.1000, instead of L.500. 4. The mayor's court of Calcutta should for the future be confined to small mercantile causes, to which its jurisdiction only extended before the territorial acquisitions. 5. That, instead of this court, thus taken away, a new one should be established, consisting of a chief justice and three puisne judges. 6. These judges to be appointed by the crown. 7. That a superiority

be given to the presidency of Bengal over the other presidencies in India. Each of these resolutions was carried by a great majority. The salaries of the judges were fixed at L.6000 each, and that of the chief justice at L.8000. The governor of the council was to have L.25,000 annually, and the members of the council L.10,000 each. By the friends of the company, however, the bill was supposed to have a tendency to effect a total alteration in the company's constitution in England, as well as the administration of all its presidencies in Asia, in order to subject all their affairs, both at home and abroad, to the immediate power of the crown. No delinquency was charged, nor any specific ground of forfeiture assigned, yet by this bill more than 1200 freemen were to be disfranchised and deprived of any voice in the management of their property. By cutting off the L.500 stockholders, the proprietary would become more manageable by the crown; nor was there any security that the directors would be faithful to the interests of the company when they were no longer responsible to them for their actions. By the establishment of a general presidency over all the affairs of the company, and by the nomination of judges for India, government would in effect transfer the whole management of the affairs of the company to the crown, and the company would have no farther share in the business than to pay what salaries the crown thought fit to assign them. The proprietors of L.500 stock presented a petition, setting forth, that, by king William's charter granted to the company, and repeatedly confirmed since that time, in consideration of many large sums repeatedly advanced by the company to the public, they were legally possessed of a right of voting at the election of directors, making of by-laws, or in any other matter relating to the affairs and government of the company; but by a clause in this regulating bill they were deprived of this right, and that under a pretence of preventing the pernicious practice of splitting stock by collusive transfers; but so far were the proprietors from giving way to such practices, that in the year 1767 they petitioned parliament for an act, by which the several proprietors intitled to vote should be obliged to hold this qualification six months at least before the exercise of their right, afterwards extending the time to twelve months, rather than the act should fail of its intended effect. This proposed increase of the qualification of the voters, however, could not in any degree answer the end desired; for the splitting of stock being confined to such proprietors as held large quantities, they would find it an easy matter to place their stocks in the hands of half the number of persons, and thus extend their influence in a great and undue proportion; but if ever government conceived designs against the company, they would find it much easier to execute them while the proprietors were few and opulent, than when they were numerous, and at the same time independent and possessed of moderate fortunes. This petition produced a motion in the house of commons, "That it does not appear that the proprietors of L.500 stock in the East India company have been guilty of any delinquency in the exercise of their charter-rights according to the several acts of parliament made in their behalf." This, however, being rejected, the regulating bill passed in the house of

Britain.

550
Is disagreeable to the company.

551
Petition of the proprietors of 500l stock.

552
Motion in their favour rejected in the house of commons.

commons

Britain. commons by a majority of more than six to one. In the house of lords it passed by 74 to 17. The duke of Richmond moved for a conference with the house of commons; but this was refused. He then moved that copies of all the papers which had been laid before the commons should be laid before the lords also; but this being likewise refused, he joined six other members in a protest, the substance of which was, that the whole was a scheme of government to get the power and wealth of the company into their hands; pointing out at the same time the many particular infringements on public and private rights by passing the bill.

553
Investigation of the company's affairs by the select and secret committees.

All this time inquiries went on by the select and secret committees; the affairs of the company were investigated from the year 1756, and many witnesses examined concerning them. A report was presented by general Burgoyne, containing many charges of cruelty and rapacity in the conduct of several gentlemen concerned in the management of the affairs of the company; particularly with regard to the deposition of Surajah Dowlah in 1756. This was said to have been the origin of all the evils that had happened since that time. He insisted much on the treachery used in bringing about that revolution, and particularly the fictitious treaty with Omichund; exposing the conduct of lord Clive, who had caused admiral Watson's name to be affixed to that treaty, which the admiral had refused to sign in person*. He concluded with moving for the restitution of all the money received in presents or otherwise in India, while the receivers acted in a public capacity; and at last stated the following resolutions: "That all acquisitions made under the influence of a military force, or by treaty with foreign powers, do of right belong to the state; that to appropriate acquisitions obtained by such means is illegal; and that great sums of money had been obtained by such means from the sovereign princes in India." The general belief that many of the company's servants had acted in a most infamous manner, was at this time so strong, that the above resolutions were carried almost unanimously. Lord Clive defended himself by general protestations of innocence; which, however, gained but little credit, till he entered into a particular refutation of the charges against him. His friends were not of opinion that these were of an atrocious nature, and wished to excuse him by policy, necessity, &c. rather than load him with any great degree of guilt. The treaty with Omichund was justified by necessity. Some said, indeed, that as Omichund had the character of the most accomplished villain in Asia, an Englishman only wished to have a trial of skill with him. This severe sarcasm, however, was a mere piece of wit, without any solid foundation; for the crime, if any there was in that transaction, undoubtedly lay in the dethroning a sovereign prince by means of traitors, not the cheating of these traitors of their reward. Indeed, if once we admit treachery into our dealings at all, it is in vain to pretend any subjection to the rules of justice; for we are already beyond its jurisdiction.

General Burgoyne now moved, "That Lord Clive, in consequence of the powers vested in him in India, had received at various times presents to the amount of L.234,000 Sterling, to the dishonour and detri-

ment of the state;" but this being rejected after violent debates, the following was substituted: "That Lord Clive did, in so doing, abuse the power with which he was entrusted, to the evil example of the servants of the public." This also being rejected, another was added, "That lord Clive, when he received the sum above mentioned, did at the same time render great and meritorious services to his country." Thus the matter was concluded, and the affairs of the company delivered into the hands of administration, who declared that their regard for its welfare was the sole motive for bringing about this revolution.

555
He is acquitted.

556
Proceedings in American affairs.

The affairs of the East India company were succeeded by those of America. The ill humour occasioned by the taxes laid on that country has been already taken notice of. The stamp-act had excited among them a spirit of industry, economy, and a desire of serving themselves with their own manufactures, which had never been forgotten. This was at that time, as well as afterwards, imputed to wilfulness, or the discontent of a few, which would afterwards subside of itself, or be suppressed by the voice of the majority; when things would of course revert to their old channel. The trifling tax on tea, however, which had not been repealed, and the allowance given to the company to export what quantities they pleased, now threw matters into a ferment not to be quelled by any means whatever. The various proceedings in America, the tumults, and subsequent war, are fully taken notice of under the article *United States of America*. Here it only remains to give an account of the manner in which the legislature and people of Great Britain were affected by these events. It has already been remarked, that ever since the conclusion of the peace in 1763 the disposition shown by government to augment the revenue, for which indeed there was at that time an evident necessity, had produced in the popular party of Great Britain a spirit very similar to that manifested by the Americans, though in an inferior degree; so that the patriots of Britain affected to consider the Americans as oppressed by government, and suffering in the same cause with themselves. The destruction of the tea at Boston and other places in America, however, considerably diminished the number of their friends, and made many of those who still adhered much less sanguine in their cause. The matter was announced to parliament by a special message from the throne. Lord North and the other ministers set forth the conduct of the colonists, particularly of the town of Boston, in a most atrocious light, and concluded that now government was perfectly justifiable in any measures they might think proper to redress the wrong, and inflict such punishment on the town as the enormity of the crime seemed to deserve. Opposition did not pretend to exculpate, though it was still attempted to excuse them by deriving all the disturbances in that country from the arbitrary and absurd measures pursued and obstinately adhered to at home. This heavy charge the ministry evaded by drawing the attention of the house to the more important consideration, Whether the Americans were now to be dependent, or independent, on Great Britain? The Boston port-bill being then brought in, was carried, but not without considerable opposition, both within and without doors. A petition was first presented by Mr Bolla, agent for

Britain.
557
Debates on
the Boston
port bill,
and peti-
tions against
it.

the council of Massachusetts bay, urging an act of queen Elizabeth for the security of the liberty of the colonies. This was presented before the bill had actually made its appearance; but so little regard was paid to it, that, during the very time it lay on the table, the bill was brought in by lord North. After it had passed two readings, that gentleman presented another, desiring to be heard in behalf of the town of Boston, for the council of Massachusetts bay. This was absolutely refused; because, though Mr Bolla was agent for the colony, he was not for the corporation of the town of Boston. Neither could he be so for the council of Massachusetts bay; for as that was necessarily fluctuating, the body which had appointed him was now no longer existing. This appeared very inconsistent to many of the members, and produced a greater opposition in the house than would otherwise in all probability have ensued. A new petition quickly followed from the lord mayor, in the name of the natives and inhabitants of North America residing at that time in London. This was written in a more spirited style, and boldly insisted that the bill was illegal, unprecedented, unjust; and that, under such a precedent, no man or body of men in America could have a moment's security; the charge being brought by the enemies of the town, and the punishment inflicted without hearing them in their own defence, or even making them acquainted with the charge; and they concluded with these remarkable words, that "the attachment of America would not survive the justice of Britain." As little regard being paid to this as to the former petitions, and all proposals for a delay rejected, the bill passed both houses without a division; the minority, notwithstanding their opposition, not choosing to dissent publicly from the first step taken by government to reduce the disobedient colonies. That this obnoxious bill might not be sent to America without some mitigation, however, they proposed the repeal of the duty on tea laid on in 1767; but this was also rejected, probably from a vain expectation that the opposition of the Americans was that of a mere tumultuous mob, and that by showing a proper spirit and perseverance the ministry could not fail to come off victorious at last.

The extreme obstinacy shown by ministers, in this first instance, undoubtedly proved very prejudicial to their cause, not only by exasperating the Americans, but by rousing the indignation of minority, and making their opposition so violent and determined, that the Americans could not but conclude that they had a very strong party in their favour on this side of the Atlantic. This appeared in every subsequent transaction relating to the colonies. The bill for regulating the government of Massachusetts bay did not pass without a protest, from which we shall only extract the following sentence: "This act, unexampled in the records of parliament, has been entered on the journals of this house as voted *nemine dissentiente*, and has been stated in the debate of this day to have been sent to the colonies as passed without a division in either house, and therefore as conveying the uncontroverted universal sense of the nation. The despair of making effectual opposition to an unjust measure has been construed into an approbation of it."

The like consequences ensued on passing the act for

the impartial administration of justice. In the protest on this occasion the lords used the following expressions: "The bill amounts to a declaration, that the house knows no means of retaining the colonies in due obedience but by an army rendered independent of the ordinary course of law in the place where they are employed. A military force sufficient for governing upon this plan cannot be maintained without the inevitable ruin of the nation. This bill seems to be one of the many experiments towards the introduction of essential innovations into the government of this empire. The virtual indemnity provided by this bill for those who shall be indicted for murders committed under colour of office, can answer no other purpose. We consider that to be an indemnity which renders trial, and consequently punishment, impracticable. And trial is impracticable, when the very governor, under whose authority acts of violence may be committed, is impowered to send the instruments of that violence to 3000 miles distance from the scene of their offence, beyond the reach of their prosecutor, and the local evidence which may tend to their conviction. The authority given by this bill to compel the transportation from America to Great Britain of any number of witnesses at the pleasure of the parties prosecuting and prosecuted, without any regard to their age, sex, health, circumstances, business, or duties, seems to us so extravagant in its principles, and so impracticable in its execution, as to confirm us further in our opinion of the spirit which animates the whole system of the present American regulations."

A still greater opposition was made to the Quebec bill, inasmuch that, before it could be carried, the ministers were obliged to drop much of that high and aspiring tone to which they had accustomed themselves in talking of American affairs. The minority contended, that here, without any necessity pleaded, or even suggested, an arbitrary influence was extended by act of parliament to that province, furnishing a dangerous precedent, and an additional instance of the aversion which ministry bore to the rights of the people. They argued likewise in favour of the mode of trial by jury, and thought that the establishment of the Roman catholic religion there gave it a preference over the Protestant, which was now only to be exercised by toleration. The people at large also were alarmed at the religious part of the bill, and it is not impossible that the suspicions conceived at this time might contribute in some measure to the dangerous insurrections of 1779 and 1780.

At the conclusion of the session his majesty expressed the greatest satisfaction at what had been done, and hopes of the good effects that would attend the new regulations. The reception they met with in America is related in its proper place; in Britain the people seemed to wait the event with indifference, but their bad success with the colonists furnished the minority with new matter of reproach to cast on administration. The parliament in the mean time was dissolved by proclamation, and a very short time allowed for the election of new members; so that if opposition at that time had any strength, they had not now time to exert it. The new parliament met on the 30th of November 1774; when his majesty acquainted the houses that a more daring spirit of resistance still prevailed in Ameri-

Britain.
561
On the im-
partial ad-
ministration
of justice
bill.

562
Debates on
the Quebec
bill.

563
Parliamen-
tary pro-
ceeding in
ca, 1774.

558
Passes with-
out a divi-
sion.

559
Repeal of
the tea duty
refused.

560
Protest on
the regula-
ting bill.

Britain. ca, notwithstanding the most proper means had been taken to prevent the mischiefs thence arising, and assured them that they might depend on a firm resolution to withstand every attempt to weaken or impair the supreme authority of this legislature over all the dominions of the crown. In answer to this speech the minority demanded a communication of all the letters, orders, and instructions relating to American affairs; but this being over-ruled, and the address carried as a matter of form, American affairs were delayed, in spite of all opposition, till after the holidays. In the question on the address, the strength of administration was to that of their adversaries as 264 to 73.

564 In the beginning of 1775 the minority received a considerable accession of strength by the return of Lord Chatham, who, after long absence, again made his appearance in parliament. He now testified his disapprobation of the measures which had been pursued with regard to America in the warmest terms; moved for addressing the king to recall the troops from Boston; predicted, that if ministers went on in the way they had done for some time, they would make the crown not worth the king's wearing; that the kingdom was undone, &c. All his eloquence, however, proved at this time ineffectual; administration was determined upon forcing the Americans into subjection, and his motion was rejected by 68 to 18.

565 Lord North now presented the papers which had been called for by the minority; but, lest the publication of particular names should prove detrimental to individuals, only such parts as administration thought proper for public inspection were laid before the house. This was complained of, but to no purpose; and the papers, in their mutilated state, were laid before a committee of the whole house. In the mean time petitions against coercive measures with America had been received from most of the trading companies of the kingdom; which, though highly displeasing to administration, could not be absolutely rejected, though it was fully determined not to yield to their requests in the smallest degree. A committee was therefore appointed to take them into consideration, which was not to take place until the American affairs were also considered. The reason given for this method of proceeding was, that the consideration of commercial matters ought not to interfere with those of the political kind; each of them being sufficiently embarrassing without any other. This delay of hearing these petitions was supposed to be an absolute rejection of them in effect; and so indeed it proved to be, the committee to which they were consigned being humorously called the *committee of oblivion*.

566 The merchants of London, however, were determined not to give up the point until they had exerted themselves to the utmost. They drew up a paper in which they denied the distinction established by ministry. They affirmed that the connection between Great Britain and America was chiefly of a commercial nature, and that the manifold regulations adopted for the mutual prosperity of the colonies and of the mother-country formed the great political chain which united them to one another. Questions of commerce and policy, therefore, with regard to them, ought never to be divided, but examined jointly, and could never be thoroughly understood if considered in any other way.

This remonstrance was seconded by all the powers of opposition; but the truth was, that administration had already determined what line of conduct they were to follow, and therefore wished to hear as little as possible on the subject. "War (says Dr Andrews) was now the word; and notwithstanding no weightier reason could be given for not attending to what the merchants had to say, than this very determination, yet that was the very motive that impelled ministers to refuse them a hearing, lest these should make it appear how unwise it was to precipitate the nation into such a measure."

But though there is not the least reason to doubt that administration were now fully determined upon a war, and therefore wished to be troubled with as few objections as possible, they were by no means deficient in arguments for the defence of their own conduct. They alleged that the petitions so much recommended to the attention of the house were principally the work of a factious party. The advantages accruing from the American trade were owing to the dependent situation of the colonies, who now aimed at a superiority over Great Britain, or at least at shaking off entirely the superiority which the mother country had till now exercised over them without the smallest complaint. It was the advantage of the merchants themselves that was consulted by maintaining that superiority; and the merchants themselves would be the first to feel the bad consequences of its being lost. War and its consequences are no doubt very terrible, but sometimes are necessary, to prevent greater evils. The greatest evil that can befall a trading nation is the loss of its commerce; and were the Americans to persist in their courses at that time for a few years longer, this consequence must inevitably ensue.

It was besides insisted, that though administration were to yield the present contest, the warmest advocates for America could not pretend to say what would be the last of its demands. The Americans aimed in reality at the repeal of whatever appeared obnoxious to their immediate interest: But that, and their real interest, differed very much. The greatest political evil that could befall them was to be deprived of the political and commercial support they received from Great Britain; and to this they must ultimately submit, if they should ever succeed in the pursuit of that delusive phantom of independence which they now accounted their happiest situation. In short, administration insisted, not without a great show of reason, that the Americans were not to be reclaimed by concessions. Mercantile people indeed might imagine so, from the facility with which concessions would be made, and the speed with which tranquillity would be restored. But tranquillity procured in this manner would last no longer than till the colonies, untrammelled by any regulations, perceived, or imagined they perceived, the benefit of dealing with other countries, and carried their own commodities wherever they thought proper. This was the point at which they uncontestedly aimed, whatever they might pretend to the contrary; for, notwithstanding the boasts they made of the vast business transacted with Britain, it was well known to arise from the immense credit they were indulged with there, and which they could not expect elsewhere.

The honour and character of the nation were now

Britain.

also said to be at stake. The British had often taken up arms for matters of less consequence; why then should they now hesitate in a case like the present, where honour and interest both called upon them for the most vigorous and speedy exertions? Formerly it was the custom of the merchants to second the wishes of ministry in this respect, instead of opposing them. The inconvenience of suspending their profits for a time must be submitted to, and their enemies would experience as many if not more of the same kind; and it would be unworthy of the character they had so long sustained to yield to indignities for the sake of profit. The losses above mentioned, however, would be but trifling in comparison of those that would follow in time to come, should Britain from want of spirit give up the assertion of her just rights. This was a policy hitherto unknown in Britain, which had heretofore been noted for the ardour and celerity with which they were maintained.

570
On the petition of congresses to the king.

The end of all this altercation was, that the motion in favour of the merchants petitions was rejected by 250 to 89. This point, however, was no sooner discussed, than a violent debate arose about the petition of congresses to the king, which had been delivered, and by him referred to parliament. It was argued by administration, that no petition could be received from the continental congress, which was no legal body, and it would be admitting their legality to receive a petition from them; the general assemblies and their agents were the only lawful representatives of the colonies, and none else would be admitted. Opposition replied and argued as much as possible, but to no purpose; and, after an ineffectual struggle, they had the mortification to find that the petition was finally rejected by 218 to 68.

571
Chatham's conciliatory plan rejected.

In the mean time a conciliatory plan was prepared by the earl of Chatham, which was presented on the 1st of February 1775. The intent of his bill, he said, was to settle the troubles in America, and to assert at the same time the supreme legislative authority and superintending power of Great Britain over her colonies. This was to be done by their acknowledging on their part the supremacy of the British legislature and the superintending power of parliament. No taxes were to be levied in America, but with the free consent of their assemblies. It asserted a right in the crown to keep and station a military force established by law in any part of its dominions; but declared, that it could not be legally employed to enforce implicit and *unlawful* submission. A congress might also be held, in order to recognize the supreme sovereignty of Great Britain over the colonies, and to settle, at the same time, an annual revenue upon the crown, disposeable by parliament, and applicable to the exigencies of the nation. On complying with these conditions, the acts complained of by congresses were to be suspended, with every other measure pointed out as a grievance, and the constitution of their governments to remain as settled by their charters. This bill was, however, deemed at once totally inadmissible, on account of its alleged partiality to America, by the various concessions it enacted, and particularly by empowering the colonies to assemble in congress; a measure which, of all others, was at that time the most

offensive, and supposed to be the most injurious to the British interests. Britain

Lord Chatham was by no means deficient in arguments in support of his favourite plan; but these, though supported by all the powers of eloquence, proved unsuccessful; the proposal was ultimately rejected by 61 to 32. So determined were the majority in giving this an entire rejection, that it was not even permitted to lie upon the table; which, however, may be considered as a piece of indignity offered to that great man, proceeding rather from the indifference with which he had been received at court for some time, than from any real and thorough conviction of the inutility of the plan he proposed.

A new petition was next presented to the house of commons by the proprietors of estates in the West India islands; representing their alarm at the association of the Americans, and their intended stoppage of trade with the British islands; the situation of which, they said, would be very calamitous, if the acts in question were not immediately repealed. The trade of these islands was at that time of the most extensive nature. All quarters of the globe were concerned in it; the returns centered in Britain, and were an immense addition to its opulence, inasmuch that the British property there amounted to no less than 30 millions sterling. But the West Indies, however wealthy, did not produce the necessaries of life in sufficient abundance for their inhabitants. Large importations were continually wanted, which could only be supplied from North America; and were they to be cut off from a communication with that continent, they would shortly be reduced to the utmost distress. Such was the substance of this petition; to which no more attention was paid than had been to the rest. To administration all petitions now appeared to be the contrivance of faction; and it was said, that however inconvenient the coercive measures might be, they ought not to be retarded by the consideration of any temporary losses. As it was necessary, however, to let the nation know the ultimate resolves of administration respecting America, it was at last done by lord North in a long speech, in which the most remarkable circumstances relating to the dispute were enumerated. It was asserted, that universal fermentation then prevailing in America, proceeded from the unwarrantable arts and practices used to dispose them against the ruling powers in Britain; and asserted, that, notwithstanding all their complaints, the public charges borne by individuals in America were, on the strictest computation, not more than 1 to 50, when compared with what was paid by individuals in England. Nothing, therefore, but a settled determination to quarrel with the parent state could induce the Americans to persist in their disobedience to the lawful injunctions laid upon them, which were neither injudicious nor oppressive; but, on the contrary, framed with all possible lenity, and counterbalanced by advantages which were not possessed by Britain. It was therefore a spirit of resistance which animated America, and not a discontent at oppressions which plainly had no existence. For this reason it was proposed to the house to send a greater force to America; and to pass a temporary act, suspending all the foreign trade of the different colonies of New England, and

572
Petition of the West India planters

573
Rejected.

Britain. and particularly the Newfoundland fishery, until they consented to acknowledge the supreme authority of the British legislature, &c. upon which these restrictions should be taken off, and their real grievances, if any such there were, redressed upon making proper application. New England, they said, was justly singled out upon this occasion, as being the most guilty of the whole. The others, as less faulty, it was hoped, would yield with less compulsion; but the question now was simply, Whether we would at once abandon all claims on the colonies, and instantly give up the advantages arising from our sovereignty, and the commerce dependent on it? or, Whether we should resort to the measures indispensably necessary to ensure both?

574
The address on the American papers.
An address was now carried, which, in the ideas of opposition, amounted to an absolute declaration of war. The consequences, therefore, were painted out with the utmost freedom, and some even denied the charge of rebellion fixed on the province of Massachusetts bay. The people there, they said, had done nothing but what the constitution allowed: they had resisted arbitrary measures; and the examples so frequently set them at home were sufficient to justify their conduct. The appellation of *rebels*, they said, was dangerous, and might better be spared; it would only serve to render them desperate, and inspire them with a determination to resist to the last, from an apprehension that their lives and properties were forfeited. This last consideration, however, was made very light of by administration. Great stress, they said, was laid upon the union of the colonies, but a very little time would show with how much impropriety. The principles on which they were associated were too self-denying to be supported by human nature, and were too inimical to the interest and feelings of individuals to bind them long together. In other respects this union of the colonies might be viewed with indifference, and even contempt. The natives of America, it was said, were no soldiers; they were averse to military discipline, and incapable of subordination; they were of a slothful and spiritless disposition; uncleanly, liable to sickness, and easily overcome by fatigue. Such people as these would never face a British army; and a very small force would be necessary to put an end to all their projects of independence.

575
The recommitment of it.
These were the principal arguments for and against this address, which was carried by 296 to 106: but so important was the subject of it deemed by the minority, that a motion was made for recommitting it on account of the consequences that would probably result from the prosecution of the measures recommended. A very long and violent debate ensued; the event of which was, that administration contended as usual for the necessity of enforcing obedience with fire and sword. The Americans, they said, were become incorrigible through forbearance; lenity was a subject of derision among them, and was imputed to imbecility and fear; they imagined themselves able to abolish the sovereignty of Britain in that country, and were now resolved to do it. It was therefore incumbent on every native of Britain, in such a case, to stand forth, and vindicate the interest and glory of his country; and it was the duty of parliament and ministry to call forth the whole spirit of the nation to a contest in which

every thing dear to them both in their public and private capacities was so deeply concerned.

Britain
In this, and some former debates, the danger of being involved in foreign wars on account of the colonies had been insisted on; but this was looked upon by administration to be improbable. It was hardly to be imagined, they said, that foreign powers would behave in a manner so very impolitic as to encourage rebellions in other colonies, which might, in a very short time, become precedents for imitation in their own. The number of friends to government in America was likewise very much relied upon. A proper reinforcement to the troops already there would encourage those to declare themselves who were at present too timid to avow their sentiments: These, if duly supported, would be found to be no inconsiderable number; and, when added to the forces stationed among them, would undoubtedly counterbalance the power of the malecontents. This project of arming the Americans against one another was reprobated by opposition more than all the rest. The address itself was a measure replete with barbarity as well as imprudence; tending to put arms in the hands of every man throughout the continent who suspected the designs of the British administration, and to expose to ill usage and ruin every person who was known, or imagined, to be a friend to Great Britain. The Americans were said to aspire at independence; but if any thing could bring this about, it would be the conduct of ministry. The most obedient and loyal subjects cannot have patience for ever with a tyrannical government. They will undoubtedly rise at last, and assert their rights; and those who style them rebels on that account ought to remember, that oppression not only produces but justifies resistance. It had always been believed by the Americans, without any contradiction from Britain, that internal taxation in America belonged to the assemblies of the colonies, and to them only. There were opinions in all nations, which the legislature would respect, while they produced no bad consequences. This opinion ought not therefore to have been attacked at such an improper season, after having been virtually recognized by the repeal of several acts, and approved by some of the most learned and intelligent people in the kingdom. It was the greatest misfortune that could befall a state, when its rulers endeavoured, without any apparent necessity, to alter the system and maxims of governing long adopted, and the utility of which had been confirmed by experience. This was, however, the case with Britain. The mildness and benignity which was wont to direct the measures of former ministers was now laid aside for severity and imperiousness; while implicit obedience was imposed upon the colonists, as the only condition by which they could purchase peace. The aspersions of cowardice, so largely thrown upon the Americans by the ministerial party, did not pass unnoticed. It was observed, however, that were there ever so just, the very nature of their country would fight for them. By this alone our military enterprises would be retarded and impeded in a considerable degree; while the sinews of war would undoubtedly be greatly relaxed, as the suspension of such a considerable commerce as that of our colonies could not fail to be severely felt.

Britain.

Besides all this, the views and principles of ministers were attacked in the most violent manner. They were said to be reviving the old exploded doctrines of hereditary right and passive obedience.--They required the Americans to submit unconditionally to the will of Great Britain, for no other reason but because she was the parent state: but if no better reason could be produced, they could not be justly blamed for their disobedience. The ties between Great Britain and her colonies, however, were of a far more noble as well as more binding nature than even origin and consanguinity. These ties were the constitution transmitted from Britain, and the brotherly assistance hitherto afforded them by Englishmen; and which ought to render the name dear to them. While these ties remained unviolated, there was no room to complain of their behaviour; but they would never submit to despotic authority in Englishmen more than in any others. Such unwarrantable principles rendered it no longer a question, whether the measures of administration should be considered, but whether the ministers themselves ought not to be deprived of the power they exercised so unconstitutionally? And the question was not now between Great Britain and America, but, whether we should give up our colonies or our ministers?

Language of this kind excited the indignation of the ministerial party to a very high degree. They now charged ministry, in very plain terms, with the guilt of all that had happened. A factious republican spirit, they said, was gone forth; by which every person who wrote or spoke on the American cause was actuated; and which had not only induced the Americans to commence a rebellion against the parent state, but had filled the house with incendiaries. The final issue of the dispute was, that the recommitment of the address was lost by 288 to 109. The debates were the most violent that had ever been known in the British parliament; and so important was the subject reckoned, that not only the natives of Britain, but even the foreign ministers in London, watched the motions of administration with the utmost anxiety, as considering it a point which might probably give a new face to the affairs of all Europe.

5:6
Petition
from the
West India
merchants

All these victories of administration were not sufficient to prevent new enemies from starting up. Petitions had been preparing by the London merchants trading to America, and from those concerned in the West-India trade, to be presented to the house of lords. This task was undertaken by the marquis of Rockingham, but he was prevented by a previous motion in favour of the address. A long and violent debate, however, ensued concerning the necessity and propriety of receiving them. The papers on which the address had been founded were said to be partial and mutilated, for which reason the house ought to pay the greater regard to the representation of the merchants; whose testimony, as persons deeply and essentially interested in bringing truth to light, might be depended on with much greater safety. It was urged, that they earnestly desired to be heard before the house took any final determination with regard to America; a refusal would amount to a public declaration, that parliament was resolved to oppose the sense of the petition, right or wrong; and such treatment was in every re-

N^o 57.

spect unwarrantable, and no less contrary to sound policy than to equity and good manners.

Britain.

All these representations, however, had no weight with administration: they affected great sorrow at being obliged to declare that the petition could not be received consistently with the interest of the kingdom; they put the merchants in mind that the American proceedings threatened fatally to diminish the commercial greatness of this kingdom, in which case none would suffer so much as themselves; and they insisted that confidence ought to be put in the wisdom of parliament, as it was not doubted that by properly asserting the supremacy of the British legislature in the manner proposed, all those advantages about which they were so anxious would be secured. They were therefore exhorted to submit to temporary inconveniences, which could not be avoided in the present posture of affairs, though probably they would not be of long duration.

577
Rejected.

In the mean time matters went on from bad to worse in New England; so that it was soon perceived either that the friends of government in that colony did not exert themselves, or that they were far from being so numerous as had been imagined. In order to make their coercive plan the more effectual, therefore, it was now judged necessary to extend it so that every individual of the colony should become sensible of the punishment. This, it was supposed, would be done by a bill for restraining the four provinces of New England from commerce with Great Britain, Ireland, or the British West India Islands; and prohibiting them from carrying on the fishery at Newfoundland. The reasons given for this were, in substance the same with those for the others; and indeed both parties had now so much exhausted their arguments, that very little new matter was left for either. Every step taken by ministry, and every proposal made by them, however, produced a violent debate; and though they constantly gained the victory, it was not without the mortification of hearing their principles and conduct reprobated in the most opprobrious manner. In the present instance the bill was carried by 261 against 85; but a petition against it was quickly offered by the London merchants concerned in the American trade, setting forth the danger that would accrue to the fisheries of Great Britain from such a prohibition.

578
On the new
England re-
straining
bill.

From the evidence brought in support of this petition it appeared, that ten years before the American fisheries had been in such a flourishing state, that the four provinces of New England alone employed near 46,000 ton of shipping and 6000 seamen; and that the produce of their fisheries in the foreign markets amounted, in the year 1764, to upwards of L. 320,000. Since that time they had greatly increased; and what rendered the fisheries particularly valuable was, that all the materials used in them, excepting only the timber for building the vessels, and the salt for curing the fish, were purchased in Britain, and the nett proceeds of the trade were also remitted thither. It appeared also, that it would not be practicable to transfer these fisheries to Halifax or Quebec, though ever so much encouragement were given to either of these places, as they had neither vessels nor people to man them, and would never be able to procure supplies of seamen

579
General ac-
count of the
American
fisheries.

^{Britain} seamen from New England on account of the aversion of the inhabitants to the government of these two provinces.

entrusted, from a persuasion that the enemy to be encountered was not to be feared, and could easily be overcome.

^{Britain}

⁵⁸⁰
Of the inhabitants of Nantucket.

Some other circumstances were likewise urged as strong reasons against this bill; particularly the commercial concerns of the city of London with New England (to which alone the colony stood indebted for near a million), and the bad consequences of it to the people of Nantucket. This is a barren island, lying off the coast of New England, about 15 miles long, and three broad, containing about 6000 inhabitants, almost all quakers. The natural produce of this island, it was alleged, could not maintain 20 families; but the industry of the inhabitants was such, that they kept 130 vessels constantly employed in the whale-fishery, which they carried on in the north seas, to the coasts of Africa and Brazil, and even as far as the Falkland islands and the shores of Terra Magellanica. These people, it was said, ought undoubtedly to have been exempted from the common calamity, were it only from the applause due to so much industry and resolution.

The final resolution of reducing the colonies by force being now taken, it became necessary to make proper preparations for the purpose; and in this the conduct of administration was little less censured than in other respects. As the abovementioned opinion, that the Americans were timid and incapable of becoming soldiers, prevailed greatly at that time, a force of 10,000 men was judged sufficient to reduce the province of New England to obedience. This was vehemently opposed by the minority. They insisted that the force was totally inadequate, and only calculated to produce expence to no purpose. The first impression, they very justly observed, ought to be decisive, if possible; and in order to render it so, it was necessary to send such a fleet and army as might ensure the confidence of the public, and be certainly capable of surmounting all obstacles. Many of the friends of administration were of the same sentiments in this respect; and the only reason assigned for acting otherwise was an hope that the Americans would, upon more mature consideration, desist from their opposition. That they might the more readily be induced to this submission, lord North's conciliatory proposition was formed. By this it was enacted, that when the governor, council, and assembly of any of the colonies should propose to make a provision for the common defence, &c. and if such provision should be approved of by the king in parliament, the levying or imposing of taxes on that colony should then be forborne, those duties excepted which it might be expedient to impose for the regulation of commerce; the net produce of which should be carried to the account of the colony where it was raised. But this proposal, though highly extolled by the friends of administration, was no less reproached by minority than the others had been. It was said to be insidious, and calculated for the purpose of raising a revenue, which was now said to be the object of ministers. There was no essential difference between the present and former modes of taxation. The colonies were as effectually taxed without their consent by requiring them to pay a stated sum, as by laying a number of duties upon them to the same amount. There was besides a capital deficiency in the proposal, viz. that no sum was specified; so that the Americans were left totally ignorant of what the demands of Britain might be. After a long debate, however, the question was carried in favour of administration by 274 to 88.

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On the force to be sent to America.

⁸³
Lord North's conciliatory bill.

⁵⁸¹
Remarkable protest against the restraining bill.

The instance of Nantucket was so strong, that administration, with all their obstinacy, were obliged to relax a little; and, of their own accord, afforded them the relief they had such just reason to expect. That the petition in the main might prove unsuccessful, however, another was presented by the inhabitants of Poole, the tenor of which was directly opposite to that of the city of London. In this it was set forth, that the restrictions proposed by the bill would not prove detrimental to the trade of England, which was fully able, with proper exertions, to supply the demands of foreign markets. The advantage of the Newfoundland fishery more than that of New England to this country was, that it bred a great number of hardy seamen peculiarly fit for the service of the navy, while the New England seamen were, by act of parliament, exempt from being pressed. It appeared also from the examination of witnesses taken in support of this petition, that the fishery from Britain to Newfoundland employed about 400 ships, amounting to 360,000 tons, and 2000 shallops carrying 20,000 tons and navigated by as many seamen. Each season produced 600,000 quintals of fish, and the returns at a moderate rate were valued at L. 500,000.

The like fate attended a petition to the throne from the island of Jamaica. Instead of relaxing any thing of their severity, the ministry now included the southern colonies in the restrictions laid on New England. Still, however, the petitioners were indefatigable in their endeavours to be heard. The West India merchants and planters seconded their last petition by a large detail of circumstances relating to the British islands in that part of the world. This affair was conducted by Mr Glover, a gentleman equally celebrated for his literary talents and commercial knowledge. From his investigations it appeared, that, exclusive of the intrinsic worth of the islands themselves, their stock in trade and other property amounted to no less

This bill was debated with great animosity in the house of peers, and produced a remarkable protest, in which the measures of government were spoken of with great severity. "That government (said they) which attempts to preserve its authority by destroying the trade of its subjects, and by involving the innocent and guilty in a common ruin, if it acts from a choice of such means, confesses itself unworthy; if from inability to find any other, admits itself wholly incompetent to the end of its institution." They also reproached in severe terms the assertion already mentioned, that the Americans wanted spirit to resist, and that Britain would find them an easy conquest. Such language was represented as altogether void of foundation, and the mere effect of party spirit and resentment. It was also the more imprudent and unadvised, as tending, in case of coercive measures, to slacken the care and solicitude with which they ought to be pursued, and to occasion remissness in those to whom they might be

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Ineffective and leave us of the West India planters.

Britain. than 60 millions; the exportation to Britain had of late been near 200,000 hogheads and puncheons of sugar and rum, amounting to no less than four millions in value; the direct revenue arising from which was 700,000 pounds, besides that which accrued from the collateral branches depending upon it. All this, however, was urged in vain. Conciliatory proposals were made by Mr Burke and Mr Hartly, but they were rejected by great majorities. These proposals, indeed, instead of serving the cause they were meant to promote, did the very reverse. A dread was entertained of the consequences which might ensue from the republican opinions now so prevalent in the colonies, and all partiality towards them was looked upon in such a criminal light, that their opponents became deaf, on many occasions, to the voice of reason and humanity when urged in their behalf. On the other hand, the favourers of America, urged on by a furious zeal, and even resentment against those whom they looked upon to be promoters of arbitrary measures, erred equally in their opposition to ministry. This violent party spirit appeared not only among the people at large, but broke forth with the utmost fury in parliament, where the debates often resembled the railings of Billingsgate rather than the deliberations of the first assembly in a great and powerful nation.

585
Immense value of these islands.

586
All conciliatory proposals not only ineffectual but detrimental.

587
Extreme violence of both parties.

588
Misrepresentation on both sides.

In this temper of mind it is no wonder that the state of affairs was scarce ever truly represented by either party. Government continued to enact new laws, now in vain, against the Americans; their antagonists opposed these in a manner so little different from what has been already related, that any farther account of the debates would be as unentertaining as tedious. Other petitions were presented and treated with neglect. The increase of union and preparations for war among the colonists were by the ministerial party treated as the mere commotions of an headstrong mob; and by the other as an association of an injured and virtuous people, who were about to found a mighty empire in the west, while Britain was to sink in utter disgrace and contempt by their mere secession, without making any account of their exploits in the field, which could not fail to equal those of the heroes of antiquity. On the same principles the event of the skirmish at Lexington was magnified by the one into a "disgraceful defeat" on the part of the British; and by the other treated with absolute unconcern, as if no regard whatever was to be paid to it, nor any inference drawn from thence concerning the fate of the war in general. Thus also the battle at Bunkers Hill, and all the transactions of the year 1775, were unfairly stated by both parties; and the only consequence ensuing from these misrepresentations was the increasing to a violent degree the resentment betwixt the two parties; one of which depressed the Americans to the rank of consummate poltroons, while the other exalted them almost to that of demigods.

While these altercations continued to agitate the minds of the superior classes of people in Britain, the middle and lower ranks remained in a kind of indifference, or rather were against the proceedings of ministry. This opposition could not indeed influence the councils of the nation, but in other respects it proved very

troublesome. The levies were obstructed, and the recruiting service was never known to go on so heavily; numbers of people of that description not only refusing the usual proffers, but even reprobating the cause in which they were solicited to engage. Besides this, several officers of high rank showed a great aversion at the service. Lord Effingham, who had distinguished himself by his opposition to ministerial measures, resigned the command of his regiment rather than fight against the cause he had espoused so warmly. His example was followed by that of several other officers; and it is not to be doubted that, while this step conferred upon them a very considerable share of popularity, it excited in the minds of ministry an equal degree of resentment. Lord Effingham, in particular, received the public thanks of the city of London and Dublin; both of which showed an extreme aversion to the commencement of hostilities with America. The former, indeed, could scarce restrain themselves within any bounds of moderation. After the affair at Lexington they framed a remonstrance and petition, animadverting in the most severe manner on the ministry and parliament; and it was not without the greatest difficulty that the more moderate party procured one to be drawn up, under the name of an "humble petition," couched in less reprehensible terms.

Britain.

589
Resignation of Lord Effingham and other officers.

590
The city of London resents the conduct of ministry.

In the mean time several inconveniences began to be felt in different parts of the nation. The suspension of the sale and purchase of negro slaves in the West Indies and in North America, and the prohibition to export arms and gunpowder, had greatly impeded the African trade from Bristol and Liverpool. In consequence of this, a great number of ships which formerly sailed from these ports had been laid up, and near 3000 sailors belonging to Liverpool dismissed from service. Their situation soon rendered them riotous; and it was not without the assistance of the military that they were quelled. These distresses, however, made no impression on administration; who having once laid it down as a maxim, that the subjection of America was the greatest political good that could happen to Britain, were, in a consistency with their own principles, obliged to overlook every disaster that might happen in the mean time as a temporal inconvenience, which ought not to be regarded in the prosecution of a great and magnificent plan.

591
Distresses of the nation in consequence of the American war.

But whatever might be the views of administration in this respect, it was far otherwise with the generality of the nation. They felt the present inconveniences severely, while the subjugation of America presented them with no solid foundation to hope for an equivalent. It was with the utmost satisfaction, therefore, that they received the news of Mr Penn's arrival in 1775, with a new petition from the congress to be presented to the king; after which he was to give it to the public. Their expectation, however, was soon disappointed. The petition was delivered to lord Dartmouth on the first of September; and in three days it was replied, that no answer would be given to it. This laconic procedure excited no small surprise, as it was universally allowed that the language of the petition was respectful, and that it expressed the highest desire of peace and reconciliation. Lord Dartmouth's answer, therefore, could not but be considered as a final

592
Last petition of congress rejected.

Britain. renunciation of all friendly intercourse with the colonies, and which would drive them into a connection with foreign powers; a resource at which they themselves had hinted when they first took up arms. It was also thought not only to be injudicious in itself, but very ill-timed, and not at all consistent with the situation of the affairs of Britain at that time. On the other hand, the friends of administration insisted, that the petition offered nothing that could in a consistency with the dignity of the British empire be taken any notice of. Instead of professing any repentance for their own conduct, they had offered stipulations, and even required concessions on the part of Britain. It was likewise said on the part of administration, that fear had a share in framing the proposals now held out. The Americans were very sensible, that though the first steps taken by Britain had not answered the purpose, much greater efforts would quickly follow; and that, without being allowed some time, it was impossible they could bring their matters to bear. The petition, therefore, might be considered as written with a view to procrastinate matters, which was by no means admissible on the part of Britain. The colonies were already well apprized of the conditions on which they would be restored to favour; and had it at any time in their power to put a stop to the operations of war by accepting these conditions: but it would be imprudent to stop the military preparations upon such an uncertain expectation as the petition from congress held out. It was also plain, that a great majority of the nation approved of the measures of government; for addresses were received from all quarters, recommending, in the most explicit manner, a vigorous exertion against America.

593
Revival of the distinction and animosity between whigs and Tories.

The rejection of this petition inflamed the minds of both parties more than ever against each other. The obsolete distinction of *Whig* and *Tory* was now revived, and that with such animosity, that Britain itself, as well as America, now seemed in danger of becoming a seat of war and bloodshed. The Tories were accused as the promoters of those sanguinary addresses already mentioned. They were said to be the great misinformers of government; and the false representations they industriously procured from all quarters had contributed more than any thing else to inflame the animosity and produce the civil war. They were upbraided with their attachment to the Stuart family. England, it was said, had, through their machinations, been made a scene of blood in the last century; and had been perpetually tottering on the brink of ruin from the restoration to the revolution. At that time indeed the more sensible part of the nation, wearied out with perpetual attempts to enslave them, took the resolution of expelling an ill advised monarch, whom nothing could prevent from pursuing their pernicious plans to his own ruin. But the Tories were an incorrigible race, who could not be cured even by experience; for though they had seen repeated instances of the mischief attending their plans, they adhered to them with as great obstinacy as if the greatest benefits had on all occasions accrued from them. Dissension at home and disgrace abroad had been the constant attendants of their councils; while the only objects they ever had in view were the establishment and propagation of their own tenets; for these alone they laboured, the honour

and interest of the nation being entirely out of the question. These they would willingly sacrifice to the points above mentioned; and as an instance of the effects of their councils, the treaty of Utrecht was mentioned. Here, said their antagonists, the fruits of a triumphant war, carried on for twelve years, were lost at once by those feuds which the Tories occasioned through their restless endeavours to compass their iniquitous projects.

On the other hand, the Tories said that the Whigs were the genuine descendants and representatives of those republican incendiaries who had in the last century overturned the constitution and desolated the kingdom. They pretended indeed to assert the liberty of Britain; but under this pretence they wished to engross all the authority to themselves, as might easily be proved by an impartial examination of their conduct in the unhappy times alluded to. In the present dispute the principal question was, Whether the king and parliament, when united, were to be obeyed or resisted? The Tories insisted, that they were to be obeyed; the Whigs, that they were to be resisted. The truth was, therefore, that there were two parties in Britain; the one of which was of opinion that the colonies owed obedience to Great Britain in all cases whatever, and that in case of refusal they ought to be compelled to obey; but the other, though it acknowledged the same obligation on the colonies, thought it was unadvisable to force it. The only constitutional method of deciding this question was by an appeal to parliament. That appeal had already been made, and parliament had determined on compulsion. The decision ought therefore to be considered as that of the voice of the nation; and were a parliamentary majority to be viewed in any other light, all things would fall into confusion, and no rule of government remain. The doctrines of the Whigs were also said to be inadmissible in sound policy. Authority, sovereign and uncontrolled, must reside somewhere; and allowing every charge of bribery and corruption (which were brought by the other party most liberally) to be true, it were still better to be governed in some instances by such means, than to have no government at all. This must at last be the case were continual appeals to be made to the people; as they would undoubtedly be followed by perpetual broils at home as well as disasters abroad.

To these violent bickerings at home, some very serious commercial misfortunes were now added. It had been represented as very probable, during the last session of parliament, that the bill for depriving the people of New England of the benefits of the Newfoundland fishery, would redound greatly to the interest of Great Britain, by throwing into her hands alone the profits which were formerly divided with the colonies. This expectation, however, proved totally void of foundation. The number of ships fitted out that year was scarcely greater than usual. The Congress had also prohibited them from being supplied with provisions; so that not only those on board the ships, but even the inhabitants on the island of Newfoundland itself, were in danger of perishing. Many of the ships were therefore obliged to go in quest of provisions, instead of prosecuting the business on which they came. On the whole, therefore, instead of any increase, the profits of

594
Misfortunes to the Newfoundland fleet.

Britain. the fishery suffered this year a diminution of near 500,000l. Along with this, some natural causes co-operated, which, by the more superstitious, were considered as the effects of divine wrath. A most violent and uncommon storm took place in these latitudes during the fishing season. The sea rose full 30 feet above its ordinary level; and that with such rapidity, that no time was allowed for avoiding its fury. Upwards of 700 fishing boats perished, with all the people in them; and some ships foundered, with their whole crews. Nor was the devastation much less on shore, as the waters broke in upon the land, occasioning vast loss and destruction.

595
Violent and destructive storm.

596
Ineffectual petitions, &c.

597
Difficulty of procuring foreign succours.

598
France and Holland espouse the American cause.

599
Auxiliaries obtained from Hesse and Brunswick.

By these misfortunes, the general stagnation of commerce, and the little success that had hitherto attended the British arms, the mercantile part of the nation were thrown into despair. Petitions were poured in from all quarters, the contents of which were similar to those already mentioned, and their reception exactly the same. Ministers had determined on their plan; and the only difficulty was, how to put it in execution as quickly as they desired. For this purpose, application was made to the petty states of Germany, who are wont to hire out their forces, and who had frequently sent auxiliaries to Britain in former cases of exigency. At present, however, the scheme met with considerable difficulties, occasioned by the distance, as well as the danger, of the desertion of the mercenaries. The princes were likewise alarmed at the appearance of losing so many subjects for ever; while the latter were no less startled at the proposal of being transported across the ocean into a new world, there to be exposed to all the miseries of war, with very little hope of ever seeing their native country again. Other resources, however, were devised, by calling in the assistance of the Hessians, and obtaining from Holland that body of Scots troops which had been so long in their service. But in both these views administration were disappointed. All the states of Europe looked upon Britain with an invidious eye, though none so much as Holland and France; these being the two powers who had most reason to hope for advantage from the quarrel. A very strong party in Holland contended for the American interest. Pamphlets were daily published at Amsterdam in justification of the colonies: their case was compared with that of the Netherlands in former times; and they were exhorted to persevere in their claims against the pretensions of Britain. Her they represented as insatiably covetous of wealth and power, and desirous of seizing every thing she could. She was also taxed with being of a domineering disposition; and that, since her successes in the war of 1755, she had become intolerable, not only to her neighbours, but to the whole world: nay, that even during the war she had exercised an absolute sovereignty at sea, and did not scruple to avow a right and title to rule over that element.

But though these powers thus early expressed their hostile disposition towards Britain, it was otherwise with the princes of Hesse and Brunswick; by whom, and some other German princes of inferior note, a considerable number of troops were supplied. At the same time, that as many British forces as possible might be employed, large draughts were made from the garrisons of Gibraltar and Minorca, who were supplied in

return with an equal number of men from the electorate of Hanover. In justice to the ministers, indeed, it must be owned, that they prosecuted the scheme they had undertaken with all possible vigour; inasmuch that the expences already began to occasion considerable alarm. This was owing, in the first instance, to the bad success of the British arms, which occasioned a demand on this country altogether unlooked for. It had always been supposed, that the British army would be completely victorious; or at least would remain so far masters of the field, that they could easily command what supplies of fresh provisions were necessary. Instead of this, they were now cooped up in such a manner as to be actually in danger of perishing for want. The supplies, therefore, of necessity, were sent from Britain; and indeed the exertions for their relief were such as must give high ideas of the opulence and spirit of the British nation. For these troops there were shipped no fewer than 5000 live oxen, 14,000 sheep, with a proportionable number of hogs, immense quantities of vegetables, prepared with all possible care; 10,000 butts of small beer, and 5000 butts of strong beer. Some idea of the expences of these articles may be obtained from an account of what was paid for articles trifling in comparison of the above. For a regiment of light horse in Boston, L. 20,000 were paid for oats, hay, and beans. The articles of vinegar, vegetables, and casks, at no less; and every thing else in proportion. The contingencies occasioned by military operations amounted to near L. 500,000. The prodigious expences, therefore, of maintaining an inconsiderable armament at such a distance, could not fail to give a very unfavourable opinion of the war at large, and justly raise suspicions, that even the treasures of Britain would not be able to defray the expence. One advantage, however, was derived from such immense profusion; the price of every thing was augmented; that of shipping particularly rose one fourth in the ton: and though the profits made by contractors and their numerous friends were complained of, the benefits which accrued to multitudes employed in the various branches of public business seemed in some measure to make amends for every thing.

Britain.

600
Vast sums expence! to supply the garrison of Boston.

601
Almost all the Boston stores destroyed or taken.

Misfortune, however, seemed now to attend every scheme in which Britain engaged herself. Some part of it, indeed, in the present case, might be derived from mismanagement. The sailing of the transports was delayed so long that their voyages were lost. They remained for a long time wind-bound; and, after leaving port, met with such stormy weather, that they were tossed to and fro in the channel till most of the live stock they had on board perished. After clearing the coast of England, their progress was retarded by a continuance of bad weather. They were forced by the periodical winds from the coast of America into the ocean. Some were driven to the West Indies, others were captured by American privateers, and only a very few reached the harbour of Boston, with their cargoes quite damaged, so that they could be of little or no use. Notwithstanding the immense supplies above mentioned, therefore, a subscription was set on foot for the relief of the soldiers; as well as of the families of those who died in the service. This was liberal on the whole, though many refused to contribute,

bute, from their disapprobation of the cause; and bitter complaints were made of want of economy throughout the whole American department.

All this time the violent animosities between the parties continued; the desire of peace was gradually extinguished on both sides; and the foundation laid of an enmity scarce ever to be extinguished. Each seemed to be seriously of opinion that the other would willingly ruin the nation if possible; a remarkable instance of which was the commitment of Mr Sayre, an engraver in London, to the tower for high treason. The accusation laid against him was no less than that of having formed a design to seize his majesty as he went to the house of lords: but the scheme itself, and the method in which it was to be executed, appeared both so ridiculous, that the prisoner was very soon discharged; after which he commenced a process against lord Rochfort for false imprisonment.

With respect to the parliamentary proceedings during this period, very little can be said, further than that every measure of administration, whether right or wrong, was violently opposed. The employment of foreign troops, and admitting them into the fortresses of Gibraltar and Minorca, were most severely censured, as being contrary to the bill of rights. Administration contended that this bill only forbade the introduction of a foreign military power into the kingdom during peace; but the times were not peaceable, and the introduction of the troops was evidently with a view to quell a rebellion. The force designed for the conquest of America was then declared to be inadequate to the purpose; but it was replied on the part of ministry, that the design was to conciliate, not to conquer. The force (25,000 men) was sufficient to strike terror; and though this should not instantly be produced, conciliatory offers would still be held out after every blow that was struck.

In the mean time the Americans, sensible of the dangerous situation in which they stood, exerted themselves to the utmost to dislodge the British troops from Boston. This being at length accomplished in March 1776, they proceeded to put their towns in the most formidable state of defence; inasmuch that they seem, if properly defended, to have been almost impregnable. This was evident from the repulse of Sir Peter Parker at Charlestown. But they did not exert equal spirit in the defence of New York; where, besides losing the town, they received such a defeat as seemed to threaten their affairs with total ruin. See AMERICA.

In this view it appeared to the generality of the people in Britain. The successful campaign of 1776 was looked upon as so decisive, that little room was left to suppose the Americans capable of ever retrieving their affairs. Opposition were much embarrassed, and now almost reduced to the single argument of the interference of foreign powers, which they had often unsuccessfully used before. Besides this, indeed, the obstinacy of the Americans in refusing the offers of lord Howe, even at the moment of their greatest depression, seemed to be a very bad presage. The strength of ministry, however, now became so decisive, that whatever they proposed was immediately carried. The number of seamen for 1777 was augmented to 45,000, and upwards of five millions voted for the expence of the navy, and to discharge its debt. The expences of

the land-service amounted to near three millions, besides the extraordinaries of the former year, which amounted to more than L. 1,200,000; and though this vast profusion became the subject of much complaint and animadversion, the power of ministry silenced every opposer.

But however administration might now triumph, their exultation was but of short continuance. The misfortune of general Burgoyne at Saratoga threw the whole nation into a kind of despair, and reduced the ministry to the greatest perplexity. The great difficulty now was to contrive means for raising a sufficient number of forces to carry on the war; but from this they extricated themselves by what must be allowed a masterly contrivance. This was the encouraging levies for government service by cities and private persons; and as the design was kept a profound secret before the Christmas recess, they were not disturbed by the dangerous clamours of opposition. The recess was purposely extended in order to give time for the scheme to take effect; and before parliament met again it was actually accomplished, so that ministers could once more face their opponents without any fear.

Another and more weighty consideration, however, now occurred. The European states in general had long beheld the grandeur of Britain with an envious eye. The news of the disaster at Saratoga was therefore received among them as those of the defeat of Charles XII. at Pultowa was among the powers whom he had so long commanded. Of all these the French, for obvious reasons, were the most active in supporting the Americans. Numbers of the young nobility were eager to signalize themselves in the American cause; and among the rest the marquis de la Fayette, a young nobleman of the first rank and fortune. Impelled by an enthusiastic ardour in favour of the American cause, he purchased a vessel, loaded her with military stores, and sailed in her with several of his friends to America, where he presented his services to congress. From them he met with a most gracious reception, and was invested with a command, in which he lost no opportunity of distinguishing himself. Besides this nobleman, several other officers from France and Germany actually entered the American service, and by their military talents greatly contributed to the exertions which the colonies were afterwards enabled to make.

This assistance, however, would have been but trifling, had not the French court also interested itself in their behalf; for by the time, or very soon after, the news of general Burgoyne's disaster arrived in Britain, a treaty was on foot between the French court and the United States of America.

Even before this time France had showed such an extreme partiality towards the Americans, as might have plainly indicated their design of ultimately assisting them in their national capacity. The encouragement given to the American privateers in all the ports of France had produced strong remonstrances on the part of Britain; and an order was at last demanded, that all these privateers with their prizes should depart the kingdom. With this they found it necessary to comply at that time, lest reprisals should be made by capturing their whole Newfoundland fleet then out on the fishery. So many delays, however, were made on

B. Itan.

607

Vast expen-
dis attend-
ing the war.

608

Perplexity
of admini-
stration on
the news of
general Bur-
goyne's de-
feat.

609

They cari-
cature them-
selves with
great delec-
tation.

610

The French
resolve to
assist Amer-
ica.

Britain various pretences, that not a single vessel was dismissed from any of their ports. So far indeed were the French court from any design of this kind, that in the month of July 1777 the whole body of merchants throughout the kingdom were assured from government that they might depend on protection in their trade with America.

All this time the greatest preparations were made throughout the whole kingdom of France for war; so that the most judicious politicians were of opinion that a rupture with that power should have immediately followed the commencement of hostilities with America, and for which the behaviour of the former furnished abundant reasons of justification. Whatever might have been the motives of the British ministry, however, it is certain, that in defiance of probability, even when joined by the most acrimonious censures of opposition, they continued to pretend ignorance of any hostile intentions in the court of France, until that court of its own accord thought proper to announce them. This was done by a formal notification to the court of Britain in the month of March 1778, and that in the most mortifying terms. In this declaration it was announced, not only that a treaty of friendship and commerce was concluded betwixt France and America, but Britain was insulted with being told that America was actually in possession of independency, as if the former had already exerted her utmost efforts without being able to reduce them. A merit was also made of having entered into no commercial stipulations in favour of France exclusive of Britain. Nothing, therefore, could be more offensive; and though it could not decently be said on the part of the French monarch that he wished for war, yet his pacific intentions were conveyed in such haughty terms, that the whole could only be considered as a declaration of those hostilities which he pretended to avoid.

611
Treaty with
America
announced
to the court
of Britain.

Both parties now united in their opinion that a war with France was unavoidable; but they were not for that reason any farther advanced towards a reconciliation. It must be owned, indeed, that the minority had now, according to their own account, received very great provocation. They had from the beginning reprobated the American war, and prognosticated its bad success. In this they had been over-ruled, and the character of the Americans represented in such a manner as almost to preclude the idea of their being able to resist. They had resisted, however; and by destroying or taking prisoners a whole army, verified those predictions which had been so often treated with ridicule. The popular party had, times without number, insisted in the most earnest manner for some kind of concession towards America; but this had constantly been refused with an unparalleled and inveterate obstinacy. They now saw these very concessions offered to America after the defeat of Burgoyne, which, had they been granted in time, would have prevented all the mischief. Added to all this, the expences for the ensuing year had been hurried through the house before the Christmas vacation; the levies had been raised by subscription without consent of parliament at all; yet both these proceedings had been determined to be strictly legal and constitutional. Every inquiry into the measures of government had been frustrated; and one into the state of the nation in general, which could

612
Severe charges
against
administration.

not be absolutely rejected, was rendered ineffectual by delays and evasion. Lastly, they now saw their country involved in a foreign war with a nation well provided for all emergencies, while we had supinely suffered them to go on, without making the least effort to put ourselves in a proper state of defence.

For these reasons opposition insisted that the present ministry ought no longer to be trusted with the management of public affairs. An acknowledgment of the independence of America was now by many supposed to be the only rational step that could be taken, which might now be done with a good grace, and which we would unavoidably be obliged to take at last whether we would or not. By acknowledging this independence before they had time to enter into exclusive engagements with France, their trade would be open to all the world. This of course would lessen their correspondence with France, and leave them at liberty to form such connections as they thought most proper. The ministerial party, however, still insisted on vigorous measures, representing it as a spiritless and disgraceful measure to bend beneath the power of France, and setting forth the resources of Great Britain as sufficient to resist the efforts of all her enemies. The dishonour of leaving the American loyalists exposed to the resentment of their countrymen was also set forth in the strongest manner. These, by very intelligent people, were said to be by far the greater number. Were it not more eligible, on the very strength of such an affirmation, to make trial of its veracity, and to put arms into their hands? Whatever the danger of the experiment might be, we could not abandon them without exposing our reputation, and losing that character of fidelity to our engagements for which we had hitherto been so justly respected. Unanimity in the present case was strongly, and indeed very justly, insisted upon; but when opposition complained of some occult irresistible influence by which the councils of the nation were directed, in despite of every suggestion of reason and argument, the charge was denied in the strongest manner, and ministers disclaimed every motive of their conduct, excepting that of an internal conviction of its own rectitude.

Notwithstanding the violence of these altercations, however, the greatest courage and steadiness was manifested by the cool and deliberate part of the nation. The French resolved in the first place to excite a general terror by threatening an invasion. This was evidently impracticable, without their procuring first the superiority at sea: yet as multitudes in the country were apt to be terrified by the very mention of a French invasion, orders were issued to draw out and embody the militia, which was then composed of men in every respect as well exercised and disciplined as any regular troops. It was complained, however, that a French squadron of 12 ships of the line had sailed from Toulon, without any obstruction, under the command of the count d'Estaing. The most grievous apprehensions were entertained from the great inferiority of lord Howe's naval force, which might expose him to a total defeat, and the whole fleet of transports to be taken or destroyed by the enemy. But whatever might have been the probabilities in this case, it is certain that either the fortune or conduct

613
Removal
the mi-
nisters
upon.

614
Invasion
threatened
by the
French.

615
D'Estaing
sailed with
squadron
from Tou-
lon.

of this commander were such, that no exploit of any great consequence was ever performed by him. That matters, however, might be put in the best situation possible, addresses were moved for the recalling of the fleets and armies from America, in order to station them in places where they might contribute more effectually to the defence of the kingdom. This was opposed not only by administration, but even by some of the most popular members of opposition themselves. Of this opinion were lord Chatham and the earl of Shelburne; the former of whom resisted it with a vehemence of speech peculiar on this occasion.

The operations of the French in America, with the various success of the war, are related under the article *United States of AMERICA*. Here we have only to take notice, that d'Estaing, having failed in his attempt on the British fleet at new York, and in assisting his allies in their attempt on Rhode Island, as well as having by other parts of his conduct greatly disgusted them, failed for the West Indies, where he unsuccessfully attacked the island of St Lucia*. Being repulsed in this attempt, he sailed to the island of Grenada, which he reduced, treating the vanquished in a very cruel manner†; while a body of troops dispatched by him also reduced the island of St Vincent.

By this time the French admiral was powerfully reinforced; so that his fleet consisted of 26 sail of the line and twelve frigates. During the time he was employed at Grenada, Admiral Byron with the British squadron was accompanying the homeward bound West India fleet till out of danger; after which he sailed with a body of troops, under general Grant, for the recovery of St Vincent; but before they could reach that island, certain intelligence was received of the descent at Grenada. On this they steered directly for that island, where they encountered the French fleet without hesitation, notwithstanding the great superiority of the latter. At this time the French squadron amounted to 27 sail of the line and seven frigates; while that of Britain consisted only of 21 line of battle ships and one frigate. The British admirals, Byron and Barrington, endeavoured to bring the enemy to a close engagement, but this was as studiously avoided by d'Estaing; and such was the dexterity and circumspection with which the latter conducted matters, that it was only by seizing the transient opportunities of the different movements occasioned by the wind and weather, that some of the British ships could close in with their antagonists. Even when this was the case, the engagement was carried on upon such unequal terms, that the British ships were terribly shattered. For some time captains Collingwood, Edwards, and Cornwallis, stood the fire of the whole French fleet. Captain Faithful of the Monmouth, a 64 gun ship, singly threw himself in the way of the enemy's van to stop them. Several of the British ships forced their way to the very mouth of St George's harbour on the island of Grenada: but falling it in the hands of the French, an end was put to the engagement; nor did the French care to renew it, though the British ships had suffered very much.

D'Estaing now having received fresh reinforcements, set sail for the continent of America, after convoying the homeward bound fleet of French merchantmen in

their return from the West India islands. His disastrous attempt on the town of Savannah, with the subsequent discord betwixt him and the colonists, are related under the article *United States of AMERICA*. Here we have only to take notice, that thus the fears which had been excited by the superiority of the French in the West Indian seas were effectually dissipated. The islands of Dominica, St Vincent, and Grenada, were indeed lost; the first being taken by the marquis de Bouille, governor of Martinico, and the two last by d'Estaing as already related*: but these successes were balanced by the failure of the French commander in every other enterprise; by his terrible disaster at the Savannah; and by the acquisition of St Lucia, which was taken in the year 1778 by admiral Barrington and general Prescott and Meadows†. In other parts of the West Indian seas also the honour of the British arms was very effectually supported by the bravery and vigilance of the commanders on that station. Here admiral Hyde Parker, assisted by admiral Rowley, kept the enemy in continual alarm, and intercepted the trade of the French islands in such a manner as greatly distressed them. Three large frigates dispatched by count d'Estaing after his failure in America were taken, and a great part of a convoy seized or destroyed in sight of M. de la Motte Piquet's squadron in the harbour of Port Royal at Martinico, the admiral himself narrowly escaped. He had sailed out of that harbour, in order to favour the escape of the convoy already mentioned; which having partly effected, he withdrew; but was pursued so closely, that he had scarcely time to shelter himself under the batteries on shore.

These successes, which happened in the years 1778, 1779, and beginning of 1780, kept the event of the war pretty much in an equilibrium on the western seas and continent; but in the mean time the most unhappy dissensions prevailed through every department of the British government in Europe, which threatened at last to involve the whole nation in confusion and bloodshed.

Among other charges brought by the members in opposition against the ministry, that of neglecting the navy had been one of the most considerable; nor indeed does it appear that the charge was altogether without foundation. Without a fleet, however, it was now impossible to avoid the danger of an invasion. At this time, indeed, the fleet was in a very weak condition, but the valour and experience of the officers seemed in some measure to compensate that defect. The chief command was given to admiral Keppel, who had served with uncommon reputation during the last war. Admirals Sir Robert Hartland and Sir Hugh Palliser served under him, both of them officers of undoubted courage and capacity. Arriving at Portsmouth towards the end of March 1778, admiral Keppel exerted himself with so much industry and diligence, that exclusive of those ships which it was found necessary to dispatch to the coast of North America under admiral Byron, a fleet of 20 sail of the line was got in complete readiness by the beginning of June, and ten more in a forward state of preparation.

At the head of this fleet, admiral Keppel sailed from Portsmouth on the 13th of June, in order to protect the vast number of commercial shipping expected from

British.
619
General
State of the
interests of
the American
and
West Indian
war.

* See these
articles.

† See St
Lucia.

620
Bad condition
of the
British navy
in Europe.

621
Operations
of Admiral
Keppel, &c.
his command
ment was
the French
fleet.

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all parts of the world, and at the same time to watch the motion of the French fleet at Brest.

On the arrival of the British fleet off the coast of France, two French frigates approached it, in order to make their observations. These were the *Licorne* of 32 guns and the *Belle Poule* of 26. In consequence of a signal to give chase, the *Milford* frigate overtook the *Licorne* towards the close of the day, and requested the French captain to come under the British admiral's stern; upon his refusal, a ship of the line came up, and compelled him to come into the fleet. Next morning, the *Licorne* seeming by her motions to be altering her course, a shot was fired across her way as a signal for keeping it. Hereupon she discharged a broadside and a volley of small arms into the *America* of 64 guns that lay close to her, and immediately struck. The behaviour of the French captain was the more astonishing, as lord Longford, captain of the *America*, was at that instant engaged in conversation with him in terms of civility; but though such behaviour certainly merited severe chastisement, no hostile return was made.

The *Arethusa* of 26 guns, commanded by captain Marshal, with the *Aleit* cutter, was mean while in pursuit of the *Belle Poule*, that was also accompanied by a schooner, and the chase was continued till they were both out of sight of the fleet. On his coming up, he informed the French captain of his orders to bring him to the admiral, and requested his compliance. This being refused, the *Arethusa* fired a shot across the *Belle Poule*, which she returned with a discharge of her broadside. The engagement thus begun, continued more than two hours with uncommon warmth and fury.

The *Belle Poule* was greatly superior not only in number, but in the weight of her metal: her guns were all 12 pounders; those of the *Arethusa* only six: Notwithstanding this inferiority, she maintained so desperate a fight, that the French frigate suffered a much greater loss of men than the British. The slain and wounded on board the former, amounted, by their own account, to near 100; on board the latter, they were not half that proportion.

Captain Fairfax in the *Aleit*, during the engagement between the two frigates, attacked the French schooner, which being of much the same force, the dispute continued two hours with great bravery on both sides, when she struck to the English cutter.

The *Arethusa* received so much damage, that she became almost unmanageable: the captain endeavoured to put her into such a position, as to continue the engagement; but was unable to do it. Being at the same time upon the enemy's coast, and close on the shore, the danger of grounding in such a situation obliged him to act with the more caution, as it was midnight. The *Belle Poule*, in the mean time, stood into a small bay, surrounded with rocks, where she was protected from all attacks: she had suffered so much, that the captain, apprehending that she could not stand another engagement, had resolved, in case he found himself in danger of one, to run her aground: but her situation prevented any such attempt; and as soon as it was day-light, a number of boats came out from shore, and towed her into a place of safety. Notwithstanding the evident and great superiority on the side

of the French, this action was extolled by them as a proof of singular bravery, and the account of it received with as much triumph as if it had been a victory.

On the 18th of June, the day following the engagement with the *Belle Poule*, another frigate fell in with the British fleet; and was captured by the admiral's orders, on account of the behaviour of the *Licorne*.

The capture of these French frigates produced such intelligence to the admiral, as proved of the utmost importance, at the same time that it was highly alarming. He was informed that the fleet at Brest consisted of 32 ships of the line and 12 frigates. This was in every respect a most fortunate discovery, as he had no more with him than 20 ships of the line and three frigates. The superiority of the enemy being such as neither skill nor courage could oppose in his present circumstances; and as the consequences of a defeat must have been fatal to this country, he thought himself bound in prudence to return to Portsmouth for a reinforcement. Here he arrived on the 27th of June, and remained there till the ships from the Mediterranean, and the Spanish and Portuguese trade, and the summer fleet from the West Indies coming home, brought him a supply of seamen, and enabled him to put to sea again, with an addition of ten ships of the line. But still there was a great deficiency of frigates, owing to the great numbers that were on the American station, and the necessity of manning the ships of the line preferably to all others.

In the mean time, the preparations at Brest being fully completed, the French fleet put to sea on the 8th of July. It consisted of 32 sail of the line, besides a large number of frigates. Count D'Orvilliers commanded in chief. The other principal officers in this fleet were counts Duchaffault, de Guichen, and de Grasse; monsieur de Rochechoart and monsieur de la Motte Piquet. A prince of the blood royal had also been sent to serve on board of this fleet; this was the duke of Chartres, son and heir to the duke of Orleans, first prince of the blood royal of France in the collateral line. He commanded one of the divisions in quality of admiral.

On the 9th day of July, the British fleet sailed out of Portsmouth in three divisions; the first commanded by Sir Robert Harland, the third by Sir Hugh Palliser, and the centre by Admiral Keppel, accompanied by Admiral Campbell, an officer of great courage and merit. The French had been informed that the British fleet was greatly inferior to their own; which was but too true at the time when they received this information. Being yet unapprised of the reinforcement it was returned with, the admiral failed at first in quest of it, intending to attack it while in the weak condition it had been represented to him.

As the British admiral was equally intent on coming to action as soon as possible, they were not long before they met. On the 23d of July they came in sight. But the appearance of the British ships soon convinced the French admiral of his mistake, and he immediately determined to avoid an engagement no less cautiously than he had eagerly sought it before.

Herein he was favoured by the approach of night: All that could be done on the part of the British was to form the line of battle in expectation that the enemy would do the same. During the night the wind changed

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so favourably for the French, as to give them the weather gage. This putting the choice of coming to action, or of declining it, entirely in their own power, deprived the British admiral of the opportunity of forcing them to engage as he had proposed.

During the space of four days, the French had the option of coming to action; but constantly exerted their utmost care and industry to avoid it. The British fleet continued the whole time beating up against the wind, evidently with a resolution to attack them. But notwithstanding the vigour and skill manifested in this pursuit, the British admiral had the mortification to see his endeavours continually eluded by the vigilance and precaution of the enemy not to lose the least advantage that wind and weather could afford.

The chase lasted till the 27th of July. Between ten and eleven in the morning, an alteration of wind and weather occasioned several motions in both fleets that brought them, unintentionally on the part of the French, and chiefly through the dexterous management of the British admiral, so near each other, that it was no longer in their power to decline an engagement. Both fleets were now on the same tack: had they so remained, the British fleet on coming up with the French would have had an opportunity of a fair engagement, ship to ship; which would hardly have failed of proving very decisive: but this was a manner of combating quite contrary to the wishes of the French admiral. Instead of receiving the British fleet in this position, as soon as he found that an action must ensue, he put his ships on the contrary tack, that, sailing in opposite directions, they might only fire at each other as they passed by. By this means a close and sidelong action would be effectually evaded. As soon as the van of the British fleet, consisting of Sir Robert Harland's division, came up, they directed their fire upon it; but at too great a distance to make any impression: the fire was not returned by the British ships till they came close up to the enemy, and were sure of doing execution. In this manner they all passed close alongside each other in opposite directions, making a very heavy and destructive fire.

The centre division of the British line having passed the rearmost ships of the enemy, the first care of the admiral was to effect a renewal of the engagement, as soon as the ships of the different fleets, yet in action, had got clear of each other respectively. Sir Robert Harland, with some ships of his division, had already tacked, and stood towards the French; but the remaining part of the fleet had not yet tacked, and some were dropped to leeward, and repairing the damages they had received in the action. His own ship the *Victory* had suffered too much to tack about instantly; and had he done it, he would have thrown the ships astern of him into disorder. As soon as it was practicable, however, the *Victory* wore, and steered again upon the enemy before any other ship of the centre division; of which not above three or four were able to do the same. The other ships not having recovered their stations near enough to support each other on a renewal of action, in order to collect them more readily for that purpose, he made the signal for the line of battle a-head. It was now three in the afternoon; but the ships of the British fleet had not sufficiently regained their stations

to engage. The *Victory* lay nearest the enemy, with the four ships above mentioned, and seven more of Sir Robert Harland's division. These twelve were the only ships in any condition for immediate service; of the others belonging to the centre and to Sir Robert Harland's division, three were a great way astern, and five at a considerable distance to leeward, much disabled in their rigging.

Sir Hugh Palliser who commanded the rear division during the time of action, in which he behaved with signal bravery, came of course the last out of it; and in consequence of the admiral's signal for the line, was to have led the van on renewing the fight; but his division was upon a contrary tack, and was entirely out of the line. The French, on the other hand, expecting directly to be re-attacked, had closed together in tacking, and were now spreading themselves into a line of battle. On discovering the position of the British ships that were fallen to leeward, they immediately stood towards them, in order to cut them off. This obliged the admiral to wear and to steer athwart the enemy's foremost division, in order to secure them; directing, at the same time, Sir Robert Harland to form his division in a line astern, in order to face the enemy till Sir Hugh Palliser could come up, and enable him to act more effectually.

The admiral, in moving to the protection of the leeward ships, was now drawing near the enemy. As Sir Hugh Palliser still continued to windward, he made a signal for all the ships in that position to come into his wake: Sir Hugh Palliser repeated this signal; but it was unluckily mistaken by the ships of his division as an order to come into his own wake, which they did accordingly; and as he still remained in his position, they retained theirs of course.

Sir Robert Harland was now directed to take his station ahead, and the signal repeated for Sir Hugh Palliser's division to come into his wake; but this signal was not complied with, any more than a verbal message to that purpose, and other subsequent signals for that division's coming into its station in the line, before it was too late to recommence any operations against the enemy.

In the night, the French took the determination to put it wholly out of the power of the British fleet to attack them a second time. For this purpose, three of their swiftest sailing vessels were fixed in the stations occupied during the day by the three admiral ships of the respective divisions, with lights at the masts-heads, to deceive the British fleet into the belief that the French fleet kept its position with an intent to fight next morning. Protected by this stratagem, the remainder of the French fleet drew off unperceived and unsuspected during the night, and retired with all speed towards Brest: they continued this retreat the whole course of the following day, and entered that port in the evening. Their departure was not discovered till break of day; but it was too late to pursue them, as they were only discernible from the masts-heads of the largest ships in the British fleet. The three ships that had remained with the light were pursued: but the vessels that chased them were so unable to overtake them from the damages they had received in the preceding day's engagement, that they were quickly re-

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called; and the admiral made the best of his way to Plymouth, as being the nearest port, in order to put his fleet into a proper condition to return in quest of the enemy.

The killed and wounded on board the British fleet amounted to somewhat more than 500; but the French, it has been asserted on grounds of great credibility, lost 3000. This appears the less improbable, from the consideration that the French, in all their naval engagements, aim principally at the mast and rigging, and the British chiefly at the body of the ships.

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Subsequent
dissentions,
and trial of
the admiral

This action, whatever might have been the merit of the commanders, proved a source of the most fatal animosities. The bulk of the nation had so long been accustomed to hear of great and glorious victories at sea, that it was supposed a kind of impossibility for a French and British fleet to encounter without the total ruin of the former. The event of the last engagement, therefore, became an object of very severe criticism; and complaints were made, that, through the bad conduct of the blue division, an opportunity had been lost of gaining a complete victory over the French fleet. These complaints were quickly introduced into the public papers; and were carried on with a warmth and vehemence that set the whole nation into a ferment of the most violent and outrageous nature. The friends of Sir Hugh Palliser, the vice admiral of the blue, were no less violent in the defence of his conduct than his opponents were in its condemnation; while those who espoused the cause of the admiral, manifested no less determination in accusing him of being the real cause of the escape of the French fleet, through his disobedience of the signals and orders of his commander, and by remaining at a distance with his division, instead of coming to the assistance of the rest of the fleet.

An accusation of so weighty a nature very much alarmed Sir Hugh Palliser. He therefore applied to admiral Keppel for a justification of his conduct; and required of him to sign and publish a paper relative to the engagement of the 27th of July; therein specifying as a fact, that he did not intend by his signals on the evening of that day to renew the battle then, but to be in readiness for it the next morning.

On the rejection of this demand, Sir Hugh Palliser published in one of the daily papers a variety of circumstances concerning that engagement; reflecting severely on the conduct of the admiral, and prefacing the whole by a letter signed with his name.

An attack so public, and so detrimental to his character, induced admiral Keppel to declare to the admiralty, that unless Sir Hugh Palliser should explain this matter to his satisfaction, he could not, consistently with his reputation, ever act conjointly with him.

This altercation happening before the meeting of parliament, was of course taken notice of when it met. In the house of peers an inquiry was demanded into the conduct of the commanders of the fleet on the 27th of July, on account of the declaration of admiral Keppel, that he would not resume the command until such an inquiry had taken place.

In the house of commons also it was urged, that as admiral Keppel had expressed a public refusal to serve in conjunction with Sir Hugh Palliser, the cause of such a declaration ought to be investigated. Admiral Keppel and Sir Hugh Palliser, who were both present

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in the house on this occasion, spoke severally to the point in question in support of their respective conduct. The issue of the contest between them was, that a motion was made for an address to the Crown to bring Sir Hugh Palliser to a trial for his behaviour in the late engagement with the French fleet. In answer to this motion, Sir Hugh Palliser replied, in a speech of great warmth and vehemence, that he had already demanded and obtained a court-martial to sit on admiral Keppel, whom he charged with having through his misconduct caused the failure of success in that engagement.

This intelligence was received with great astonishment in the house. It had been, and still continued to be, the general desire of individuals of all parties, to heal this breach between the two officers at a time when the services of both were so much needed. It was therefore with universal concern the house was informed of the determination that had been taken to bring admiral Keppel to a trial. The admiral, however, conducted himself on this occasion with remarkable temper and coolness of expression. He acquiesced without reluctance in the orders that had been laid upon him to prepare for a trial of his conduct; which he hoped would not, upon inquiry, appear to have been dishonourable or injurious to his country, any more than disgraceful to himself.

The conduct of the board of admiralty in admitting the charges against admiral Keppel, and appointing a trial, was greatly condemned in the house. It was said to have been their duty to have laboured with the utmost earnestness, and exerted their whole official influence, to stifle this unhappy disagreement between two brave and valuable men; the consequences of which they well knew, and ought to have obviated, by interposing as reconciliators, instead of promoting the dispute, by consenting to bring it to a judicial and public hearing. On the other hand, it was answered, that they could not, consistently with the impartiality which they owed to every officer of the navy, refuse to receive all matters of complaint relating to subjects of their department. They had no right to decide on the merits of any case laid before them, but were bound to refer it to a court composed of naval officers, who were the only proper and competent judges of each others conduct in professional matters. In conformity with these principles, which were founded upon the clearest equity, they left the decision of the present altercation to the gentlemen of the navy; whose honour and integrity in all instances of this kind had never been called in question, and by whose verdict alone it was but just and reasonable that every officer in that line of service should wish to stand or fall.

The arguments upon this subject were urged with great heat and violence on both sides. They produced uncommon animosity and rancour, and gave rise to a spirit of contention that diffused itself through all classes of society. Such was the height of passion that prevailed every where, that the critical circumstances of the nation were wholly forgotten, and the attention of the public entirely absorbed in this fatal dispute. Individuals of all ranks and all professions engaged in it with as much zeal as if they had been personally concerned in the issue. The dissatisfaction that was excited upon this occasion among the upper classes in the navy, appeared in a memorial presented to the king

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by twelve of the oldest and most distinguished admirals, at the head of whom was the name of lord Hawke. The conduct of Sir Hugh Palliser was therein condemned without reserve; that of the admiralty itself was severely censured, as having established a precedent pregnant with the most ruinous consequences to the naval service of the kingdom. By the measure it had now adopted, that board had submitted to become the instrument of any individual who might be prompted by iniquitous motives to deprive the navy of its best and highest officers. It was a destructive violation, they said, of all order and discipline in the navy, to permit and countenance long concealed, and afterwards precipitately adopted charges, and recriminatory accusations of subordinate officers against their commanders in chief. It was no less improper and scandalous, to suffer men at once in high civil office, and in subordinate command, previous to their making such accusations, to attempt to corrupt the judgment of the public, by publishing libels on their officers in a common newspaper, which tended at once to excite dissensions in the navy, and to prejudice the minds of those who were to try the merits of the accusation against the superior officer.

It was remarkable in this memorial, that the majority of those who subscribed it were not only officers of the first rank and importance in the navy, but unconnected with the opposition, and attached by various motives to the court and ministry. This evinced their conduct in the present instance to have been uninfluenced by considerations of party.

No business of any consequence was agitated in either of the houses of parliament while the trial continued. It began upon the 7th of January 1779, and lasted more than a month, not ending till the 11th day of February ensuing. After a long and accurate investigation of every species of evidence that could be produced, the court-martial acquitted admiral Keppel of all the charges that had been brought against him in the most complete and honourable manner. He was declared to have acted the part of a judicious, brave, and experienced officer; and the accusation was condemned in the most severe manner.

Both houses of parliament voted him their thanks for the eminent services he had performed, and the whole nation resounded with his applause. The city of London bestowed every honour and mark of respect in its power upon admiral Keppel; while the resentment against his accuser was so strong, that it constrained him to retire wholly from public life, and to resign all his employments.

But notwithstanding the high degree of national favour and esteem in which admiral Keppel now stood, he thought it prudent to withdraw from a situation wherein he found himself not acceptable to those in power, by resigning his command.

The conduct of those who presided at the admiralty board now became an object of severe censure; and a number of facts were cited to prove that its conduct for many years past had been highly reprehensible. The debates were uncommonly violent; and the resolution to condemn the conduct of the admiralty was lost only by a majority of 34. Administration, however, still kept their ground; for though a second attempt was made to show that the state of the navy was

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success.
attach on
the board of
admiralty.

inadequate to the vast sums bestowed upon it, the point was again lost by much the same majority. The argument used by the ministry in defence of their conduct in this case was, that the ships now constructed were of a much larger size, and consequently much more expensive than formerly. But however they might be victorious in argument, it is certain that the conduct of the admiralty was very far from giving general satisfaction at present. Not only admiral Keppel, but lord Howe, declared his resolution to relinquish the service while it continued under the direction of its managers at that time. Their resignation was followed by that of Sir Robert Harland, Sir John Lindsay, and several others; nay, so general was the dislike to the service now become, that not fewer than 20 captains of the first distinction had proposed to go in a body to resign their commissions at once; and were prevented from doing so only by the great occasion they saw there was at that time for their services.

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Resignation
of admirals
Keppel,
Howe, and
other officers.

This extreme aversion to the service produced a direct attack upon lord Sandwich, at that time first lord of the admiralty. But though in this as well as other cases the ministry were still victorious, they could not prevent an inquiry into the cause of our want of success in the American war. This was insisted upon by lord and general Howe, whose conduct had been so much reflected upon, that a vindication was become absolutely necessary. The inquiry was indeed very disagreeable to administration, and therefore evaded as long as possible. From the evidence of lord Cornwallis and other officers of high rank, however, it appeared that the forces sent to America were not at any time sufficient to reduce it; that the Americans were almost universally unfriendly to the British cause; and that the nature of the country was such, that the conquest of it must be excessively difficult. It appeared also, that the camp of the Americans on Long Island was so strong, that it could not have been attacked with any probability of success, after their defeat in 1776, without artillery and other necessary preparations. In every instance, therefore, the general's conduct was shown to have been the most eligible and judicious possible. These facts, however, being directly opposite to what the ministry wished to appear, counter evidence was brought in, with a view to invalidate the testimony of the very respectable witnesses above mentioned. In this business only two were examined, viz. major-general Robertson, and Mr Joseph Galloway an American gentleman. From the evidence of Mr Galloway especially, it appeared, that the conduct of general Howe had not been unexceptionable; that the greater part of the Americans were friendly to the cause of Britain; that the country was not so full of obstructions as had been represented; woods and forests being no obstructions to the marching of armies in as many columns as they pleased; that soldiers might carry provisions for 19 days on their backs, &c.

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Inquiry into
the conduct
of the
American
war.

Though no insults could be laid upon such extravagant assertions proceeding undoubtedly from ignorance, yet they fully answered the purpose of ministry at this time, viz. procrastination, and preventing the disagreeable truths abovementioned from striking the minds of the public too forcibly. The event of this inquiry, however, encouraged general Burgoyne to insist for an examination of his conduct; which indeed had been

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into general
Burgoyne's
conduct.

Britain. so unmercifully censured, that even the ministers began to think he had suffered too much, and that he ought to be allowed to vindicate himself. He was accordingly permitted to bring witnesses in his own behalf; and from the most respectable evidence it appeared that he had acted the part, as occasion required, both of a general and soldier; that the attachment of his army to him was so great, that no dangers or difficulties could shake it; and that, even when all their patience and courage were found to be ineffectual, they were still ready to obey his commands, and die with arms in their hands. A great number of other particulars relating to his expedition were also cleared up entirely to the honour of the general, and several charges against him were totally refuted. It appeared, however, that the Americans, far from being the contemptible enemy they had been called, were intrepid and resolute. On the whole, it was remarked by a great number of the most judicious people in the nation, that the spirit of defamation, which for some time had been so prevalent, must at last produce the most fatal effects; by depriving the nation of its best officers, through the aversion that would be produced in them, both in the sea and land departments, to enter into a service where they were certain of being calumniated.

Britain. the command of the marquis de Vadreuil, destined to reinforce the fleet commanded by D'Estaing. But before its proceeding thither, an attack was made on the British settlements on the rivers Senegal and Gambia in Africa. These were easily conquered; and on this occasion the French quitted their own island of Goree, which was very soon after taken possession of by Sir Edward Hughes in his way to the East Indies. These unimportant and distant conquests, however, being insufficient to produce any great eclat, it was resolved to strike a blow nearer home, by the conquest of Jersey and Guernsey. An attempt was accordingly made; but with so little success, that not a single man could be disembarked on the island they intended to conquer. The enterprize, however, proved indirectly of great service to the cause of America. A fleet of 400 merchantmen and transports were at that time on the point of sailing for New York, under the conduct of admiral Arbuthnot; but that officer, being informed of the attack on Jersey, thought it his duty to come to the assistance of the island rather than proceed on his voyage. This delay was followed by another, occasioned by bad weather; so that the fleet, which was laden with warlike stores and necessaries, did not arrive till the end of August, and several important enterprizes projected by Sir Henry Clinton were of course laid aside.

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Accession of Spain to the confederacy against Britain.
* See Spain.

After the resignation of admiral Keppel, the command of the Channel fleet was bestowed, though not without violent debates, on Sir Charles Hardy, a brave and experienced officer, but now advanced in years, and who had retired from the service with a design of never returning to it, being at that time governor of Greenwich hospital. The choice of an admiral to command this fleet was now of the greater importance on account of the accession of Spain to the general confederacy which took place this year*. The quarrel, like that with France, was formally intimated by the Spanish minister on the 17th of June 1779; and like that also was attended with new but ineffectual proposals of an accommodation with America, and removal of the ministry. The imminent danger, however, to which the nation was now exposed, required a vigorous exertion, and various projects for its internal defence were laid before the parliament. The principal of these were the raising of volunteer companies to be added to the regiments of militia belonging to the counties where they were raised, and the augmenting the number of militia. The latter was judged unadvisable, on account of the necessity there would be to send a great number of regular forces out of the kingdom, which would require new supplies of recruits; and the increase of the militia might prove detrimental to the recruiting service. The spirit and magnanimity displayed on this occasion, however, did the highest honour to the national character, and fully justified the opinion generally entertained of its opulence and valour. All parts of the kingdom seemed actuated by a laudable zeal to concur in every measure necessary for its defence; large sums were subscribed by people of rank and affluence; and companies were raised, and regiments formed, with such alacrity as quickly banished all apprehensions for the safety of the kingdom.

631
French Squadron of frigates destroyed by Sir James Wallace.

The French, in the mean time, determined to make a second attempt on Jersey; but their squadron, being attacked by another under Sir James Wallace, was driven ashore in a small bay on the coast of Normandy, under cover of a battery. Thither they were pursued by the British commander, who silenced the battery, took a large frigate of 34 guns, with two rich prizes, and burned two other frigates and several other vessels.

628
Schemes for the internal defence of the nation.

629
Vigorous efforts of the people on this occasion.

630
Britain settlements in Africa reduced.

to which the nation was now exposed, required a vigorous exertion, and various projects for its internal defence were laid before the parliament. The principal of these were the raising of volunteer companies to be added to the regiments of militia belonging to the counties where they were raised, and the augmenting the number of militia. The latter was judged unadvisable, on account of the necessity there would be to send a great number of regular forces out of the kingdom, which would require new supplies of recruits; and the increase of the militia might prove detrimental to the recruiting service. The spirit and magnanimity displayed on this occasion, however, did the highest honour to the national character, and fully justified the opinion generally entertained of its opulence and valour. All parts of the kingdom seemed actuated by a laudable zeal to concur in every measure necessary for its defence; large sums were subscribed by people of rank and affluence; and companies were raised, and regiments formed, with such alacrity as quickly banished all apprehensions for the safety of the kingdom.

632
Invasion of Great Britain projected.

Thus disappointed in their attempt on Jersey, a project was formed of invading Great Britain itself; and the preparations for it, whether serious or not, were so formidable, that they very justly excited a considerable alarm in this country. Not only were the best troops in the French service marched down to the coasts of the British channel, but transports were provided in great numbers, and many general officers promoted; the commanders also who were to have the charge of this important expedition were named by government. A junction was formed betwixt the French and Spanish fleets, in spite of the endeavours used on the part of the British to prevent it; and then the allies made their appearance in the British seas with upwards of 60 ships of the line, besides a vast number of frigates and other armed vessels.

634
Formidable appearance of the combined fleets.

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They take only a single ship.

All this formidable apparatus, however, ended in nothing more than the taking of a single ship, the Ardent, of 64 guns. They had passed the British fleet under Sir Charles Hardy in the mouth of the channel without observing him. Sailing then along the coast of England, they came in sight of Plymouth, where they took the Ardent, as has been already mentioned; after which they returned, without making the least attempt to land any where. The British admiral made good his entrance, without opposition, into the channel, on their quitting it, which a strong easterly wind obliged them to do. He endeavoured to entice them up the channel in pursuit of him; but the

Britain. the great sickness and mortality on board their ships, as they gave out, obliged them to retire, in order to repair their ships, and recruit the health of their people. Thus ended the first, and indeed the greatest, exploit performed by the combined fleets in the British seas. An annual parade of a similar kind was afterwards kept up, which was as formally opposed on the part of the British; but not the least act of hostility was ever committed by either of the channel fleets against each other.

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Though this ill success, or rather pusillanimity, manifest in the conduct of the combined fleets, was such that the French themselves were ashamed of it, the appearance of them in the channel furnished opposition with abundance of matter for declamation. All ranks of men, indeed, now began to be wearied of the American war; and even those who had formerly been the most sanguine in defence of coercive measures, now began to be convinced of their inutilty. The calamitous effects produced by the continuation of these measures, indeed, had by this time rendered the far greater part of the people exceedingly averse to them; and the almost universal wish was, that the oppressive burden of the American war should be cast off, and the whole national strength exerted against those whom, on account of our frequent contests with them, we had been accustomed to call our natural enemies. For this purpose the national spirit continued to be exerted with unabated vigour. Large sums were subscribed in the several counties, and employed in raising volunteers, and forming them into independent companies; associations were also formed in the towns, where the inhabitants bestowed a considerable portion of their time in training themselves to the use of arms. The East India company now forgot their quarrel with ministry, and not only presented government with a sum sufficient for levying 6000 seamen, but at its own cost added three 74 gun ships to the navy. Administration were not yet, however, weary of the plans they had laid down, and which they seemed inclined to prosecute, and indeed did prosecute, as long as the nation would support them. The virulence of opposition, therefore, still continued; and what was worse, every part of the kingdom seemed to imbibe their sentiments. Among other charges now brought against them was that of misapplying the national force. An hundred thousand men were employed for the internal defence of the kingdom; which being much more than sufficient for the purpose, ought therefore to have been distributed into places where it might have acted to advantage. The army of Great Britain, it was said, now amounted to 300,000 men; the navy to 300 sail, including frigates and armed vessels; twenty millions had been expended on the service of the year 1779: and yet, with all this force and treasure, the utmost boast that ministers could make was, that the enemy had been hitherto kept at bay, and not allowed to invade Great Britain. Nor were the charges less heavy in other respects. Veteran officers had been passed by to make room for those of inferior merit. The discontents and miserable state of Ireland, the loss of the West India islands, &c. were all put to the account of ministers; and it was said that the universal cry of the nation was for their dismissal. Their incapacity was now visible to every body; and it was a

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matter of universal surprize how they durst remain their places in opposition to the general desire of the nation.

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To all this ministry replied in a resolute and determined manner, denying or refuting every circumstance; and at last, after violent debates, gained their point of an address without any amendment proposing their removal, in the upper house by 82 to 41, and in the lower by 253 to 134. The enormous expences already incurred, however, and hereafter to be incurred, for the carrying on of the war, occasioned such a general alarm, that it was no longer possible to refuse compliance with some scheme of economy, or at least giving it a patient hearing. The duke of Richmond proposed that the crown should set the example, and moved for an address to this purpose; but the motion was lost by 77 to 36. The earl of Shelburne next undertook the discussion of the subject; and having, in a most elaborate speech, compared the expences of former times with the present, and shown the immense disparity, he proceeded to show the reasons. These were, that ministers formerly employed fewer persons, and obliged them to be content with smaller profits. One contractor supplied all the troops in America during the last war, and his agreement was to furnish a ration of provisions at sixpence; but so different was the management now, that the ration of provisions, instead of sixpence, cost two shillings. One person only had enjoyed contracts to the amount of 1,300,000l.; 3,700,000l. had passed through the hands of another contractor to be transmitted to America: but no voucher had been given for the expenditure of this immense sum; the accounts being contained in a few lines, accounting for 20,000l. in one line, 30,000l. in another, &c. Thus, he said, the ministry acquired a most unbounded and unconstitutional influence; and having the dangerous power of expending the national treasure without any check, corruption and venality every where abounded. He moved, therefore, that the expenditure of those vast sums annually sunk in extraordinary should be brought under some controul; and that to extend the public expences beyond the sums granted by parliament, was an invasion of its peculiar and exclusive rights.

638
Various
schemes of
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rejected.

Though this motion of the earl of Shelburne's, and some others of a similar tendency, were rejected on solid principles according to the ministry, the minds of the people were far from being conciliated to their views. Instead of this, the opinion began to be so general, that ministers exercised an unconstitutional influence over the representatives, and that such influence was very much augmented within these few years, it was now supposed by numbers of people, that nothing short of a change in the constitution of parliament could remedy the evil complained of. To this purpose a petition was framed in the city of York, on the 30th of December 1779, where a number of the most respectable people in the county had assembled, and delegated 61 gentlemen as a committee to manage the correspondence necessary for carrying on the design, and forming an association to support and promote it. In the present petition it was set forth, that, in consequence of the war in which the nation was involved, the public debt was greatly augmented, taxes increased, and trade and manuf. were much af-

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Britain. feated. The profusion attending the war was complained of; and parliament was requested, previous to the raising of any new taxes, to inquire into, and correct the abuse of expenditure in the public money; to reduce exorbitant emoluments, abolish sinecure places and unmerited pensions, and apply the produce to the exigencies of the state. This petition was followed by others of a similar kind from 27 of the principal counties, and most of the large towns in England. The most severe and opprobrious language was used in the county-meetings with regard to the ministry and parliament. The latter were represented as void of all principle, ready to sacrifice both conscience and reputation to the will of those in power; and, in short, bound by no ties but those of the most sordid interest; ready on all occasions to enrich themselves by the spoils of their country; and persons to whom the honour or interest of the kingdom were matters of no consideration. The court, on the other hand, was looked upon as the receptacle of every one who harboured ill designs against the people of Britain, and where no body stood any chance of advancing himself but by adulation and extreme servility.

The emissaries of America and the other enemies of Great Britain are said to have been active in fomenting these discords, which at this period arose to an height unknown for a century past. The ministry, however, continued firm and undaunted. Previous to the taking any of the petitions into consideration, they insisted on going through the business of the supply, by determining the ways and means; nor did either the number of English petitions, or an additional one from the island of Jamaica setting forth the extreme danger that island was in, make them alter their resolution in the least.

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Mr Burke's
plan of par-
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At last, in the beginning of February 1780, a plan was brought forward by Mr Burke, for securing the independency of parliament, and introducing economy into the various departments of government. This plan, among other things, proposed the abolition of the offices of treasurer, comptroller, and cofferer of the household; treasurer of the chamber, master of the household, the board of green cloth, with several other places under the steward of the household; the great and removing wardrobe, the jewel office, the robes, board of works, and the civil branch of the board of ordnance. Other reformations were also proposed; but though the temper of the times obliged the minister to admit the bills, and even to pretend an approbation of the plan, he meant nothing less than to admit it in its full extent, or indeed in any part, if it could possibly be prevented. When the plan, therefore, which he had approved in general, came to be particularly considered, he was found to be determined against every part of it. The general temper of the people, without doors, however, seemed now to have affected many of the members of parliament, and made them desert their old standard. An economical plan proposed in the house of lords by the earl of Shelburne was rejected only by a majority of 101 to 55. This was the strongest opposition that had appeared in that house for many years; but in the lower house matters still went worse. The first proposition in Mr Burke's plan was to abolish the office of secretary of state for the colonies; and the utmost efforts of administration

could preserve this office only by a majority of 208 to 201. The board of trade was abolished by 207 to 198: but this was the only defeat sustained by ministry at present; all the rest of the plan being rejected excepting only one clause, by which it was determined that the offices of lieutenant and ensign, &c. belonging to the yeomen of the guards, should not any longer be sold, but given to officers in the army and navy on half pay, and of 15 years standing in their respective lines of service.

This ill success was very mortifying to Mr Burke, who had expected to save more than a million annually to the nation. Administration, however, had still a greater defeat to meet with than what they had experienced in the abolition of the board of trade. The 6th of April was the day appointed for taking into consideration the numerous petitions, from half the kingdom of England, already mentioned. They were introduced by Mr Dunning; who, in a very elaborate speech, set forth the many attempts that had been made to introduce reformation and economy into the plans of government. These had been defeated by ministerial artifice, or overthrown by mere dint of numbers: he concluded therefore, and moved as a resolution of the house, That the influence of the crown had increased, was increasing, and ought to be diminished. This motion being carried after a long and violent debate, he next moved, that the house of commons was as competent to examine into and correct abuses in the expenditure of the civil list as in any other branch of the public revenue. To this another was added by Mr Thomas Pitt, that it was the duty of the house to provide an immediate and effectual redress of the abuses complained of in the petitions. The ministry now requested that nothing farther might be done that night: but such was the temper of the house, that both these motions were carried without a division; after which they were read a first and second time, and agreed to without a division.

Ministry had never received such a complete defeat, nor ever been treated with so much asperity of language. The news of the proceedings of this day were received by the people at large with as much joy as if the most complete victory over a foreign enemy had been announced. Opposition, however, though masters of the field at present, did not imagine they had obtained any permanent victory, and therefore resolved to make the most of the advantages they had gained. It was moved by Mr Dunning at the next meeting, that to ascertain the independence of parliament, and remove all suspicions of its being under undue influence, there should, every session, seven days after the meeting of parliament, be laid before that house an account of all the sums issued out of the civil list, or any other branch of the revenue, since the last recess, in favour of any of its members. This passed with little difficulty; but when he moved that the treasurers of the chamber and household, the cofferer, comptroller, and master of the household, with the clerks of the green cloth, and their deputies, should be excluded from having seats in the house, a warm debate ensued; and the motion was carried only by 215 against 213. This was the last triumph of the popular party; their next motion, for the exclusion of revenue officers, being thrown out by 224 against 195. A last effort was made by Mr Dunning's proposal of an ad-
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citain. dress to the throne against proroguing or dissolving the parliament, until measures had been taken to prevent the improper influence complained of in the petitions. On this occasion the debates were long and violent; but the motion was lost by 254 against 203. Ministry would gladly have screened their friends from the vengeance of opposition; alleging the lateness of the hour, it being then past midnight. The speaker of the house, however, perceiving Mr Fox about to rise, insisted that the house should remain sitting; and thus the deserters from the popular party were condemned to hear their conduct set forth in such terms as perhaps were never applied on any other occasion to members of the British senate.

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This last victory of administration confirmed the dissatisfaction and ill opinion which the people had conceived of the majority of their representatives. It was in the height of that ill temper which the conduct of parliament had created in the multitude, that those discontents broke out which were so near involving the kingdom in universal desolation. The hardships under which individuals professing the Roman Catholic persuasion had laboured for many years in England, had lately awakened the consideration of the liberal minded. The inutility and impropriety of persecuting people from whom no danger was apprehended, and who were not suspected of disaffection to the civil constitution of this country, induced several persons of rank and influence to undertake the procuring them relief.

The calamities of the times had afforded the English Roman Catholics a very proper occasion to manifest their attachment to government. They presented a most loyal and dutiful address to the king, containing the strongest assurances of affection and fidelity to his person and the civil government of this country.

“ Our exclusion (said they) from many of the benefits of that constitution, has not diminished our reverence for it. We behold with satisfaction the felicity of our fellow-subjects; and we partake of the general prosperity which results from an institution so full of wisdom. We have patiently submitted to such restrictions and discouragements as the legislature thought expedient. We have thankfully received such relaxations of the rigour of the laws, as the mildness of an enlightened age, and the benignity of the British government have gradually produced; and we submissively wait, without presuming to suggest either time or measure, for such other indulgence as those happy causes cannot fail in their own season to effect.

“ We beg leave to assure your majesty, that our dissent from the legal establishment in matters of religion is purely conscientious; that we hold no opinions adverse to your majesty's government, or repugnant to the duties of good citizens; and we trust that this has been shown more decisively by our irreproachable conduct for many years past, under circumstances of public discountenance and displeasure, than it can be manifested by any declaration whatever.

“ In a time of public danger, when your majesty's subjects can have but one interest, and ought to have but one wish and one sentiment, we think it our duty to assure your majesty of our unreserved affection to your government, of our unalterable attachment to the cause and welfare of this our common country, and our utter detestation of the designs and views of any foreign

power against the dignity of your crown, and the safety and tranquillity of your subjects.

“ The delicacy of our situation is such, that we do not presume to point out the particular means by which we may be allowed to testify our zeal to your majesty, and our wishes to serve our country; but we entreat leave faithfully to assure your majesty, that we shall be perfectly ready, on every occasion, to give such proofs of our fidelity, and the purity of our intentions, as your majesty's wisdom and the sense of the nation shall at any time deem expedient.”

This address was presented to the king on the first day of May 1778, and was signed by the duke of Norfolk, the earls of Surrey and Shrewsbury, the lords Stourton, Petre, Arundel, Dormer, Teynham, Clifford, and Linton; and by 163 commoners of rank and fortune.

The only obstacle that stood in the way of their wishes was, the difficulty of overcoming the prejudices of the lower classes, who would probably disapprove and condemn the indulgence shown to the people of a persuasion which they had been taught to look upon with horror and detestation. But notwithstanding the prepossessions of the vulgar, it was determined by several individuals of generous and liberal sentiments, to espouse their cause as far as it could be done consistently with the principles of the constitution and the general temper of the times. Their being patronised by some of the principal leaders in opposition, was a circumstance greatly in their favour; as it showed that those who professed to be the most strenuous friends to the freedom and constitution of this country, did not imagine they would be endangered by treating the Roman Catholics with more lenity than they had hitherto experienced.

About the middle of May, Sir George Saville made a motion for the repeal of some penalties enacted against them. He grounded his motion on the necessity of vindicating the honour and asserting the true principles of the Protestant religion, of which the peculiar merit was to admit of no persecution. It ill became the professors of such a religion to be guilty of that intolerance with which they reproached others. The statutes he meant to repeal were such as gave occasion to deeds that debased and were a disgrace to human nature, by inciting relations to divest themselves of the feelings of humanity, and by encouraging the rapacity of informers.

He represented the address above quoted as a full proof of the loyal disposition of the Roman Catholics, and as an unfeigned testimony of the soundness of their political principles. In order, however, to silence the objections of those who might suspect them of duplicity, a test was proposed of so binding and solemn a nature, that no man could be supposed to imagine that any authority could annul its efficacy.

The pains and penalties of the statutes to be repealed were laid before the house by Mr Dunning. By these statutes it was made felony in a foreign clergyman of the Roman communion, and high treason in one that was a native of this kingdom, to teach the doctrines or perform divine service according to the rites of that church; the estates of persons educated abroad in that persuasion were forfeited to the next Protestant heir; a son or any other nearest relation, be-
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ing a Protestant, was empowered to take possession of his own father's, or nearest of kin's estate, during their lives; a Roman Catholic was disabled from acquiring any legal property by purchase.

The mildness of the British government did not indeed countenance the practice of the severities enacted by these statutes: but still the prospect of gain subjected every man of the Roman persuasion to the ill usage of informers; as on their evidence the magistrates were bound, however unwilling, to carry these cruel laws into execution.

In consequence of these representations, the motion made in favour of the Roman Catholics was received without one dissenting voice; and a bill in pursuance to its intent was brought in and passed both houses. The test or oath by which they were bound, was conceived in the strongest and most expressive terms. They were enjoined to swear allegiance to the king's person and family, and to abjure especially the pretensions to the crown assumed by the person called *Charles III.* They were to declare their disbelief and detestation of the following positions: That it is lawful to put individuals to death on pretence of their being heretics; that no faith is to be kept with heretics; that princes excommunicated by the pope and council, or by the see of Rome, or any other authority, may be deposed or murdered by their subjects or by any others; that the pope of Rome, or any other foreign prelate or sovereign, is intitled to any temporal or civil jurisdiction or pre-eminence, either directly or indirectly, in this kingdom. They were solemnly to profess, that they made the aforesaid declarations with the utmost sincerity, and in the strictest and plainest meaning of the words and language of the test, without harbouring any secret persuasion that any dispensation from Rome, or any other authority, could acquit or absolve them from the obligations contracted by this oath, or declare it null and void.

The indulgence shown to the Roman Catholics in England, encouraged those of the same persuasion in Scotland to hope for a similar relief. Several gentlemen of that nation of great rank and character, and who were members of parliament, expressed their warmest wishes that it should be extended to their country; and declared their intention to bring in a bill for that purpose the following session. The design was approved by the general assembly of the church of Scotland; who rejected, by a majority of no less than 100, a remonstrance that had been proposed against it. In consequence of these flattering appearances, a petition was prepared for parliament on behalf of the Roman Catholics in Scotland. But these expectations were soon damped. A pamphlet was published against the doctrine and professors of the popish religion, which represented them as the common foes to mankind and the disturbers of all states; and this being circulated among all classes, raised a number of enemies to the intended petition.

The opposition was at first chiefly conducted by some persons at Edinburgh, who assumed the title of Committee for the Protestant Interest; and under that denomination carried on a correspondence with all those who coincided with their opinions, and who formed a very large proportion of the common people in Scot-

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land. As the committee at Edinburgh, from its residence in the capital of the kingdom, was deemed to consist of persons of the first importance, it directed in a manner the motions of all the others.

The persons who made up this committee, however, acted from no mean or mercenary views: they aimed only at the preservation of the Protestant religion, and the liberties of their country; both which they conceived were in danger, from the indulgence of government to individuals of the Roman Catholic persuasion.

Actuated by these ideas, they exerted themselves with so much activity, that the principal gentlemen of the Catholic persuasion thought it requisite for their safety to convey an intimation to the British ministry, that they were desirous to drop the application they had proposed to make for an indulgence similar to that which had been granted to their fellow-subjects in England of the same communion.

They published also in the newspapers the representation they had made to ministry; hoping thereby to convince the public, that they were sincerely desirous to remove any cause of dissatisfaction on their own account, and to submit to any inconveniency sooner than occasion disturbance. But matters were now gone too far to be conciliated by any means.

On the 2d day of February 1779, the populace met according to appointment, in order to carry into execution the various projects they had in contemplation. They began by an attack upon a house inhabited by a Roman Catholic bishop, with others of his persuasion, and which contained a place of worship. They committed it to the flames. They destroyed in the same manner another house that had also a chapel; after which they proceeded to vent their resentment on several individuals of that persuasion by burning their effects.

The next objects of their vengeance were those who had patronized the Roman Catholics. They beset the houses of Dr Robertson and Mr Crosby; but, on hearing of the intentions of the rioters, the friends of both came to their assistance in such numbers, and so well prepared to repel the fury of the populace, that they did not dare to exercise the violence they had premeditated.

This disappointment, which was accompanied by further precautions against their malevolent designs, put an end to the attempts of the mob at Edinburgh. But the spirit of dissatisfaction at the indulgence intended to the Roman Catholics still remained in full force. Ministry was held out as harbouring a secret determination to undermine the Protestant religion, and to introduce popery; and loaded in consequence with the most outrageous invectives.

By degrees the same ungovernable spirit was communicated to part of the English nation. The cry against popery became daily more loud among the inferior classes; and that inveteracy which had subsided during so many years, began to revive in as powerful a degree, as if the nation were actually under the impending terrors of persecution. To this were added the secret fears of others; who still imagined it was not inconsistent with good policy to discourage a religion, from the professors of which so much danger had accrued to the constitution of this country in former times. These, tho'

Britain. averse to all acts of violence, thought it necessary to keep alive the antipathy to it, and by no means to show the least willingness to grant any further indulgence than it had hitherto experienced.

From this motive they were of opinion, that a suspension of the laws enacted against it, though tacit and unauthorised, was sufficient to remove all complaints of harshness and oppression on the part of the Roman Catholics; and they looked upon the penal statutes as a requisite bar to confine them within the bounds of submission, and fear of offending.

Thus a society was formed in London, which took the title of the Protestant Association, of which lord George Gordon, who had rendered himself conspicuous in Scotland by his opposition to the repeal, was elected president: and it now prepared to act in a decisive manner against the resolutions of the legislature.

On the 29th of May 1780, the associators held a meeting in order to settle in what manner they should present a petition to the house of commons against the repeal of the penal statutes. A long speech was made on this occasion by their president, who represented the Roman persuasion as gaining ground rapidly in this country; that the only method of stopping its progress, was to go up with a spirited remonstrance to their representatives, and to tell them in plain and resolute terms that they were determined to preserve their religious freedom with their lives, &c.

This harangue being received with the loudest applause, he moved, that the whole body of the association should meet on the 2d day of June in St George's Fields, at ten in the morning, to accompany him to the house of commons on the delivery of the petition. This being unanimously assented to, he informed them, that if he found himself attended by fewer than 20,000, he would not present the petition. He then directed they should form themselves into four divisions; the first, second, and third, to consist of those who belonged to the City, Westminster, and Southwark; the fourth of the Scotch residents in London. They were, by way of distinction, to wear blue cockades in their hats.

Three days previous to the presentation of the petition, he gave notice of it to the house, and acquainted it with the manner in which it was to be presented; but this was received with as much indifference and unconcern as all his former intimations.

On the 2d day of June, according to appointment, about 50 or 60,000 men assembled in St George's Fields. They drew up in four separate divisions, as had been agreed, and proceeded to the parliament house, with lord George Gordon at their head. An immense roll of parchment was carried before them, containing the names of those who had signed the petition.

On their way to the house, they behaved with great peaceableness and decency; but as soon as they were arrived, great disturbances took place. The rioters began by compelling all the members of both houses they met with, to put blue cockades in their hats, and call out, "No Popery." They forced some to take an oath that they would vote for the repeal of the popery act, as they styled it. They treated others with great indignity, posting themselves in all the avenues to both houses; the doors of which they twice endeavoured to break open.

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Britain. Their rage was chiefly directed against the members of the house of lords; several of whom narrowly escaped with their lives.

During these disturbances, lord George Gordon moved for leave to bring up the petition. This was readily granted; but when he proposed it should be taken into immediate consideration, it was strenuously opposed by almost the whole house. Enraged at this opposition, he came out several times to the people during the debates, acquainting them how averse the house appeared to grant their petition, and naming particularly those who had spoken against it.

Several members of the house expostulated with him in the warmest terms on the unjustifiableness of his conduct; and one of his relations, colonel Gordon, threatened to run him through the moment any of the rioters should force their entrance into the house. It was some hours before the house could carry on its deliberations with any regularity, which was not done till the members were relieved by the arrival of a party of the guards. Order being restored, the business of the petition was resumed; when lord George Gordon told them it had been signed by near 120,000 British Protestant subjects. He therefore insisted that the petition should be considered without delay. But notwithstanding the dangers with which they were menaced, and the proof which the mover of the petition had given that no means should be left unemployed to compel them to grant it, the commons continued immovable in their determination. Of 200 members, then present in the house, six only voted for it.

In the mean time the mob had dispersed itself into various parts of the metropolis, where they demolished two Romish chapels belonging to foreign ministers; and openly vented the most terrible menaces against all people of that persuasion.

On the 4th of June they assembled in great numbers in the eastern parts of London; and attacked the chapels and houses of the Roman Catholics in that quarter, stripping them of their contents, which they threw into the street, and committed to the flames.

They renewed their outrages on the following day, destroying several Romish chapels, and demolishing the house of Sir George Saville in resentment of his having brought into parliament the bill in favour of the Roman Catholics.

Next day both houses met as usual; but finding that no business could be done, they adjourned to the 19th.

During this day and the following, which were the 6th and 7th of June, the rioters were absolute masters of the metropolis and its environs.

Some of those who had been concerned in the demolition of the chapels belonging to foreign ministers, having been seized and sent to Newgate, the mob collected before that prison, and demanded their immediate release. On being refused, they proceeded to throw firebrands and all manner of combustibles into the keeper's house; which unhappily communicated the fire to the whole building; so that this immense pile was soon in flames. In this scene of confusion, the prisoners were all released. They amounted to about 300; among whom several were under sentence of death. They set fire, in the same manner, to the King's bench and Fleet prisons, and to a number of houses belonging to Roman Catholics,

tholics. The terror occasioned by these incendiaries was such, that most people hung out of their windows pieces of blue silk, which was the colour assumed by the rioters; and chalked on their doors and shutters the words, "No Popery," by way of signifying they were friendly to their cause.

The night of the 7th of June concluded these horrors. No less than 36 different conflagrations were counted at the same time. The bank had been threatened, and was twice assailed; but happily was too well guarded for their attempts. In the evening, large bodies of troops arrived from all parts, and came in time to put a stop to the progress of the rioters. They fell upon them every where, and multitudes were slain and wounded, besides the numbers that perished thro' intoxication. It was not until the afternoon of the 8th, that people began to recover from their consternation. During great part of the day, the disorders of the preceding night had created so terrible an alarm, that the shops were almost universally shut up over all London. The melancholy effects of misguided zeal were not, however, confined solely to London. The outrageous disposition of the populace was preparing to act the like horrid scenes in other parts of England. The mob rose in Hull, Bristol, and Bath; but through the timely interposition of the magistracy, these places were saved from their fury.

On the subsiding of this violent and unexpected commotion, it was thought proper to secure lord George Gordon. He was arrested, and committed close prisoner to the Tower, after having undergone a long examination before the principal lords of the council.

On the 19th of June, both houses met again according to adjournment. A speech was made on this occasion from the throne, acquainting them with the measures that had been taken in consequence of the disturbances, and assuring them of the utmost readiness to concur in whatever could contribute to the safety and maintenance of the laws and liberties of the people. The speech was highly approved; but the conduct of administration was severely censured, and charged with unpardonable neglect for not calling forth the civil power, and employing the military in due time to obviate the mischiefs that had been committed. Ministry excused itself, from the want of sufficient strength to answer all the demands of assistance that were made during the riots, and the absolute impossibility of suppressing them till the arrival of troops from the country. The various petitions were now taken into consideration that had been presented for the repeal of the act which had occasioned the riots; but the house continued in the same mind. Nevertheless it was thought proper to yield somewhat to the prejudices of the people, by passing a bill for preventing persons of the Popish persuasion from teaching or educating the children of Protestants; but this was afterwards thrown out by the lords.

Nothing could have happened more opportunely for the present ministry than the riots just now related; for such were the alarm and terror occasioned by them, that the ardour which had appeared for promoting popular meetings and associations, and for opposing the measures of government, was in a great degree suppressed. The county meetings were represented as

having a tendency like the Protestant Association, to bring on insurrections and rebellions. Many began to consider all popular meetings as extremely dangerous; and among the commercial and monied people, there was not an inconsiderable number, who were so panic-struck by the late riots, that all attention to the principles of the constitution was over-ruled by their extreme anxiety about the preservation of their property. Had it not been for these events, though the minister was again at the head of a majority in parliament, it is probable that the spirit of opposition which prevailed in the different counties would have compelled administration to make some concessions to the people. But these transactions extremely strengthened the hands of administration, and rendered the exertions of the popular leaders less formidable. The popular party were also somewhat weakened, by the dissensions which took place among them in the county meetings, and assemblies of that kind, relative to annual parliaments and other political regulations which were proposed to be adopted.

In the suppression of these riots, however, the interference of the military without the command of the civil magistrate became a matter of suspicion to the people at large. In the house of lords the duke of Richmond expressed an expectation that some of his majesty's ministers would rise, and give their lordships assurances, that the measures taken in order to suppress the riots, which were defensible only upon the ground of necessity, would be so stated; and that what was illegally done, on the ground of necessity, would be cured by an act of indemnity.

Various other observations were thrown out relative to the king's prerogative and military law: upon which lord Mansfield observed, that neither the king's prerogative nor military law had any thing to do with the conduct of government in their endeavours to quell the late outrages. All men, of all ranks, descriptions, and denominations, were bound, by their oath of allegiance, to interpose for the prevention of acts of high treason, or felony, wherever any attempts to perpetrate such crimes were made in their presence; and were criminal, if they did not do it. In the whole of these proceedings, therefore, the military had not acted in their technical capacity as military, but had merely exercised their duty as civil men, which they, in common with other civil men, had both a right and an obligation to exercise. When a body of men were convened, without proceeding to the actual perpetration of treasonable or felonious acts, then, by a clause in the riot-act, the presence of the civil magistrate was necessary, before the military could interpose at all; and for this reason, that as no acts of felony were committed, they could have no plea in the civil character for meddling at all. But by the statute-law of the country, it became felonious in any combination of men to persevere in that combination, after the riot-act had been read by a justice of the peace; and this being done, then, and not till then, they had a constitutional reason for their interposition; namely, the privilege and duty of hindering the commission of felony, whenever they had it in their power. This being, therefore, the plain voice of the law, his lordship did not see how any prerogative of the king had been exercised, nor how military law had been established.

Britain. established. Nothing had been done out of the regular course of the law, and no power had been assumed by the soldiery, which they did not possess as civil individuals, and not in their technical capacity as members of the military.

This doctrine was far from being agreeable to the nation in general, and was very freely censured both in news-papers and pamphlets. It was admitted, that if soldiers came accidentally, as individuals, to any place where felonies were committing, they might interfere, as well as others of the king's subjects, in the prevention of them. But this was a different case from that of bodies of armed troops being sent under officers commissioned by the king, and with orders to act against riotous and disorderly persons without any authority from the civil magistrate. It was maintained, that the constitution of England knew no such character as a mercenary soldier, at the sole will of the executive power. Soldiers were held to their duty by laws which affected no other part of the community: and no soldier, as such, could be employed in the service of the constitution, without a particular act of parliament in his favour. The idea that a military man was convertible into a soldier, or a citizen, as royalty might move its sceptre, was a novel idea, and only made for the present occasion. Mercenary armies were understood to consist of men, who had either detached themselves or been forced from civil societies. Laws were made on these suppositions, regarding their liberties and lives, such as no members of civil society could submit to. Soldiers were only tolerated by annual bills, and under repeated pretences; and the very idea of blending them with the common subjects of the state, and giving persons of their description a right of judging on its most important occurrences, would have filled our ancestors with horror. The laws tolerated an army for certain periods, and under certain restrictions; but there was no law which admitted the interference of the military in any of the operations of civil government.

It was acknowledged, that the late atrocious riots had rendered an extraordinary exertion of power absolutely necessary: but it was at the same time contended, that the interposition of the army in those outrages, without any authority from the civil magistrate, was an act of prerogative unconstitutional and illegal, though perfectly reasonable and beneficial. The public safety and benefit might sometimes excuse exertions of power, which would be injurious and tyrannical on ordinary occasions: but the utmost care should be taken, that such extraordinary exertions should not be established as precedents, which might operate very fatally to the constitution. An act of indemnity to the ministry, therefore, on account of the necessity of the case, should be immediately passed. But if a large standing army was kept up, and the king was understood to be invested with a power of ordering the troops to act discretionally, whenever he should judge proper, without any authority from the civil magistrate, the people could have no possible security for their liberties. In vain might be their appeals to the courts of justice: for the efficacy of appeals of that kind, in such cases, would depend on the pleasure of the prince.

Many were filled with similar apprehensions, and

alarmed at the dangerous precedent which the late exertions of the military afforded, however necessary they might be from the very singular circumstances of the case. Among others, Sir George Saville, in an address to his constituents some time afterwards, declared, that he considered them as "fully, effectually, and absolutely under the discretion and power of a military force, which was to act without waiting for the authority of the civil magistrates."

A letter written by lord Amherst to lieutenant-colonel Twisleton, who commanded the troops employed in London for the suppression of the riots, and which was understood to be an order for disarming the citizens, was much canvassed in both houses of parliament. The letter, however, was denied to have such a meaning, and was said to be levelled only at disorderly persons who were found in arms. It excited, nevertheless, no inconsiderable alarm; and was an inducement, added to the consideration of the late riots, to lead a great number of citizens to provide themselves with arms, and to join in plans of military association, that they might be enabled to protect themselves and the city from violence and outrage, without any future interposition of the military.

We must now proceed to a detail of the operations of the war, which, notwithstanding the powerful confederacy against Great Britain, seemed rather to be in her favour than otherwise. The Spaniards had begun their military operations by the siege of Gibraltar, but with very little success; and the close of the year 1779, and beginning of 1780, were attended with some considerable naval advantages to Great Britain. On the 18th of December 1779, the fleet under the command of Sir Hyde Parker in the West Indies captured nine sail of French merchant ships, which, with several others, were under the convoy of some ships of war. Two days after he detached rear admiral Rowley in pursuit of three large French ships, of which he had received intelligence, and which were supposed to be part of Mons. la Mothe Picquet's squadron returning from Grenada. His success there has been already mentioned; and about the same time several other vessels were taken by the same squadron commanded by Sir Hyde Parker.

On the 8th of January 1780, Sir George Brydges Rodney, who had been intrusted with the command of a fleet, one object of the destination of which was the relief of Gibraltar, fell in with 22 sail of Spanish ships, and in a few hours the whole fleet was taken.

In little more than a week after, the same fortunate admiral met with still more signal success. On the 16th of the month he engaged, near Cape St Vincent, a Spanish fleet, consisting of 11 ships of the line and two frigates, under Don Juan de Langara. The Spaniards made a gallant defence; but four of their largest ships were taken, and carried into Gibraltar. These were, the Phoenix of 80 guns and 700 men, on board which was the admiral, Don Juan de Langara; the *Moharica*, of 70 guns and 600 men, Don Antonio Oyarvide commander; the *Princesa*, of 70 guns and 600 men, Don Manuel de Leon commander; and the *Diligente*, of 50 guns and 600 men, Don Antonio Abornoz commander. Two other 70 guns ships were also taken; but one of them was driven on shore on the breakers and lost, and the other

Britain. other was likewise driven on shore, but afterwards recovered. Four ships of the line escaped, and the two frigates: but two of the former were much damaged in the action; in the course of which one Spanish ship, the *San Domingo*, of 70 guns and 600 men, was blown up. The five men of war taken were remarkably fine ships; and were afterwards completely refitted, manned, and put into the English line of battle. The Spanish admiral and his officers applied to Sir George Rodney to obtain the liberty of returning to Spain upon their parole of honour: but this he declined for some time, because he was informed that a great number of British seamen were then prisoners in Spain, who ought to have been released. However, afterwards receiving assurances that these should be immediately set at liberty, he released the Spanish admiral and officers upon their parole; and the prisoners in general were treated with such generosity and humanity, as appeared to make a great impression upon the court of Madrid and the Spanish nation. When admiral Rodney had supplied the garrison of Gibraltar with provisions, ammunition, and money, he proceeded on his voyage to the West Indies; having sent home part of his fleet, with his Spanish prizes, under the command of rear-admiral Digby; who took a French man of war on his return, the *Prothée*, of 64 guns and 700 men.

On the 20th of March there was an action in the West Indies, between some French and English men of war, the former under the command of Mons. de la Mothe Picquet, and the latter, being part of Sir Peter Parker's squadron, under that of commodore Cornwallis. The engagement was maintained on both sides with great spirit; but the French at length gave up the contest, and made the best of their way for Cape François.

Admiral Rodney having arrived in the West Indies, and taken upon him the command of his majesty's ships at the Leeward islands, an action happened between him and the French fleet under the command of count de Guichen, on the 17th of April. The British squadron consisted of 20 ships of the line, besides frigates; and the French fleet of 23 ships of the line, and several frigates. The action began a little before one, and continued till about a quarter after four in the afternoon. Admiral Rodney was on board the *Sandwich*, a 90 gun ship, which beat three of the French ships out of their line of battle, and entirely broke it. But such was at length the crippled condition of the *Sandwich*, and of several other ships, that it was impossible to pursue the French that night without the greatest disadvantage. The victory was, indeed, claimed on both sides; but no ship was taken on either: and the French retired to Guadaloupe. Admiral Rodney's ship, the *Sandwich*, had suffered so much, that for 24 hours she was with difficulty kept above water. Of the British there were killed in this engagement 120, and 353 were wounded.

On the 15th of May, another action happened between the same commanders. It did not commence till near seven in the evening, only a few ships having engaged, which were soon separated; and the whole ended in nothing decisive. Of the British 21 were killed, and 100 wounded. The fleets met again on the 19th of the same month, when another action en-

Britain. sued; but this also terminated without any material advantage on either side. In the last engagement 47 of the British were killed and 193 wounded. According to the French accounts, the total of their loss, in these three actions, amounted to 158 killed, and 820 wounded.

It was a very unfavourable circumstance for Great Britain, that the French should have so formidable a fleet in the West Indies: and this great force of the enemy was augmented in June, by being joined with a Spanish squadron near the island of Dominica. The French and Spanish fleets, when united, amounted to 36 sail of the line. They did not, however, attack any of the British islands, or even reconnoitre the fleet under the command of Sir George Brydges Rodney, which then lay at anchor in Gros Islet bay. Such, indeed, were the vigilance and good conduct of that admiral, and so sensible were the inhabitants of these islands of his services, that the houses of assembly of St Christopher's and Nevis presented addresses to him, testifying their gratitude for the security they enjoyed in consequence of his spirited and seasonable exertions.

In the month of June, admiral Geary, who commanded the grand fleet, took twelve valuable merchant ships bound from Port au Prince to Bourdeaux and other ports of France: But in the month of July a very important and unexpected capture was made by the Spaniards, which could not but excite much alarm in Great Britain. On the 8th of August, captain Moutray, who had under his command the *Ramilies* of 74 guns and two frigates, with the trade bound for the East and West Indies under convoy, had the misfortune to fall in with the combined fleets of France and Spain, which had sailed from Cadiz the preceding day. The *Ramilies* and the two frigates escaped: but the rest were so completely surrounded, that five East Indiamen were taken, and 50 merchant ships bound for the West Indies. Their cargoes were extremely valuable: it was one of the most complete naval captures ever made; and was a heavy stroke to the commerce of Great Britain. The Spaniards on this occasion behaved to their prisoners with great attention and humanity; and appeared disposed to make an adequate return for the generous treatment which their countrymen had experienced from admiral Rodney. This loss, however, great as it was, was scarce sufficient to compensate the capture of Fort Omoa from the Spaniards, where upwards of three millions of dollars were gained by the victors, and, among other valuable commodities, 25 quintals of quicksilver, without which the Spaniards could not extract the precious metals from their ores; the loss of which consequently rendered their mines useless.

But while the British were making the most vigorous efforts, and even in the main getting the better of the powers who opposed them fairly in the field, enemies were raised up throughout all Europe, who, by reason of their acting indirectly, could neither be opposed nor resisted. The power which most openly manifested its hostile intentions was Holland; but besides this, a most formidable confederacy, under the title of the *armed neutrality*, was formed, evidently with a design to crush the power of Great Britain. Of this confederacy the empress of Russia declared herself the head; and her plan was intimated on the

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the armed
neutrality.

tain. 26th of February 1780, in a declaration addressed to the courts of London, Versailles, and Madrid. In this piece it was observed, that though from the conduct of her Imperial majesty it might have been hoped that her subjects would have been allowed peaceably to enjoy the fruits of their industry, and of the advantages belonging to all neutral nations, experience had proved the contrary: her imperial majesty's subjects had been often molested in their navigation, and retarded in their operations, by the ships and privateers of the belligerent powers. Her Imperial majesty therefore declared, that she found herself under the necessity of removing those vexations which were offered to the commerce of Russia, as well as to the liberty of commerce in general, by all the means compatible with her dignity and the welfare of her subjects: but before she came to any serious measures, and in order to prevent all new misunderstandings, she thought it just and equitable to expose to the eyes of all Europe the principles which she had adopted for her conduct, and which were contained in the following propositions:

1. That neutral ships should enjoy a free navigation, even from port to port, and on the coasts of the belligerent powers.

2. That all effects belonging to the subjects of the belligerent powers should be looked upon as free on board such neutral ships, excepting only such goods as were stipulated contraband.

3. Her imperial majesty, for the proper understanding of this, refers to the articles 10. and 11. of her treaty of commerce with Great Britain, extending her obligations to all the other belligerent powers.

In the treaty made between Great Britain and Russia in 1734 it is said, "The subjects of either party may freely pass, repass, and trade in all countries which now are or hereafter shall be at enmity with the other of the said parties, places actually blocked up or besieged only excepted, provided they do not carry any warlike stores or ammunition to the enemy: as for all other effects, their ships, passengers, and goods, shall be free and unmolested. Cannons, mortars, or other warlike utensils, in any quantity beyond what may be necessary for the ship's provision, and may properly appertain to and be judged necessary for every man of the ship's crew, or for each passenger, shall be deemed ammunition of war; and if any such be found, they may seize and confiscate the same according to law: but neither the vessels, passengers, or the rest of the goods, shall be detained for that reason, or hindered from pursuing their voyage." The same enumeration of the goods, stipulated as contraband, was given in the treaty concluded between Great Britain and Russia in 1766.

4. That in order to determine what characterizes a port blocked up, that denomination should not be granted but to such places before which there were actually a number of enemy's ships stationed near enough so as to make its entry dangerous.

5. That these principles should serve as rules in the judicial proceedings and sentences upon the legality of prizes.

Her imperial majesty declared, that she was firmly resolved to maintain these principles; and that, in order to protect the honour of her flag and the security of the commerce and navigation of her subjects, she

had given an order to fit out a considerable part of her naval forces. She added, that this measure would have no influence on the strict and rigorous neutrality which she was resolved to observe, so long as she should not be provoked and forced to depart from her principles of moderation and impartiality. It was only in that extremity that her fleet would be ordered to act wherever her honour, interest, and necessity should require. This declaration was also communicated to the States-general by prince Gallitzin, envoy extraordinary from the empress of Russia; and she invited them to make a common cause with her, so far as such an union might serve to protect commerce and navigation. Similar communications and invitations were also made to the courts of Copenhagen, of Stockholm, and of Lisbon, in order, it was said, that, by the united care of all the neutral maritime powers, the navigation of all the neutral trading nations might be established and legalized, and a system adopted founded upon justice, and which, by its real advantage, might serve for rules as future ages.

The memorial of the empress of Russia, though very unfavourable to the views of Great Britain, received a civil answer from that court: but by other powers it was received, as it might naturally be expected, with much more cordiality. In the answer of the king of France it was said, that "what her Imperial majesty claimed from the belligerent powers was nothing else than the rules prescribed to the French navy; the execution whereof was maintained with an exactness known and applauded by all Europe." He expressed his approbation of the principles and views of her Imperial majesty; and declared, that from the measures she had now adopted, "solid advantages would undoubtedly result, not only to her subjects, but also to all nations." The kings of Sweden and Denmark also formally acceded to the armed neutrality proposed by the empress of Russia, and declared their perfect approbation of her sentiments. The States-general did the same: but on account of that slowness of deliberation which prevails in the councils of the republic, it was not till towards the close of the year that their concurrence was notified to the court of Russia. It was resolved by the powers engaged in this armed neutrality to make a common cause of it at sea against any of the belligerent powers who should violate, with respect to neutral nations, the principles which had been laid down in the memorial of the empress of Russia.

But though the British ministry could not openly engage in war with all the other powers of Europe, they determined to take severe vengeance on the Dutch, whose ingratitude and perfidy now became a general subject of speculation. It has already been observed, that, ever since the commencement of hostilities with the Americans, the Dutch had shown much partiality towards them. This continued to be the case, even beyond what the natural avidity of a mercantile people could be supposed to produce: frequent memorials and remonstrances had of consequence passed between the two nations, and the breach gradually grew wider and wider, until at last matters came to an extremity, by a discovery that the town of Amsterdam was about to enter into a commercial treaty with America. This happened in the beginning of Sep-
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tember 1780, by the capture of Mr Laurens, lately president of the American congress, and who had been empowered by that body to conclude a treaty with Holland. Mr Laurens himself was instantly committed prisoner to the tower of London, and a spirited remonstrance was made to the states of Holland, requiring a formal disavowal of the transaction. To this, however, no other answer could be obtained, than that they would take the matter into consideration according to the forms and usages of the country; and that a reply would be given as soon as the nature of their government would admit.

Such an equivocal answer could not by any means be satisfactory; and therefore the most vigorous measures were resolved on. On the 25th of January 1781, it was announced to the house, that his majesty had been obliged to direct letters of marque and reprisal to be issued against the States-general and their subjects. For the causes and motives of his conduct in this respect, he referred to a public manifesto against that republic, which he had ordered to be laid before the house. The charges against the republic, however, were briefly summed up by lord North in his speech on the occasion. The states, he said, in open violation of treaties, had not only refused to give Great Britain that assistance which those treaties intitled her to claim when attacked by the house of Bourbon, but had also, in direct violation of the law of nations, contributed as far as they could to furnish France with warlike stores, and had also at length thought proper to countenance the magistracy of Amsterdam in the insult which they had offered to this country, by entering into a treaty with the rebellious colonies of Great Britain, as free and independent states. By the treaty of 1678, it was stipulated, that, in case Great Britain was attacked by the house of Bourbon, she had a right to take her choice of either calling upon the States-general to become parties in the war, and to attack the house of Bourbon within two months, or of requiring an aid of 6000 troops, and 20 ships of war, which the States were to furnish immediately after the claim was made. But though this country had always preserved her faith with Holland, yet that republic had refused to fulfil the terms of this treaty.

His lordship farther observed, that the States-general had suffered Paul Jones, a Scotchman, and a pirate, acting without legal authority from any acknowledged government, to bring British ships into their ports, and

to refit there (A). A rebel privateer had also been saluted at the Dutch island of St Eustatius, after she had been suffered to capture two British ships within cannon-shot of their forts and castles. A memorial was presented at the Hague, in June 1779, on the breaking out of the war with Spain, to claim the aid we were intitled to require by the treaty of 1678; but of this not the least notice was taken on the part of the States. Two other notices had since been delivered, each of which met with the same reception. The British ministry had done all in their power to bring the States to a true sense of their interest; and when the necessity of the case compelled them to seize on Dutch ships carrying stores to France, they had paid the full value for the cargoes, and returned the ships; so that neither the private merchant, the private adventurer, nor the States, had suffered. France only had felt the inconvenience, by her being deprived of that assistance which she would have received from those cargoes.

With respect to an observation that had been made, that the treaty laid before the house, between the Dutch and the Americans, was nothing more than a contemplative project, his lordship remarked, that it was actually signed and sealed; the names of Van Berkel the pensionary of Amsterdam, and Mons. de Neuville, a merchant and burgher of that city, being subscribed to it on the part of the magistracy of Amsterdam, and the name of John Lee, as commissioner or agent for the congress of America. The States-general had also refused to pay the least attention to the requisition in his majesty's memorial, delivered by Sir Joseph Yorke, that proper notice should be taken of Van Berkel and his associates; so far as such a refusal could be implied by a contemptuous silence. As to the principal magistrates of Amsterdam, they were so far from disavowing the fact, or attempting to palliate it, that they gloried in the whole transaction; and expressly declared, even to the States-general, that what they had done was what their indispensable duty required.

His lordship added, that he lamented the necessity of a war with Holland; but it appeared to him to be an unavoidable measure. He confessed the situation of this country to be truly alarming; but when he considered the powerful stand that had already been made against the most alarming confederacy that had ever been formed against Great Britain, the little success that the enemies of this country had met with in all their

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(A) This man, who had been formerly a servant in lord Selkirk's house, had landed in 1778 and plundered it of the plate, but without doing any farther mischief. The action, however, was very disagreeable to his own party; and, at the desire of Dr Franklin, the plate was afterwards restored. After this exploit, he attempted to set fire to the town of Whitehaven, but without success. In 1779, he made a descent on the coast of Ireland, but without committing any act of hostility. His people indeed carried off some sheep and oxen, but their captain paid liberally for what they had taken. In the month of September 1779 he appeared in the Frith of Forth with several prizes. They advanced up the Frith above the island of Inchkeith, so as to be nearly opposite to Leith. His design was supposed to have been to burn the shipping there; but he was prevented from attempting this by a strong west wind; and such measures were also taken for the defence of the harbour, by erecting batteries and otherwise, that he would probably have miscarried had any attempt been made. On leaving the coast of Scotland, he fell in with the *Setapis* and *Scarborough*, both of which he took after a most desperate engagement; by which all the vessels were reduced almost to wrecks. These were carried into a Dutch harbour; and it was this transaction to which lord North now alluded. He was called a *privateer*, on account of his not being at that time properly furnished with a commission either from France or America, though this was denied by the opposite party.

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tion at the conduct of their governors. This was particularly the case with Jamaica and Barbadoes, in both which islands there were frequent contests about this time between the houses of assembly and the governors. But the remonstrances of the inhabitants on this subject did not meet with much attention from those who had it in their power to afford them relief: for it seemed, indeed, to be a kind of maxim with the British administration at this period, to pay little regard to any complaints from the subjects of the empire, respecting any abuse of authority, from whatever quarter they might come, Ireland only excepted; and, with respect to that kingdom, they were induced to relax a little from the high tone they were accustomed to assume, by the powerful and energetic arguments of the Irish volunteers. See IRELAND.

The great and decisive stroke, however, which happened this year, was the capture of lord Cornwallis with the division of the army under his command. Other events, indeed, were sufficiently mortifying. The province of West Florida had been reduced by the Spaniards; Minorca was besieged by them with an apparent impossibility of holding out; the island of St Eustatius was surpris'd by the French; and in short every circumstance seemed to proclaim the necessity of putting an end to a war so calamitous and destructive.

All the disasters that had yet happened, however, were not sufficient to induce the ministry to abandon their favourite scheme of war with the colonies. The parliament met on the 27th of November 1781. It has already been observed, that in the year 1780 the ministry had received such a signal defeat as seemed to prognosticate the ruin of their power. They had indeed afterwards acquired a majority, and the extreme terror produced by the riots had contributed not a little to the establishment of their authority. The remembrance of what had passed, however, most probably induced them to a dissolution of parliament; while the successes at Charlestown and other parts of America, once more gave them a decided majority in both houses. But the disasters of the year 1781 involved them in the utmost difficulty and distress. In the speech from the throne, his majesty observed, that the war was still unhappily prolonged by that restless ambition which first excited the enemies of his crown and people to commence it, and which still continued to disappoint his earnest desire and diligent exertions to restore the public tranquillity. But he should not answer the trust committed to the sovereignty of a free people, nor make a suitable return to his subjects for their zealous and affectionate attachment to him, if he consented to sacrifice, either to his own desire of peace, or to their temporary ease and relief, those essential rights and permanent interests, upon the maintenance and preservation of which the future strength and security of Great Britain must depend. The events of war he said, had been very unfortunate to his arms in Virginia, having ended in the loss of his forces in that province. No endeavours, he added, had been wanting on his part to extinguish that spirit of rebellion which his enemies had found means to foment and maintain in the colonies, and to restore to his deluded subjects in America that happy and prosperous condition which they had formerly derived from a due obedience to the laws; but the late misfortune in that quarter called

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loudly for the firm concurrence and assistance of parliament, in order to frustrate the designs of their enemies, which were equally prejudicial to the real interests of America, and to those of Great Britain. At the close of the speech, his majesty observed, that among the many ill consequences which attended the continuation of the present war, he sincerely regretted the additional burdens which it must unavoidably bring upon his faithful subjects: but he still declared his perfect conviction of the justice of his cause; and that he had no doubt, but that, by the concurrence and support of his parliament, by the valour of his fleets and armies, and by a vigorous, animated, and united exertion of the faculties and resources of his people, he should be enabled to restore the blessing of a safe and honourable peace to all his dominions.

A motion for an address of thanks, couched in the usual style, was made in the house of commons. It was urged, that a durable and advantageous peace could result only from the firm, vigorous, and unremitting prosecution of the war. The present was not the time to relinquish hope, but to resolve upon exertion. By despair we should invite calamity to overwhelm us; and it would ill become a great and valiant people, whose resources were yet powerful and numerous, to submit where they should resist; to look with indifference upon their political importance; and to tarnish, by indolent pusillanimity, the national and dear-bought glories both of remote and recent æras, instead of opposing, with augmented force, a combination whose inveterate efforts to throw out of the scale of Europe the whole political existence of Great Britain, were strengthened by the late victory over lord Cornwallis in Virginia. But if a general spirit of unanimity, so requisite at one of the most alarming and important periods in the British annals, were to arise within the walls of parliament, and thence to diffuse itself throughout the body of the people, the gloom that hovered round us would rapidly disperse, and great successes would conduct the nation back to all its pristine splendor and felicity.

This was vehemently opposed by Mr Fox and Mr Burke. The latter remarked, that if there could be a greater misfortune than had already been undergone by this kingdom in the present disgraceful contest, it was hearing men rise up in the great assembly of the nation to vindicate such measures. If the ministry and the parliament were not to be taught by experience; if neither calamities could make them feel, nor the voice of God make them wise; what had this fallen and undone country to hope for? If any thing could tend to deject the people of England, to make them despair of their situation, and resign themselves to their fate, it must be to receive information that their ministers, after all that had been suffered, were yet determined to go on with the American war. A battle might be lost, an enterprize might miscarry, an island might be captured, an army might be lost in the best of causes, and even under a system of vigour and foresight; because the battle, after all the wisdom and bravery of man, was in the hands of heaven: and if either or all these calamities had happened in a good cause, and under the auspices of a vigilant administration, a brave people would not despair. But it was not so in the present case. Amidst all their sufferings and

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did persist
in their
military
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speech
Nov. 1781.

Britain. and their misfortunes, they saw nothing so distressing as the weakness or wickedness of their ministers. They seemed still determined to go on, without plan, and without foresight, in this war of calamities; for every thing that happened in it was a calamity. He considered them all alike, victories and defeats; towns taken, and towns evacuated; new generals appointed, and old generals recalled; they were all alike calamities in his eyes, for they all spurred us on to this fatal business. Victories gave us hopes, defeats made us desperate, and both instigated us to go on. They were, therefore, both calamities; and the king's speech was the greatest calamity of all; for the king's speech showed us the disposition of the ministers: and this disposition was not to retreat an inch; to go on, to plunge us deeper, to make our situation more disgraceful, and more unhappy.

In the course of the debate, it was contended on the part of administration, and particularly by lord North, that by the address, as originally proposed, the house did not pledge themselves to any continuance of the American war: but this was strongly denied by the gentlemen in opposition. However, the point was at last decided in favour of ministry by a majority of 216 to 129; and the address was then carried as originally proposed.

In the house of peers, a motion for an address similar to that of the house of commons, was made by lord Southampton, and seconded by lord Walsingham. It was vigorously opposed by the earl of Shelburne; who observed, that seven years had now elapsed since blood was first drawn in America; and from that period to the present the affairs of Great Britain had been continually growing worse. A long progress in the war had left us in a situation in which there were no advantages to console; but dangers and calamities had arisen, which were unknown to us at the commencement of hostilities. Of nearly 87,000 men sent to America, how few had returned! What treasures had been in vain expended! What enormous debts accumulated! The most liberal national supplies had been followed by nothing but calamities; and the whole proceedings of the ministry manifested a want of system and of intelligence. Among other instances of mismanagement, his lordship remarked, that, instead of blocking up the French fleets within their own harbours, or immediately intercepting them on their putting out to sea, we had suffered them to sail far upon their expeditions to our distant settlements; and when they had acquired this great advantage, we slowly followed their powerful armaments with inconsiderable squadrons, and scarcely ever reached the place of destination till the enterprizes of the enemy were totally accomplished. His lordship also declared it to be his opinion, that the capture of earl Cornwallis was owing to the preceding capture of St Eustatius. As to the farther prosecution of the war with the least prospect of success, it was totally impossible: the nation was too much exhausted both of men and money; recruits were not to be procured for the army; and as to our navy, if we had the best first lord of the admiralty, and the ablest board that ever sat, it was impossible to provide for all the distant services of so extensive a war. The reason was obvious. The fine navy that belonged to Great Britain at the

conclusion of the last war had been suffered to rot and moulder away; while France and Spain had recruited and repaired their marine during the whole period of the peace.

Among other strictures on ministerial conduct, it was observed by the duke of Richmond, that at present scarcely a seventh part of the people were represented, while all the remainder had no concern whatever, either virtually or individually, in the management of their own affairs; which, their lordships well knew, the constitution of this country, as originally framed, gave them a right to have. He appealed to the house, whether many of their lordships did not name the members for several boroughs, and whether the representatives were not chosen only by the management of two or three burghesses. Were this point reformed, his grace declared, that he should still expect to see the country capable of regaining some portion of its former greatness. He also made some observations on the interior cabinet, which had, he said, been the ruin of this country. To prove its mischievous tendency, he instanced the declaration of the late earl of Chatham, who confessed to the house, that "he was duped and deceived, and that he had not been ten days in the cabinet before he felt the ground rotten under his feet." His grace likewise said, that though it was the middle of a war, he made no scruple to recommend it most strenuously to government, immediately to set about curtailing the numbers of the army, and that as much as possible. He recommended, that arms should be put into the hands of the people, for the purposes of domestic defence; and he did not doubt but that in this case, they would act with greater power and success, than even the most numerous military forces. He also advised withdrawing the troops from America, augmenting the navy as much as possible, and sending such succours to the West India islands as might enable them effectually to resist any attempts from the enemy.

Lord Stormont defended the address as originally proposed; and observed, that the language of the speech from the throne was proper to be held by any prince worthy of the crown, in a moment like the present; and the long established custom rendered such an address as had been moved the fit answer to it. The preservation of America, as a dependent part of the British empire, was too important to be relinquished; and the present crisis, so far from justifying despair, called for a redoubled ardour, and for immediate exertion.

The lord-chancellor said, that the present speech from the throne, like all others at the commencement of a session, was no more than a brief state of the nation, delivered in the ancient style of composition, and conformably to established usage, from almost the first existence of a parliament; and as to the address, its language not being specifically binding, their lordships might vote in favour of it, without pledging themselves to support any future ministerial measure whatever. The house at length divided, when lord Shelburne's amendment was rejected by a majority of 75 to 31. A short protest against the address was entered by the duke of Richmond, the marquis of Rockingham, and earl Fitzwilliam; in which they declared, that they dissented, "for reasons too often urged in vain for the last seven years against the ruinous prosecution

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ention of the unjust war carrying on by his majesty's ministers against the people of North America, and too fatally confirmed by repeated experience, and the late disgraceful loss of a second army, to stand in need of repetition."

Though ministers thus succeeded in carrying the addresses in the usual form, they did not meet with the like success in their main plan of carrying on the war. After the debate on the number of seamen, which was fixed at 100,000 for the ensuing year, Sir James Lowther moved as a resolution of the house, "That the war carried on with America had been ineffectual for the purposes for which it was undertaken; and that all farther attempts to reduce that continent by force of arms would be in vain, and must be injurious to this country by weakening her powers to resist her ancient and confederated enemies." This was supported by a number of arguments interlarded with the most severe reflections on ministerial conduct. In the course of this debate it was observed, and indeed with evident truth, that every state of consequence in Europe withheld its succours, and left us to contend alone against a multitude of enemies; so that we should search in vain for an ally from one corner of the universe to the other. As to the American war, in which the ministry so madly persisted, it was not like a war between two rival, or two neighbouring states, about a barrier or a boundary; a contest which, however it ended, could not detract much from the importance or weight of either. It was a war in which the conclusion of every campaign was against us; in which we weakened no enemy by our efforts; in which we had suffered every thing without gaining any thing. The American war had been a war of delusion from the beginning to the end. Every promise had been broken, every assertion had been falsified, every object had been completely given up. The ministry had said one thing one day; and the next day they had come down again, and with grave faces said what was directly contrary. But it was time to put an end to these delusions; not the least prospect of success in the war now remained; the period was therefore come, when it was indispensably necessary that the parliament should interfere, in order to avert that ruin with which this unhappy country was so immediately threatened.

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Different
plan of war
proposed
by Lord
North.

The motion was opposed by lord North; who said, that if it was agreed to by the house, it must put an end to the American war in every shape, and even cripple the hands of government in other respects. It would point out to the enemies of this country what were to be the mode and operations of the war; and thus inform the enemy in what manner they might best point their operations against this country during the next campaign. Great Britain must not retain any post in the colonies; for that would be considered as one mode of attempting to reduce the Americans to obedience by force. But was it not manifest, that there might be a necessity of retaining certain posts in America, for the convenience even of carrying on the war against France and Spain?

With respect to the American war in general, his lordship acknowledged, that it had been extremely unfortunate; but he affirmed, that the misfortunes and calamities which had attended it, though of a most ferocious and fatal nature, were matters rather to be de-

plored and lamented as the events of war, in themselves perpetually uncertain, than to be ascribed to any criminality in ministers. He had always considered the American war as a war of the most cruel necessity; but at the same time as a war commenced for the support of the just rights of the crown and of the parliament of Great Britain. He would also venture to declare, that as the war was unfortunate to all his fellow-subjects, so it was particularly distressing to himself. He had always considered it as the heaviest calamity of his life; and if, at any time, a sacrifice, not only of the emoluments of his situation, but even of the whole of his private fortune, could have purchased for his country a safe and honourable peace, he would have made that sacrifice with the utmost cheerfulness, and thought the opportunity of offering it the greatest blessing which could possibly have befallen him. His lordship added, that though he totally disapproved of the motion, yet he was willing to declare it to be his opinion, that it would not be wise nor right to go on with the American war as we had hitherto done; that is, to send armies to traverse from the south to the north of the provinces in their interior parts, as had been done in a late case, and which had failed of producing the intended and the desired effect.

This new method of carrying on the war was as much disapproved of as the other; nor indeed did it seem to be generally believed that any material alteration was to take place in the ministerial system. General Burgoyne observed, that declaring a design of maintaining posts in America, of the nature of New York, was declaring a design of offensive war; and that such a maintenance of posts would prove an improvident and a preposterous war. The great if not the only purpose of keeping places of arms upon an enemy's coast, and especially upon a continent, must be for offensive war. During the glorious administration of the earl of Chatham, a place of arms was intended to be established at St Malo's; and it was afterwards established at Belleisle upon a more extensive view than that of a mere inlet into the country. It made a powerful diversion, and drew a great military force from Germany, to protect the whole range of coast from Bayonne to Dunkirk, which was threatened by an embarkation from that place of arms. But the circumstance which rendered that menace against the French coast either practicable or formidable was, our dominion of the sea. At that resplendent era, our naval flag rode in the very bays of France as securely as if anchored at Spithead; and a few frigates would have convoyed an army of 20,000 men to any one point of the French or Spanish coast. This then could be produced as a just precedent for a place of arms. But what other precedents existed? The command of a strait, by which it was possible either to give an inlet for commerce, or to divide the ports of an enemy. Of such a nature was Calais, which, together with Dover, kept separate as often as we thought proper the great ocean and the German sea. Such also was Gibraltar; a place of arms that gave a virtual superiority to the navy of England, though with an inferior number of ships, as separating the ports of the house of Bourbon in the ocean from their ports in the Mediterranean, and preventing the junction of their fleets. But New York, as a place of arms, could au-

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Opposed by
general
Burgoyne.

Britain. fwer no possible purpose but to feed an impracticable war, and to multiply that system of contracts, loans, and influence, which, after having operated to the loss of every dependence of the country, was ready to give the final blow to the last remains of property and liberty in the country itself.

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He recants
his original
print, les
concerning
America.

The general added, that he had not hitherto touched upon the principle of the American war. The impracticability of it was a sufficient justification for supporting the present motion. But he was now convinced that the principle of the American war was wrong, though he had not been of that opinion when he formerly engaged in the service in America. He had been brought to this conviction, by observing the uniform conduct and behaviour of the people of America. Passion, prejudice, and interest, might operate suddenly and partially; but when we saw one principle pervading the whole continent, the Americans resolutely encountering difficulty and death for a course of years, it must be a strong vanity and presumption in our own minds, which could only lead us to imagine that they were not in the right. It was reason, and the finger of God alone, that implanted the same sentiment in three millions of people. He would assert the truth of the fact against all which either art or contrivance could produce to the contrary. He was likewise now convinced, upon comparing the conduct of the ministry, as time had developed their system, that the American war formed only a part of a general design levelled against the constitution of this country and the general rights of mankind.

After some farther debate, Sir James Lowther's motion was rejected by a majority of 220 to 179. This, however, was a majority in which the ministry had little reason to exult; as it was sufficiently apparent, from the numbers who voted against administration, that the uninfluenced sense of that house was clearly and decisively against any farther prosecution of the American war.

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Debate on
the army
estimate.

Other arguments to the same purpose with those of general Burgoyne, just mentioned, were used in the debate on the army estimates. On the 14th of December, the secretary at war informed the house, that the whole force of the army, including the militia of this kingdom, required for the service of the year 1782, would amount to 186,220 men, and for this force the parliament had to provide. The sum required for these troops for pay, cloathing, and other articles, amounted to four millions two hundred and twenty thousand pounds. This military force exceeded that of the last year by 4074 men; and the expence was consequently greater by 29,067 l. 15s. The increase was occasioned by the greater number of troops already sent, or then going, to the East Indies. But the expence of those troops was to be reimbursed by the East India company.

After some farther statements relative to the military force of the kingdom and its expence had been made by the secretary at war, colonel Barré rose, and with great vehemence declared, that the estimates of the army which were laid before that house were scandalous and evasive. There was a much greater number of non-effective men than were stated in the estimates. In fact, they amounted to a fifth part of the army. The house should also recollect, that the estimates lying on

the table did not compose the whole of the expences of the army; for extraordinaries of several millions were yet to come. Neither were the men under the several descriptions given by the secretary at war the whole number of military force employed. Other troops were employed solely at the discretion of the minister, and paid irregularly and unconstitutionally, without the assent or knowledge of the legislature; particularly the provincial corps in America, amounting to nine thousand men in actual service, the statement of which force, though it had been called for from year to year, was never brought into the estimates.

With respect to the army estimates, the colonel proceeded to observe, that in many instances they were filled with such abandoned impositions, that there appeared an actual design to treat inquiries from the parliament with sovereign contempt. Several regiments, of which the number of men did not amount to one hundred, were set down at eight hundred; and others not having more than fifty were mentioned in the estimates as consisting of five, six, or seven hundred men. Indeed, too large a part of the armies, for which that house had been persuaded to give their votes, existed only upon paper. Amongst other regiments, the royal English fusileers had not even a fourth of their complement. The royal Scotch fusileers were in a worse predicament. Their number fell short of even one hundred men. The 60th regiment was stated as amounting to 3500 men, when the fact was, that it did not consist of 1500; and many others might be enumerated in the same situation. The statement of the estimates relative to garrisons, particularly those of Gibraltar and Minorca, were equally delusive and overcharged.

Lord George Germaine said, that the reason why the provincial corps had not been included in the estimates was, that some share of the public money might be spared, by avoiding to vote an establishment for these troops. They were raised and paid in a manner by much the most economical for the nation. They were solely under the management of the commander in chief; and an officer, called the *inspector-general of the provincial corps*, regularly took care to muster them from time to time; nor was a single man paid for, if not in actual employ. His lordship also informed the house, that the ministry were unanimously of opinion, that, considering the present situation of affairs, and the misfortunes of the war, it would not be right to continue any longer the plan on which it had hitherto been conducted; and therefore that a fresh army would not be sent to supply the place of that captured at York-town under earl Cornwallis.

Sir George Savile expressed the strongest disapprobation of any farther prosecution of the American war, or of raising any more troops for that purpose. He adverted to the intimation which had been given by the ministry, that a change was to be made in the mode of conducting the American war. This, he said, was in fact telling the house, that they were determined to prosecute the war with all the feeble efforts of which they were yet capable. Every unprejudiced and sensible observer must perceive, that so extraordinary a conduct resembled, if it did not indicate, the violence of insanity. General Conway declared, that he entirely disapproved of a continuance of the Ame-

Britain. rican war in any form, as he wished that it might totally cease. He eagerly desired the recal of our fleets and armies, and was anxious for an entire and immediate prevention of those calamities which had almost completed the destruction of the empire. He considered an avowal of the independence of America as a severe misfortune, and a debasing stroke against Great Britain; but of the two evils he would choose the least, and he would submit to the independence of America. In short, he would almost yield to any circumstance whatsoever, rather than persist a day longer in the prosecution of so pernicious a war. Ideas had been started relative to a war of posts, among which New York had been particularly mentioned. But on what military authority did the ministry presume to think that New York was tenible? What garrison would be able to maintain it? The diversity of military opinions given on this subject served rather to alarm than to convince. To secure New York, the possession of Long Island, which is a hundred miles in length, is absolutely necessary; and it was well known that Sir Henry Clinton, with all his troops, did not consider himself as secure. Notwithstanding these and other arguments, however, the question was carried in favour of ministry by a considerable majority, and the supplies were voted accordingly.

Besides the grand question for and against the continuance of the American war, several other matters of smaller moment were agitated this session; particularly the affair of St Eustatius* as already mentioned, an inquiry into the state of the navy, and into the causes of our bad success in the American war. All these questions were carried in favour of ministry, though not without a strength of opposition they had never experienced before. A motion for censuring lord Sandwich was lost only by 236 to 217; and so general did the desire of a change of administration now appear, that it excited no small degree of surprize that the present ministers should still retain their places. Nothing could set in a more striking point of view the detestation in which they were held, than the extreme aversion shown at admitting lord George Germaine to the dignity of peerage. On this occasion, the Minden business was not only ripped up, but after his actual investiture, and when he had taken his seat in the house, under the title of lord viscount Sackville, a second debate ensued relative to the dishonour the peers had sustained by his admission into their house. It was moved by the marquis of Caermarthen, that "it was reprehensible in any minister, and highly derogatory to the honour of that house, to advise the crown to exercise its indisputable right of creating a peer, in favour of a person labouring under the heavy censure of a court martial," which was particularly stated in the motion, and also the public orders given out on the occasion by the late king. The marquis urged, that the house of peers being a court of honour, it behoved them most carefully to preserve that honour uncontaminated, and to endeavour to mark out, as forcibly as possible, the disapprobation which they felt at receiving into their assembly, as a brother peer, a person stigmatized in the orderly books of every regiment in the service. The earl of Abingdon observed, that he could not help conceiving, that, although there was not a right of election, there was

and must be a right of exclusion vested in that house, when the admission of any peer happened to be against the sense of their lordships. His judgment of this arose not only from the idea, that that house was possessed of original rights, as independent of the crown as of the people; but from the circumstance of their being the hereditary counsellors of the crown, against the sense of whom, he held, the crown could not of right exert itself. His lordship declared, that he considered the admission of lord George Germaine to a peerage, to be no less an insufferable indignity to that house, than an outrageous insult to the people at large. It was an indignity to that house, because it was connecting them with one whom every soldier was forbidden to associate with. It was an insult to the people; for what had the person raised to the peerage done, to merit honours superior to his fellow-citizens? He had only one claim to any kind of promotion; and that was, that he had undone his country, by executing the plan of that accursed, invisible, though efficient cabinet, from whom, as he had received his orders, so he had obtained his reward.

Lord Sackville declared, that he neither knew by whose advice he had been raised to this dignity, nor thought, that, in a point of this nature, the recommendation of any minister was in the least needful. To bestow honours was the peculiar and universally admitted prerogative of the crown, provided that the parties advanced to them were competent to receive them. This he insisted was the case at present. The sentence of the court-martial was stated as the ground of the objection against his elevation to the peerage; but even such a sentence did not amount to any legal disability whatsoever. Twenty-three years had elapsed since the court-martial which sat upon him had pronounced that sentence; and he should naturally suppose, that such of their lordships, and of the public in general, as were at all acquainted with the peculiarly hard and unfair circumstances which accompanied his trial, had been long accustomed to behold this business in its proper point of view. Assailed by an excess of acrimony, at least equal to any that a British officer could have experienced from enemies at once implacable and unjust, he was condemned unheard, and punished previously to his trial. In these circumstances, it was well known, that he had challenged his accusers to come forward; that he provoked inquiry; and that he insisted upon a trial. He was assured at the time, that if the determination of the court-martial should even prove capital, it would be carried into execution: but no intimations of this kind could dissuade him from insisting that a trial should take place; and he flattered himself, that the candour and equity of their lordships would lead them to conclude, that such behaviour, under such circumstances, could only result from a consciousness of innocence. To the sentence of it he had submitted; and, as the result of such submission, he thought that he had then acquitted himself to his country and to the public. At the present moment, it was extremely singular, that although neither the charge, nor the defence, nor the evidence, nor in short any one part of the proceedings on the trial, was before their lordships, they were called upon to put the sentence a second time in force against him. He trusted, however, that their lordships would

* See *Essays* &c.

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Debate on admitting Lord George Germaine to sit in the House of Peers.

would call to mind the occurrences which had taken place, with respect to himself, subsequent to that period. In 1765, not more than four years after the trial, he was appointed to an office in administration. Previously to his acceptance of the propositions then made to him that he should bear a part in administration, it was agreed for him to become a member of the council-board. There he accordingly took his seat; and thenceforward considered such a circumstance as virtually a repeal of the sentence of the court-martial. A revision of the proceedings of the court-martial was now unattainable; for during the space of 23 years, the period of time which had elapsed since the trial, every member who had sat upon it, except one, had been dead and buried. An attempt to investigate the motives which actuated the several members of the court was equally impracticable. He hoped, therefore, their lordships would be of opinion, that he was fully competent to receive the title which his sovereign had been graciously pleased to bestow upon him; and that it was neither expedient, necessary, nor becoming for that house, to fly in the face of the crown, or to oppose its indisputable prerogative, because it had advanced an old and faithful servant to the dignity of a seat among their lordships.

The duke of Richmond observed, that, from the reign of Edward III. to the time of Henry VII. it was expressly stated, in every new patent of the creation of a peer, that such creation was made *with the consent of parliament*; nor did a single instance occur, during the whole of this period, of any title being granted without the particular acquiescence of the house of lords. After the reign of Henry VII. the crown carried with a considerably less restraining hand this exercise of the prerogative; and during the latter æras, it had been generally regarded as an incontestable and established right. It appeared, however, that the ancient principles of the British constitution had set boundaries to restrain this exercise of the prerogative; and that formerly a legal disability was not the only circumstance which might amount to a disqualification for the peerage. Some insinuations had been thrown out, respecting the decision of the court-martial, which were far from being well grounded. When the court-martial took place, for the purpose of determining the criminality or the innocence of the noble viscount, the times were not, as had been represented, remarkable for the predominance of clamour or of faction. He observed, that their lordships were not ignorant, that the noble viscount rested a considerable part of the vindication of his behaviour at the battle of Minden, upon the supposed existence of a striking variation in the orders delivered from prince Ferdinand to the commander of the cavalry. It was understood that the first order was, that *the cavalry* should advance; and the second, that *the British cavalry* should advance. Yet, even under these supposed contradictory orders, it was evident that the noble lord should advance; and, certainly, the distance being short, he enjoyed a sufficient space of time for obedience to his instructions. Lord Southampton, who delivered one of the messages, was now present in the house; and it should seem, that he had no choice, on this occasion, but to acknowledge, either that he did not properly deliver such orders to the noble viscount, or that the latter, having properly received them,

neglected to obey them. But whatever difficulties might have arisen, during the endeavours to determine exactly how much time had actually been lost, in consequence of the non-compliance of the noble viscount with the orders which he received, his grace said, that he could with much facility have solved, what all the witnesses examined as to this point were not able positively to determine. If, as he was summoned to appear upon the trial, his deposition had been called for, he could have proved, because he held all the while his watch within his hand, and seldom ceased to look at it, that the time lost when the noble viscount delayed to advance, under pretence, that, receiving such contradictory orders, it was impossible for him to discover whether he ought to advance with the *whole* cavalry, or only with the British cavalry, was *one hour and a half*. It was, therefore, extremely evident, that the noble lord had it in his power to have brought up the cavalry from the distance of a mile and a quarter; in consequence of which, by joining in the battle, they might have rendered the victory more brilliant and decisive. But, before the arrival of this cavalry, the engagement was concluded. Such was the testimony, his grace said, which, having had the honour to serve, at the battle of Minden, under prince Ferdinand of Brunswick, he must have borne, if, being summoned, the members of the court-martial had thought proper to have examined him on the trial. Under such circumstances, the noble viscount could have little reason to complain of the sentence of the court-martial, of the orders which followed, or of the loss of his commission.

The motion was powerfully supported by other arguments, both by the duke of Richmond himself and other peers; but, however, was rejected by a majority of 93 against 28. A protest was entered, signed by nine peers, in which the sentence and the public orders were particularly stated; and in which they declared, that they "could not look upon the raising to the peerage a person so circumstanced, in any other light than as a measure fatal to the interests as well as to the glory of the crown, and to the dignity of that house; insulting to the memory of the late sovereign, and likewise to every surviving branch of the illustrious house of Brunswick; repugnant to every principle of military discipline, and directly contrary to the maintenance of the honour of that house, and to that honour which has for ages been the glorious characteristic of the British nation, and which, as far as could depend on them, they found themselves called upon, not more by duty than inclination, to transmit pure and unfulled to posterity."

The ruinous tendency of the American war was now so strikingly apparent, that it became necessary for those who had a just sense of the dangerous situation of their country, who wished well to its interests, or even to prevent its destruction, to exert their most vigorous efforts to put an end to so fatal a contest. Accordingly, on the 22d of February, a motion was made by general Conway, "That an humble address should be presented, earnestly imploring his majesty, that, taking into his royal consideration the many and great calamities which had attended the present unfortunate war, and the heavy burdens thereby brought on his loyal and affectionate people, he would be graciously

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Protest against receiving him.

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Motion for an address to the American war, &c.

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ciously pleaded to listen to the humble prayer and advice of his faithful commons, that the war on the continent of North America might no longer be pursued for the impracticable purpose of reducing that country to obedience by force; and expressing their hope that the earnest desire and diligent exertion to restore the public tranquillity, of which they had received his majesty's most gracious assurances, might, by a happy reconciliation with the revolted colonies, be forwarded and made effectual; to which great end, his majesty's faithful commons would be ready most cheerfully to give their utmost assistance." In the speech by which he introduced this motion, the general set forth the enormities with which the British arms had so frequently been stigmatized by opposition, and the excessive animosity of the Americans. Not a single friend to the British government (he said) could be discovered amongst the inhabitants of North America, from one end of the country to the other. We had, indeed, at present no object to contend for: for if it could be admitted for a moment, even for the sake of argument, that it were possible we might conquer at the last, what benefits would repay the struggle for the victory? We should then only gain a desert, a country depopulated by the war, which our despotism and barbarity, our avarice and ambition, our antipathy for freedom, and our passion for injustice, had kindled in her bosom. But all expectations of this kind were in the highest degree vain and absurd; though he had received intelligence (the general said) from a person lately arrived from America, in whose veracity, experience, and discernment, he could implicitly confide, that the people of that country, although in arms against us, were still anxious for the accomplishment of peace. He was also assured, that certain individuals, at no considerable distance, were empowered, on the part of the congress, to treat with the ministers of Great Britain for the attainment of so essential an object. These circumstances were not unknown to government; and a noble lord, who had lately retired from the office of secretary of state for the American department, had been particularly applied to on this interesting occasion. What reason could the ministers assign why they had neglected to improve this singular advantage, and seemed to spurn at all ideas of negotiation? Could it be possible, that a series of ignominious misadventures and defeats had not yet operated as a cure for the inhuman and destructive love of war? Such was the situation of the nation, that it behoved the ministers to negotiate for peace almost on any terms. But as they had hitherto done nothing of this kind, it was indispensably necessary that the parliament should interfere, and put an immediate end to a war so calamitous, so fatal, and so destructive. The motion was seconded by lord John Cavendish, who remarked, that the American war had been a war of malice and resentment, without either dignity in its conduct, probability in its object, or justice in its origin. It was, however, vigorously opposed by administration, who had still sufficient strength to gain their point, though only by a single vote, the motion being rejected by 194 to 193.

The increasing strength of opposition now showed that the downfall of ministry was at hand. The decision of the last question was considered as a victory

gained by the former; and Mr Fox instantly gave notice that the subject would be resumed in a few days, under another form. It was accordingly revived on the 27th of February; on which day a petition from the city of London was presented to the house, soliciting the house to interpose in such a manner as should prevent any farther prosecution of the American war; after which general Conway moved, that it should be resolved, "That it was the opinion of that house, that the farther prosecution of offensive war on the continent of North America, for the purpose of reducing the revolted colonies to obedience by force, would be the means of weakening the efforts of this country against her European enemies, and tend, under the present circumstances, dangerously to increase the mutual enmity so fatal to the interests both of Great Britain and America; and, by preventing a happy reconciliation with that country, to frustrate the earnest desire graciously expressed by his majesty to restore the blessings of public tranquillity."

In the speech by which he introduced this motion, the general took notice of some objections that had been made to his former motion, under the idea that it was unconstitutional in that house to interfere with its advice in those things which especially and indisputably belonged to the executive power. It appeared, however, from the journals, that from the days of Edward III. down to the present reign, parliament had at all times given advice to the crown in matters relating to war and peace. In the reign of Richard II. it was frequently done; and also in that of Henry IV. One remarkable instance of this was in the reign of Henry VII. when that prince consulted his parliament respecting the propriety of supporting the duke of Brittany against France, and also of declaring war against the latter; and he told his parliament, that it was for no other purpose than to hear their advice on these heads that he called them together. In the reign of James I. the parliament interfered repeatedly with their advice respecting the Palatinate, the match with Spain, and a declaration of war against that power. In the time of Charles I. there were similar interferences; and in the reign of his son Charles II. the parliament made repeated remonstrances, but particularly in 1674 and 1675, on the subject of the alliance with France, which they urged ought to be renounced, and at the same time recommended a strict union with the united provinces. To some of these remonstrances, indeed, answers were returned not very satisfactory; and the parliament were informed, that they were exceeding the line of their duty, and encroaching upon the prerogative of the crown. But so little did the commons of those days relish these answers, that they addressed the king to know who it was that had advised his majesty to return such answers to their loyal and constitutional remonstrances. In the reign of king William, repeated instances were to be found in the journals of advice given by parliament relative to the Irish war and the war on the continent. The like occurred frequently in the reign of queen Anne: that princess, in an address from the parliament, was advised not to make peace with France until Spain should be secured to Austria; and also, not to consent to peace until Dunkirk should be demolished. In short, it was manifest from the whole history

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tain. of English parliaments, that it was ever considered as constitutional for parliament to interfere, whenever it thought proper, in all matters so important as those of peace and war. The general urged other arguments in support of his motion, which was seconded by lord Althorpe; and petitions from the mayor, burgesses, and commonalty of the city of Bristol, and from the merchants, tradesmen, and inhabitants of that city, against the American war, were read. In order to evade coming to any immediate determination on the question, a proposition was made by Mr Wallace, the attorney-general, that a truce should be entered into with America; and that a bill should be prepared to enable his majesty's ministers to treat on this ground: and under the pretence of allowing time for this measure, he moved, "that the present debate should be adjourned for a fortnight." The house divided upon this motion, when there appeared for it 215, and against it 234; so that there was a majority of 19 against the ministry. The original motion of general Conway was then put and carried without a division. The general immediately followed up his first motion with another for an address to the king, in which the American war was spoken of precisely in the same terms made use of in the motion, and in which his majesty was solicited to put a stop to any farther prosecution of offensive war against the colonies. This motion was agreed to; and it was also resolved, that the address should be presented to his majesty by the whole house. The address was accordingly presented on the first of March; when his majesty returned an answer, in which he declared, that there were no objects nearer to his heart than the ease, happiness, and prosperity of his people; that the house of commons might be assured, that, in pursuance of their advice, he should take such measures as should appear to him to be most conducive to the restoration of harmony between Great Britain and her revolted colonies, so essential to the prosperity of both; and that his efforts should be directed, in the most effectual manner, against our European enemies, until such a peace could be obtained as should consist with the interests and permanent welfare of his kingdoms. But though the proceedings of the house of commons, in addressing his majesty against any farther prosecution of the American war, gave general satisfaction, the royal answer, however, was not thought sufficiently explicit. It was therefore observed by general Conway, in the house of commons, on the 4th of March, that he hoped he should be supported by the house in his desire of securing the nation against the possibility of a doubt that the American war was not now completely concluded. Something, perhaps, might yet be wanting, by which ministers might be so expressly bound, that, however desirous of evasion, they would not have it in their power to evade the injunction of that house. He therefore moved, "That an humble address should be presented to his majesty, to return his majesty the thanks of that house for his gracious answer to their last address; that house being convinced, that nothing could, in the present circumstances of this country, so essentially promote those great objects of his majesty's paternal care for his people as the measures which his faithful commons had most humbly but earnestly recommended to his majesty."

This motion was unanimously agreed to; after which the general made a second motion, that it should be resolved by that house, "That, after the solemn declaration of the opinion of that house, in their humble address presented to his majesty on Friday last, and his majesty's assurance of his gracious intention, that house would consider as enemies to his majesty and this country, all those who should endeavour to frustrate his majesty's paternal care for the ease and happiness of his people, by advising, or by any means attempting, the farther prosecution of offensive war on the continent of North America, for the purpose of reducing the revolted colonies to obedience by force."

After some debate, the motion was agreed to without a division; and on the 6th of the month, after a number of papers had been read in the house of peers relative to the surrender of earl Cornwallis and the army under his command, the two following motions were made by the duke of Chandos. First, "That it was the opinion of that house, that the immediate cause of the capture of the army under earl Cornwallis in Virginia, appeared to have been the want of a sufficient naval force to cover and protect the same." Secondly, "That the not covering and protecting the army under earl Cornwallis, in a proper manner, was highly blameable in those who advised and planned the expedition." After some debate, the motions were rejected, upon a division, by a majority of 72 to 37.

Thus the ministry still kept their ground, and with the most astonishing resolution combated the powers of opposition, which were daily increasing. On the 8th of March several resolutions were moved by lord John Cavendish; one of which was, that "the chief cause of all the national misfortunes was the want of foresight and ability in his majesty's ministers." Another respected the immense sum expended on the war, which was not denied to be less than 100 millions. The expensiture of this sum became an object of severe scrutiny; but still all inquiry was frustrated. Mr Burke affirmed, that all public documents relative to the finances, exhibited the mismanagement, profusion, and enormities, of an unprincipled administration; as an instance of which he adduced the presents given to the Indians for their services during the last year, amounting to no less than 100,000*l*. Several other particulars were pointed out; but the motions were lost by 226 to 216.

The unpopularity of lord North was now farther augmented by his proposal of some new taxes, particularly on soap, the carriage of goods, and places of entertainment. Opposition therefore still determined to force him to resign; which indeed it seemed impracticable that he would voluntarily do. On the 15th of March it was moved by Sir John Ross, that "the nation could have no farther confidence in the ministers who had the conduct of public affairs." The debate was remarkable for an argument, in the affair of America, perfectly original, and unprecedented in all that had been said or written on the subject. Sir James Marriot informed the house, that though it had been frequently pretended, that the inhabitants of the colonies were not represented in the British parliament, yet the fact was otherwise; for they were actually represented. The first colonization, by national and sovereign authority, he remarked, was the establishment of

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Resolutions concerning the capture of Cornwallis rejected.

671 Resolutions against ministry rejected.

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Britain. the colony of Virginia. The grants and charters made of those lands, and of all the subsequent colonies, were of one tenor, and expressed in the following terms: "To have and to hold of the king or queen's majesty, as part and parcel of the manor of East Greenwich, within the county of Kent, *reddendum*, a certain rent at our castle of East Greenwich, &c." So that the inhabitants of America were, in fact, by the nature of their tenure, represented in parliament by the knights of the shire for the county of Kent. This curious legal discovery, that the American colonies were part and parcel of the manor of East Greenwich, though delivered by the learned judge with all proper gravity and solemnity, yet excited so much merriment in the house, that it was with great difficulty, for some time, that the speaker could preserve any kind of order.

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Lord North's defence of his own conduct.

Lord North endeavoured to vindicate his own administration. He affirmed, that it could not be declared with truth, by that house, that the national calamities originated from the measures of the present administration. The repeal of the American stamp-act, and the passing of the declaratory law, took place before his entrance into office. As a private member of parliament, he gave his vote in favour of both; but, as a minister, he was not responsible for either. When he accepted his post, the times were scarcely less violent than the present. He approached the helm when others had deserted it; and, standing there, he had used his utmost efforts to assist his country. That the American war was just and requisite, and prosecuted for the purpose of supporting and maintaining the rights of the British legislature, was a position, for the truth of which he would ever contend, whilst he enjoyed the power of arguing at all upon the subject. As to peace, he not only wished most earnestly for it, but also for the formation of such a ministry as might at once prove welcome to the country, and with unanimous cordiality co-operate for the welfare and the honour of the state. It was not an attachment to the honours and emoluments of office which had kept him so long in place; and he should disdain to throw impediments in the way of any honourable and salutary coalition of parties, though for the adjustment of an administration from which he might perceive himself excluded. The house at length divided upon the question, when there appeared for it 227, and against it 236; so that there was a majority of nine in favour of administration.

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The ministers at last quit their places.

Notwithstanding this seemingly favourable determination, it was so well known that the ministry could not stand their ground, that, four days after, a similar motion to that made by Sir John Rous was to have been made by the earl of Surrey; but when his lordship was about to rise for that purpose, lord North addressed himself to the speaker, and endeavoured to gain the attention of the house. This occasioned some altercation, it being contended by many members, that the earl of Surrey ought to be heard first. But lord North being at length suffered to proceed, he observed, that as he understood the motion to be made by the noble earl was similar to that made a few days before, and the object of which was the removal of the ministers, he had such information to communicate to the house, as must, he conceived, render any such motion now unnecessary. He could with authority assure the

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house, that his majesty had come to a full determination to change his ministers. Indeed, those persons who had for some time conducted the public affairs were no longer his majesty's ministers. They were not now to be considered as men holding the reins of government, and transacting measures of state, but merely remaining to do their official duty, till other ministers were appointed to take their places. The sooner those new ministers were appointed, his lordship declared, that, in his opinion, the better it would be for the public business, and the general interests of the nation. He returned thanks to the house for the many instances of favour and indulgence which he had received from them during the course of his administration; and he declared, that he considered himself as responsible, in all senses of the word, for every circumstance of his ministerial conduct, and that he should be ready to answer to his country whenever he should be called upon for that purpose.

The earl of Surrey informed the house, that the motion which he intended to have made was designed to declare to the nation, and to all Europe, that the ministry were not dismissed because they wanted to avoid the fatigues of office, but because the parliament had totally withdrawn from them their good opinion and their confidence, and were determined no longer to permit the perpetration of those violent abuses of their trust, to which, with impunity, and to the disgrace and detriment of the state, they had for such a length of time proceeded. His lordship, however, agreed, in consequence of the declaration of lord North, to wave his intended motion; and, after some farther debate, the house adjourned.

Thus an end was put to an administration which had for so long been obnoxious to a great part of the nation, and whose removal contributed very much to allay those dangerous ferments by which every part of the British dominions had been so long agitated. Peace now became as much the object of ministry as war had been formerly. Before we proceed to any account of the negotiations for that desirable event, however, it will be necessary to take notice of those military events which disposed the other belligerent powers to an accommodation. The bad success of Britain in America has been already taken notice of. The disaster of Cornwallis had produced a sincere desire of being at peace with America: but that could not be accomplished without making peace with France also; and that power was haughty and elated with success. Minorca had now fallen into the hands of the Spaniards; and though it is certain that the capture of a few miserable invalids, attended with such extreme difficulty as the Spaniards experienced †, ought rather to have intimidated them than otherwise, they now projected the most important conquests. Nothing less than the entire reduction of the British West India islands became the object of the allies; and indeed there was too much reason to suppose that this object was within their reach. In the beginning of the year 1782, the islands of Nevis and St Christopher were obliged to surrender to M. de Grasse the French admiral, and the marquis de Bouille, who had already signalized himself by several exploits *. Jamaica was marked out as the next victim; but an end of all these aspiring hopes was fast approaching. The advantages

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Military operations in 1782.

† See Minorca.

* See Nevis and St Christopher's.

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hitherto gained by the French in their naval engagements with the British fleet, had proceeded from their keeping at a great distance during the time of action, and from their good fortune and dexterity in gaining the wind. At last, the French admiral, de Grasse, probably prompted by his natural courage, determined, after an indecisive action on the 9th of April 1782, to stand a close engagement with his formidable antagonist admiral Rodney. This, with him, appears to have been a matter of choice, as he interfered to prevent the loss of a disabled ship, by parting with which he might have avoided the disaster that followed. This memorable engagement took place off the island of Dominica, three days after the former. The British fleet consisted of 37 ships of the line, and the French of 34. The engagement commenced at seven o'clock in the morning, and continued with unremitting fury till half past six in the evening. It is said, that no other signal was made by the admiral but the general one for action, and that for close fight. Sir George Rodney was on board the Formidable, a ship of ninety guns; and the count de Grasse was on board the Ville de Paris, a ship of 110 guns, which was a present to the French king from the city of Paris. In the course of the action, the Formidable fired nearly 80 broadsides; and for three hours the admiral's ship was involved in so thick a cloud of smoke, that it was almost invisible to the officers and men of the rest of the fleet. The van division of the British fleet was commanded by Sir Samuel Hood, and the rear division by rear-admiral Drake; and both these officers greatly distinguished themselves in this important action. But the decisive turn on this memorable day was given by a bold manœuvre of the Formidable, which broke the French line, and threw them into confusion. The first French ship that struck was the Cæsar, a 74 gun ship, the captain of which fought nobly, and fell in the action. It is said, that, when she struck, she had not a foot of canvas without a shot-hole. Unfortunately, soon after she was taken possession of, she took fire by accident, and blew up, when about 200 Frenchmen perished in her, together with an English lieutenant and ten English seamen. But le Glorieux and le Hector, both 74 gun ships, were also taken by the British fleet; together with l'Ardent of 64 guns; and a French 74 gun ship was also sunk in the engagement. It was a very close and hard fought action on both sides, but the French fleet was at length totally defeated. It was almost dark when the Ville de Paris struck, on board which the count de Grasse had fought very gallantly. Five thousand five hundred troops were on board the French fleet, and the havock among these was very great, as well as among the French seamen. The British had 230 killed and 759 wounded. Captain Blair, who commanded the Anson, and several other officers, were killed in the action; and lord Robert Manners, who commanded the Resolution, died of his wounds on his return home. On the 19th of the same month, a squadron which was detached from the main-fleet, under the command of Sir Samuel Hood, captured the Cato and the Jason, two French men of war of 64 guns each, and also l'Aimable of 32 guns, and the Ceres of 18. About the same time also the fleet under admiral Barrington took from the French, off Uthant,

le Pegase of 74 guns, l'Actionnaire of 64, and ten sail of vessels under their convoy.

It was universally allowed, that in this engagement the French, notwithstanding their defeat, behaved with the greatest valour. De Grasse himself did not surrender till 400 of his people were killed, and only himself and two others remained without a wound. The captain of the Cæsar, after his ensign-staff was shot away, and the ship almost battered to pieces, caused his colours to be nailed to the mast, and thus continued fighting till he was killed. The vessel, when taken, was a mere wreck. Other French officers behaved in the same manner. The valour of the British requires no encomium; it was evident from their success.

This victory was a very fortunate circumstance both for the interest and reputation of the British admiral. Before this event, the new ministry had appointed admiral Pigot to supersede him in the command in the West Indies; and it was understood, that they meant to set on foot a rigid inquiry into the transactions at St Eustatius. But the splendor of his victory put an end to all thoughts of that kind: he received the thanks of both houses of parliament for his services; and was created an English peer, by the title of baron Rodney, of Rodney-Stoke, in the county of Somerset. Sir Samuel Hood was also created baron Hood of Catherington, in the kingdom of Ireland; and rear-admiral Drake, and captain Astleck, were created baronets of Great Britain. Some attempts were also made, in the house of commons, to procure a vote of censure against the new ministry, for having recalled lord Rodney; but the motions made for this purpose were rejected by the majority.

The count de Grasse, after his defeat, was received on board the Baisleur man of war, and afterward, landed on the island of Jamaica, where he was treated with great respect. After continuing there some time, he was conveyed to England, and accommodated with a suite of apartments at the Royal Hotel in Pall-mall. His sword, which he had delivered up, according to the usual custom, to admiral Rodney, was returned to him by the king. This etiquette enabled him to appear at court, where he was received by their majesties and the royal family in a manner suitable to his rank. From the time of his arrival in London to his departure, which was on the 12th of August 1782, he was visited by many persons of the first fashion and distinction, and was much employed in paying visits to the great officers of state, and some of the principal nobility of the kingdom, by whom he was entertained in a very sumptuous and hospitable style. He received, indeed, every mark of civility which the British nation could bestow; and was treated with much respect even by the common people, from the opinion that was generally entertained of his valour and merit.

Though the designs of the French against Jamaica were now effectually frustrated, the victory was not followed by those beneficial consequences which by many were expected. None of the British islands which had been taken by the French in the West Indies were afterwards re-captured; though it was hoped that this would have been the result of our naval superiority in those seas. It was also an unfortunate circumstance, that some of those ships which were taken

Britain. by admiral Rodney were afterwards lost at sea; particularly the *Ville de Paris*, *Glorieux*, and *Hector*. A British man of war, the *Centaur*, of 74 guns, was also sunk in lat. 48 deg. 33 min. and long. 43 deg. 20 min. on the 24th of September 1782, in consequence of the disabled state to which it was reduced by some very violent storms. Before the ship sunk, the officers and crew had sustained great hardships: most of them at last went down with the ship; but the lives of captain Inglefield the commander, and ten other officers and seamen, were preserved by their getting on board a pinnace. But even this was leaky; and when they went into it they were nearly in the middle of the Western ocean, without compass, quadrant, great coat or cloak; all very thinly clothed, in a gale of wind, and with scarcely any provisions. After undergoing extreme hardships and fatigues for 16 days, they at length reached the island of *Fayall*, one of the *Azores*. They were so much reduced by want of food and incessant labour, that, after they had landed, some of the stoutest men belonging to the *Centaur* were obliged to be supported through the streets of *Fayall*. The *Jamaica* homeward bound fleet were also dispersed this year by a hurricane off the banks of *Newfoundland*, when the *Ramillies* of 74 guns and several merchantmen foundered.

The British navy also sustained, about this time, a considerable loss at home, by the *Royal George*, of 100 guns, being overfet and sunk at *Portsmouth*. This melancholy accident, which happened on the 29th of August, was occasioned by a partial heel being given to the ship, with a view to cleanse and sweeten her; but the guns on one side being removed to the other, or at least the greater part of them, and her lower deck ports being not lashed in, and the ship thwarting on the tide with a squall from the north-west, it filled with water, and she sunk in the space of about three minutes. Admiral *Kempenfelt*, a very brave and meritorious officer, other officers, upwards of 400 seamen and 200 women, besides many children, perished in her.

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Hudson's
bay and the
Bahama
islands re-
suced.

Thus the prosecution of the war seemed to be attended with endless disasters and difficulties to all parties. The signal defeat above mentioned not only secured the island of *Jamaica* effectually from the attempts of the French, but prevented them from entertaining any other project than that of distressing the commerce of individuals. In the beginning of May an expedition was undertaken to the remote and inhospitable regions of *Hudson's Bay*; and though no force existed in that place capable of making any resistance, a 74 gun ship and two 36 gun frigates were employed on the service. All the people in that part of the world either fled or surrendered at the first summons. The loss of the *Hudson's bay* company, on this occasion, amounted to 500,000 l. but the humanity of the French commander was conspicuous in leaving a sufficient quantity of provisions and stores of all kinds for the use of the British who had fled at his approach.

Another expedition was undertaken by the Spaniards to the *Bahama* islands, where a like easy conquest was obtained. The island of *Providence* was defended only by 360 men, who being attacked by 5000, could make no resistance. A very honourable capitulation

was granted by the victors, who likewise treated the garrison with great kindness afterwards. Some settlements on the *Mosquito* shore were also taken by the Spaniards: but the Bay-men, assisted by their negroes, bravely retook some of them; and having formed a little army with the Indians in those parts, headed by colonel *Delpard*, they attacked and carried the posts on the *Black River*, making prisoners of about 800 Spanish troops. The great disaster which befel this Spanish armament destroyed before Gibraltar. power, however, was their failure before Gibraltar, which happened in the month of September 1782, with such circumstances of horror and destruction, as evinced the absurdity of persisting in the enterprise. Thus all parties were taught that it was high time to put an end to their contentions. The affair of *Cornwallis* had shown that it was impossible for Britain to conquer America; the defeat of *de Grasse* had rendered the reduction of the British possessions in the *West Indies* impracticable by the French; the final repulse before Gibraltar, and its relief afterwards by the British fleet †, put an end † See G. b. to that favourite enterprise, in which almost the whole strength of Spain was employed; while the engagement of the Dutch with admiral *Parker* showed them that nothing could be gained by a naval war with Britain.

We have already taken notice, as fully as the limits of this article would admit, of the events which led to the removal of lord *North* and the other ministers who for so long time had directed public measures in this kingdom. On this occasion it was said that his majesty expressed a considerable agitation of mind at being in a manner compelled to make such an entire change in his councils; for the members in opposition would form no coalition with any of the old ministry, the lord chancellor only excepted. On the 27th and 30th of March 1782, the marquis of *Rockingham* was appointed first lord of the treasury; lord *John Cavendish* chancellor of the exchequer; the earl of *Shelburne* and Mr *Fox* principal secretaries of state; lord *Camden* president of the council; the duke of *Richmond* master of the ordnance; the duke of *Grafton* lord privy-seal; admiral *Keppel* first lord of the admiralty; general *Conway* commander in chief of all the forces in Great Britain; Mr *Thomas Townshend* secretary at war; Mr *Burke* paymaster of the forces; and colonel *Barré* treasurer of the navy. Other offices and honours were likewise conferred on different members of the opposition; and some were raised to the peerage, particularly admiral *Keppel*, Sir *Fletcher Norton*, and Mr *Dun-*

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Negotia-
tions for
peace.
The first business in which the new ministry engaged, was the taking such measures as were proper to effectuate a general peace. No time was lost in the pursuit of this great object, or in taking the necessary steps for its attainment. Accordingly, the empress of *Russia* having offered her mediation, in order to restore peace between Great Britain and *Holland*, Mr secretary *Fox*, within two days after his entrance into office, wrote a letter to *Monf. Simolin*, the Russian minister in London, informing him, that his majesty was ready to enter into a negotiation for the purpose of settling on foot a treaty of peace, on the terms and conditions of that which was agreed to in 1674 between his majesty and the republic of *Holland*; and that, in order

Britain. order to facilitate such a treaty, he was willing to give immediate orders for a suspension of hostilities, if the states-general were disposed to agree to that measure.

But the states of Holland did not appear inclined to a separate peace; nor perhaps would it have been agreeable to the principles of sound policy, if they had agreed to any propositions of this kind. However, immediately after the change of ministry, negotiations for a general peace were commenced at Paris. Mr Grenville was invested with full powers to treat with all the parties at war; and was also directed to propose the independency of the 13 United Provinces of America, in the first instance, instead of making it a condition of a general treaty. Admiral Digby and general Carleton were also directed to acquaint the American congress with the pacific views of the British court, and with the offer that was made to acknowledge the independency of the United States.

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Death of the marquis of Rockingham occasions new changes in the ministry.

But before this work of pacification had made any considerable progress, the new ministry sustained an irreparable loss by the death of the marquis of Rockingham in July 1782. Even before this event, considerable apprehensions were entertained of their want of union; but the death of the nobleman just mentioned occasioned an absolute dissolution. The earl of Shelburne, who succeeded him as first lord of the treasury, proved so disagreeable to some of his colleagues, that Mr Fox, lord John Cavendish, Mr Burke, Mr Frederic Montagu, and two or three others, instantly resigned their places. Others, however, though little attached to the earl, kept their places; and his lordship found means to attach to his interest Mr William Pitt, son to the late earl of Chatham. Though then in an early stage of life, that gentleman had distinguished himself greatly in parliament, and was now prevailed upon to accept the office of chancellor. The seceding members of the cabinet were at great pains to explain their motives to the house for taking this step. There were in general a suspicion that matters would be managed differently from the plan they had proposed while in office, and particularly that American independence would not be allowed; but this was positively denied at the time; and with truth, as appeared by the event. There appeared indeed a duplicity in the conduct of the earl of Shelburne not easily to be accounted for. Even after it had been intimated by general Carleton and admiral Digby, that the independency of the united provinces should be granted by his majesty in the first instance, instead of making it a condition of a provisional treaty, his lordship expressed himself to the following purpose: "He had formerly been, and still was of opinion, that whenever the independency of America was acknowledged by the British parliament, the sun of England's glory was set for ever. This had been the opinion of lord Chatham and other able statesmen; nevertheless, as the majority of the cabinet were of a contrary opinion, he acquiesced in the measure, though his ideas were different. He did not wish to see England's sun set for ever, but looked for a spark to be left which might light us up a new day. He wished to God that he had been deputed to congress, that he might plead the cause of America as well as Britain. He was convinced that the liberties of the former were gone as soon as the independency of the states was allowed; and he con-

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Strange speech of lord Shelburne on American independence

cluded his speech with observing, that he was not afraid of his expressions being repeated in America; there being great numbers there who were of the same opinion with him, and perceived ruin and independency linked together."

If his lordship really was of opinion that his oratorical powers were able to persuade the Americans out of a system for which they had fought so desperately for a number of years, it is much to be feared he overrated them. No objection, however, arose to the general pacification. As early as November 30th 1782, the articles of a provisional treaty were settled between Britain and America*. By these it was stipulated, that the people of the united states should continue to enjoy, without molestation, the right to take fish of every kind on the grand bank, and on all the other banks of Newfoundland; and that they should likewise exercise and continue the same privilege in the gulph of St Lawrence, and at every other place in the sea, where the inhabitants used heretofore to fish. The inhabitants of the united states were likewise to have the liberty to take fish of every kind on such part of the coast of Newfoundland as British seamen shall resort to; but not to cure or dry them on that island. They were also to possess the privilege of fishing on the coasts, bays, and creeks of all the other dominions of his Britannic majesty in America; and the American fishermen were permitted to cure and dry fish in any of the unsettled bays, harbours, and creeks of Nova Scotia, Magdalen islands, and Labrador. But it was agreed, that, after such places should be settled, this right could not be legally put in practice without the consent of the inhabitants and proprietors of the ground. It was accorded, that creditors upon either side should meet with no impediment in the prosecution of their claims. It was contracted that the congress should earnestly recommend it to the legislatures of the respective states, to provide for the restitution of all estates and properties which had been confiscated, belonging to real British subjects, and of the estates and properties of persons resident in districts in the possession of his majesty's arms, and who had not borne arms against the united states. It was resolved, that persons of any other description should have free liberty to go to any part whatsoever of any of the thirteen united states, and remain in it for twelve months unmolested in their endeavours to recover such of their estates, rights, and properties as might not have been confiscated; and it was concerted that the congress should earnestly recommend to the several states a revision of all acts or laws regarding the premises, so as to render them perfectly consistent, not only with justice and equity, but with that spirit of conciliation which, on the return of the blessings of peace, should universally prevail. It was understood that no future confiscations should be made, nor prosecutions commenced against any person, or body of men, on account of the part which he or they had taken in the present war; and that those who might be in confinement on such a charge, at the time of the ratification of the treaty in America, should be immediately set at liberty. It was concluded that there should be a firm and perpetual peace between his Britannic majesty and the united states; that all hostilities by sea and land should immediately cease; and that prisoners on both sides

Britain.

683
Gives occasion to the Americans to rail against Britain.

See America, n^o 389.
Articles of the provisional treaty with America.

Britain.

should be set at liberty. It was determined that his Britannic majesty should expeditiously, and without committing destruction of any fort, withdraw all his armies, garrisons, and fleets, from every port, place, and harbour of the united states. The navigation of the river Mississippi, from its source to the ocean, was to remain for ever free and open to the subjects of Great Britain and the citizens of the united states. In fine, it was agreed in the event, that if any place or territory belonging to Great Britain, or to the united states, should be conquered by the arms of either before the arrival of the provisional articles in America, it should be restored without compensation or difficulty.

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Preliminary
articles
with
France ;

In the treaty between Great Britain and France, it was agreed that Newfoundland should remain with England, as before the commencement of the war; and, to prevent disputes about boundaries, it was accorded that the French fishery should begin from Cape St John on the eastern side, and going round by the north, should have for its boundary Cape Ray on the western side. The islands of St Pierre and Miquelon, which had been taken in September 1778, were ceded in full right to France. The French were to continue to fish in the gulph of St Laurence, conformably to the fifth article of the treaty of Paris. The king of Great Britain was to restore to France the island of St Lucia, and to cede and guaranty to her that of Tobago. The king of France was to surrender to Great Britain the islands of Grenada and the Grenadines, St Vincent, Dominica, St Christopher's, Nevis, and Mountferrat. The river of Senegal and its dependencies, with the forts of St Louie, Podor, Galam, Arguin, and Portendic, were to be given to France; and the island of Goree was to be restored to it. Fort James and the river Gambia were guarantied to his Britannic majesty; and the gum trade was to remain in the same condition as before the commencement of hostilities. The king of Great Britain was to restore to his most Christian majesty all the establishments which belonged to him at the breaking out of the war on the coast of Orixa and in Bengal, with the liberty to surround Chandernagor with a ditch for draining the waters; and became engaged to secure to the subjects of France in that part of India, and on the coasts of Orixa, Coromandel, and Malabar, a safe, free, and independent trade, either as private traders, or under the direction of a company. Pondicherry, as well as Karical, was to be rendered back to France; and his Britannic majesty was to give as a dependency round Pondicherry the two districts of Valanour and Bahour; and as a dependency round Karical, the four contiguous Magans. The French were again to enter into the possession of Mahe, and of the Comptoir at Surat. The allies of France and Great Britain were to be invited to accede to the present pacification; and the term of four months was to be allowed them, for the purpose of making their decision. In the event of their aversion from peace, no assistance on either side was to be given to them. Great Britain renounced every claim with respect to Dunkirk. Commissioners were to be appointed respectively by the two nations to inquire into the state of their commerce, and to concert new arrangements of trade on the footing of mutual convenience. All conquests on either side, in any part of the world whatsoever, not mentioned nor

Britain.

alluded to in the present treaty, were to be restored without difficulty, and without requiring compensation. It was determined that the king of Great Britain should order the evacuation of the islands of St Pierre and Miquelon, three months after the ratification of the preliminary treaty; and that, if possible, before the expiration of the same period, he should relinquish all connection with St Lucia in the West Indies, and Goree in Africa. It was stipulated in like manner, that his Britannic majesty should, at the end of three months after the ratification of the treaty, or sooner, enter into the possession of the islands of Grenada and the Grenadines, St Vincent, Dominica, St Christopher's, Nevis, and Mountferrat. France was to be put into possession of the towns and comptoirs which were to be restored to her in the East Indies, and of the territories which were to serve as dependencies round Pondicherry and round Karical, six months after the ratification of the definitive treaty; and at the termination of the same term she was to restore the towns and districts which her arms might have taken from the English or their allies in that quarter of the globe. The prisoners upon each side were reciprocally to be surrendered, and without ransom, upon the ratification of the treaty, and on paying the debts they might have contracted during their captivity. Each crown was respectively to reimburse the sums which had been advanced for the maintenance of their prisoners by the country where they had been detained, according to attested and authentic vouchers. With a view to prevent every dispute and complaint on account of prizes which might be made at sea after the signing of the preliminary articles, it was mutually settled and understood that the vessels and effects which might be taken in the Channel, and in the North seas, after the space of twelve days, to be computed from the ratification of the present preliminary articles, were to be restored upon each side; that the term should be one month from the Channel and the North seas, as far as the Canary islands inclusively, whether in the ocean or the Mediterranean; two months from the Canary islands as far as the equinoctial line or equator; and lastly, five months without exception in all other parts of the world.

These preliminary articles of peace were concluded at Versailles on the 20th of January 1783, between Mr Alleyne Fitzherbert, minister plenipotentiary on the part of his Britannic majesty, and Charles Gravier, comte de Vergennes, the minister plenipotentiary on the part of the king of France. At the same time the preliminary articles of peace between Great Britain and Spain were also concluded at Versailles between Mr Fitzherbert and the comte d'Aranda, the minister plenipotentiary for the Spanish monarch. It was agreed that a sincere friendship should be re-established between his Britannic majesty and his Catholic majesty, their kingdoms, states, and subjects by sea and land in all parts of the world. His Catholic majesty was to keep the island of Minorca; and was to retain West Florida. East Florida was to be ceded to him by the king of Great Britain. Eighteen months from the date of the ratification of the definitive treaty were to be allowed to the subjects of the latter who had settled in the island of Minorca and in the two Floridas, to sell their estates, to recover their debts, and to trans-

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With Spain.

Britain. port their persons and effects, without being restrained upon account of their religion, or on any other pretence whatsoever, except that of debts, and prosecutions for crimes. His Britannic majesty was, at the same time, to have the power to cause all the effects that might belong to him in East Florida, whether artillery or others, to be carried away. The liberty of cutting logwood in a district of which the boundaries were to be ascertained, without molestation or disturbance of any kind whatsoever, was permitted to Great Britain. The king of Spain was to restore the islands of Providence, and the Bahamas, without exception, in the condition in which they were when they were conquered by his arms. All other conquests of territories and countries upon either side, not included in the present articles, were to be mutually restored without difficulty or compensation. The epoch for the restitutions to be made, and for the evacuations to take place, the regulations for the release of prisoners, and for the cessation of captures, were exactly the same as those which have already been related, as stipulated in the preliminary articles with France.

187 peace recently cemented. No sooner were these articles ratified and laid before parliament, than the most vehement declamations against ministry took place. Never had the administration of lord North himself been arraigned with more asperity of language. The ministry defended themselves with great resolution; but found it impossible to avoid the censure of parliament. An address without any amendment was indeed carried in the house of lords by 72 to 59; but in the lower house it was lost by 224 to 208. On the 21st of February, some resolutions were moved in the house of commons by lord George Cavendish, of which the most remarkable were, that the concessions made by Britain were greater than its adversaries had a right to expect; and that the house would take the case of the American loyalists into consideration. The last motion indeed his lordship consented to wave; but all the rest were carried against ministry by 207 to 190. These proceedings, however, could make no alteration with regard to the treaty, which had already been ratified by all the contending powers, the Dutch only excepted. The terms offered them were a renewal of the treaty of 1674; which, though the most advantageous they could possibly expect, were positively refused at that time. Afterwards they made an offer to accept the terms they had formerly refused; but the compliment was then returned by a refusal on the part of Britain. When the preliminary articles were settled with the courts of France and Spain, a suspension of arms took place with Holland also; but though the definitive arrangements with the other powers were finally concluded by the month of September, it was not till then that the preliminary articles were settled with Holland. The terms were a general restitution of all places taken on both sides during the war, excepting only the settlement of Negapatnam in the East Indies, which was to remain in the hands of Britain, unless an equivalent was given on the part of Holland. The navigation of the eastern seas was to remain free and unmolested to all the British shipping. The other articles concerned only the exchange of prisoners, and such other matters as are common to all treaties.

Thus an end was put to the most dangerous war in which Britain was ever engaged; and in which, notwithstanding the powerful combination against her, she still remained in a state of superiority to all her enemies. At that time, and ever since, it has appeared how much the politicians were mistaken who imagined that the prosperity of Britain depended in a great measure on her colonies: Though for a number of years she had not only been deprived of these colonies, but opposed by them with all their force; though attacked at the same time by three of the greatest powers in Europe, and looked upon with an invidious eye by all the rest; the damages done to her enemies still greatly exceeded those she had received. Their trade by sea was almost ruined; and on comparing the loss of ships on both sides, the balance in favour of Britain was 28 ships of the line and 37 frigates, carrying in all near 2000 guns. Notwithstanding this, however, the state of the nation appears to have been really such, that a much longer continuance of the war would have been impracticable. In the debates, which were kept up with the greatest violence on account of the peace, Mr Pitt set forth our situation with great energy and strength of argument. "It was in vain (he said) to boast of the strength of our navy; we had not more than 100 sail of the line; but the fleet of France and Spain amounted nearly to 140 ships of the line. A destination of 72 ships of the line was to have acted against Jamaica. Admiral Pigot had only 46 sail to support it; and it was a favourite maxim of many members of the house, that defensive war must terminate in certain ruin. It was not possible that admiral Pigot could have acted offensively against the islands of the enemy; for lord Rodney, when flushed with victory, did not dare to attack them. Would admiral Pigot have recovered by arms what the ministers had regained by negotiation? With a superior fleet against him, and in its fight, is it to be conceived that he could have retaken Grenada, Dominica, St Christopher's, Nevis, and Montserrat? On the contrary, is it not more than probable that the campaign in the West Indies must have terminated in the loss of Jamaica?"

"In the east, it was true that the services of Sir Edward Hughes had been highly extolled; but he could only be commended for a merely defensive resistance. Victory seemed to be out of the question; and he had not been able to prevent the disembarkation of a powerful European armament which had joined itself to Hyder Ally, and threatened the desolation of the Carnatic. At home and in our own seas the fleets of the enemy would have been nearly double to ours. We might have seized the intervals of their cruise, and paraded the channel for a few weeks; but that parade would have only served to disgrace us. It was yet the only achievement in our power; for to have hazarded an engagement would have been equivalent to a surrender of the kingdom."

"Neither, in his opinion, was the state of our army to be considered as formidable. New levies could not be raised in a depopulated country. We might send upon an offensive scheme five or six thousand men; and what expectation could be excited by a force of this kind? To have withdrawn troops from America was a critical game. There were no transports in which they

Britain. 689
Event of the war more favourable to Britain than her enemies.

690
Mr Pitt's account of the state of the nation at the conclusion of the peace.

See 700.

Britain.

might be embarked; and if it had been possible to embark them, in what miraculous manner were they to be protected against the fleets of the enemy?

"As to our finances, they were melancholy. Let the immense extent of our debts be weighed; let our resources be considered; and let us then ask, what would have been the consequence of the protraction of the war? It would have endangered the bankruptcy of public faith; and this bankruptcy, it is obvious, if it had come upon us, might have dissolved all the ties of government, and have operated to the general ruin.

"To accept the peace on the terms already related, or to continue the war, was the only alternative in the power of ministers. Such was the *ultimatum* of France: At the same time, however, it ought to be remembered, that the peace obtained was better than could have been expected from the lowness of our condition. We had acknowledged the American independence; but what was that but an empty form? We had ceded Florida; but had we not obtained the islands of Providence and the Bahamas? We had granted an extent of fishery on the coast of Newfoundland; but had we not established an exclusive right to the most valuable banks? We had restored St Lucia, and given up Tobago; but had we not regained Grenada, Dominica, St Christopher's, Nevis, and Montserrat? And had we not rescued Jamaica from inevitable danger. In Africa we had given Goree; but Goree was the grave of our countrymen; and we had secured Fort James and the river Gambia, the best and the most healthy settlement. In Europe we had relinquished Minorca; but Minorca is not tenible in war, and in peace it must be supported at a ruinous expence. We had permitted the reparation of the port of Dunkirk: but Dunkirk could only be an object when ships of a far inferior draught to the present were in use; the change in the operations of naval war had taken away its importance. In the East Indies cessions had been made; but let it be remarked that these cessions are inconsiderable in themselves, and could not be protected by us in the event of hostilities. In fine, it was objected, that we had abandoned the unhappy loyalists to their implacable enemies. What is this but to impute to congress by anticipation a violence which common decency forbids us to expect? But let it be considered, that the principle of assisting these unfortunate men would not have justified ministers to have continued the war. And let it be considered, that a continuation of the war would not have procured them any certain indemnity. The accumulation of our distresses must have added to theirs. A year or two hence, harder terms of peace might have been forced upon our acceptance. Their fate then must have been desperate indeed! But as matters were now situated, there were hopes of mercy and reconciliation."

Having thus given as full an account as our limits would allow of the great national events to the conclusion of the peace in 1783, we shall now give a detail of some others, which though of sufficient importance to deserve notice, could not without interrupting the narrative. It has repeatedly been observed, that thro' the violence of parties, a general temper of distrust and suspicion took place throughout the nation, insomuch that the most improbable stories with respect to individuals began to gain credit, of which an instance was

691
A general distrust and suspicion of treachery prevailed during the war.

given in the case of Mr Sayre. From certain circumstances, however, it appeared, that there undoubtedly were persons in the kingdom who wished if possible to destroy the national strength in such a manner as to render it impossible for us to make head against the attempts of our enemies. On the 8th of December 1776, a fire broke out in the ropehouse of the dockyard at Portsmouth, which totally consumed it, but without doing any very material damage. For some time the affair passed as an accident; but in clearing away the rubbish, a tin-box was found with a wooden bottom, containing matches which had been lighted, and underneath was a vessel with spirit of wine: however, the fire not having been properly supplied with air, had extinguished of itself before it touched the spirit of wine. Had it caught fire, all the stores in the storehouse, sufficient to rig out 50 sail of men of war, would have been destroyed. In the beginning of the year 1777, a fire happened at Bristol, which consumed six or seven warehouses; and by the finding of machines similar to those already mentioned, it was evident that the fire had not been accidental. The terror of the public was now greatly increased, and the most violent accusations against each other were thrown out by the ministerial and popular parties. On this point, however, they soon came to a right understanding, by the discovery of the author of all this mischief. This was one James Aitken, *alias* John the Painter, a native of Edinburgh. Having been from his early years accustomed to a vagrant life, to which indeed his profession naturally led him, he had gone through many different adventures. He had enlisted as a soldier, deserted, and when pinched by want made no scruple of betaking himself to the highway, or committing thefts. Having traversed a great part of America, he there imbibed the prejudices against Britain to such a degree, that he at last took the extraordinary resolution of singly overturning the whole power of the nation. This he was to accomplish by setting on fire the dockyards at Portsmouth and Plymouth, and afterwards the principal trading towns of the nation. With this view, he inspected with the utmost care those docks and other places on which his attempts were to be made, in order to learn with what care they were guarded. This he found in general as negligent as he could wish; and indeed had he not been some way or other very deficient in the construction of his machines, he must certainly have done a great deal of mischief: for as his attempts were always discovered by finding his machines, it was apparent that he had met with abundance of opportunities.

For some time the affair at Portsmouth passed, as has already been mentioned, for an accident. It was soon recollected, however, that a person had been seen loitering about the rope-house, and had even been locked up one night in it; that he had worked as a painter, and taken frequent opportunities of getting into that house, &c. These circumstances exciting a suspicion that he was the incendiary, he was traced to different places, and at last found in a prison; to which he had been committed for a burglary. On his examination, however, he behaved with such assurance and apparent consciousness of innocence, as almost disconcerted those who were authorized. At last he

Britain.

692
Heightened by a fire at Portsmouth,

693
And at Bristol.

694
The incident discovered.

695
He is apprehended, at execution.

Britain. he was deceived into a confession by another painter, who was likewise an American, and pretended to compassionate his case. Thus evidence was procured against him, but he still maintained his character to the very last; rejecting and invalidating the testimony of his false friend, on account of his baseness and treachery. He received his sentence with great fortitude; but at length not only confessed his guilt, but left some directions for preventing the dock-yards and magazines from being exposed to the like danger in time to come.

Thus it appeared that the whole of this alarm of treason and American incendiaries was owing to the political enthusiasm of a wretched vagabond. Still, however, it appeared that the French court were very well acquainted with many particulars relating to the state of this kingdom, and the movements of our squadrons, which ought by all means to have been kept secret. These treacherous proceedings were first detected in the month of June 1780. One Ratcliffe, master of a cutter, gave information that he had been hired by one Mr Rogere to carry packets to France, for which he was to be paid 20l. each time, and to have 100l. besides at a certain period. Apprehending at last, however, that he might incur some danger by continuing this employment, he gave information of what was going on to one Mr Steward, a merchant at Sandwich, by whom his last packet was carried to the secretary of state. After being opened and sealed up again, it was returned, and he was directed to carry it to France as formerly. This was the fate of several succeeding packets, though it was some time before Ratcliffe saw the principal party concerned. At last this was accomplished by his complaining to Mr Rogere that he had not been paid the 100l. according to promise. A meeting being thus procured, it was found that the person who gave intelligence to the enemy was one M. Henry de la Motte, a French gentleman then residing in London. On searching his house, no papers of any consequence were found; but on his arrival, he being absent when the messengers first arrived, he threw some out of his pocket, unperceived by any body, as he thought. The papers, however, were taken up by the messengers, and gave plain indications not only of a treasonable correspondence with the enemy, but that he was connected with one Henry Lutterloh, Esq; a German, who then resided at Wickham near Portsmouth. This person being also apprehended, not only made a full discovery of the treasonable correspondence with France, but gave abundant proofs of himself being one of the most depraved and hardened of all mankind, lost to every sensation excepting the desire of accumulating wealth. His evidence, however, and other strong circumstances, were sufficient to convict M. de la Motte, who was accordingly executed, tho' the king remitted that dreadful part of his sentence of having his heart taken out alive, &c. During his trial, and on every other occasion, he behaved in such a manner as showed him to be an accomplished gentleman; and not only excited the compassion, but the admiration of every one who saw him.

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Intelligence
treacher-
ly con-
veyed from
Britain to
the French
court.

697
La Motte,
French-
man, ap-
prehended
for high
treason.

698
He is exe-
cuted.

During the whole course of the war, only one other person was detected in any act of treason; and he ap-

pears to have been actuated merely by mercenary motives, though La Motte and John the Painter probably acted from principle. This was one David Tyrie, a native of Edinburgh. Having been bred in the mercantile line, and engaged in a number of speculations with a view to gain money, in all of which he discovered considerable abilities, he at last engaged in the dangerous one of conveying intelligence to the French of the ships of war fitted out in Britain, the time of their sailing, &c. For this he was apprehended in February 1782. The discovery was made by means of one Mrs Askew, who passed for his wife, having delivered a bundle of papers in a hurry to a school-mistress, and desiring her not to show them to any body. Instead of this, however, she not only inspected them herself, but showed them to another, by whom they were sent to the secretary at war. By this, and another packet discovered by William James, who had been employed to carry it to France, Tyrie was convicted and executed in the month of August 1782. He behaved with great resolution, and at last showed rather an indecent levity and unconcern, by laughing at the place of execution. The sentence not only took place in the dreadful manner appointed by law, but the crowd behaved with the most shameful and unexampled barbarity. "Such (say the accounts of his execution) being the singular conduct of many who were near the body, that happy was he who could procure a finger, or some vestige of the criminal!"— This unhappy man, while in prison, had, with his companions, contrived a method of effecting their escape, by working through a brick wall three feet thick, and covering the hole with a plank coloured like the bricks; but the scheme was discovered by the imprudence of Tyrie himself asking the keeper how thick the wall was.

On the whole, it appears, that notwithstanding the excessive altercation and virulence of parties, which even went to such a length as to produce duels between some members of parliament; neither the one nor the other entertained any designs against what they believed to be the true interest of the nation. The one seem to have regarded its honour too much, and been inclined to sacrifice even its existence to that favourite notion: the other perhaps regarded the national honour too little; as indeed no advantageous idea could have been formed of the spirit of a nation which could submit to grant its colonies independence without any struggle. The event, however, has shown that the loss of the colonies, so far from being a disadvantage, has been the very reverse. The commerce of Britain, instead of being dependent on America, has arrived at a much greater height than ever, while the consequent increase of wealth may, it is hoped, in time enable the nation to free itself from that enormous debt, great part of which has been contracted, first in defending, and then attempting to conquer the colonies.

700
Barbarity
of the
crowd who
attended
his execu-
tion.

701
Present
flourishing
state of
Great Bri-
tain.

New-BRITAIN, a large country of North America, called also *Terra Labrador*, has Hudson's bay and strait, on the north and west; Canada and the river St Lawrence, on the south; and the Atlantic ocean, on the east. It is subject to Great Britain, but yields only skins and furs. The following is the best description of this country that hath yet appeared. It was drawn

Britain.
699
David Tyrie, a Scotchman, apprehended, and executed, for corresponding with the French.

700
Barbarity
of the
crowd who
attended
his execu-
tion.

701
Present
flourishing
state of
Great Bri-
tain.

Britain. up by the commander of the Otter sloop, and communicated to the royal society by the honourable Daines
Phil. Trans.
 Vol. LXIV.
 p. 372.

“ There is no part of the British dominions so little known as the immense country of Labrador. So few have visited the northern parts of this vast country, that almost from the straits of Belleisle until you come to the entrance to Hudson’s bay, for more than ten degrees of latitude, no chart which can give any tolerable idea of the coast hath been hitherto formed. The barrenness of the country explains why it has been so seldom frequented. Here avarice has but little to feed on.

“ Perhaps, without an immoderate share of vanity, I may venture to presume, that, as far as I have been, which is to the latitude of 59. 10. the draught which I have been able to form is by much the best of any that has hitherto been made.

“ Others have gone before me blest with abilities superior to mine, and to whom I hope to be thought equal only in assiduity. But I had advantages of which they were destitute: with a small vessel, and having an Indian with me, who knew every rock and shoal upon the coast, I was enabled to be accurate in my observations; and these are the reasons why I deem my own sketch preferable to all others.

“ As this country is one of the most barren in the whole world, so its sea-coast is the most remarkable. Bordered by innumerable islands, and many of them being a considerable distance from the main land, a ship of burden would fail a great way along the coast without being able to form any notion of its true situation.

“ Hence it is that all charts of it have been so extremely erroneous; and hence arose those opinions that some of the inlets extended a vast distance into the country, if not quite into the sea of Hudson’s bay.

“ Davis’s inlet, which has been so much talked of, is not 20 leagues from the entrance of it to its extremity.

“ The navigation here is extremely hazardous. Towards the land, the sea is covered with large bodies and broken pieces of ice; and the farther you go northward, the greater is the quantity you meet with.

“ Some of those masses, which the seamen call *islands of ice*, are of a prodigious magnitude; and they are generally supposed to swim two thirds under water. You will frequently see them more than 100 feet above the surface; and to ships in a storm, or in thick weather, nothing can be more terrible.

“ Those prodigious pieces of ice come from the north, and are supposed to be formed by the freezing of cataracts upon the lands about East Greenland and the pole. As soon as the severity of the winter begins to abate, their immense weight breaks them from the shore, and they are driven to the southward. To the miserable inhabitants of Labrador their appearance upon the coast serves as a token of the approach of summer.

“ This vast tract of land is extremely barren, and altogether incapable of cultivation. The surface is every where uneven and covered with large stones, some of which are of amazing dimensions. There are few springs; yet throughout the country there are prodigious chains of lakes or ponds, which are produced by
 N^o 58.

the rains and the melting of the snow. These ponds abound in trout, but they are very small.

“ There is no such thing as level land. It is a country formed of frightful mountains, and unfruitful valleys. The mountains are almost devoid of every sort of herbage. A blighted shrub and a little moss is sometimes to be seen upon them, but in general the bare rock is all you behold. The valleys are full of crooked low trees, such as the different pines, spruce, birch, and a species of cedar. Up some of the deep bays, and not far from the water, it is said, however, there are a few sticks of no inconsiderable size. In a word, the whole country is nothing more than a prodigious heap of barren rocks.

“ The climate is extremely rigorous. There is but little appearance of summer before the middle of July; and in September the approach of winter is very evident. It has been remarked, that the winters within these few years have been less severe than they have been known heretofore. The cause of such an alteration it would be difficult to discover.

“ All along the coast there are many rivers that empty themselves into the sea, yet there are but few of any consideration; and you must not imagine that the largest are any thing like what is generally understood by a river. Custom has taught us to give them this appellation; but the greatest part of them are nothing more than broad brooks or rivulets. As they are only drains from the ponds, in dry weather they are every where fordable; for, running upon a solid rock, they become broad without having a bed of any depth below the surface of the banks.

“ The superficial appearance of this country is extremely unfavourable. What may be hidden in its bowels, we cannot pretend to suggest: probably it may produce some copper; the rocks in many places are impregnated with an ore of that resemblance. Something of a horny substance, which is extremely transparent, and which will scale out into a multitude of small sheets, is often found amidst the stones; there are both black and white of this sort, but the black is the most rare. It has been tried in fire, but seems to be noways affected by heat.

“ The species of wood here are not very various: excepting a few shrubs which have as yet received no name from the Europeans, the principal produce of the country is the different sorts of spruce and pine. Of these, even in the more southern parts, there is not abundance; as you advance northwards they gradually diminish; and by the time you arrive at the 60th degree of latitude, the eye is not delighted with any sort of herbage. Here the wretched residents build their miserable habitations with the bones of whales. If ever they cheer their aching limbs with a fire, they gather a few sticks from the sea shore, which have probably been washed from Norway or Lapland. Here a vast quantity of snow remains upon the land throughout the year.

“ Although the winter here is so excessively rigid, in summer the heat is sometimes disagreeable; and in that season the weather is very moderate, and remarkably serene. It is but seldom foggy, speaking comparatively, between this and Newfoundland; nor are you so frequently liable to those destructive gales of wind which visit many other parts of the globe.

“ It

Britannicus
||
Britton.

“ It is in general high land, and sometimes you meet with mountains of an astonishing height; you are also frequently presented with prospects that are really awful, and extremely romantic.

“ The inhabitants of New Britain are called *Eskimaux*; for a particular account of whom, see the article *ESKIMAUX*.

BRITANNICUS, son to the emperor Claudius by Messalina, was excluded from the empire after his father had married Agrippina; who put her son Nero on the throne, and caused Britannicus to be poisoned, A. D. 55.

BRITANNICUS, an Italian, one of the best humanists of the 15th century, was born at Brescia. He published notes on Persius, Juvenal, Terence, Statius, and Ovid. He died in 1510.

BRITE, or **BRIGHT**, in husbandry. Wheat, barley, or any other grain, is said to *brite*, when it grows over ripe and shatters.

BRITTANY, or **BRETAGNE**, a considerable province of France, which is 150 miles in length, and 112 in breadth. It is a peninsula, surrounded on all sides by the ocean, except on the east where it joins to Anjou, Maine, Normandy, and Poitou. It is divided into the upper and lower; and therein are large forests. It carries on a great trade, by reason of the many harbours on its coasts. It was united to the crown of France in 1532. Rennes is the capital town.

BRITTLENESS, that quality of bodies on account of which they are denominated *brittle*, or which subjects them to be easily broken by pressure or percussion.

Brittle bodies are extremely hard; a very small percussion exerts a force on them equivalent to the greatest pressure, and thus may easily break them. This effect is particularly remarkable in glass suddenly cooled, the brittleness of which is thereby much increased. Tin, though in itself tough, gives a brittleness to all the other metals when mixed therewith. The brittleness of glass has been said to arise from the heterogeneity of the parts whereof it is composed, as salt and sand can never bind sufficiently together: but this cannot be the case; for the pure calces of metals, or any other simple substances when vitrified, become brittle also. In timbers, brittleness seems to be connected with durability; the more brittle any sort of wood is, the more durable it is found. Thus oak is of very long duration; while beech and birch, as being tough, presently rot, and are of little service in building.

BRITTON (Thomas), the famous musical small-coal-man, was born at Higham Ferrers in Northamptonshire. He served his time in London, where he set up in a stable, next door to the little gate of St John of Jerusalem, on Clerkenwell-green, which he converted into a house. Here getting acquainted with Dr Gareniers, his near neighbour, he became an excellent chemist, constructing a moveable laboratory which was much admired by all who saw it. His skill in music was no ways inferior to that in chemistry, either in the theory or practice: he had for many years a well frequented musical club, meeting at his own little cell; and was as well respected as known by persons of the first quality; being, above all, a valuable man in his mo-

ral character. In Ward's account of clubs, we are told, that “ Britton's was first begun, or at least confirmed, by Sir Roger L'Estrange, a very musical gentleman; and that the attachment of Sir Roger and other ingenious gentlemen, lovers of the muses, to Britton, arose from the profound regard he had in general to all manner of literature. It is observable, that this meeting was the first of the kind, and the undoubted parent of some of the most celebrated concerts in London. Ward, who was his cotemporary, says, that at the first institution of it, his concert was performed in his own house, which is thus described. “ On the ground floor was a repository for small-coal: over that was the concert room, which was very long and narrow; and had a ceiling so low, that a tall man could but just stand upright in it. The stairs to this room were on the outside of the house, and could scarce be ascended without crawling. The house itself was very old and low built, and in every respect so mean as to be a fit habitation only for a very poor man.” Notwithstanding all this mansion, despicable as it may seem, attracted to it as polite an audience as ever the opera did. At these concerts Dr Pepusch, Mr Handel, Mr Banister, Mr Henry Needler, and other capital matters, were performers. At the first institution of this club, it is certain Britton would receive no gratuity whatever from his guests, and was offended when ever any was offered him. According to some, however, he departed from this; and the rules were, Britton found the instruments, the subscription was 10s. a year, and they had coffee at a penny a dish. The singularity of his character, the course of his studies, and the collections he made, induced suspicions that Britton was not the man he seemed to be. Among other groundless conjectures, his musical assembly was thought by some to be only a cover for seditious meetings; by others, for magical purposes; and Britton himself was taken for an atheist, a presbyterian, a Jesuit, &c. The circumstances of this man's death are not less remarkable than those of his life. There lived at that time one Samuel Honeyman, a blacksmith by trade, who became very famous for a faculty which he possessed of speaking as if his voice proceeded from some distant part of the house where he stood; in short, he was one of those men called *Ventriloquist**, i. e. those that speak from their bellies. One Robe, an acquaintance of Britton's, was foolish enough to introduce this man, unknown to Britton, for the sole purpose of terrifying him; and he succeeded in it. Honeyman, without moving his lips, or seeming to speak, announced, as from afar off, the death of Britton within a few hours, with an intimation that the only way to avert his doom was for him to fall on his knees immediately and say the Lord's prayer: the poor man did as he was bid, went home and took to his bed, and in a few days died, leaving his friend Mr Robe to enjoy the fruits of his mirth. This happened in September 1714. Britton left behind him a large collection of books, music, and musical instruments. Of the former Sir Hans Sloane was a considerable purchaser. His collection of music, mostly picked by himself, and very neatly, sold for near L. 100. In the British Museum there is a painting of him taken from the life. A mezzotinto print was taken from this picture, for which Mr Hughes (author

* See *Ventriloquist*.

Briva of the siege of Damascus, and a frequent performer at Britton's concerts) wrote the following lines :

Tho' mean thy rank, yet in thy humble cell
Did gentle peace and arts unpurchas'd dwell ;
Well pleas'd, Apollo thither led his train,
And music warbled in her sweetest strain.
Cyllenius so, as fables tell, and Jove,
Came willing guests to poor Philemon's grove.
Let uselefs pomp behold, and blush to find
So low a station, such a lib'ral mind.

BRIVA ISARÆ, (anc. geog.), a town of Gallia Belgica on the river Isara or Oyse ; now *Pontefse*.

BRIVATES, (anc. geog.), a port of Gallia Celtica ; now *Brest*, in Brittany.

BRIVES-LA-GALLARD, a town of France, in lower Limosin. It stands in a fruitful plain, opposite to an island formed by the river Corcize, over which there are two handsome bridges. E. Long. 1. 45. N. Lat. 45. 15.

BRIXELLUM, (anc. geog.), a town of Gallia Cispadana ; remarkable for being the place where Otho killed himself after the battle of Bedriacum : now *Bersello*, or *Bresello*, in the territory of Rhegio.

BRIXEN (the bishopric of), is seated in Tirol, in Germany, near the frontiers of Friuli and Carinthia, towards the east. The bishop has a vote and seat in the diet of the empire, and furnishes his contingent when any tax is laid on Tirol. The principal places are Brixen, Sertzingen, Breuneck, and Lientz.

BRIXEN, the capital of the bishopric of the same name, and where the bishop commonly resides, is seated on the river Eisache, at some distance from the mountain Brenner. It is surrounded with mountains, where there are plenty of vineyards, which yield good red wine. It is a populous town ; and the houses are well built with piazzas, and are painted on the outside. The public buildings are very handsome, and there are several spacious squares. It is much frequented, on account of the mineral waters that are near it. E. Long. 11. 50. N. Lat. 46. 35.

BRIXIA (anc. geog.), a town of the Cenomani in the Regio Transpadana : now *Brescia*, capital of the Bresciano.

BRIZA, QUAKING-GRASS, in botany : a genus of the digynia order, belonging to the triandria class of plants ; and in the natural method ranking under the 4th order, *Gramina*. The calyx is two-valved, and multiflorous ; the spicula bifarious or spread to the two sides ; with the small valves heart-shaped and blunt, and the inner one small in proportion to the rest. There are five species of briza ; two of which are natives of Britain, viz. the media or middle quaking-grass, and the minor or small quaking-grass. They grow in pasture grounds.

BRIZE, in husbandry, denotes ground that has lain long untilled.

BRIZE-Vents, shelters used by gardeners who have not walls on the north-side, to keep cold winds from damaging their beds of melons. They are inclosures about six or seven feet high, and an inch or more thick ; made of straw, supported by stakes fixed into the ground, and props across on both inside and outside ; and fastened together with willow-twigs, or iron-wire.

BROACH, BROCHA (from the French *broche*, de-

notes an awl or bodkin ; also a large packing needle. A spit, in some parts of England, is called a *broach* ; and from this word comes to pierce or broach a barrel. In Scotland, *broach*, *broche*, or *broche*, is the name of an utensil which the Highlanders use, like the *fibula* of the Romans, to fasten their vest. They are usually made of silver ; of a round figure ; with a tongue crossing its diameter, to fasten the folds of the garment ; sometimes with two tongues, one on each side of a cross-bar in the middle. There are preserved, in several families, ancient broches of very elegant workmanship, and richly ornamented. Some of them are inscribed with names, to which particular virtues used to be attributed ; others are furnished with receptacles for relics, supposed to preserve from harm. So that these broches seem to have been worn not only for use but as amulets. One or two of this sort are figured and described by Mr Pennant, *Tow in Scotl.* i. 90. iii. 14. edit. 3d.

BROADCAST, as opposed to the drill husbandry, denotes the method of cultivating corn, turnips, pulses, clover, the foreign grasses, and most other field-plants, that are not transplanted by sowing them with the hand ; in which method they are scattered over the ground at large, and thence said to be sown in broadcast. This is called the *old husbandry*, to distinguish it from the drill, horse-hoeing, or new husbandry. See AGRICULTURE.

BROAD piece, a denomination given to certain gold-pieces broader than a guinea ; particularly Caroluses and Jacobuses.

BROAD-side, in the sea-language, a discharge of all the guns on one side of a ship at the same time. A broad-side is a kind of volley of cannonade, and ought never to be given at a distance from the enemy above musket-shot at point-blank.

BROCADE, or BROCADO, a stuff of gold, silver, or silk, raised and enriched with flowers, foliages, and other ornaments, according to the fancy of the merchants or manufacturers.

Formerly the word signified only a stuff, wove all of gold, both in the warp and in the woof, or all of silver, or of both mixed together ; thence it passed to those of stuffs in which there was silk mixed, to raise and terminate the gold or silver flowers : but at present all stuffs, even those of silk alone, whether they be programs of Tours or of Naples, satins, and even tasseties or lustrings, if they be but adorned and worked with some flowers or other figures, are called *brocades*.

In manufacturing brocades, the flattened gilt wire is spun on threads of yellow silk approaching as near as may be to the colour of gold itself. The wire, winding off from a bobbin, twirls about the thread as it spins round ; and, by means of curious machinery, too complex to be described here, a number of threads are thus twisted at once by the turning of one wheel. The principal art consists in so regulating the motion, that the several circumvolutions of the flattened wire on each side may just touch one another, and form, as it were, one continued covering. It is said, that at Milan there is made a sort of flattened wire gilt only on one side, which is wound upon the thread so that only the gilt side appears ; and that the preparation of this wire is kept a secret, and has been attempted in other places with

Broadcast
||
Brocade.

Brocade.

Brocade.

with little success. There is also a gilt copper wire, made in the same manner as the gilt silver: Savary observes, that this kind of wire, called *faux gold*, is prepared chiefly at Nuremberg; and that the ordinances of France require it to be spun, for its distinction from the gilt silver, on flaxen or hempen threads. One of our writers takes notice, that the Chinese, instead of flattened gilt wire, use slips of gilt paper, which they both interweave in their stuffs and twist upon silk threads: this practice he inconsiderately proposes as a hint to the British weaver. But, whatever be the pretended beauty of stuffs of this kind of manufacture, it is obvious that they must want durability. The Chinese themselves, according to Du Halde's account, sensible of this imperfection, scarcely use them any otherwise than in tapestries, and such other ornaments as are not intended to be much worn, or exposed to moisture.

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The Venetians have carried on a large trade to the Levant, in a kind of brocade called *damaquets*, which, though it has only about half the quantity of gold or silver as that made among us, looks far more beautiful. The flattened wire is neither wound close together on the silk threads, nor the threads struck close in the weaving; yet, by passing the stuff betwixt rolls, the disposition and management of which is kept a secret, the tissue or flower is made to appear one entire brilliant plate of gold or silver. The French ministry, ever vigilant for the advancement of arts and commerce, judged this manufacture important enough to deserve their attention; and accordingly, for contriving the machinery, they engaged the ingenious M. Vaucanson, known throughout Europe for his curious pieces of mechanism, who, in the memoirs of the academy for the year 1757, lately printed, gives an account of his success, and of the establishment of such a manufacture at Lyons.

The lower roll is made of wood, 32 inches in length and 14 in diameter; the upper one of copper, 36 inches long and 8 in diameter: this last is hollow, and open at one end, for introducing iron heaters. For making the rolls cylindrical, he has a particular kind of lathe, wherein the cutting tool, which the most dexterous hand could not guide in a straight line through such a length as 36 inches, is made to slide, by means of a screw, on two large steel rulers, perfectly straight, and capable of being moved at pleasure, nearer, and always exactly parallel, to the axis of the roll.

He first disposed the rolls nearly as in the common flattening mill. In this disposition, ten men were scarcely sufficient for turning them with force enough to duly extend the gilding; and the collars, in which the axes of the rolls turned at each end, wore or galled so fast, that the pressure continually diminished, insomuch that a piece of stuff of ten ells had the gilding sensibly less extended on the last part than on the first. He endeavoured to obviate this inconvenience by screwing the rolls closer and closer in proportion as the stuff passed thro', or as the wearing of the collars occasioned more play between them; but this method produced an imperfection in the stuff, every turn of the screw making a sensible bar across it. To lessen the attrition, each end of the axis, instead of a collar, was made to turn between three iron cylinders called *friction wheels*: but even this did not answer fully, for now another source of unequal

pressure was discovered. The wooden roll, being compressible, had its diameter sensibly diminished: it likewise lost its roundness, so that the pressure varied in different points of its revolution. On trying different kinds both of European and Indian woods, all the hard ones split, the soft ones warped without splitting, and, of more than 20 rolls, there was not one which continued round for 24 hours even without being worked in the machine.

These failures put him upon contriving another method of pressing the rolls together, so that the force should always accommodate itself to whatever inequalities might happen. The axis of the copper roll being made to turn between friction-wheels as before, that of the wooden one is pressed upwards by a lever at each end furnished with a half collar for receiving the end of the axis. Each lever has the end of its short arm supported on the frame of the machine, and the long arm is drawn upwards by an iron rod communicating with the end of the short arm of another lever placed horizontally: to the long arm of this lever is hung a weight, and the levers are so proportioned, that a weight of 30 pounds presses the rolls together with a force equivalent to 17,536 pounds, which was found to be the proper force for the sufficient extension of the gilding. By this contrivance four men can turn the rolls with more ease than ten can turn those which are kept together by screws; and the same weight acting uniformly in every part, the pressure continues always equal, though the wooden roll should even become oval, and though the stuff be of unequal thickness.

A piece of cloth, of about two ells, is sewed to the beginning and end of the stuff, to keep it out to its width when it enters and parts from the rolls, which could not be done by the hands for fear of burning or bruising them; as it would take too much time to sew these cloths to every small piece of an ell or two, a number of these is sewed together. The stuff is rolled upon a cylinder, which is placed behind the machine, and its axis pressed down by springs to keep the stuff tight as it comes off. Four iron bars, made red hot, are introduced into the copper roll, which in half an hour acquires the proper degree of heat, or nearly such a one as is used for the ironing of linen: the wooden roll is then laid in its place, and the machine set to work. If more than 30 ells are to be passed at once, the wooden roll must be changed for another, for it will not bear a long continuance of the heat without danger of splitting; and therefore the manufacturer should be provided with several of these rolls, that when one is removed, another may be ready to supply its room: as soon as taken off from the machine, it should be wrapt in a cloth and laid in a moist place.

The principal inconvenience attending the use of this machine, is, that the heat necessary for extending the gilding, though it improves the brightness of white and yellow silks, is injurious to some colours, as crimson and green. A double pressure will not supply the place of heat; and the only method of preventing this injury, or rendering it as slight as possible, appeared to be, to pass the stuff through with great celerity.

Method of Cleaning Brocade when sullied. For this purpose neither alkies nor soap must be used; because the former, while they clean the gold, corrode the silk,

Broca^vel
||
Brogling

and change or discharge its colour; and the latter also alters the shade, and even the species, of certain colours. But spirit of wine may be used without any danger of its injuring either the colour or quality of the subject; and in many cases proves as effectual for restoring the lustre of the gold, as the most corrosive detergents. A rich brocade, flowered with a variety of colours, after being disagreeably tarnished, had the lustre of the gold perfectly restored by washing it with a soft brush dipped in warm spirit of wine, and some of the colours of the silk which were likewise soiled became at the same time remarkably bright and lively. Spirit of wine seems to be the only material adapted to this intention, and probably the boasted secret of certain artists is no other than this spirit disguised. Dr Lewis says he does not know of any other that is of sufficient activity to discharge the foul matter, without being hurtful to the silk. As to powders, however fine, and however cautiously used, they scratch and wear the gold, which here is only superficial, and of extreme tenuity.

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Arts, p. 39.

BROCADE Shell, the English name of a species of *LIMAX*.

BROCATEL, or *BROCADEL*, a kind of coarse brocade; chiefly used for tapeltry.

BROCCOLI, a kind of cabbage cultivated for the use of the table. See *BRASSICA*.

BROCHE, or *BROACH*. See *BROACH*.

BROCK, among sportsmen, a term used to denote a badger.—A hart, too, of the third year, is called a *brock*, or *brocket*; and a hind of the same year is called a *brocket's sister*.

BROD, a town of Hungary, in the county of Pofsega in Slavonia, seated on the river Save. It was once more considerable than at present; and is memorable for a victory obtained over the Turks in 1668. E. Long. 18. 36. N. Lat. 45. 20.

BRODEAU (John), in Latin *Brodeus*, a great critic, on whom Lypsius, Scaliger, Grotius, and all the learned, have bestowed great encomiums, was descended from a noble family in France, and born at Tours in 1500. He was liberally educated, and placed under Alciat to study the civil law; but soon forsaking that, he gave himself up wholly to languages and the belles lettres. He travelled into Italy, where he became acquainted with Sadolet, Bembus, and other famous wits; and here (says Thauuus) he applied himself to the study of mathematics, philosophy, and the sacred languages, in which he made no small proficiency. Then, returning to his own country, he led a retired, but not an idle, life, as his many learned lucubrations abundantly testify. He was a man free from all ambition and vain glory, and suffered his works to be published rather under the sanction and authority of others than under his own. His chief works are, 1. A commentary on the *Anthologia*. 2. Ten books of miscellanies. 3. Notes on Oppian, Euripides, &c. He died in 1563, aged 63.

BRODERA, or *BRODRA*, a town of Asia, in the empire of the Great Mogul. It stands in a large sandy plain, on the little river Wasset; and is fortified, after the old way, with pretty good walls and towers. It is inhabited by Banians and callico-weavers. The country about it produces plenty of gum lac and indigo. E. Long. 72. 30. N. Lat. 22. 10.

BROGLING FOR EELS; the same with *SNIGGLING*.

Broglio
||
Broker.

BROGLIO, a town of Piedmont in Italy, and capital of a county of the same name, situated near the frontiers of Provence, in E. Long. 6. 42. N. Lat. 44. 12.

BROKE (Sir Robert), lord chief justice of the common pleas, was the son of Thomas Broke, Esq; of Claverly in Shropshire, and educated at Oxford; from whence he removed to the Middle Temple, and soon became a very eminent lawyer. In the year 1542, he was chosen summer reader, and double reader in 1550. In 1552, he was made serjeant at law; and the year following (first of queen Mary), lord chief justice of the common pleas; about which time he received the honour of knighthood. Stow says he was recorder of London and speaker of the house of commons; which is confirmed by a manuscript in the Ashmolean library. He died and was buried at Claverly in Shropshire, the place of his nativity, in 1558. Wood gives him the character of a great lawyer and an upright judge. His works are, 1. An abridgement containing an abstract of the year-books till the time of queen Mary. 2. Certain cases adjudged in the reign of Henry VIII. Edward VI. and queen Mary. 3. Reading on the statute of limitations, 32 Hen. VIII. c. 2.

BROKEN WIND, among farriers. See *FARRIERY*.

BROKER. The origin of the word is contested; some derive it from the French *broier*, "to grind;" others from *broccarder*, "to caviil, or tiggler;" others deduce broker from a trader broken, and that from the Saxon *broc* "misfortune," which is often the true reason of a man's breaking. In which view, a broker is a broken trader by misfortune; and it is said none but such were formerly admitted to that employment.

BROKERS are of three kinds; exchange-brokers, stock-brokers, and pawn-brokers.

Exchange BROKERS, are a sort of negociators, who contrive, make, and conclude bargains between merchants and tradesmen, in matters of money or merchandise, for which they have a fee or premium. These, in old English law-books, are called *broggers*, and in Scotland, *broccarii*, i. e. according to Skene, mediators or intercessors in any contract, &c.

They make it their business to know the alteration of the course of exchange, to inform merchants how it goes, and to notify to those who have money to receive or pay beyond sea, who are proper persons for negotiating the exchange with; and when the matter is accomplished, that is, when the money is paid, they have for brokage 2s. per 100 l. sterling. These, by the statute of 8 and 9 William III. are to be licensed in London by the lord mayor, who gives them an oath, and takes bond for the faithful execution of their offices. If any person shall act as broker without being thus licensed and admitted, he shall forfeit the sum of 500 l.; and persons employing him, 5 l.; and brokers are to register contracts, &c. under the like penalty: also brokers shall not deal for themselves, on pain of forfeiting 200 l. They are to carry about with them a silver medal, having the king's arms and the arms of the city, and pay 40s. a-year to the chamber of the city.

In France, till the middle of the 17th century, their exchange-brokers were called *courtiers de change*; but by an arret of council in 1639, the name was changed for that more creditable one of *agent de change, banquier*, &c.

Broker. *Et finaxie*; and in the beginning of the 18th century, to render the office still more honourable, the title of *king's counsellors* was added.

At Grand Cairo, and several places of the Levant, the Arabs, who do the office of exchange-brokers, are called *cofsals*; the manner of whose negotiating with the European merchants has something in it so very particular, that we have referred it to a distinct article. See CONSUL.

The exchange-brokers at Amsterdam, called *makel-ders*, are of two kinds; the one, like the English, called *sworn brokers*, because of the oath they take before the burgo-masters; but the others negotiate without any commission, and are called *walking brokers*. The first are in number 395; whereof 375 are Christians, and 20 Jews: the others are near double that number; so that in Amsterdam there are near 1000 exchange-brokers.—The difference between the two consists in this: The books and persons of the former are allowed as evidence in the courts of justice; whereas, in case of dispute, the latter are disowned, and their bargains disannulled.

The fee of the sworn exchange-brokers of Amsterdam is fixed by two regulations, of 1613 and 1623, with regard to matters of exchange, to 18 sols for 100 livres de gros, or 600 florins; i. e. three sols for 100 florins; payable, half by the drawer and half by the person who pays the money. But custom has made considerable alterations herein.

The Jews, Armenians, and Banians, are the chief brokers throughout most parts of the Levant and the Indies. In Persia, all affairs are transacted by a sort of brokers whom they call *delal*, i. e. great talkers. The manner of making their markets is very singular: after the brokers have launched out into long, and usually impertinent discourses, coming towards a conclusion, they only converse with their fingers. The buyer and seller's broker each take the other by the right hand, which they cover with their coat, or a handkerchief: the finger stretched out stands for six; bent for five; the tip of the finger for one; the whole hand for 100; and the hand clenched, for 1000. They will express even pounds, shillings, and pence, by their hands. During all this mystic commerce, the two brokers appear as cold and composed as if there were nothing passing between them.

The French distinguish two kinds of brokers; one for the service of merchants, the other of manufacturers, artificers, and workmen. The business of the former is to facilitate the sale of goods in the wholesale and mercantile way; that of the other, to procure the goods wanted for manufacturers, artificers, &c. or to sell their goods when made. At Paris there is scarce a company of tradesmen, or even mechanics, but have their brokers, who are usually taken out of their body, and make it their sole business to negotiate in the particular kinds of goods to which such company is by statutes restrained. There are brokers for drapery, brokers for grocery, brokers for mercery, &c. There are even brokers for tanners, curriers, cutlers, and the like.

Stock-BROKERS, are those who are employed to buy and sell shares in the joint stock of a company or corporation, and also in the public funds. As the practice of stock-jobbing has been carried to such an ex-

cess as became not only ruinous to a great number of private families, but even affected, or at least might soon affect, the public credit of the nation, the legislature thought fit to put a stop to it, or at least to bring it within certain bounds, and under some regulation. The negotiations, &c. of these brokers are regulated by stat. 6 Geo. I. cap. 18. and 7 and 10 Geo. II. cap. 8. which, among other things, enact, that contracts in the nature of wagers, &c. incur a penalty of L. 500, and by the sale of stock, of which the seller is not possessed, a forfeit of L. 100, and that brokers keep a book, in which all contracts, with their dates, and the names of the parties concerned, shall be entered, on pain of L. 50.

PAWN-BROKERS, persons who keep shops, and lend money upon pledges to necessitous persons, and most commonly at an exorbitant interest. They are more properly styled *pawn-takers*, or *tally-men*; sometimes *shopers*, or *shopkeepers*. These are meant in 1 Jac. I. cap. xxi. sect. 5. where it is declared, that the sale of goods wrongfully taken to any broker, or pawn-broker, in London, Westminster, Southwark, or within two miles of London, does not alter the property. And (sect. 7.) if a broker, having received such goods, shall not, upon request of the owner, discover them, how and when he came by them, and to whom they are conveyed, he shall forfeit the double value thereof, to be recovered by action of debt, &c.

In the cities of Italy, there are companies established by authority for the letting out money on pawns, called *mounts of piety*; a title little becoming such institutions. In some parts of Italy, they have also mounts of piety of another kind, wherein they only receive ready money, and return it again with interest, at a certain sum *per annum*. At Bologna, they have several such mounts, which are distinguished into *frank* and *perpetual*: the interest of the former is only four *per cent.*; that of the latter, seven.

BROKERS are also those who sell old household furniture, and wearing apparel, &c.

BROME (Alexander), a poet and attorney in the lord mayor's court in the reign of Charles II. was the author of the greatest part of those songs and epigrams which were published in favour of the royalists, and against the *rump*, as well in Oliver Cromwell's time as during the rebellion. These, together with his Epistles and Epigrams translated from different authors, were all printed in one volume 8vo after the Restoration. He also published a version of Horace, by himself and others, which is very far from being a bad one. He left behind him a comedy entitled *The Cunning Lovers*: and the world is indebted to him for two volumes of Richard Brome's plays in octavo; many of which, but for his care in preserving and publishing them, would in all probability have been entirely lost. He died in 1646.

BROME (Richard), a dramatic writer who lived in the reign of king Charles I. and was cotemporary with Decker, Ford, Shirley, &c. His extraction was mean, he having been originally no better than a menial servant to the celebrated Ben Johnson. He wrote himself, however, into high reputation, as is testified not only by various commendatory verses written by his cotemporaries and prefixed to many of his plays, but also by some lines which his quondam master addressed to him

Broker,
Brome.

Bromelia.

on account of his comedy called *The Northern Lass*. Brome, in imitation of his master, laid it down as his first great point, to apply closely to the study of men and manners. His genius was entirely turned to comedy; and therefore his proper province was observation more than reading. His plots are all his own, and are far from being ill conducted; and his characters, which for the most part are strongly marked, were the offspring of his own judgment and experience, and his close attention to the foibles of the human heart. In a word, his plays in general are good ones; met with great applause when first acted; and as Langbain informs us, were thought by the players worthy to be revived, to their own profit and the author's honour, in that critical age which he himself lived in. Nay, we have had a proof, even in our own time, of the merit of one of his comedies, which with a very little alteration has lately been revived, and with great success, viz. *The Jovial Crew*, which for no less than three seasons running brought crowded audiences to the theatre-royal in Covent Garden at all the frequent repetitions of its performance. The comedies which the author left behind him are 15 in number; ten of which are collected together, as above mentioned, in two volumes octavo. He joined also with Thomas Heywood in a play called *The Lancashire Witches*.

BROMELIA, the **PINE-APPLE**: A genus of the monogynia order, belonging to the hexandria class of plants; and in the natural method ranking under the 10th order, *Coronaria*.

Species. Of this genus Linnæus enumerates seven species; but the following are the most remarkable. I. The ananas; of which there are six varieties, viz. 1. The ovatus, or oval-shaped pine-apple. 2. The pyramidalis, pyramidal, or sugar-loaf pine. 3. The glaber, with smooth leaves. 4. The lucidus, with shining green leaves. 5. The ferrotinus, with a yellowish coloured flesh. 6. The viridis, or green pine-apple. The other species are, II. The nudicaulis, with the lower leaves indented and prickly. III. The lingulata, with obtuse, sawed, and prickly leaves.—The first sort hath leaves very like some sorts of aloes, but not so thick and succulent, which are strongly armed with black spines. From the centre of the plant arises the flower-stalk, which is near three feet high, the lower part of which is garnished with entire leaves placed alternately at every joint. The upper part of the stalk is garnished with flowers set in a loose spike or thyrse quite round: these are succeeded by oval seed-vessels, having a longitudinal partition, in the centre of which are fastened smooth cylindrical seeds.—The second hath shorter leaves than the first, which are sharply sawed on their edges, and of a deep green colour. The flower-stem arises from the centre of the plant, which divides upward into several branches: the upper part of these are garnished with spikes of flowers, which come out alternately from the sides of the branches, each having a narrow entire leaf just below it, which are longer than the spike. The flowers are placed very close on the spikes; and when they decay, the empalement turns to an oval pointed seed-vessel, inclosing seeds of the same shape with the other.

Culture, &c. The first sort of ananas is the most common in Europe; but the second sort is much pre-

ferable to it, the fruit of this being larger and much better flavoured: the juice of this sort is not so astringent as that of the first; so that this fruit may be eaten in greater quantity with less danger. This sort frequently produces suckers immediately under the fruit, whereby it may be increased much faster than the common sort; so that in a few years it may be the best common sort in Britain.—The third sort is preserved by some curious persons for the sake of variety; but the fruit is not worth any thing.—The sort with very smooth grass-green leaves was raised from seeds taken out of a rotten fruit which came from the West Indies to the late Henry Heathcote, Esq; from whom Mr Miller received one plant, which produced large fruit: this is what the people of America call the *king pine*.—The plants are propagated by planting the crowns which grow on the fruit, or the suckers which are produced either from the sides of the plants or under the fruit: both which are found to be equally good; although by some persons the crown is thought preferable to the suckers, as supposing it will produce fruit sooner than the suckers, which is certainly a mistake. The suckers and crowns must be laid to dry in a warm place for four or five days, or more (according to the moisture of the part which adhered to the old plant or fruit); for if they are immediately planted, they will rot. The certain rule of judging when they are fit to plant, is by observing if the bottom is healed over and become hard; for if the suckers are drawn off carefully from the old plants, they will have a hard skin over the lower part, so need not lie so long as the crowns of those whose bottoms are moist. But whenever a crown is taken from the fruit, or the suckers from old plants, they should be immediately divested of their bottom-leaves, so high as to allow depth for their planting; so that they may be thoroughly dry and healed in every part, lest when they receive heat and moisture they should perish, which often happens when this method is not observed. If these suckers or crowns are taken off late in the autumn, or during the winter, or early in the spring, they should be laid in a dry place in the stove for a fortnight or three weeks before they are planted; but in the summer season, they will be fit for planting in a week at farthest.

These should be planted in a rich good kitchen-garden mould, not too heavy so as to detain the moisture too long, nor over light and sandy; but where this is wanting, you should procure some fresh earth from a good pasture, which should be mixed with about a third part of rotten neats dung, or the dung of an old melon or cucumber bed which is well consumed. These should be mixed six or eight months before they are used, but if it be a year it will be the better; and should be often turned, that their parts may be the better united, as also the clods well broken. This earth should not be screened very fine; for if you only clear it of the great stones, it will be better for the plants than when it is made too fine. You should always avoid mixing any sand with the earth, unless it be extremely stiff, and then it will be necessary to have it mixed at least six months or a year before it is used; and it must be frequently turned, that the sand may be incorporated in the earth so as to divide its parts; but you should not put more than a sixth part

Bromelia.

of sand; for too much sand is very injurious to these plants. In the summer season, these plants must be frequently watered; but you should not give them large quantities at a time: you must also be very careful that the moisture is not detained in the pots by the holes being stopped, for that will soon destroy the plants. If the season is warm, they should be watered twice a-week; but in a cool season, once a-week will be often enough: and, during the summer season, you should once a-week water them gently all over their leaves; which will wash the filth from off them, and thereby greatly promote the growth of the plants.

There are some persons who frequently shift these plants from pot to pot. But this is by no means to be practised by those who propose to have large well-flavoured fruit: for, unless the pots be filled with the roots, by the time the plants begin to show their fruit, they commonly produce small fruit, which have generally large crowns on them; therefore the plants will not require to be new potted oftener than twice in a season. The first time should be about the end of April, when the suckers and crowns of the former year's fruit (which remained all the winter in those pots in which they were first planted) should be shifted into larger pots; *i. e.* those which were in halfpenny or three-farthing pots should be put into penny or at most three-halfpenny pots, according to the size of the plants; for you must be very careful not to overpot them, nothing being more prejudicial to these plants. The second time for shifting of them is in the beginning of August; when you should shift those which are of a proper size for fruiting the following spring into two-penny pots, which are full large enough for any of these plants. At each of these times of shifting the plants, the bark-bed should be stirred up, and some new bark added, to raise the bed up to the height it was at first made; and when the pots are plunged again into the bark-bed, the plants should be watered gently all over their leaves, to wash off the filth, and to settle the earth to the roots of the plants. If the bark-bed be well stirred, and a quantity of good fresh bark added to the bed, at this latter shifting, it will be of great service to the plants; for they may remain in the same tan until the beginning of November, or sometimes later, according to the mildness of the season, and will require but little fire before that time. During the winter, they will not require to be watered oftener than once a-week, according as you find the earth in the pots to dry: nor should you give them too much at each time; for it is much better to give them a little water often, than to over-water them.

You must observe never to shift those plants which show their fruit into other pots; for if they are removed after the fruit appears, it will stop the growth, and thereby cause the fruit to be smaller, and retard its ripening, so that many times it will be October or November before the fruit is ripe: therefore you should be very careful to keep the plants in a vigorous growing state from the first appearance of the fruit, because upon this depends the goodness and the size of the fruit; for if they receive a check after this, the fruit is generally small and ill-tasted.—When you have cut off the fruit from the plant whose kind you are desirous to propagate, you should trim the leaves, and

plunge the pots again into a moderate hot-bed, observing to refresh them frequently with water, which will cause them to put out suckers in plenty; so that a person may be soon supplied with plants enough of any of the kinds, who will but observe to keep the plants in health.

The most dangerous thing that can happen to these plants is their being attacked by small white insects, which appear at first like a white mildew, but soon after have the appearance of lice: these attack both root and leaves at the same time; and, if they are not soon destroyed, will spread over a whole stove in a short time, and in a few weeks entirely stop the growth of the plants by sucking out the nutritious juice, so that the leaves will appear yellow and sickly, and have generally a great number of yellow transparent foots all over them. These insects, after they are fully grown, appear like bugs, adhering so closely to the leaves as not to be easily washed off, and seem to have no local motion. They were originally brought from America upon the plants which were imported from thence; and are probably the same insects which have destroyed the sugar-canes of late in some of the Leeward Islands, for upon some sugar-canes which were sent Mr Miller from Barbadoes he observed great numbers of these insects. Since they have been in England, they have spread greatly in such stoves where there has not been more than ordinary care taken to destroy them. They have also attacked the orange-trees in many gardens near London, and have done them incredible damage; but they do not endure the cold of our climate in winter, so that they are never found on such plants as live in the open air. The only method yet discovered for destroying these insects, is by frequently washing the leaves, branches, and stems, of such plants as they attack, with water in which there has been a strong infusion of tobacco stalks. But this method cannot be practised on the ananas plants, because the insects will fasten themselves so low between the leaves, that it is impossible to come at them with a sponge to wash them off; so that if all those which appear to sight are cleared off, they will soon be succeeded by a fresh supply from below, and the roots will be also equally infested at the same time. Therefore, wherever these insects appear on the plants, the safest method will be to take the plants out of the pots, and clear the earth from the roots; then prepare a large tub, which should be filled with water in which there has been a strong infusion of tobacco stalks; into this tub you should put the plants, placing some sticks across the tub to keep them immersed in water. In this water they should remain 24 hours; then take them out, and with a sponge wash off all the insects from the leaves and roots, and dip the plants into a tub of fair water, washing them therein, which is the most effectual way to clear them from the insects. After which, you should pot them in fresh earth; and, having stirred up the bark-bed, and added some new tan to give a fresh heat to the bed, the pots should be plunged again, observing to water them all over the leaves, and this should be repeated once a-week during the summer season; for these insects always multiply much faster where the plants are kept dry, than where they are sometimes sprinkled over with water, and kept in a growing state. As these insects are frequently brought

Bromelia

Bromelia. over from America on the ananas plants which come from thence, those persons who procure their plants from thence, should look carefully over them when they receive them, to see they have none of these insects on them; for if they have, they will soon be propagated over all the plants in the stove where they are placed: therefore, whenever they are observed, the plants should be soaked (as before directed) before they are planted into pots.

Such are the directions generally given with regard to the culture of the pine-apple in this country. Of late, however, some very considerable improvements have been made in that article. The leaves of the oak have been substituted to the more expensive bark; and by treating the pines with them, they are found to thrive as well, and to produce as good fruit, as in the other method: of the proper way of managing these leaves for the rearing of exotic plants, an account is given under the article *OAK-LEAVES*. But the most considerable improvement is that mentioned in the 67th volume of the Philosophical Transactions, where a method is shown by William Bastard, Esq; of Devonshire, of raising these fruits in water. His account of this method is as follows.

“ Before I enter into the particulars of raising pine-apples in water, it will be necessary to tell you that my hot-house is covered with the best crown-glass, which I apprehend gives more heat than the common sort of green glass generally used for hot-houses. In the front part of the house, and indeed any where in the lowest parts of it, the pine-apple plants will not thrive well in water. The way in which I treat them is as follows. I place a shelf near the highest part of the back wall, so that the pine-plants may stand without absolutely touching the glass, but as near it as can be: on this shelf I place pans full of water, about seven or eight inches deep; and in these pans I put the pine-apple plants, growing in the same pots of earth as they are generally planted in to be plunged into the bark-bed in the common way; that is, I put the pot of earth, with the pine-plant in it, in the pan-full of water, and as the water decreases I constantly fill up the pan. I place either plants in fruit, or young plants as soon as they are well rooted, in these pans of water, and find they thrive equally well: the fruit reared this way is always much larger, as well as better flavoured, than when ripened in the bark-bed. I have more than once put only the plants themselves without any earth, I mean after they had roots, into these pans of water, with only water sufficient to keep the roots always covered, and found them flourish beyond expectation. In my house, the shelf I mention is supported by irons from the top, and there is an intervening space of about 10 inches between the back wall and the shelf. A neighbour of mine has placed a leaden cistern upon the top of the back flue (in which, as it is in contact with the flue, the water is always warm when there is fire in the house), and finds his fruit excellent and large. My shelf does not touch the back flue, but is about a foot above it; and consequently the water is only warmed by the air in the house. Both these methods do well. The way I account for this success is, that the warm air always ascending to the part where this shelf is placed, as being the highest part of the house, keeps it much hot-

ter than in any other part. The temperature at that place is, I believe, seldom less than what is indicated by the 73d degree of Fahrenheit's thermometer, and when the sun shines it is often at above 100: the water the plants grow in seems to enable them to bear the greatest heat, if sufficient air be allowed; and I often see the roots of the plants growing out of the holes in the bottom of the pot of earth, and shooting vigorously in the water.

“ My hot-house (the dimensions of which it may be proper to know) is 60 feet long and 11 feet wide, the flues included; six feet high in the front, and 11 feet at the back of the inside of the house. It is warmed by two fires. A leaden trough or cistern on the top of the back flue is preferable to my shelf, as in it the pine-plants grow much faster in the winter, the water being always warmed by the flue: of this I have seen the great benefit these last two months in my neighbourhood. It is not foreign to this purpose to mention, that, as a person was moving a large pine-plant from the hot-bed in my house last summer, which plant was just showing fruit, by some accident he broke off the plant just above the earth in which it grew, and there was no root whatever left to it: by way of experiment I took the plant, and fixed it upright in a pan of water (without any earth whatever) on the shelf; it there soon threw out roots, and bore a pine-apple that weighed upwards of two pounds.”

BROMLEY, a town of Kent in England, situated on the river Ravensburn, in E. Long. 0. 5. N. Lat. 51. 23.

BROMSGROVE, a town of Worcestershire in England, seated on the river Salwarp. It is a pretty good town, well inhabited by clothiers; and the market is large for corn, cattle, and all sorts of provisions. W. Long. 2. 5. N. Lat. 52. 26.

BROMUS, *BROOM GRASS*, in botany: A genus of the digynia order, belonging to the triandria class of plants; ranking, in the natural method, under the 4th order, *Gramina*. The calyx is bivalved, having a partial spike, oblong and round, opposite grains, with an awn below the point of each outer valve. There are 24 species, eight of which are natives of Britain, viz. the scalinus or field broom-grass; the arvensis, or common broom-grass; the ciliatus, or wall broom-grass; the sterilis, or barren broom-grass; the giganteus, or tall broom-grass; the ramosus, or wood broom-grass; and the pinnatus, or spiked broom-grass.

BROMYARD, a town of Herefordshire in England, seated on a rising ground, and containing about 200 houses. W. Long. 2. 46. N. Lat. 52. 20.

BRON, a town of Italy, in the duchy of Milan, where the Imperialists gained an advantage over the French in 1703. E. Long. 10. 0. N. Lat. 44. 50.

BRONCHIA, in anatomy, the ramifications of the trachea. See *ANATOMY*, n° 116.

BRONCHOCELE, a tumor rising in the anterior part of the neck. See *MEDICINE-INDEX*.

BRONCHOTOMY, in surgery, an incision made in the aspera arteria, or wind-pipe, which is necessary in many cases, and especially in a violent quinsy, to prevent suffocation from the great inflammation or tumor of the parts. It is also called *laryngotomy* and *tracheotomy*. See *SURGERY*.

Bronkhorst
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Bronze.Bronze
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Brooke.

BRONKHORST (John Van), an eminent painter who flourished about the middle of the last century. He was born at Utrecht; and after having studied under several masters, entered the school of Cornelius Poelemburg, whose style of painting he imitated with great success. He painted both history and landscapes; and his pictures, which are very highly finished, are held in great estimation. He amused himself with the point; and some landscapes from Poelemburg, together with other subjects from his own compositions, are attributed to him.

BRONTIÆ, or **THUNDER-STONES**, in natural history. See **BELEMNITES**.

BRONTIUM, in Grecian antiquity, a place underneath the floor of the theatres, in which were kept brazen vessels full of stones and other materials, with which they imitated the noise of thunder.

BRONTOLOGY, denotes the doctrine of thunder, or an explanation of its causes, phenomena, &c. together with the prefaces drawn from it. See **ELECTRICITY** and **THUNDER**.

BRONZE, a compound of copper and tin, to which sometimes other metallic substances, particularly zinc, are added.—This metal is brittle, hard, and sonorous. It is employed for various uses, as for making of bells, cannons and statues; and the proportions of the component metals are varied to suit the several purposes to which it is applied. This compound, like some others, is specifically heavier than either of the metals taken separately. A metallic mass, composed of four fifths of copper and one-fifth part of tin, weighs in water $7\frac{1}{10}$ grains more than the same quantities of these two metals would together weigh in water if not alloyed. This proves, that in the union of copper and tin there is a penetration of parts, the one metal entering into the pores of the other; and this is further confirmed by an observation of Mr Tillet, member of the royal academy of sciences. In his memoir concerning the ductility of metals, he takes notice, that when the mixture of copper and tin is made in the proportions above-mentioned, the colour of the copper is entirely annulled and covered by that of the tin, although the quantity of the first be four times greater; and this singular effect cannot be understood without admitting a total change in the size and disposition of the pores of the compound metal.

Tin being less subject to rust than copper, bronze is also found to be less liable to be covered with verdigrise than pure copper is; and this is one reason why it is used for cannons, statues, and works exposed to the air and weather. The greater fusibility of bronze than copper is also an advantageous property, and much facilitates the casting of large works. The operation for casting bronze is sufficiently simple. For this purpose a brick furnace is used, nearly of the shape of an oven for baking bread. The floor of this furnace is concave, and consists of a composition of sand and clay. In this hollow floor the metals to be fused are put.—The furnace has three openings. The first is a lateral mouth, at which enters the flame of the wood placed in a second furnace, on one side of the first: the second opening is a chimney placed on a side opposite to the mouth, by means of which the flame is drawn over the metal. The third is a hole which is opened and shut at

pleasure; through which the inner part of the furnace may be occasionally inspected, that the state of the metal may be observed. When the metal is in the state required, a fourth opening is then unclosed, communicating with the hollow floor, and thro' which the melted metal flows by channels into the moulds prepared to receive it.

BRONZE, also denotes a colour prepared by the colourmen of Paris, wherewith to imitate bronze.—There are two sorts, the red bronze, and the yellow or golden. The latter is made solely of copper-dust; the finest and brightest that can be got: the former is made of the same, with the addition of a little quantity of red ochre well pulverized. They are both applied with varnish. To prevent their turning greenish, the work must be dried over a chafing-dish as soon as bronzed.

BRONZES, a name given by antiquarians to figures either of men or beasts, to urns, and in general to every piece of sculpture which the ancients made of that metal. We likewise give the name of *bronzes* to statues or busts cast of bronze, whether these pieces be copies of antiques or original subjects.—Among medallists, all copper medals bear the name of *bronze*.

BRONZING, the art or act of imitating bronze, which is done by means of copper-dust or leaf, fastened on the outside, as gold leaves are in gilding.

BROOD, the young of fish, fowls, &c.

BROODING, the act of a hen in hatching her eggs. See **HATCHING**.

BROOK, a little river or small current of water.—A brook is distinguished from a river, inasmuch as a river flows at all times, whereas a brook flows at some particular seasons only.

Brook-Lime. See **VERONICA**.

BROOKE (Mrs), daughter of a clergyman of the name of Moore, was a lady as remarkable for her virtues and suavity of manners as for her great literary accomplishments. Her first performance, which introduced her to the notice and consequent esteem of the public, was *Julia Mandeville*; a work concerning which there were various opinions, but which every body read with eagerness. It has been often wished that she had made the catastrophe less melancholy; and we believe that she afterwards was of the same opinion, but she thought it beneath her character to alter it. She soon afterwards went to Canada with her husband, who was chaplain to the garrison at Quebec; and here she saw and loved those romantic characters and scenes which gave birth to *Emily Montague*, a work most deservedly in universal esteem, which has passed through several editions, and which is now not easily met with. On her return to England, accident introduced her, and congenial sentiments attracted her, to Mrs Yates; an intimacy was formed, which terminated only with the life of that lady. Mrs Brooke, in consequence of this connection, formed an acquaintance with Mr Garrick, and wrote some pieces for the stage. She had, however, great reason to be dissatisfied with his behaviour as a manager; and she made *The Excursion*, a novel which she wrote at this time, the vehicle by which she exhibited to the public her complaints and anger against the king of Drury. Her anger, we believe, was just, but the retribution was too severe. She herself afterwards

Broom
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Broome.

terwards thought so, for she lamented and retracted it. Her first dramatic performance was the tragedy of *Virginia*, 1756. Her next effort in that line was, *The Siege of Synope*, a tragedy introduced by Mr Harris, and written principally with a view of placing Mrs Yates in a conspicuous character. This did not altogether fail, but it did not become popular; it wanted energy, and it had not much originality; there was little to disapprove, but there was nothing to admire. Her next and most popular production was *Resina*, which, in a most liberal manner, she presented to Mr Harris. Few modern pieces have been equally successful. Last year also, a musical piece of hers, entitled *Marian*, was introduced, which is now occasionally exhibited, for which we believe Shield is principally to be thanked. Mrs Brooke was also the translator of various hooks from the French. She was esteemed by Dr Johnson, valued by Miss Seward, and her company courted by all the first characters of her time. She died in January 1789, two days after her husband. Her husband enjoyed the rectory of Colney in Norfolk, to which he had been preferred after his arrival from America.

BROOM, in botany. See GENISTA.

Butcher's BROOM, in botany. See RUSCUS.

Spanish BROOM, in botany. See SPARTIUM.

BROOM also denotes a well-known household besom or implement wherewith to sweep away dirt, dust, and the like. We say, a *birch-broom*, a *hair-broom*, a *rush-broom*, a *heath-broom*. The primitive kind of brooms, from whence the denomination is given to all the rest, was made of the genita or wild broom growing on commons.

Broom-flower gives the denomination to an order of knights instituted by St Lewis of France, on occasion of his marriage. The motto was, *Exaltat humiles*, and the collar of the order made up of broom-flowers and hulks, enamelled and intermixed with *flour-de-lys* of gold, set in open lozenges, enamelled white, chained together, and as it hung a cross florencee of gold. This answers to what the French call *Ordre de la Geneste*, from the name of a species of broom so called; different from the common broom, as being lower, the stalk smaller, and leaf narrow; the flower is yellow, and bears a long hulk. Some also speak of another order of the *Geneste* or *Broom* established by Charles Martel, or rather Charles VI.

Broom-gall, in natural history, a name given by authors to a remarkable species of galls found on the *genista vulgaris* or common broom. This is occasioned, like all other galls, by the puncture and eating of an insect; and, when opened, is found to contain a small oblong worm, of a red colour, but whose size requires the use of a glass in order to see it distinctly.

Broom-Rape, in botany. See OROBANCHE.

BROOME (William), the coadjutor of Pope in translating the *Odyssey*, was born in Cheshire, as is said, of very mean parents. He was educated upon the foundation at Eaton, and was captain of the school a whole year, without any vacancy, by which he might have obtained a scholarship at King's college. Being by this delay, such as is said to have happened very rarely, superannuated, he was sent to St John's college by the contribution of his friends, where he ob-

tained a small exhibition. At this college he lived for some time in the same chamber with the well-known Ford, by whom Dr Johnson heard him described as a contracted scholar and a mere versifier, unacquainted with life, and unskilful in conversation. His addiction to metre was then such, that his companions familiarly called him *Poet*. When he had opportunities of mingling with mankind, he cleared himself, as Ford likewise owned, from great part of his scholastic rust. He appeared early in the world as a translator of the *Iliads* into prose, in conjunction with Ozell and Oldisworth. How their several parts were distributed is not known. This is the translation of which Ozell boasted as superior, in Toland's opinion, to that of Pope: It has long since vanished (Dr Johnson observes), and is now in danger from the critics. He was introduced to Mr Pope, who was then visiting Sir John Cotton at Madingley, near Cambridge; and gained so much of his esteem, that he was employed to make extracts from Eustathius for the notes to the translation of the *Iliad*; and in the volumes of poetry published by Lintot, commonly called *Pope's Miscellanies*, many of his early pieces were inserted.

Pope and Broome were to be yet more closely connected. When the success of the *Iliad* gave encouragement to a version of the *Odyssey*, Pope, weary of the toil, called Fenton and Broome to his assistance; and taking only half the work upon himself, divided the other half between his partners, giving four books to Fenton and eight to Broome. Fenton's books are enumerated in Dr Johnson's life of him. To the lot of Broome fell the second, sixth, eighth, eleventh, twelfth, sixteenth, eighteenth, and twenty-third, together with the burden of writing all the notes. The price at which Pope purchased this assistance was three hundred pounds paid to Fenton and five hundred to Broome, with as many copies as he wanted for his friends, which amounted to one hundred more. The payment made to Fenton is known only by hearsay; Broome's is very distinctly told by Pope in the notes to the *Dunciad*. It is evident, that, according to Pope's own estimate, Broome was unkindly treated. If four books could merit three hundred pounds, eight and all the notes, equivalent at least to four, had certainly a right to more than six. Broome probably considered himself as injured, and there was for some time more than coldness between him and his employer. He always spoke of Pope as too much a lover of money, and Pope pursued him with avowed hostility; for he not only named him disrespectfully in the *Dunciad*, but quoted him more than once in the *Bathos*, as a proficient in the art of sinking: and in his enumeration of the different kinds of poets distinguished for the profound, he reckons Broome among "the parrots who repeat another's words in such a hoarse odd tone as makes them seem their own." It has been said that they were afterwards reconciled; but their peace was probably without friendship. He afterwards published a *Miscellany of Poems*, and never rose to very high dignity in the church. He was some time rector of Sturston in Suffolk, where he married a wealthy widow; and afterwards, when the king visited Cambridge 1728, became doctor of laws. He was 1733 presented by the crown to the rectory of Pulham in Norfolk,

Broome.

which

Brooming
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Brother.

Brother.

which he held with Oakley Magna in Suffolk, given him by the lord Cornwallis, to whom he was chaplain, and who added the vicarage of Eye in Suffolk; he then resigned Pulham, and retained the other two. Toward the close of his life he grew again poetical, and amused himself with translating Odes of Anacreon, which he published in the Gentleman's Magazine under the name of *Chester*. He died at Bath in 1745, and was buried in the abbey church.

BROOMING, or *BREAMING* of a Ship, the washing and burning off all the filth she has contracted on her sides with weeds, straw, broom, or the like, when she is on the careen, or on the ground. See **CAREENING**.

BROSSARD (Sebastian de), an eminent French musician. In the former part of his life he had been prebendary and chapel-master of the cathedral church of Strasburg; but afterwards became grand-chaplain, and also maitre de chapelle in the cathedral of Meaux. There is extant of his a work entitled *Prodromus musicalis*. He was author also of a very useful book, entitled *Dictionnaire de musique*, printed at Amsterdam, in folio, 1703; and afterwards at the same place in octavo, without a date. At the end of this book is a catalogue of authors ancient and modern, to the amount of 900, who have written on music; divided into classes, wherein are interspersed many curious observations of the author relating to the history of music. By Mr Boivin's *Catalogue general des livres de musique* for the year 1729, it appears that Brossard was the author of two sets of motets, as also of nine *Lecons de Tenebres* therein mentioned. It seems that these several publications were at a time when the author was far advanced in years; for Walther takes notice, that in the *Mercure Galante*, he is mentioned as an abbé and composer, so early as the year 1678.

BROTHEL-HOUSES, lewd places, being the common habitations of prostitutes. King Henry VIII. by proclamation, in the 37th year of his reign, suppressed all the stews or brothel-houses which had long continued on the bank-side in Southwark, contrary to the law of God and of the land*. A brothelman was a loose idle fellow; and a *feme bordelier*, or *brothelier*, a common whore. And *brothelman* is a contraction for *brothelman*. See **BAWDY-HOUSE**.

BROTHER, *Frater*, a term of relation between two male children, sprung from the same father, or mother, or both. Scaliger and Vossius derive *frater* from *φρατερ*, for *φρατες*, which properly signifies a person who draws water in the same well; *φρας*, in Greek, signifying a well, and *φρατρια*, a company of people, who have a right to draw water out of the same well.—The word, it is said, came originally from the city Argos, where there were only a few wells distributed in certain quarters of the city, to which those of the same neighbourhood alone repaired.

By the civil law, brothers and sisters stand in the second degree of consanguinity; by the canon law, they are in the first degree.—By the Mosaic law, the brother of a man who died without issue was obliged to marry the widow of the deceased. Deuter. xxv. 7.

The ancients applied the term brother indifferently to almost all who stood related in the collateral line, as uncles and nephews, cousin-germans, &c.—This we learn not only from a great many passages in the Old

Testament, but also from profane authors: Cicero, in his Philippics, says, "Antonia was both wife and sister of Mark Antony; because she was daughter of his brother C. Antonius." And as to cousins, Tullius Hostilius, in Dionysius Halicarneseus, calls the Horatii and Curatii, brothers; because they were sisters children.

The language of the Jews, bishop Pearson observes, included in the name of brethren not only the strict relation of fraternity, but also the larger of consanguinity. We are brethren, says Abraham to Lot, Gen. xiii. 8. whereas Lot was only his nephew.—So Jacob told Rachel that he was her father's brother, Gen. xxix. 12. whereas he was only her father's nephew.—This consideration has been urged with good advantage against the Antidicomatians, who, from the mention made of the brethren of Jesus, John ii. 12. Matth. xii. 46. have impugned the perpetual virginity of the mother of Christ.

Among us, it is customary for kings to give the title brother to each other; the unction in coronation being esteemed to create a kind of brotherhood. Nor is the custom modern: Menander mentions a letter of Cosroes king of Persia to the emperor Justinian, beginning thus: Cosroes, king of kings, &c. to the emperor Justinian my brother.—Kings now also give the same appellation to the electors of the empire; and the like was given by the king of France to the late king of Sardinia, while only duke of Savoy.

In the civil law, brothers, *fratres*, in the plural, sometimes comprehend sisters: as *Lucius & Titia, fratres; tres fratres, Titius, Mevius, & Seia*.

Foster-BROTHERS, those who sucked the same nurse. The French call them *fratres du lait*, or brothers by milk; which is most properly used in respect of a person who sucked a nurse at the same time with the nurse's own child.

BROTHERS-German, *Fratres Germani*. See **GERMAN**.

BROTHER was also used, in middle-age writers, for a *comes*, or governor of a province.

BROTHER is applied, in a less proper sense, to denote a person of the same profession. In which sense, judges, bishops, priests, &c. call each other brothers.

BROTHER is also a customary term for priests of the same persuasion to address one another by: but it is more particularly used to denote the relation between monks of the same convent; as, brother Zachary: in English, we more usually say, Friar Zachary, from the French word, *frere*, brother.—Preachers also call their hearers, *my brethren*, or *my dear brethren*. This appellation is borrowed from the primitive Christians, who all called each other *brothers*. But it is now principally used for such of the religious as are not priests; those in orders are generally honoured with the title of *father*, whereas the rest are only simply brothers.

BROTHER is also an appellation more peculiarly given to certain orders of religious: Thus, the

BROTHERS of St Alexis, in the low countries, were an order of persons who attended on those who lay dying, and took care of the burial of the dead. See also **BROTHERS of CHARITY, of DEATH, &c.**

POOR BROTHERS, in the charity-house, a denomination given to decayed gentlemen, to the number of 80, who are subsisted with diet, clothing, and lodging, on the establishment. The poor brothers are to be gentlemen

Brother
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Broughton

men by descent, come to poverty, or decayed merchants, soldiers, or officers of the king's household. The conditions of admission are, that they have no estate for life worth 200 l. nor coming in, *viii* & *modis*, 24 l. *per annum*; and that they be fifty years old, unless they have been maimed in the public service; in which case, the age of forty suffices. They wear a livery-gown within doors.

BROTHERS of Arms, an appellation given those who contract a kind of fraternity in war, obliging themselves to the mutual service and assistance of each other. In the military orders, the knights are also called *brothers*.—In the order of Malta, there is a particular class, who are called *serving brothers*; consisting of such as cannot give proof of their nobility. In Latin they are denominated *fratres clientes*.

BROTHERS of the rosy cross. See ROSYCRUCIANS.

BROUAGE, a maritime town of Saintonge in France. It consists of five or six streets which terminate in a great square. It is famous for its salt-works, which are the finest in the kingdom. W. Long. 1. 0. N. Lat. 45. 50.

BROURSHAVEN, a port-town of the United Provinces, in the island of Schonen in Zealand, seated on the north side of the island, in a bay of the sea, in E. Long. 3. 35. N. Lat. 51. 50.

BROUGH, a town in Westmoreland in England, seated under Stanmore-hill, W. Long. 2. 50. N. Lat. 54. 40. It was formerly a place of great note, being a Roman fortress; but is now so much decayed, that it is little better than a village.

BROUGHTON (THOMAS), a learned divine, and one of the original writers of the *Biographia Britannica*, was born at London, July 5th 1704, in the parish of St Andrew, Holborn; of which parish his father was minister. At an early age he was sent to Eton school, where he soon distinguished himself by the acuteness of his genius, and the studiousness of his disposition. Being superannuated on this foundation, he removed about 1722 to the university of Cambridge; and, for the sake of a scholarship, entered himself of Gonville and Caius college. Here two of the principal objects of his attention were, the acquisition of the knowledge of the modern languages, and the study of the mathematics, under the famous professor Sanderfon. May 28th 1727, Mr Broughton, after taking the degree of Bachelor of Arts, was admitted to deacon's orders. In the succeeding year, September 22d, he was ordained priest, and proceeded to the degree of M. A. At this time he removed from the university, to the curacy of Offley, in Hertfordshire. In 1739, he was instituted to the rectory of Stepington, otherwise Stibington, in the county of Huntingdon, on the presentation of John Duke of Bedford, and was appointed one of that nobleman's chaplains. Soon after he was chosen reader to the Temple, by which means he became known to bishop Sherlock, then master of it, and who conceived so high an opinion of our author's merit, that, in 1744, this eminent prelate presented Mr Broughton to the valuable vicarage of Bedminster, near Bristol, together with the chapels of St Mary Redcliff, St Thomas, and Abbot's Leigh, annexed. Some short time after, he was collated, by the same patron, to the prebend of Bedminster and Redcliff, in the cathedral of Salisbury.

Upon receiving this preferment, he removed from London to Bristol, where he married the daughter of Thomas Harris, clerk of that city, by whom he had seven children, six of whom survived him. He resided on his living till his death, which happened December 21st 1774, in the 71st year of his age. He was interred in the church of St Mary Redcliff.

From the time of Mr Broughton's quitting the university, till he was considerably advanced in life, he was engaged in a variety of publications, of which a list is given in the *Biographia Britannica*, 2d edition. Some little time before his death, he composed "A short view of the principles upon which Christian churches require, of their respective clergy, subscription to established articles of religion;" but this work never appeared in print. He possessed, likewise, no inconsiderable talent for poetry, as is evident from many little fugitive pieces in manuscript, found among his papers; and particularly from two unfinished tragedies, both written at the age of 17. When he was at Eton school, Mr Broughton was of the same year with Dr Ewer, late bishop of Bangor; Dr Sumner, late provost of King's college, Cambridge; and Dr Sleech, late provost of Eton: and during his residence in London, he enjoyed the esteem and friendship of most of the literary men of his time. He was a great lover of music, particularly the ancient; which introduced him to the knowledge and acquaintance of Mr Handel; whom he furnished with the words for many of his compositions. In his public character, Mr Broughton was distinguished by an active zeal for the Christian cause, joined with a moderation of mind. In private life, he was devoted to the interests and happiness of his family; and was of a mild, cheerful, and liberal temper. This disposition, which is not always united with eminent literary abilities, attended him to his grave. In 1778, a posthumous "volume of sermons, on select subjects," was published by his son, the Rev. Thomas Broughton, M. A. of Wadham college, Oxford, and vicar of Tiverton, near Bath.

BROUKHUSIUS (JONVS), or **JOHN BROEKHUIZEN**, a distinguished scholar in Holland, was born November 20. 1649, at Amsterdam, where his father was a clerk in the admiralty. He learned the Latin tongue under Hadrian Junius, and made a prodigious progress in polite literature; but, his father dying when he was very young, he was taken from literary pursuits, and placed with an apothecary at Amsterdam, with whom he lived some years. Not liking this, he went into the army, where his behaviour raised him to the rank of lieutenant-captain; and, in 1674, was sent with his regiment to America in the fleet under admiral de Ruyter, but returned to Holland the same year. In 1678, he was sent to the garrison at Utrecht, where he contracted a friendship with the celebrated Grævius; and here, though a person of an excellent temper, he had the misfortune to be so deeply engaged in a duel, that, according to the laws of Holland, his life was forfeited: but Grævius wrote immediately to Nicholas Heinfius, who obtained his pardon from the Stadtholder. Not long after, he became a captain of one of the companies then at Amsterdam; which post placed him in an easy situation, and gave him leisure to pursue his studies. His company being disbanded in 1697, a pension was granted him; upon which he retired

Broughton,
Broukhu-
sius.

Broucker retired to a country-house near Amsterdam, where he saw but little company, and spent his time among books. He died December 15th 1707.

As a classical editor, he is distinguished by his labours upon Tibullus and Propertius; the latter was published in 1702, the former in 1708. He was an excellent Latin poet himself: a volume of his poems was published at Utrecht, 1684, in 12mo; but a very noble edition of them was given by Van Hoogstraeten at Amsterdam, 1711, in 4to. His "Dutch poems" were also published at Amsterdam, 1712, in 8vo, by the same person, who prefixed his life, extracted from Peter Burman's funeral oration upon him. Brouckhusius was also an editor of Sannazarius's and Palearius's Latin works. With regard to his Latin poems, the authors of the "Journal de Trevoux" have delivered themselves thus (and what they have said may be applied to the bulk of modern Latin poems): "His verses are written in good Latin enough; but they want fire. We find in them a great many passages borrowed from Tibullus and Propertius, but not their genius. The author was a poet by art, not by nature."

BROUNCKER, or **BROUNKER**, (William), lord viscount of Castle-Lyons, in Ireland, and the first president of the Royal Society, was the son of Sir William Brounker, knt. and born about the year 1620. He was distinguished by his knowledge of the mathematics, and by the considerable posts of honour and profit he enjoyed after the restoration; for he had at the same time the office of chancellor to the queen, and the keeping of her great seal, that of one of the commissioners of the navy, and master of St Catherine's hospital near the Tower of London. He wrote, 1. Experiments of the recoiling of guns. 2. An algebraical paper upon the squaring of the hyperbola; and several letters to Dr Usher, archbishop of Armagh. He died in 1684.

BROUWER (Adrian), a famous Dutch painter, born either at Oudenard or Haerlem, in 1608, of poor parentage. He became the disciple of Francis Hals, under whom he proved an inimitable artist. His subjects were taken from low life, always copied from nature; as droll conversations, drunken brawls, hours at cards, or surgeons dressing the wounded. Brouwer was apprehended at Antwerp as a spy; where being discovered by Rubens, he procured his liberty, took him home, clothed him, and endeavoured to acquaint the public with his merit; but the levity of his temper made him quit his benefactor: and he died not long after, in 1640, destroyed by a dissolute course of life.

BROW, or **EYE-BROW**, an hairy arch extended over the orbit of each eye. See **ANATOMY**, n^o 142.

BROW-POST, among builders, denotes a beam which goes across a building.

BROW-ANTLER, among sportsmen, that branch of a deer's horn next the tail.

BROWALLIA, in botany, a genus of the angiospermia order, belonging to the didynamia class of plants, for which there is no English name.—Of this there are two species. The demissa, with a single flower upon each footstalk; and the elata, with one or many flowers on each footstalk. The seeds of the first were sent to Mr Miller from Panama. It usually grows a-

bout two feet high, and spreads out into lateral branches on every side of the stalk, garnished with oval leaves which are entire, and have short footstalks. Towards the end of the branches, the flowers are produced singly upon pretty long footstalks arising from the wing of the leaf. These are of a light blue colour, sometimes inclining to a purple or red; and there are often three colours of flowers on the same plant. The plant flowers in July, August, and September; and the seeds are ripe in five or six weeks after. The second sort is a native of Peru: the stalk of this plant is twice the size of that of the first, and appears somewhat shrubby; the leaves upon the flower-branches are smooth: the footstalks have some with one flower, others with three, and others with five; which are of a deep violet colour. As both species of browallia are annual plants, they must be raised from seeds, which are to be sown on a hot-bed: but they may be transplanted in June, into the borders of the flower-garden; where, if the weather proves warm, they will flower and perfect seeds; but lest these should fail, there should be a plant or two kept in the stove to secure seeds.

BROWN (Robert), a schismatic divine, the founder of the Brownists, a numerous sect of dissenters in the reign of queen Elizabeth. He was the son of Mr Anthony Brown of Tolthorp in Rutlandshire; whose father obtained the singular privilege of wearing his cap in the king's presence, by a charter of Henry VIII. Robert was educated at Cambridge, in Corpus Christi, or, according to Collier, in Bennet college, and was afterwards a schoolmaster in Southwark. About the year 1580, he began to promulgate his principles of dissent from the established church; and the following year preached at Norwich, where he soon accumulated a numerous congregation. He was violent in his abuse of the church of England; pretended to divine inspiration, and that he alone was the sure guide to heaven. This new sect daily increasing, Dr Freaque bishop of Norwich, with other ecclesiastical commissioners, called our apostle before them. He was insolent to the court, and they committed him to the custody of the sheriff's officer: but he was released at the intercession of lord treasurer Burleigh, to whom it seems he was related. Brown now left the kingdom; and, with permission of the states, settled at Middleburg in Zealand; where he formed a church after his own plan, and preached without molestation; but here persecution, the *sine qua non* of fanaticism, was wanting. In 1585, we find him again in England: for in that year he was cited to appear before archbishop Whitgift; and seeming to comply with the established church, was, by lord Burleigh, sent home to his father: but, relapsing into his former obduracy, his aged parent was obliged to turn him out of his house. He now wandered about for some time, and in the course of his mission endured great hardships. At last he fixed at Northampton; where, labouring with too much indifferency to increase his sect, he was cited by the bishop of Peterborough, and, refusing to appear, was finally excommunicated for contempt. His solemnity of this censure, we are told, immediately effected his reformation. He moved for absolution, which he obtained, and from that time became a dutiful member of the church of England. This happened about the year 1590; and,

Browallia,
Brown.

Brown. in a short time after, Brown was preferred to a rectory in Northamptonshire, where he kept a curate to do his duty, and where he might probably have died in peace: but having some dispute with the constable of his parish, he proceeded to blows; and was afterwards so insolent to the justice, that he committed him to Northampton jail, where he died in 1630, aged 80. Thus ended the life of the famous Robert Brown; the greatest part of which was a series of opposition and persecution. He boasted on his death-bed, that he had been confined in no less than 32 different prisons. He wrote "A treatise of reformation without tarrying for any, and of the wickedness of those teachers which will not reform themselves and their charge, because they will tarry till the magistrate command and compel them, by me Robert Brown;" and two others, making together a thin quarto; published at Middleburg, 1582.

BROWN (Ulysses Maximilian), a celebrated general of the 18th century, was son of Ulysses, baron Brown and Camus, colonel of a regiment of cuirassiers in the emperor's service, and descended from one of the most ancient and noble families in Ireland. He was born at Basil in 1705; and having finished his first studies at Limeric in Ireland, was, in 1715, sent for into Hungary, by count George Brown, his uncle, member of the aulic council of war, and colonel of a regiment of infantry. He was present at the famous battle of Belgrade, in 1717. Next year he followed his uncle into Italy, who made him continue his studies, in the Clementine college, at Rome, till the year 1721, when he was sent to Prague in order to learn the civil law. At the end of the year 1723, he became captain in his uncle's regiment; and in 1725, lieutenant-colonel: in 1730, he went into Corsica with a battalion of his regiment; and contributed greatly to the taking of Callanfara, where he received a considerable wound in his thigh. In 1732, the emperor made him chamberlain: He was raised to the rank of colonel in 1734; and distinguished himself so much in the war of Italy, especially at the battles of Parma and Guastalla, and in burning in the presence of the French army the bridge which the marshal de Noailles had caused to be thrown over the Adige, that he was made general in 1736. The following year he favoured the retreat of the army, after the unhappy battle of Banjuluca in Bosnia, by an excellent manœuvre, and saved all the baggage. His admirable conduct upon this occasion was rewarded by his obtaining a second regiment of infantry, vacant by the death of count Francis de Wallis.

At his return to Vienna, in 1739, the emperor Charles VI. raised him to the rank of general-field-marshal-lieutenant, and made him counsellor in the aulic council of war. After the death of that prince, the king of Prussia entering Silesia, count Brown, with a small body of troops, disputed the country with him inch by inch. He signalized himself on several other occasions: and, in 1743, the queen of Hungary made him a privy-counsellor, at her coronation in Bohemia. He at length passed into Bavaria, where he commanded the van-guard of the Austrian army; seized Deckendorf, with a great quantity of baggage; and obliged the French to abandon the banks of the Danube, which the Austrian army passed in full security. The same

year, *viz.* in 1743, the queen of Hungary sent him to Worms, in quality of her plenipotentiary to the king of Britain; where he put the last hand to the treaty of alliance between the courts of Vienna, London, and Turin. In 1744, he followed 'prince Lobkowitz into Italy; took the city of Veletri, on the 4th of August, in spite of the superior numbers of the enemy; entered their camp, overthrew several regiments, and took many prisoners. The following year he was recalled into Bavaria, where he took the town of Wilschhofen by assault, and received a dangerous shot in the thigh. The same year he was made general of the artillery; and in January 1746, marched for Italy, at the head of a body of 18,000 men. He then drove the Spaniards out of the Milanese; and having joined the forces under prince de Lichtenstein, commanded the left wing of the Austrian army at the battle of Placentia on the 15th of June 1746, and defeated the right wing of the enemy's forces commanded by marshal de Maillebois. After this victory, he commanded in chief the army against the Genoese; seized the pass of Bosetta or Bochetta, though defended by above 4000 men; and took the city of Genoa. Count Brown at length joined the king of Sardinia's troops; and took, in conjunction with him, Mont-Alban, and the county of Nice. On the 30th of November he passed the Var, in spite of the French troops; entered Provence; took the isles of St Margaret and St Honorat; and thought to have rendered himself master of a much greater part of Provence, when the revolution which happened in Genoa, and marshal de Belleisle's advancing with his army, obliged him to make that fine retreat which procured him the admiration and esteem of all persons skilled in war. He employed the rest of the year 1747 in defending the states of the house of Austria in Italy; and after the peace in 1748, he was sent to Nice to regulate there, in conjunction with the duke of Belleisle and the marquis de la Minas, the differences that had arisen with respect to the execution of some of the articles of the definitive treaty of Aix la Chapelle.

The empress queen, to reward these signal services, especially his glorious campaigns in Italy in 1749, made him governor of Transylvania, where he rendered himself generally admired for his probity and disinterestedness. In 1752, he obtained the government of the city of Prague, with the chief command of the troops in that kingdom; in 1753, the king of Poland, elector of Saxony, honoured him with the collar of the order of the white eagle; and the next year he was declared field-marshal.

The king of Prussia entering Saxony in 1756, and attacking Bohemia, count Brown marched against him; and repulsed that prince at the battle of Lobositz, on the 1st of October, though he had only 27,000 men, and the king of Prussia had at least 40,000. Seven days after this battle, he undertook the famous march into Saxony, to deliver the Saxon troops shut up between Pirna and Konigstein; an action worthy of the greatest captains, ancient or modern. He at length obliged the Prussians to retire from Bohemia; for which he was rewarded, by being made a knight of the golden fleece. Soon after, count Brown hastily assembled an army in Bohemia, to oppose the king of Prussia, who had again penetrated into

1711. into that kingdom at the head of all his forces; and on the 6th of May fought the famous battle of Prague; in which, while he was employed in giving his orders for maintaining the advantages he had gained over the Prussians, he was so dangerously wounded, that he was obliged to be carried to Prague, where he died of his wounds, on the 26th of June 1757, at 52 years of age. There is reason to believe, that, had he not been wounded, he would have gained the victory, as he had broken the Prussians, and the brave count Schwerin, one of their greatest generals, was slain.

BROWN (Sir Thomas), an eminent physician and celebrated writer, was born at London, October 19th 1605. Having studied at Winchester college, and afterwards at Oxford, he travelled through France and Italy; and returning by the way of Holland, took his degree of doctor of physic at Leyden. In 1636, he settled at Norwich; and the year following, was incorporated as doctor of physic at Oxford. His *Religio Medici* made a great noise; and being translated into Latin, instantly spread throughout Europe, and gained him a prodigious reputation: it was then translated into almost every language in Europe. This book has been heavily censured by some, as tending to infidelity, and even atheism; while others, with much more reason, have applauded the piety, as well as the parts and learning, of the author. The reverend Mr Granger observes, that among other peculiarities in this book, he speaks of the ultimate act of love as a folly beneath a philosopher; and says, that he could be content that we might procreate, like trees, without conjunction: but, after the writing of it, he descended from his philosophic dignity, and married an agreeable woman. It was said, that his reason for marrying was, because he could discover no better method of procreation. His Treatise on Vulgar Errors was read with equal avidity; he also published *Hydriasthia*, or a Discourse of Sepulchral Urns lately found in Norfolk. His reputation in his profession was equal to his fame for learning in other respects; and therefore the college of physicians were pleased to take him into their number as an honorary member; and king Charles II. coming to Norwich in his progress, in 1671, was pleased to knight him, with singular marks of favour and respect. He died on his birth-day, in 1682, leaving several manuscripts behind him, which were published under the title of *The posthumous works of the learned Sir Thomas Brown, Knt. M. D.*

BROWN (Edward), the son of the former, physician to king Charles II. and president of the royal college at London. He was born in the year 1642; and studied at Cambridge, and afterwards at Merton college, Oxford. He then travelled; and at his return published a brief account of some travels in Hungary, Servia, Bulgaria, Macedonia, Thessaly, Aultria, Styria, Carinthia, Carniola, Friuli, &c.: he also published an account of several travels through great part of Germany; and joined his name to those of many other eminent men, in a translation of Plutarch's lives. He was acquainted with Hebrew, was a critic in Greek, and no man of his age wrote better Latin. High Dutch, Italian, French, &c. he spoke and wrote with as much ease as his mother-tongue. King Charles said of him, that "he was as learned as any

of the college, and as well bred as any at court." He died August 27th 1708.

Brown.

BROWN (William), an English poet of the 17th century, was descended from a good family, and born at Tavistock in Devonshire in the year 1590. After he had passed through the grammar school, he was sent to Exeter college in the university of Oxford, in the beginning of the reign of James I. and became tutor to Robert Dormer, who was afterwards earl of Carnarvon, and killed at Newbury battle, September 20th 1643. He is styled in the public register of the university, "a man well skilled in all kinds of polite literature and useful arts;" *vir omni humana literatura et bonarum artium cognitione instructus*. After he had left the college with his pupil, he was taken into the family of William earl of Pembroke, who had a great respect for him; and he made his fortune so well, that he purchased an estate. His poetical works procured him a very great reputation. They are as follow: 1. Britannia's pastorals. The first part was published at London, 1613, in folio; and ushered into the world with several copies of verses made by his ingenious and learned friends John Selden, Michael Drayton, Christopher Cook, &c. The second part was printed at London in 1616, and recommended by various copies of verses written by John Glanville, who afterwards became eminent in the profession of the law, and others. These two parts were reprinted in two vols. 8vo, 1625. 2. The shepherd's pipe, in seven eclogues; London, 1614, in 8vo. 3. An elegy on the never-enough bewailed death of prince Henry, eldest son of king James I. Mr Wood tells us, that it is probable our author wrote several other poems which he had not seen. It is uncertain when he died.

BROWN (Thomas), "of facetious memory," as he is styled by Addison, was the son of a farmer in Shropshire; and entered in Christ-church college, Oxford, where he soon distinguished himself by his uncommon attainments in literature. But the irregularities of his life not suffering him to continue long there, he, instead of returning to his father, went to London to seek his fortune: his companions, however, being more delighted with his humour than ready to relieve his necessities, he had recourse to the usual refuge of half-starved wits, scribbling for bread; and published a great variety of poems, letters, dialogues, &c. full of humour and erudition, but often indelicate. Though a good-natured man, he had one pernicious quality, which was, rather to lose his friend than his joke.

Towards the latter end of Tom Brown's life, we are informed by Mr Jacob, that he was in favour with the earl of Dorset, who invited him to dinner on a Christmas day, with Mr Dryden and some other gentlemen celebrated for their ingenuity, (as his lordship's custom was); when Mr Brown to his agreeable surprise found a bank note of 50*l.* under his plate, and Mr Dryden at the same time was presented with another of 100*l.* Mr Brown died in the year 1704; and was interred in the cloyster of Westminster abbey, near the remains of Mrs Behn, with whom he was intimate in his lifetime. His works have been printed both in 8vo and 12mo, making 4 vols.

BROWN (Dr John), a clergyman of the church of England, and an ingenious writer, was born at Roth-

Brown. bury in Northumberland in November 1715. His father John Brown, was a native of Scotland, of the Browns of Colstown near Haddington; and at the time of his son's birth was curate to Dr Thomlinson rector of Rothbury. He was afterwards collated to the vicarage of Wigton in Cumberland; to which place he carried his son, who received the first part of his education there. Thence he was removed in 1732 to the university of Cambridge, and entered of St John's college, under the tuition of Dr Tunstall. After taking the degree of bachelor of arts with great reputation (being amongst the list of wranglers, and his name at the head of the list), he returned to Wigton, and received both deacon's and priest's orders from Sir George Fleming bishop of Carlisle. Here he was appointed by the dean and chapter a minor canon and lecturer of the cathedral church. For some years he lived here in obscurity; and nothing farther is known concerning him, than that in 1739 he went to Cambridge to take his degree of master of arts. In 1745 he distinguished himself as a volunteer in the king's service, and behaved with great intrepidity at the siege of Carlisle. After the defeat of the rebels, when several of them were tried at the assizes held at Carlisle in the summer of 1746, he preached at the cathedral church of that city two excellent discourses, on the mutual connection between religious truth and civil freedom; and between superstition, tyranny, irreligion, and licentiousness.

Mr Brown's attachment to the royal cause and to the Whig party procured him the friendship of Dr Osbaldeston, who was the only person that continued to be his friend through life; the peculiarities of Mr Brown's temper, or some other cause, having produced quarrels with every one else. When Dr Osbaldeston was advanced to the see of Carlisle, he appointed Mr Brown to be one of his chaplains.

It was probably in the early part of his life, and during his residence at Carlisle, that Mr Brown wrote his poem intitled *Honour*, inscribed to the lord viscount Londsdale. Our author's next poetical production was his *Essay on Satire*; and which was of considerable advantage to him both in point of fame and fortune. It was addressed to Dr Warburton; to whom it was so acceptable, that he took Mr Brown into his friendship, and introduced him to Ralph Allen, Esq; of Prior Park, near Bath, who behaved to him with great generosity, and at whose house he resided for some time.

In 1751 Mr Brown published his "Essays on the Characteristics of Lord Shaftesbury, &c." dedicated to Ralph Allen, Esq. This was received with a high degree of applause, though several persons attempted to answer it. In 1754 our author was promoted by the earl of Hardwicke to the living of Great Horkeley in Essex.

In 1755, our author took the degree of doctor of divinity at Cambridge. This year he published his tragedy of Barbarossa; which, under the management of Mr Garrick, was acted with considerable applause; but when it came to be published, it was exposed to a variety of strictures and censures. This tragedy introduced our author to the acquaintance of that eminent actor; by whose favour he had a second tragedy, named *Athelstan*, represented

at Drury-Lane play-house. This was also well received by the public; but did not become so popular as Barbarossa, nor did it preserve so long the possession of the stage.

In 1757 appeared his famous "Estimate of the Manners and Principles of the Times." The reception which this work met with from the public was very flattering to his vanity; no fewer than seven editions of it having been printed in little more than a year. The chief design of this performance was to show, that a vain, luxurious, and selfish effeminacy in the higher ranks of life marked the character of the age; and to point out the effects and sources of this effeminacy. Several antagonists appeared, some of whom were neither destitute of learning nor ingenuity; though Dr Brown himself asserted that Mr Wallace, a clergyman of Edinburgh, was the only candid and decent adversary that appeared against him. The testimony given by M. de Voltaire to the effect which the Estimate had on the conduct of the nation, is very honourable to Dr Brown. "When Marshal Richelieu, in 1756, (says that celebrated writer), laid siege to Port Mahon, the capital of Minorca, the British sent out admiral Byng with a strong naval force, to drive the French fleet off the island, and raise the siege. At this time there appeared a book, entitled *An Estimate of the Manners of the Times*; of which there was no less than five editions printed off in London in the space of three months. In this treatise the author proves that the English nation was entirely degenerated;—that it was near its ruin;—that its inhabitants were no longer so robust and hardy as in former times;—and that its soldiers had lost their courage. —This work roused the sensibility of the English nation, and produced the following consequences. They attacked, almost at one and the same time all the sea coasts of France, and her possessions in Asia, Africa, and America." In 1758, our author published the second volume of his Estimate of the Manners and Principles of the Times; containing additional remarks on the ruling manners and principles, and on the public effects of those manners and principles. The design of this volume was, to retract such mistakes as he thought he had committed; to prove such points as were affirmed and not proved; to illustrate those particulars which were hinted, but not explained; to reply to such capital objections as had been made to his general system by preceding writers on the same subject; and to display the consequences which might be fairly deduced from his principles, and through a designed brevity were omitted in the first volume. But it unfortunately happened that the Doctor's self-opinion, which gave so much offence in his first volume, broke out in the second with still greater violence. The consequence of this was, that he exposed himself to general censure and dislike; and the prejudices against him occasioned the real excellencies of the work to be very much overlooked. The periodical critics, whom he had gone needlessly out of his way to abuse, treated him with uncommon severity; and such a multitude of antagonists rose against him, so many objections were urged upon him, by friends as well as enemies, that he seems to have been deeply impressed, and to have retired for a while into the country. From the country it was

Brown. that he wrote, in a series of letters to a noble friend, "An Explanatory Defence of the Estimate of the Manners and Principles of the Times; being an appendix to that work, occasioned by the clamours lately raised against it among certain ranks of men."

But while Dr Brown thus distinguished himself as a political writer, he was advanced to no higher dignity in the church: nay, on some disgust, it is supposed, he resigned his living in Essex: however, in recompence, Dr Osbaldeston procured him the rectory of St Nicholas in Newcastle on Tyne. He would probably have received further favours from this prelate, had not the latter died soon after his promotion to the see of London.

In 1760 our author published an Additional Dialogue of the Dead, between Pericles and Aristides; being a sequel to a dialogue of lord Lyttleton's between Pericles and Cosmo. One design of this additional dialogue was to vindicate the measures of Mr Pitt, against whose administration lord Lyttleton had been supposed to have thrown out some hints. Our author's next publication, in 1763, was "The cure of Saul," a sacred ode; which was followed in the same year by "A Dissertation on the Rise, Union, and Power, the Progressions, Separations, and Corruptions of Poetry and Music." This is one of the most pleasing of Dr Brown's performances, and abounds with a variety of critical discussions. A number of strictures on this piece were published; and the Doctor defended himself in a treatise intitled *Remarks on some Observations on Dr Brown's Dissertations on Poetry and Music*. In 1764 our author published, in octavo, "The History of the Rise and Progress of Poetry through its several Species;" which is no more than the substance given in the dissertation abovementioned. The same year Dr Brown published a volume of sermons, dedicated to his patron Dr Osbaldeston bishop of London; but most, if not all, of these, had been separately published, excepting the first three, which were on the subject of education. In the beginning of the year 1765, the Doctor again returned to politics, and published "Thoughts on Civil Liberty, Licentiousness, and Faction." At the conclusion of this work the author prescribed a code of education, upon which Dr Priestley made remarks at the end of his "Essay on the Course of a liberal Education for civil and active Life." The same year he published a sermon "On the Female Character and Education," preached on the 16th of May 1765, before the guardians of the asylum for deserted female orphans. His last publication was in 1766, "A Letter to the Rev. Dr Lowth, occasioned by his late Letter to the Right Rev. Author of the Divine Legation of Moses." This was occasioned by Dr Lowth's having *clearly*, though *indirectly*, pointed at Dr Brown as one of the extravagant adulators and defenders of bishop Warburton. Besides these works, Dr Brown published a poem on Liberty, and two or three anonymous pamphlets. At the end of several of his later writings, he advertised his design of publishing "Christian Principles of Legislation," but was prevented from executing it by his death; though the work appears to have been completed.

We come now to the concluding events of our author's life; concerning which the following is the most authentic intelligence that can be procured. Whilst

Brown. Dr Dumaresq resided in Russia in the year 1765, to which he had been invited the preceding year to give his advice and assistance for the establishment and regulation of several schools which her Imperial majesty intended to erect, he received a letter from a lady of distinguished character in England, recommending to him Dr Brown as a proper correspondent on this occasion. Dr Dumaresq then wrote a letter to Dr Brown, telling him the occasion of his application, and the difficulties that occurred. He had imagined that nothing more would be wanted of him than what concerned classical learning, and a general foundation for the sciences; as that had been the common introduction to every kind of useful knowledge in the western parts of Europe. But on his arrival he found that a much more extensive scheme was required; and such as extended not only to learning properly so called, but also to matters military and naval, civil and commercial. But having stated his difficulties in executing this plan to Dr Brown, the latter proposed a scheme still more extensive; and which was no less than a general plan of civilization throughout the whole Russian empire. In this plan, however, though it showed very enlarged ideas and great strength of mind, there were several defects which rendered it, as Dr Brown himself was afterwards convinced, impracticable. He had laid greater stress upon the support, energy, and efficacy of absolute power in princes when exerted in a good cause, than experience would warrant; and he was ready to imagine that the bulk of the Russian nation, just emerging out of barbarism, was like a *tabula rasa*, upon which any characters might be written. At last the Doctor's letter was laid before the empress, who was so pleased with it that she immediately invited him to Russia. He accepted the invitation, and procured his Majesty's leave to go; 1000*l.* were ordered for his expence, and he actually received 200*l.* But when he was on the point of setting out, an attack of the gout and rheumatism, to which he had been all his lifetime subject, so impaired his health, that his friends dissuaded, and at last succeeded in preventing him from going. The money was returned, excepting 97*l.* 6*s.* which had been expended in necessities for the intended journey. But though he thus declined the journey, a long letter which he afterwards wrote to the empress, and which does honour to his abilities, shows that he had not abandoned his intention of being serviceable. The affair, however, taking in all its circumstances, did no doubt greatly agitate his mind; and his being obliged at length to give up the journey, must have been no small disappointment to a man of his sanguine expectations. This disappointment concurring with the general state of his health, and perhaps the recollection of some other failures that had happened, was followed by a dejection of spirits; in consequence of which he put an end to his life on the 23d of September 1766, in the 51*st* year of his age. On the morning of that day his servant came into his bed-chamber, and asked him what sort of a night he had had? to which he replied, "A pretty good one." The servant having quitted the bed-side for a few minutes, heard a noise in the Doctor's throat, which he imagined to be owing to some obstruction occasioned by phlegm. Going to assist his master, he found him speechless, and bleeding profuse-

Brown. ly, having cut the jugular vein with a razor; and this he had done so effectually, that death speedily ensued. Such was the unhappy end of this ingenious writer; but the manner of it, when some previous circumstances of his life are understood, will cast no stain on his character. He had a tendency to insanity in his constitution; and, from his early life, had been subject at times to some disorder in his brain, at least to melancholy in its excess. Mrs Gilpin of Carlisle, soon after Dr Brown's decease, wrote in the following terms in a letter to a friend. "His distemper was a frenzy, to which he had by fits been long subject; to my own knowledge, above 30 years. Had it not been for Mr Farish frequently, and once for myself, the same event would have happened to him long ago. It was no premeditated purpose in him; for he abhorred the thought of self-murder; and in bitterness of soul expressed his fears to me, that one time or another some ready mischief might present itself to him, at a time when he was wholly deprived of his reason."

BROWN (Simon), a dissenting minister, whose uncommon talents and singular misfortunes intitle him justly to a place in this work, was born at Shepton Mallet in Somersetshire, 1680. Grounded and excelling in grammatical learning, he early became qualified for the ministry, and actually began to preach before he was twenty. He was first called to be a pastor at Portsmouth, and afterwards removed to the Old Jewry, where he was admired and esteemed for a number of years. But the death of his wife and only son, which happened in 1723, affected him so as to deprive him of his reason; and he became from that time lost to himself, to his family, and to the world: his congregation at the Old Jewry, in expectation of his recovery, delayed for some time to fill his post; yet at length all hopes were over, and Mr Samuel Chandler was appointed to succeed him in 1725. This double misfortune affected him at first in a manner little different from distraction, but afterwards sunk him into a settled melancholy. He quitted the duties of his function, and would not be persuaded to join in any act of worship, public or private. Being urged by his friends for a reason of this extraordinary change, at which they expressed the utmost grief and astonishment, he told them, after much importunity, that "he had fallen under the sensible displeasure of God, who had caused his rational soul gradually to perish, and left him only an animal life in common with brutes: that, though he retained the human shape, and the faculty of speaking in a manner that appeared to others rational, he had all the

Brown. while no more notion of what he said than a parrot; that it was therefore profane in him to pray, and incongruous to be present at the prayers of others:" and, very consistently with this, he considered himself no longer as a moral agent, or subject of either reward or punishment. In this way of thinking and talking he unalterably and obstinately persisted to the end of his life; though he afterwards suffered, and even requested, prayers to be made for him. Some time after his secession from the Old Jewry, he retired to Shepton Mallet, his native place; and though in this retirement he was perpetually contending that his powers of reason and imagination were gone, yet he was as constantly exerting both with much activity and vigour. He amused himself sometimes with translating parts of the ancient Greek and Latin poets into English verse: he composed little pieces for the use of children; An English Grammar and Spelling-Book; An Abstract of the Scripture-History, and A Collection of Fables, both in metre; and with much learning he brought together into a short compass all the *Themata* of the Greek and Latin tongues, and also compiled a Dictionary to each of those works, in order to render the learning of both these languages more easy and compendious. Of these performances none have been made public. But what showed the strength and vigour of his understanding, while he was daily bemoaning the loss of it, were two works composed during the two last years of his life, in defence of Christianity, against Woolston and Tindal. He wrote an answer to Woolston's fifth Discourse on the Miracles of our Saviour, entitled, A fit rebuke for a ludicrous Infidel, with a preface concerning the prosecution of such writers by the civil power. The preface contains a vigorous plea for liberty, and is strongly against prosecutions in matters of religion; and in the Answer, Woolston is as well managed as he was by any of his refuters, and more in his own way too. His book against Tindal was called, A Defence of the Religion of Nature and the Christian Revelation, against the defective account of the one and the exceptions against the other, in a book entitled, Christianity as old as the Creation; and it is allowed to be as good a one as that controversy produced. He intended to dedicate it to queen Caroline; but as the unhappy state of his mind appeared in the dedication, some of his friends very wisely suppressed it, as sure to defeat the use and intent of his work. The copy however was preserved, and is subjoined in the note (A), as much too great a curiosity to be suppressed. The above pieces were published.

(A) Madam, Of all the extraordinary things that have been rendered to your royal hands since your first happy arrival in Britain, it may be boldly said, what now bespeaks your majesty's acceptance is the chief. Not in itself indeed: it is a trifle unworthy your exalted rank, and what will hardly prove an entertaining amusement to one of your majesty's deep penetration, exact judgment, and fine taste; but on account of the author, who is the first being of the kind, and yet without a name. He was once a man, and of some little name; but of no worth, as his present unparalleled case makes but too manifest: for, by the immediate hand of an avenging God, his very thinking substance has for more than seven years been continually wasting away, till it is wholly perished out of him, if it be not utterly come to nothing. None, no, not the least remembrance of its very ruins remains; not the shadow of an idea is left; nor any sense, so much as one single one, perfect or imperfect, whole or diminished, ever did appear to a mind within him, or was perceived by it. Such a present from such a thing, however worthless in itself, may not be wholly unacceptable to your majesty, the author being such as history cannot parallel; and if the fact, which is real, and no fiction or wrong conceit, obtains credit,

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ed by Mr, afterwards Dr W. Harris, who, in an advertisement to the reader, recommends the afflicted case of the author, under a deep and peculiar melancholy, to the compassion and prayers of all his friends, and every serious Christian. Mr Brown survived the publication of this last work a very short time. A complication of distempers, contracted by his sedentary life (for he could not be prevailed on to refresh himself with air and exercise), brought on a mortification, which put a period to his labours and sorrows about the latter end of 1732. He was unquestionably a man of uncommon abilities and learning: his management of Woolston showed him to have also vivacity and wit: and, notwithstanding that strange conceit which possessed him, it is remarkable that he never appeared feeble or absurd, except when the object of his frenzy was before him. Besides the two pieces above mentioned, and before he was ill, he had published some single Sermons, together with a Collection of Hymns and Spiritual Songs. He left several daughters.

Brown (Isaac Hawkins), an ingenious English poet, was born at Burton upon Trent, Staffordshire, Jan. 21. 1705-6; of which place his father was the minister. He received his grammatical institution first at Lichfield, then at Westminster; whence, at sixteen years of age, he was removed to Trinity college, Cambridge, of which his father had been fellow. He remained there till he had taken a master of arts degree; and about 1727, settled himself in Lincoln's Inn, where he seems to have devoted more of his time to the Muses than to the law. Soon after his arrival there, he wrote a poem on *Design and Beauty*, which he addressed to Mr Highmore the painter, for whom he had a great friendship. Several other poetical pieces were written here, and particularly his *Pipe of Tobacco*. This is in imitation of Cibber, Ambrose, Phillips, Thomson, Young, Pope, and Swift, who were then all living; and is reckoned one of the most pleasing and popular of his performances. In 1743-4, he married the daughter of Dr Trinnell, archdeacon of Leicester.

He was chosen twice to serve in parliament, first in 1744, and afterwards in 1748; both times for the borough of Wenlock in Shropshire, near which place he possessed a considerable estate, which came from his maternal grandfather, Isaac Hawkins, Esq. In 1754, he published what has been deemed his capital work, *De Animi Immortalitate*, in two books; in which, besides a most judicious choice of matter and arrangement, he is thought to have shown himself not a servile but happy imitator of Lucretius and Virgil. The universal applause and popularity of this poem produced several English translations of it in a very short time; the best of which is that by Soame Jenyns, Esq; printed in his *Miscellanies*. Mr Brown intended to have added a third part, but went no farther than to leave a fragment. This excellent person died, after a lingering illness, in 1760, aged 55. In 1768, the present Hawkins Brown, Esq; obliged the public with an elegant edition of his father's poems, in large octavo; to which is prefixed a print of the author, from a painting of Mr Highmore, engraved by Ravenet.

Brown (Sir William), a noted physician and multifarious writer, was settled originally at Lynn in Norfolk, where he published a translation of Dr Gregory's Elements of Catoptrics and Dioptrics; to which he added, 1. A Method for finding the Foci of all Spectula, as well as Lens's universally; as also magnifying or lessening a given Object by a given Speculum or Lens, in any assigned Proportion. 2. A Solution of those Problems which Dr Gregory has left undemonstrated. 3. A particular Account of Microscopes and Telescopes, from Mr Huygens; with the Discoveries made by Catoptrics and Dioptrics. Having acquired a competence by his profession, he removed to Queen's Square, Ormond Street, London, where he resided till his death. By his lady, who died 1763, he had one daughter, grandmother to the present Sir Martin-Brown Folkes, bart. A great number of lively essays, both in prose and verse, the production of his pen, were printed and circulated among his friends. The active

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credit, it must be recorded as the most memorable, and indeed astonishing, event in the reign of George II. that a tract, composed by such a thing, was presented to the illustrious Caroline: his royal consort needs not be added; fame, if I am not misinformed, will tell that with pleasure to all succeeding times. He has been informed, that your majesty's piety is as genuine and eminent as your excellent qualities are great and conspicuous. This can indeed be truly known to the great Searcher of hearts only. He alone, who can look into them, can discern if they are sincere, and the main intention corresponds with the appearance; and your majesty cannot take it amiss if such an author hints, that his secret approbation is of infinitely greater value than the commendation of men, who may be easily mistaken, and are too apt to flatter their superiors. But, if he has been told the truth, such a case as his will certainly strike your majesty with astonishment; and may raise that commiseration in your royal breast, which he has in vain endeavoured to excite in those of his friends: who, by the most unreasonable and ill-founded conceit in the world, have imagined, that a thinking being could for seven years together live a stranger to its own powers, exercises, operations, and state; and to what the great God has been doing in it and to it. If your majesty, in your most retired address to the King of kings, should think of so singular a case, you may perhaps make it your devout request, that the reign of your beloved sovereign and consort may be renowned to all posterity by the recovery of a soul now in the utmost ruin, the restoration of one utterly lost, at present amongst men. And should this case affect your royal breast, you will recommend it to the piety and prayers of all the truly devout who have the honour to be known to your majesty: many such doubtless there are, though courts are not usually the places where the devout resort, or where devotion reigns. And it is not improbable, that multitudes of the pious throughout the land may take a case to heart, that under your majesty's patronage comes thus recommended. Could such a favour as this restoration be obtained from heaven by the prayers of your majesty, with what transport of gratitude would the recovered being throw himself at your majesty's feet, and, adoring the divine power and grace, profess himself, Madam, your majesty's most obliged and dutiful servant,

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part taken by Sir William Brown in the contest with the licentiates, 1768, occasioned his being introduced by Mr Foote in his *Devil upon Two Sticks*. Upon Foote's exact representation of him with his identical wig and coat, tall figure, and glass stiffly applied to his eye, he sent him a card complimenting him on having so happily represented him; but as he had forgot his muff, he had sent him his own. This good-natured method of resenting disarmed Foote. He used to frequent the annual ball at the ladies boarding-school, Queen Square, merely as a neighbour, a good-natured man, and fond of the company of sprightly young folks. A dignitary of the church being there one day to see his daughter dance, and finding this upright figure stationed there, told him he believed he was *Hernippus redivivus* who lived *anhelitu puellarum*. When he lived at Lynn, a pamphlet was written against him: he nailed it up against his house-door. At the age of 80, on St Luke's day, 1771, he came to Batson's coffee-house in his laced coat and band, and fringed white gloves, to show himself to Mr Crosby, then lord mayor. A gentleman present observing that he looked very well, he replied, *he had neither wife nor debts*. He died in 1774, at the age of 82; and by his will he left two prize-medals to be annually contended for by the Cambridge poets.

BROWNS, among dyers, painters, &c. a dusky colour inclining towards redness. Of this colour there are various shades or degrees, distinguished by different appellations; for instance, Spanish-brown, a sad-brown, a tawney-brown, the London brown, a clove-brown, &c.

Spanish brown is a dark dull red, of a horse-flesh colour. It is an earth; and is of great use among painters, being generally used as the first and priming colour that they lay upon any kind of timber-work in house-painting. That which is of the deepest colour, and freest from stones, is the best. Though this is of a dirty brown colour, yet it is much used, not to colour any garment, unless it be an old man's gown; but to shadow vermilion, or to lay upon any dark ground behind a picture, or to shadow yellow berries in the darkest places, when you want lake, &c. It is best and brightest when burnt in the fire till it be red-hot; although, if you would colour any hare, horse, dog, or the like, it should not be burnt: but, for other uses, it is best when it is burnt; as for colouring wood, posts, bodies of trees, or any thing else of wood, or any dark ground of a picture.

BROWNIA, in botany; a genus of the endecandria order, belonging to the monadelphia class of plants. The calyx is bifid, the corolla double, the exterior quinquefid, and the interior pentapetalous. There is but one species, the coccinea, a native of the West Indies.

BROWNISTS, a religious sect, which sprung out of the Puritans, towards the close of the 16th century: their leader, Robert Brown, wrote divers books in their behalf, was a man of good parts, and some learning. He was born of a good family in Rutlandshire, and related to the lord-treasurer Burleigh. He had been educated at Cambridge; but first published his notions, and began to inveigh openly against the discipline and ceremonies of the church, at Norwich, in the year 1580, from which time he underwent di-

vers persecutions from the bishops; inasmuch that he boasted he had been committed to no less than 32 prisons, in some of which he could not see his hand at noon-day. At length, with his congregation, he left the kingdom, and settled at Middleburgh in Zealand; where they obtained leave of the states to worship God in their own way, and form a church according to their own model; which they had not long done before this handful of men, just delivered from the severities of the bishops, began to differ among themselves, and crumble into many parties, that Brown their pastor grew weary of his office; and, returning to England in 1589, renounced his principles of separation, and was preferred to the rectory of a church in Northamptonshire, and died, after leading a very idle and dissolute life, in 1630.

The revolt of Brown was attended with the dissolution of the church at Middleburgh; but the seeds of Brownism, which he had sown in England, were so far from being destroyed, that Sir Walter Raleigh, in a speech in 1592, computes no less than 20,000 followers of it. The occasion of their separation was not any fault they found with the faith, but only with the discipline and form of government of the other churches in England. They equally charged corruption on the episcopal form, and on that of the presbyterians, by consistories, classes, and synods: nor would they join with any other reformed church, because they were not assured of the sanctity and regeneration of the members that composed it; on account of the toleration of sinners, with whom they maintained it an impiety to communicate. They condemned the solemn celebration of marriages in the church; maintaining, that matrimony being a political contract, the confirmation thereof ought to come from the civil magistrate. They would not allow any children to be baptized of such as were not members of the church, or of such as did not take sufficient care of those baptized before. They rejected all forms of prayer; and held that the Lord's prayer was not to be recited as a prayer, being only given for a rule or model whereon all our prayers are to be formed. The form of church-government which they established was democratical. When a church was to be gathered, such as desired to be members of it made a confession of it, and signed a covenant, by which they obliged themselves to walk together in the order of the gospel. The whole power of admitting and excluding members, with the decision of all controversies, was lodged in the brotherhood. Their church-officers were chosen from among themselves, for preaching the word, and taking care of the poor, and separated to their several offices by fasting, prayer, and imposition of hands of some of the brethren. But they did not allow the priesthood to be any distinct order, or to give any indelible character. As the vote of the brotherhood made a man a minister, and gave him authority to preach the word and administer the sacraments among them, so the same power could discharge him from his office, and reduce him to a mere layman again. And as they maintained the bounds of a church to be no greater than what could meet together in one place and join in one communion, so the power of these officers was prescribed within the same limits. The minister or pastor of one church could not administer the Lord's supper

Brown supper to another, nor baptize the children of any but those of his own society. Any lay-brother was allowed the liberty of prophesying, or of giving a word of exhortation to the people; and it was usual for some of them, after sermon, to ask questions, and reason upon the doctrines that had been preached. In a word, every church on the Brownists model is a body-corporate, having full power to do every thing which the good of the society requires, without being accountable to any classis, synod, convocation, or other jurisdiction whatever. Most of their discipline has been adopted by the Independents, a party which afterwards arose from among the Brownists. The laws were executed with great severity on the Brownists; their books were prohibited by queen Elizabeth, and their persons imprisoned, and many of them were hanged. The ecclesiastical commission and the star-chamber, in fine, distressed them to such a degree, that they resolved to quit their country. Accordingly, many families retired and settled at Amsterdam, where they formed a church, and chose Mr Johnson their pastor; and after him Mr Ainsworth, author of the learned commentary on the Pentateuch. Their church flourished near 100 years. See INDEPENDENTS.

BROWN, the name of a serviceable kind of sprite, who, according to a superstitious notion formerly prevalent in the Hebrides and Highlands of Scotland (as well as among the country people in England, where he had the name of *Robin Goodfellow*), was wont to clean the houses, helped to churn, threshed the corn, and would belabour all that pretended to make a jest of him. He was represented as stout and blooming, had fine long flowing hair, and went about with a wand in his hand. He was the very counter part of Milton's *Lubber Fiend*, who

Tells how the drudging goblin swet,
To earn his cream-bowl duly fet,
When in one night, ere glimpse of morn,
His shadowy flail hath thresh'd the corn,
That ten day-lab'ers could not end;
Then lies him down the Lubber Fiend,
And, stretch'd along the chimney's length,
Basks at the fire his hairy strength.

BROWSE, the tops of the branches of trees, whereon beasts feed. This is sometimes also called *brooze* and *bruttle*; probably from the French *brouet*, which signifies the same thing.

BROWSE more properly denotes the food which deer find in young copses, continually sprouting anew.

BRUCE (Robert), son of the earl of Carrick, being competitor with Baliol for the crown of Scotland, lost it by the arbitration of Edward I. of England, for generously refusing to hold the crown of Scotland as depending on him, which his ancestors had left him independent. But Baliol having afterward broke his agreement with Edward, Bruce was easily persuaded by that king to side with him against Baliol, upon promise that he would settle him on the throne. Having contributed much to the breaking of Baliol's party, he demanded the accomplishment of king Edward's promise, who is said to have given him this answer: "What! have I nothing else to do but to conquer kingdoms for you?" However, he recovered his crown, defeated the English in several battles, raised

the glory of the Scots, and extended their dominions. See *History of SCOTLAND*.

BRUCHSAL, a town of Germany, in the palatinate of the Rhine, and bishopric of Spire, situated on the river Satz, in E. Long. 8. 30. N. Lat. 49. 15.

BRUCHUS, in zoology, a genus of insects belonging to the order of coleoptera. The feelers are filiform, and gradually increase in thickness. There are seven species, viz. 1. The *pisi*, has grey elytra interspersed with white spots, and a white fundament with two black spots. It is a native of North America, and destroys whole fields of pease: It is now found in several of the southern parts of Europe; where it does great injury to the corn. 2. The *theobromæ*, with whitish elytra interspersed with black points. It frequents the *theobromæ* or chocolate-trees in the East Indies. 3. The *gleditsiæ*, with striated elytra of the same length with the belly, a pitch-coloured body, and green feelers. It is a native of America. 4. The *baëtris*, with smooth elytra, a hoary body, and the hind part of the thighs oval. It frequents the palm-trees of Jamaica. 5. The *granarius*, has black elytra; the fore-feet are red, and the hind-feet are dentated. It frequents the seeds of plants in different parts of Europe. 6. The *feminarius* is black, with the base of the feelers and fore-feet testaceous. It is about the size of a louse, and a native of Europe. 7. The *pecticornis*, with comb-shaped feelers longer than the body. It is a native of Barbary and China.

BRUEGHEL. See **BREUGHEL**.

BRUGES, a city of the Austrian Netherlands, capital of the territory of Bruges, with a bishop's see. It is seated in a plain eight miles from the sea; and has a great number of canals, made for the benefit of trade, one of which leads to Ghent, another to Ostend, another to Sluys, to Newport, to Furnes, to Ypres, and to Dunkirk, which you may reach in a day in the summer-time. All the waters about Bruges are without any current; but they may be changed in half an hour's time, by opening the sluices, and letting the water run into the sea. There are several bridges about the city, and that which was built in 1739 of free stone is very stately.

Bruges was in a very flourishing condition upwards of 200 years ago, and every nation had a consul here-in for the maintenance of their rights and privileges; but since the enlargement of Amsterdam and Antwerp, the trade is diminished, and its inhabitants are not numerous enough for so large a place. However, there are many rich merchants, and a chamber for trade. There are several fine churches; in the first rank of which is the cathedral, whose rich ornaments and treasure deserve notice. The finest square in the city is the great market, in which stand the halls, with public galleries, and a large court in the middle, and on one of its sides a high steeple supported only with four pillars. It is full of bells, with the most harmonious chimes in all the country. On the side of the great square there is a structure which serves for a public magazine to lay cloth in. It is built on a canal, and supported by pillars in such a manner, that small vessels can pass under it, to cross the city from the canal of Ostend to that of Ghent.

The square where the Wednesday's market is kept is very fine; for it contains several walks between two

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rows of trees, and a new guard-house in the middle. The Burg is a large square, in which is the town-house, built in the Gothic manner, and adorned with a variety of figures of the ancient counts and countesses of Flanders. In the same square there are several other public buildings. The church dedicated to the Virgin Mary is very fine, with a high steeple, which serves as a sea-mark for the ships that come to Ostend; on the inside are two tombs of copper gilt, of an extraordinary magnificence. Besides the cathedral and two collegiate churches, there are five parish churches, fourteen chapels, and twelve convents for men and women. There are a great many alms-houses and hospitals, one of which is called the *school of Bovyards*, where there are about 180 boys, some of which are brought up to learning, others to trades, according to their genius. Their habit is cloth, and half of them wear blue and half red, with a black bonnet. There is also a school for poor girls, to the number of 120, clothed with red or blue. In short, there is no place in the Low Countries where they take more care of widows and orphans.

It is remarkable that the knights of the golden fleece were instituted in this city in 1430, when the marriage of Philip the Good was celebrated with Elizabeth princess of Portugal. The parts about the city, which belong to it, are called *Franc of Bruges*, and contain 37 villages, and enjoy perfect liberty, according to the tenor of their freedom. The fortifications of Bruges are but trifling, inasmuch that in the time of war they always yield to the strongest party. It is eight miles east of Ostend, 24 north-east of Ghent, and 46 west of Antwerp. E. Long. 3. 5. N. Lat. 51. 11.

BRUGES (John of), (real name, John van Eick), a celebrated Flemish painter, and the first who discovered the method of painting in oil, flourished in the 15th century. He found in the course of his chemical experiments (to which science he also applied himself), that, by grinding colours with lintseed or nut-oil, he could form them into a solid body which would resist the water, and not need the varnish used in painting in water-colours or in fresco. He presented the first picture painted in this manner to Alphonfus I. king of Naples, who was much pleased with it.

BRUIN (John de), professor of natural philosophy and mathematics at Utrecht, was born at Gorcum in 1620. He had uncommon skill in dissecting animals, and was a great lover of experiments. He made also observations in astronomy. He published dissertations *De vi altrice*; *De corporum gravitate et levitate*; *De cognitione Dei naturali*; *De lucis causa et origine*, &c. He had a dispute with Isaac Vossius, to whom he wrote a letter printed at Amsterdam in 1663; wherein he criticises Vossius's book *De natura et proprietate lucis*; and strenuously maintains the hypothesis of Descartes. He died in 1675, after he had been professor 23 years: and his funeral oration was pronounced four days after by M. Grævius.

BRUISE, in surgery, the same with CONTUSION.

BRUMALES PLANTÆ, in botany, (from *bruma* winter); plants which flower in our winter: common about the Cape.

BRUMALIA, in Roman antiquity, festivals of Bacchus celebrated twice a-year; the first on the 12th

of the kalends of March, and the other on the 18th of the kalends of November. They were instituted by Romulus, who during these feasts used to entertain the senate. Among other heathen festivals which the primitive Christians were much inclined to observe, Tertullian mentions the *brumæ* or *brumalia*.

BRUMOY (Peter), a learned Jesuit born at Rouen in 1668, distinguished himself in his youth by his talents for the belles lettres; and during his whole life was beloved for his probity, his virtue, and the goodness of his heart. He wrote many works, the most considerable of which is his *Theatre of the Greeks*. He died at Paris in 1742.

BRUN (Anthony le), an ambassador of Spain, famous for his skill in negotiating, was of an ancient and noble family, and born at Dole in the year 1600. He was attorney-general in the parliament of Dole; during which time he had a hand in all the state negotiations which concerned the provinces. He was sent afterwards by Philip IV. to the diet of Ratibon, and from thence to the court of the emperor Ferdinand III. He was one of the plenipotentiaries of his Catholic majesty, at the conferences of Munster held in 1643; where, though all the other plenipotentiaries took place of him, yet it is said that he far exceeded them all in capacity. The king of Spain was particularly beholden to him for the peace which the Dutch made at Munster, exclusively of France; and the intriguing turn which he showed upon this occasion made him dreaded ever after by French ambassadors. He was a man of letters, as well as of politics; and therefore employed his pen as well as his tongue in the service of his master. He died, at the Hague, during his embassy, in the year 1654.

BRUN (Charles le), was descended of a family of distinction in Scotland, and born in the year 1619. His father was a statuary by profession. He discovered, it is said, such an early inclination for painting, that at three years of age he used to take coals, and design on the hearth and sides of the chimney, only by the light of the fire; and at 12 he drew the picture of his uncle so well, that it still passes for a fine piece. His father being employed in the gardens at Sequier, and having brought his son along with him, the chancellor of that name took a liking to him, and placed him with Simon Vouet, an eminent painter. He was afterwards sent to Fountainbleau, to take off some of Raphael's pieces. He sent him next to Italy, and supported him there for six years. Le Brun, in his return, met with the celebrated Poussin, by whose conversation he greatly improved himself in his art, and contracted a friendship with him which lasted as long as their lives. A painting of St Stephen, which he finished in 1651, raised his reputation to the highest pitch. Soon after this, the king, upon the representation of Mr Colbert, made him his first painter, and conferred on him the order of St Michael. His majesty employed two hours every day to see him work, while he was painting the family of Darius at Fountainbleau. About the year 1662, he began his five large pieces of the history of Alexander the Great, in which he is said to have set the actions of that famous conqueror in a more glorious light than Quintus Curtius hath done in his history. He procured several advantages for the royal academy of painting and sculpture at Paris, and formed the plan

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of another for the students of his own nation at Rome. There was scarce any thing done for the advancement of the fine arts in which he was not consulted. It was thro' the interest of M. Colbert that the king gave him the direction of all his works, particularly of his royal manufactory at the Gobelins, where he had a handsome house with a genteel salary assigned to him. He was also made director and chancellor of the royal academy, and showed the greatest zeal to encourage the fine arts in France. He was endowed with a vast inventive genius, which extended itself to arts of every kind. He was well acquainted with the manners and history of all nations. Besides his extraordinary talents, his behaviour was so genteel, and his address so pleasing, that he attracted the regard and affection of the whole court of France, where, by the places and pensions conferred on him by the king's liberality, he made a very considerable figure. Le Brun was the author of two treatises; one on physiognomy, and the other on the different characters of the passions. He died at Paris in 1690.

The talent of this painter, except for landscapes, was universal. He was not indeed admired for his colouring, nor for his skill in the distribution of his lights and shadows; but for a good gusto of design, an excellent choice of attitudes, an agreeable management of his draperies, a beautiful and just expression, and a strict observance of decorum. In fine, his compositions demand the attention and admiration of the nicest judges. The pieces that gained him greatest reputation were, besides what we have already mentioned, those which he finished at Fountainbleau, the great stair-case at Versailles, but especially the grand gallery there, which was the last of his works, and is said to have taken him up 14 years.

BRUNDISIUM, or **BRUNDISIUM**, (anc. geog.), a town of Calabria, with the best harbour in Italy. It was a very ancient town, and belonged originally to the Salentines; but was taken by the Romans about 256 years before Christ. Now *Brindisi*; which see.

BRUNIA, in botany; a genus of the monogynia order, belonging to the pentandria class of plants. The flowers are aggregate or clustered; the filaments inserted into the heels of the petals; the stigma is bifid; the seeds are solitary, and the capsule is bilocular. There are eight species.

BRUNO (Jordano), an atheistical writer, was born at Nolo in the kingdom of Naples; and about the year 1582 began to call in question some of the tenets of the Romish church, which occasioned his retiring to Geneva: but after two years stay there, he expressed his aversion to Calvinism in such a manner that he was expelled the city. After having staid some time at Lyons, Thoulouse, and Paris, he came to London, and continued two years in the house of Mr Castlneau the French ambassador. He was very well received by queen Elizabeth and the politer part of the court. His principal friends were Sir Philip Sidney and Sir Fulk Greville. With these and some others of their club, Bruno held assemblies; but as they treated of subjects of a very delicate nature, which could not suit the taste or capacity of every body, they kept the door always shut, and none but select persons were admitted into their company. At Sir Philip's request, he composed his *Spaccio della Bestia Trionfante*, which was

printed in 8vo, 1584, and dedicated to that gentleman. This work, which is remarkable for nothing but its impiety, we are told in one of the *Spektaturs*, (n^o 389), sold at an auction in London for L. 30. From England he went to Wittenberg, and from thence to Prague, where he printed some tracts, in which he openly discovered his atheistical principles. After visiting some other towns in Germany, he made a tour to Venice. Here he was apprehended by order of the inquisition; tried; condemned; and refusing to retract, was burnt at the stake, February 9th 1600.

BRUNSBUTTLE, a sea port-town of Germany, in the circle of Lower Saxony, and duchy of Holstein, seated at the mouth of the river Elbe, in E. Long. 8. 42. N. Lat. 44. 30. It is subject to Denmark.

BRUNSFELSIA, in botany; a genus of the monogynia order, belonging to the pentandria class of plants. The corolla is funnel-shaped, and very long; and the fruit an unilocular polyspermous berry. There is but one species, *viz.* the americana. It rises with a woody branching rough stem six or eight feet high; garnished with oblong entire leaves on footstalks, and large whitish flowers by threes or fours at the ends of the branches, succeeded by round saffron-coloured soft fruit. This plant may be raised from seeds sown in pots in the spring, and plunged in a bark-bed. It may also be propagated by cuttings planted in pots in the same season, plunging them also in a bark-bed or other hot-bed under glasses. The plants must always remain in the stove.

BRUNSWICK, a city of Germany, in the circle of Lower Saxony, and capital of the duchy of the same name. It is composed of five towns, *viz.* the Old Town, the New Town, the Hagen or Burg, the Old Wiek, and the Sac, which makes it a large place, but the houses are almost all built of wood. There are several churches, one of which is an ancient Gothic building, but the appearance of its antiquity is almost absorbed by the repairs it has undergone. Brunswick is a fortified place, and would require a numerous army to besiege, and not a few men to defend it. It is of a square form, divided in the middle by the river Ocker. It is about two miles in circumference, and is strongly fortified. On the ramparts is a mortar-piece of brass, ten feet six inches long, and nine feet two inches in circumference, weighing 1800 quintals, and has 93 quintals of iron in its carriages. It will carry a ball of 730 pounds weight to the distance of 33,000 paces, and throw a bomb of a thousand weight; but it requires 52 pounds of powder for a charge. This city is the residence of the prince whom we style the *duke of Brunswick Wolfenbuttle*. The inhabitants of the city and parts adjacent carry on a considerable trade with Bohemia. Brunswick mum is well known in England; a small sort of which is the common drink of the inhabitants of the city. The religion here is the Lutheran, and they observe it very strictly. The peasants are sober and laborious, but clownish and heavy; however, as they are robust and strong, they make good soldiers. The elector of Hanover is styled *duke of Brunswick*, though he has no property in, nor dominion over, this city, which belongs to the duke of Brunswick Wolfenbuttle. The number of inhabitants is about 24,000; and the whole income of the duke is estimated at L. 130,000. The academy of Brunswick

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Brunswick.

Dr Moore informs us, has been new-modelled, and the plan of education improved, by the attention, and under the patronage, of the hereditary prince. Students now resort to this academy from many parts of Germany; and there are generally some young gentlemen from Britain, who are sent to be educated here. Such of them as are intended for a military life, will not find so many advantages united at any other place in the continent, as at the academy of Brunswick. They will here be under the protection of a family partial to the British nation;—every branch of science is taught by masters of known abilities;—the young students will see garrison duty regularly performed, and may by the interest of the prince obtain liberty to attend the reviews of the Prussian troops at Magdeburg and Berlin. They will have few temptations to expence, in a town where they can see no examples of extravagance—have few opportunities of dissipation, and none of gross debauchery.

The fortifications at Brunswick were of great utility last war, and on one occasion they saved the town from being pillaged, and afforded prince Frederick, who is now in the Prussian service, an opportunity of performing an action, which, it is imagined, gave him more joy than twenty victories. This happened in the year 1761, soon after the battle of Kirch Denkers, when duke Ferdinand protected Hanover, not by conducting his army into that country, and defending it directly, as the enemy seemed to expect, and probably wished; but by diversion, attacking with strong detachments, commanded by the hereditary prince, their magazines in Hesse, and thus drawing their attention from Hanover to that quarter. While the duke lay encamped at Willhemshall, watching the motions of Broglio's army, the marechal being greatly superior in numbers, sent a body of 20,000 men, under prince Xavier of Saxony, who took possession of Wolfenbuttle, and soon after invested Brunswick. Prince Ferdinand, anxious to save his native city, ventured to detach 5000 of his army, small as it was, under his nephew Frederick, assisted by general Luckener, with orders to harass the enemy, and endeavour to raise the siege. The young prince, while on his march, sent a soldier with a letter to the governor, which was wrapped round a bullet, and which the soldier was to swallow in case of his being taken by the enemy.—He had the good fortune to get safe into the town. The letter apprised the commander of the garrison of the prince's approach, and particularised the night and hour when he expected to be at a certain place near the town, requiring him to favour his entrance.

In the middle of the night appointed, the prince fell suddenly on the enemy's cavalry, who, unsuspecting of his approach, were encamped carelessly within a mile of the town. They were immediately dispersed, and spread such an alarm among the infantry, that they also retreated with considerable loss. Early in the morning the young prince entered Brunswick, amidst the acclamations of his fellow-citizens, whom he had relieved from the horrors of a siege. The hereditary prince having destroyed the French magazines in Hesse, had been recalled by his uncle, and ordered to attempt the relief of Brunswick. While he was advancing with all possible speed, and had got within a few leagues

of the town, he received the news of the siege being raised. On his arrival at his father's palace, he found his brother Frederick at table, entertaining the French officers, who had been taken prisoners the preceding night.

BRUNSWICK (the duchy of), is a country of Germany, bounded on the north by the duchy of Lunenburg; on the west, by the circle of Westphalia, from which it is separated by the river Weser; on the south by Hesse, and the little territory of Piechfield; and on the east by Thuringia, with the principalities of Anhalt and Halberstadt, and the duchy of Magdeburg. The rivers are, the Weser, the Ocker, and the Lyne; and it is fertile both in corn and pastures. It is divided into three principalities, Wolfenbuttle, Grubenhagen, and Calenberg, which also comprehends the duchy of Gottingen. The principality of Wolfenbuttle has its own dukes; but the other two belong to the elector of Hanover. The territories of the house of Brunswick are more extensive; the principal of which are the duchies of Brunswick and Lunenburg, with the county of Danneburg, which is annexed thereto. The rest are Blankenburg, Dieport, and Hoyer, besides two or three smaller districts.

BRUNSWICK (the family of). The illustrious and ancient house of Brunswick owes its origin to Azo IV. of the family of Esté, son of Hugo III. marquis of Ferrara in Italy. Azo, who died in 1055, left by his wife Cunegonde, daughter and heiress to Guelph III. Duke of Bavaria, a son, who was Guelph IV. great-grandfather to Henry the Lion. His son, Guelph V. surnamed the Valiant, was created duke of Bavaria by the Emperor Henry II. His son, Guelph VI. married Matilda, the richest heiress in Europe; but having no issue, his brother Henry the Black succeeded to his dominions. He died in 1125, having married Wulfhild daughter of Magnus, last duke of Saxony, of the Bulling family, by whom he had Henry the Proud, who succeeded to Bavaria in 1137; and he having married a daughter of the emperor Lotharius, his father-in-law granted him investiture of Saxony, and meant him for his successor in the empire; but this last he was disappointed of. Dying in 1139, both Saxony and Bavaria devolved on his son Henry V. surnamed the Lion. He married Maude, eldest daughter of king Henry II. of England, and is always looked upon as the founder of the Brunswick family: it is therefore extremely remarkable, that his present Majesty should be descended from one of our worthiest monarchs, in whom were united the royal Anglo-Saxon and Norman blood. The dominions possessed by Henry the Lion were the most extensive of any prince of his time; but having refused to assist the emperor Frederick Barbarossa in a war against Pope Alexander III. this drew the emperor's resentment on him; and being already jealous of his power and abilities, all his former services were forgotten; and, in the diet of Wurtzburg in 1179 or 1180, he was proscribed. The duchy of Bavaria was given to Otho count Wittelpach, from whom is descended the present electoral family of Bavaria; the duchy of Saxony to Bernard Ascanius, founder of the house of Anhalt; and all his other territories disposed of to different persons. On this he retired to England; and, by his father's intercession,

Bruntisland Brunswick and Lunenburg were restored to him. His wife Maude died in 1189, and he in 1195. He left three sons; but the two oldest not leaving any male issue, William, the third son, carried on the line of the family: and his son Otho was created duke of Brunswick and Lunenburg in 1235, by the emperor Ferdinand II. From him all the succeeding dukes of this family have descended; and no family can boast of a line of princes who have more distinguished themselves, both by their political abilities and martial achievements; and they are allied to all the principal families in Europe. The house of Brunswick has divided into several branches. The present duke of Brunswick-Wolfenbittel is sprung from the eldest; the duke of Brunswick-Zell was from the second; and from this last sprung the elector of Hanover.

Brush.

BRUNTISLAND, a parliament-town of Fifeshire in Scotland, situated on the firth of Forth, eight miles north of Edinburgh, in W. Long. 3. 5. N. Lat. 56. 12. Here is the best harbour on the coast, formed by a rocky isle eked out with piers, for there are none on this side the county entirely natural. This is dry at low water. The church is square, with a steeple rising in the centre. The old castle, built by the *Durries*, commanded both town and harbour. The place has a natural strength, which, with the conveniency of a port opposite to the capital, made it, during the troubles of 1560, a most desirable post. The French, allies of the queen regent, fortified it strongly. In 1715, it was surprised and possessed by the rebels, who here formed the bold design of passing over a body of troops to the opposite shore; which was in part executed, under the command of brigadier Macintosh, notwithstanding all the efforts of the men of war.

BRUSCHIUS (Gaspar), a Latin historian and poet, was born at Egra in Bohemia, in 1518. He was devoted to books from his childhood, and especially to poetry, in which he gained so much reputation, that he attained to the poetical crown, to the dignity of poet laureat, and of count palatine. He wrote with prodigious facility; and his verses are extremely flowing, easy, and natural. He published Latin poems on a great variety of subjects; the history of the bishops and bishoprics of Germany; history of German monasteries; and a great number of other works, of which a catalogue is given in Gesner's *Bibliothèque*. Bruschius was far from being rich, or rather he was very poor; subsisting almost entirely by the benefactions of his poetical patrons, and by presents from the abbots and abbesses whose monasteries he described. The liberalities of some abbots, while he was with Oporin at Basil, enabled him to buy a new suit of clothes; but when he found, that appearing well dressed in the streets procured him many marks of respect from the vulgar, he tore his new finery to pieces, "as slaves that had usurped their master's honours." Bruschius seems to have been too great a philosopher for the age he lived in, or indeed for any age. He was murdered in the forest of Sealingenbach, between Rottenberg on the Tauber and Winheim: and it was believed that this assassination was concerted and carried into execution by some gentlemen against whom Bruschius was about to write something.

BRUSH, an assemblage of hairs or hogs bristles fastened in the holes of a wooden laudle or board,

pierced for that purpose, serving to cleanse divers bodies by rubbing therewith. The manner of making brushes is by folding the hair or bristle in two; and bringing it by means of a packthread, which is engaged in the fold, through the holes with which the wood is pierced all over, being afterwards fastened therein with glue. When the holes are thus filled, the ends of the hair are cut to make the surface even.

Shearmens BRUSH, is made of wild bears bristles; and serves to lay the wool or nap of cloth, after shearing it for the last time.

BRUSH, among painters, a larger and coarser kind of a pencil made of hogs bristles, wherewith to lay the colours on their large pieces. The Chinese painters brush consists of the stalk of a plant; whose fibres being fretted at both ends, and tied again, serve for a brush.

Wire-BRUSHES, are used by silver smiths and gilders, for scrubbing silver, copper, or brass pieces, in order to the gilding of them. There is a method of dying or colouring leather, performed by only rubbing the colour on the skin with a brush. This the French leather-gilders call *brousseure*; being the lowest of all the sorts of dye allowed by their statutes.

BRUSH of a FOX, among sportsmen, signifies his drag or tail, the tip or end of which is called the *chape*.

BRUSH is also used in speaking of a small thicket or coppice. In this sense the word is formed from the middle-age Latin *bruscia*, *bruscus*, which signifies the same.

BRUSH-Wood denotes small slender wood or spray. See **BROWSE**.

BRUSH, in electricity, denotes the luminous appearance of the electric matter issuing in a parcel of diverging rays from a point. Beccaria ascribes this appearance to the force with which the electric fluid, going out of a point, divides the contiguous air, and passes through it to that which is more remote.

BRUSHING. Among jockies, a brushing gallop denotes a brisk one: a horse should have his brushing gallop in a morning before watering.

BRUSSELS, the capital of Brabant in the Austrian Netherlands, and generally the seat of the Austrian governor, is situated on the small river Senne, which runs through it. It is a rich and handsome city; and among the public structures, the ducal palace where the governor resides, the town house, and the arsenal, are most superb. No city in Europe, except Naples and Genoa, makes a finer appearance at a distance: but, like them, when in the town, it is all up and down hill. It is encompassed with a double brick wall, and has seven gates; but being seven miles in compass, is too large to hold out a long siege. In Brussels are seven fine squares or market-places; that of the great market is one of the most beautiful in the world. The town-house takes up one quarter of it; and has a very high steeple, on the top of which is a brazen statue of St Michael, fifteen feet high. In one of the apartments, which is handsomely adorned, the states of Brabant meet. In three other rooms there is the history of the resignation of Charles V. wrought in tapestry; which is so well done, that it may be mistaken for painting. In the other parts of this square, are the halls of the different trades. There are here several palaces of the nobility: that of Orange now belongs to the king of Prussia.

Brussels, Prussia. The opera-house is built after the Italian manner, with rows of boxes, in which are chimneys. One is covered over with looking-glass, so that they can sit by the fire, drink a bottle, and see what is doing. There are 20 public fountains, adorned with statues, at the corners of the most public streets; and in the middle of the town-house is one with Neptune, the tritons, and the horses spouting out water from their nostrils. The hospitals are well endowed, some of which are for the maintenance of strangers for three days. There is also a sundling hospital, and one for penitent courtesans. Among the churches, that of St Gudula is very magnificent. It stands on the top of a hill, near the gate of Louvain, and is surrounded with iron balustrades. It is an old Gothic structure, with two large steeples at the east end, and is finely adorned within. The Jesuits have a fine church as well as a library. There are several monasteries and nunneries, two of which still are English. The nunnery called the *Beguinage* is like a little town, being surrounded by a wall and ditch, and has little streets, where each nun has an apartment. Six or seven hundred girls are educated here.

In 1695, Brussels was bombarded by marshal Villeroy, who demolished four thousand houses, the stadthouse, and several churches. In 1708, it was besieged again by the elector of Bavaria; but the duke of Marlborough soon came to its assistance, and obliged him to raise the siege with precipitation. Marshal Saxe, the French general, took it in 1746; but it was restored by the treaty of Aix la Chapelle. It is much fallen from its former splendor; and all the trade which is carried on there is in lace, camblets, and tapestry, which they make in great perfection. E. Long. 4. 8. N. Lat. 50. 51.

BRUSSELS (the quarter or district of), is one of the four parts of the duchy of Brabant. This quarter is bounded on the east by that of Louvain; on the north by that of Antwerp; on the west by Flanders; and on the south by Hainhalt. Brussels is the capital city of this quarter and all Brabant.

BRUTE, a general name for all animals except mankind.

Among brutes, the monkey kind bear the nearest resemblance to man; both in the external shape and internal structure, but more in the former than in the latter. In the monkey kind, the highest and the nearest approach to the likeness of man is the Oran Outang, or *Homo Sylvestris*.—The structure and œconomy of brutes make the objects of what is called *Comparative ANATOMY*. See that article.

Philosophers have been much puzzled about the essential characteristics of brutes, by which they may be distinguished from man. Some define a brute to be an *animal not risible*, or a *living creature incapable of laughter*; others call them *mute animals*. The peripatetics allowed them a sensitive power, but denied them a rational one. The Platonists allowed them reason and understanding, though in a degree less pure and refined than that of men. Lactantius allows every thing to brutes which men have, except a sense of religion; and even this has been ascribed to them by some sceptics. Descartes maintained that brutes are mere inanimate machines, absolutely destitute not only of reason, but of all thought and perception, and that all their ac-

tions are only consequences of the exquisite mechanism of their bodies. This system, however, is much older than Descartes; it was borrowed by him from Gomez Pereira, a Spanish physician, who employed 30 years in composing a treatise which he entitled *Antoniana Margarita*, from the Christian names of his father and mother. It was published in 1554; but his opinion had not the honour of gaining partizans, or even of being refuted; so that it died with him. Even Pereira seems not to have been the inventor of this notion; something like it having been held by some of the ancients, as we find from Putarch and St Augullin. Others, who rejected the Cartesian hypothesis, have maintained that brutes are endowed with a soul essentially inferior to that of men; and to this soul some have allowed immortality, others not. And, lastly, in a treatise published by one Bougeant a Jesuit, entitled *A philosophical amusement on the language of beasts*, he affirms that they are animated by evil-spirits or devils.

The opinion of Descartes was probably invented, or at least adopted, by him to defeat two great objections: one against the immortality of the souls of brutes, if they were allowed to have any; the other against the goodness of God, in suffering creatures who had never sinned, to be subjected to so many miseries. The arguments in favour of it may be stated as follow: 1. It is certain, that a number of human actions are merely mechanical; because they are done imperceptibly to the agent, and without any direction from the will; which are to be ascribed to the impression of objects and the primordial disposition of the machine, wherein the influence of the soul has no share; of which number are all habits of the body acquired from the reiteration of certain actions. In all such circumstances, human beings are no better than automata. 2. There are some natural movements so involuntary, that we cannot restrain them; for example, that admirable mechanism ever on the watch to preserve an equilibrium, when we stoop, bend, or incline our bodies in any way, and when we walk upon a narrow plank. 3. The natural liking for, and antipathy against, certain objects, which in children precede the power of knowing and discriminating them, and which sometimes in grown persons triumph over all the efforts of reason; are all phenomena to be accounted for from the wondrous mechanism of the body, and are so many cogent proofs of that irresistible influence which objects have on the human frame. 4. Every one knows how much our passions depend on the degree of motion into which the blood is put, and the reciprocal impressions caused by the animal-spirits between the heart and brain, that are so closely connected by their nerves; and if such effects may be produced by such simple mechanical means as the mere increase of motion in the blood, without any direction of the will, we are not to wonder at the actions of brutes being the effects only of a refined mechanism, without thought or perception. 5. A farther proof will arise from a consideration of the many wonderful effects which even the ingenuity of men has contrived to bring about by mechanical means; the androide, for instance, of Mr Kempell, which plays at chess. Now, it is not to be questioned, but that the mechanism of the body of the meanest animal infinitely

Brute. finitely surpasses that of Mr Kempell's machine; and what can be the consequence of this, but that the actions of that animal must be proportionably more surprising than those of the wooden chess-player? See *ANDROIDES* and *AUTOMATON*.

The above is a short abstract of all the arguments that are brought in favour of the Cartesian system: but they are evidently very far from being conclusive. They are deficient, in the first place, because, though we allow them in the utmost extent the Cartesians themselves can desire, they prove only the possibility of brutes being inanimate, and that the power of God actually could produce such and such actions from inanimate machines; but that he actually hath done so, they have not the least tendency to prove. In the second place, the Cartesian argument is insufficient, because it hath no limits, and knows not where to stop; as, by the same method of arguing, every man might prove his neighbour to be an inanimate machine: for though every individual be conscious of his own thoughts, he is not so of those of his neighbours; and it no more exceeds the power of God to cause an inanimate machine perform the actions of a man than those of a beast. Neither are the two objections which the hypothesis is calculated to answer, to be at all admitted as arguments in its favour. They are, 1. That if we allow brutes to have souls, they must be immaterial, and consequently immortal; and, 2. It seems a contradiction to the goodness of God to think that he should subject innocent creatures to such a multitude of evils as we see the brute creation endure in this world. The first of these is productive of no bad consequences to us, though it should be granted: and if it is supposed that the brute creatures are really immortal, the second objection vanishes; because, in the enjoyment of endless felicity, all temporary afflictions, how severe soever, must be swallowed up as though they had never been.

As to a positive proof on the other side, *viz.* that brutes are really endowed with sensation and consciousness, there is undoubtedly the same evidence for the sensibility of brutes that there is for that of mankind. We see brutes avoid pain as much as we do; and we likewise see them seek for pleasure and express their happiness in the enjoyment of certain things by signs not at all equivocal. Therefore, though we grant the possibility of all this being the effect of mere mechanism; yet, as we are conscious that in ourselves similar effects are produced by a sentient principle, we have all the reason in the world to conclude that in brutes they are likewise derived from a principle of sensation: especially seeing we know of no kind of mechanism in any other part of nature that produces any thing like the effects just mentioned; and until we see that a mechanism of this kind does take place in some part of nature, we have no right to suppose it in any. As to those actions of the human body in which it seems to move spontaneously, like an automaton, without the direction of the mind or will, it is almost superfluous to observe, that they were not performed in this manner originally, but required very great exertions of the will and intellectual faculty before the body could be brought to perform them easily; so that from this nothing can be inferred. Add to this, that divine revelation sets forth to us in many

places the brute creation as objects of mercy; which could not be done without the highest absurdity, if they were not really capable of feeling pleasure and pain as well as we.

The most rational opposers of the Cartesian scheme maintain, that brutes are endowed with a principle of sensation as well as we; though of an inferior nature to ours. Great disputes, however, have arisen on this subject; some maintaining, that the soul of brutes is merely sensitive, and that they are altogether destitute of reflection and understanding; others, that they not only reason, but make a better use of it than men do. That the brutes are endowed only with sensation, and totally destitute of all power of reflection, or even reasoning, is what can by no means be maintained on good grounds: neither can it be asserted that they act entirely from instinct, or a blind propensity to certain things without knowing why or wherefore. In numberless instances, needless to be mentioned here, but which will readily occur to every reader, it is evident, that education will get the better of many of the natural instincts of brutes; which could never be the case were they absolutely incapable of reasoning. On the other hand, it is equally certain, that they are by no means capable of education in the same degree that men are; neither are the rational exertions of beasts at all to be compared even with those of the meanest savages. One remarkable instance of this is in the use of the element of fire. The most savage nations have known how to make this element subservient to their purposes; or if some have been found who have been entirely ignorant of its existence, they have quickly learned its uses on seeing it made use of by others: but though many of the brute creatures are delighted with warmth, and have opportunities every day of seeing how fire is supplied with fuel, and by that means preserved, it never was known that one of them attempted to preserve a fire by this means. This shows a strange defect of rationality, unaccountable upon any other supposition than that the soul or sentient principle of brutes is some how or other inferior in its nature to that of man; but still it is a sentient principle, capable of perceptions as quick, and in many instances much more so than our own.

Father Bougeant supports his opinion of the spirits of brute creatures being devils, in the following manner: Having proved at large that beasts naturally have understanding, "Reason (says he) naturally inclines us to believe that beasts have a spiritual soul; and the only thing that opposes this sentiment is, the consequences that might be inferred from it. If brutes have a soul, that soul must be either matter or spirit; it must be one of the two, and yet you dare affirm neither. You dare not say it is matter, because you must then necessarily suppose matter to be capable of thinking: nor will you say that it is spirit, this opinion bringing with it consequences contrary to the principles of religion; and this, among others, that man would differ from beasts only by the degrees of plus and minus; which would demolish the very foundation of all religion. Therefore, if I can elude all these consequences; if I can assign to beasts a spiritual soul, without striking at the doctrines of religion; it is evident, that my system, being moreover the most agreeable to reason,

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is the only warrantable hypothesis. Now I shall, and can do it, with the greatest ease imaginable. I even have means, by the same method, to explain many very obscure passages in the Holy Scripture, and to resolve some very great difficulties which are not well confuted. This we shall unfold in a more particular manner.

“ Religion teaches us, that the devils, from the very moment they had sinned, were reprobate, and that they were doomed to burn for ever in hell; but the church has not yet determined whether they do actually endure the torments to which they are condemned. It may then be thought that they do not yet suffer them, and that the execution of the verdict brought against them is reserved for the day of the final judgment.—Now what I pretend to infer from hence is, that, till doomsday comes, God, in order not to suffer so many legions of reprobate spirits to be of no use, has distributed them through the several spaces of the world, to serve the designs of his Providence, and make his omnipotence to appear. Some, continuing in their natural state, busy themselves in tempting men, in seducing and tormenting them; either immediately, as Job’s devil, and those that lay hold of human bodies; or by the ministry of forcerers or phantoms. These wicked spirits are those whom the scripture calls the *powers of darkness*, or the *powers of the air*. God, with the others, makes millions of beasts of all kinds, which serve for the uses of men, which fill the universe, and cause the wisdom and omnipotence of the Creator to be admired. By that means I can easily conceive, on the one hand, how the devils can tempt us; and on the other, how beasts can think, know, have sentiments, and a spiritual soul, without any way striking at the doctrines of religion. I am no longer surpris’d to see them have forecast, memory, and judgment. I should rather have occasion to wonder at their having no more, since their soul very likely is more perfect than ours. But I discover the reason of this: it is because, in beasts as well as in ourselves, the operations of the mind are dependent on the material organs of the machine to which it is united; and those organs being grosser and less perfect than in us, it follows, that the knowledge, the thoughts, and the other spiritual operations of the beasts, must of course be less perfect than ours: And if these proud spirits know their own dismal state, what an humiliation must it be to them thus to see themselves reduced to the condition of beasts! But, whether they know it or no, so shameful a degradation is still, with regard to them, the primary effect of the divine vengeance I just mentioned; it is an anticipated Hell.”

Having mentioned the prejudices against this hypothesis, such particularly as the pleasure which people of sense and religion take in beasts and birds, especially all sorts of domestic animals; he proceeds, “ Do we love beasts for their own sakes? No. As they are altogether strangers to human society, they can have no other appointment but that of being useful and amusing. And what care we whether it be a devil or any other creature that amuses us? The thought of it, far from shocking, pleases me mightily. I with gratitude admire the goodness of the Creator, who gave me so many little devils to serve and amuse me.

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If I am told that these poor devils are doomed to suffer eternal tortures, I admire God’s decrees, but I have no manner of share in that dreadful sentence; I leave the execution of it to the sovereign Judge; and, notwithstanding this, I live with my little devils as I do with a multitude of people, of whom religion informs me that a great number shall be damned. But the cure of a prejudice is not to be effected in a moment; it is done by time and reflection: give me leave then lightly to touch upon this difficulty, in order to observe a very important thing to you.

“ Persuaded as we are that beasts have intelligence, have we not all of us a thousand times pitied them for the excessive evils which the majority of them are exposed to, and in reality suffer? How unhappy is the condition of horses! we are apt to say upon seeing a horse whom an unmerciful carman is murdering with blows. How miserable is a dog whom they are breaking for hunting! How dismal is the fate of beasts living in woods! they are perpetually exposed to the injuries of the weather; always seized with apprehensions of becoming the prey of hunters, or of some wilder animal; for ever obliged, after long fatigue, to look out for some poor insipid food; often suffering cruel hunger; and subject, moreover, to illness and death! If men are subject to a multitude of miseries that overwhelm them, religion acquaints us with the reason of it; viz. the being born sinners. But what crimes can beasts have committed by birth to be subject to evils so very cruel? What are we, then, to think of the horrible excesses of miseries undergone by beasts? miseries, indeed, far greater than those endured by men. This is, in any other system, an incomprehensible mystery; whereas nothing is more easy to be conceived from the system I propose. The rebellious spirits deserve a punishment still more rigorous, and happy it is for them that their punishment is deferred. In a word, God’s goodness is vindicated, man himself is justified: for what right can we have, without necessity, and often in the way of mere diversion, to take away the life of millions of beasts, if God had not authorized us so to do? And beasts being as sensible as ourselves of pain and death, how could a just and merciful God have given man that privilege, if they were not so many guilty victims of the divine vengeance?

“ But hear still something more convincing, and of greater consequence: beasts, by nature, are extremely vicious. We know well that they never sin, because they are not free; but this is the only condition wanting to make them sinners. The voracious birds and beasts of prey are cruel. Many insects of one and the same species devour one another. Cats are perfidious and ungrateful; monkeys are mischievous; and dogs envious. All beasts in general are jealous and revengeful to excess; not to mention many other vices we observe in them: and at the same time that they are by nature so very vicious, they have, say we, neither the liberty nor any helps to resist the bias that hurries them into so many bad actions. They are, according to the schools, necessitated to do evil, to disconcert the general order, to commit whatever is most contrary to the notion we have of natural justice and to the principles of virtue. What monsters are these in a world originally created for order and justice to

reign in? This is, in good part, what formerly persuaded the Manicheans that there were of necessity two orders of things, one good, and the other bad; and that the beasts were not the work of the good principle: a monstrous error! But how then shall we believe that beasts came out of the hands of their Creator with qualities so very strange! If man is so very wicked and corrupt, it is because he has himself through sin perverted the happy nature God had given him at his creation. Of two things, then, we must say one: either that God has taken delight in making beasts so vicious as they are, and of giving us in them models of what is most shameful in the world; or that they have, like man, original sin, which has perverted their primitive nature.

“The first of these propositions finds very difficult access to the mind, and is an express contradiction to the holy scriptures; which say, that whatever came out of God’s hands, at the time of the creation of the world, was good, yea very good. What good can there be in a monkey’s being so very mischievous, a dog so full of envy, a cat so malicious? But then many authors have pretended, that beasts, before man’s fall, were different from what they are now; and that it was in order to punish man that they became so wicked. But this opinion is a mere supposition of which there is not the least footsteps in Holy Scripture. It is a pitiful subterfuge to elude a real difficulty: this at most might be said of the beasts with whom man has a sort of correspondence; but not at all of the birds, fishes, and insects, which have no manner of relation to him. We must then have recourse to the second proposition, That the nature of beasts has, like that of man, been corrupted by some original sin: Another hypothesis, void of foundation, and equally inconsistent with reason and religion, in all the systems which have been hitherto espoused concerning the souls of beasts. What party are we to take? Why, admit of my system, and all is explained. The souls of beasts are refractory spirits which have made themselves guilty towards God. The sin in beasts is no original sin; it is a personal crime, which has corrupted and perverted their nature in its whole substance; hence all the vices and corruption we observe in them, though they can be no longer criminal, because God, by irrecoverably reprobating them, has at the same time divested them of their liberty.”

These quotations contain the strength of father Bougeant’s hypothesis, which also hath had its followers; but the reply to it is obvious. Beasts, though remarkably mischievous, are not completely so; they are in many instances capable of gratitude and love, which devils cannot possibly be. The very same passions that are in the brutes, exist in the human nature; and if we chose to argue from the existence of those passions, and the ascendancy they have over mankind at some times, we may say with as great justice, that the souls of men are devils, as that the souls of brutes are. All that can be reasonably inferred from the greater prevalence of the malignant passions among the brutes than among men, is, that the former have less rationality than men: and accordingly it is found, that among savages, who exercise their reason less than other men, every species of barbarity is practised, without being deemed a crime.

On the present subject there is a very ingenious treatise in German, published by the late professor Bergman, under the title (as translated) of “Researches designed to show what the brute animals certainly *are not*, and also what they probably *are*.”—That they are *not* machines, he proves with more detail than seemed necessary for refuting a hypothesis which would equally tend to make *us all* machines. It is certain, that the *half-reasoning* elephant cannot be deemed a machine, by us, from any other consideration, than that *he* goes upon four feet, while *we* go upon two; and he might as well take us for mere machines because *we* go upon two feet, while *he* goes upon four.

But if animals are not mere machines, what *are* they? Manifestly sensitive beings, with an immaterial principle; and thinking or reasoning beings, to a *certain degree*. In certain classes of animals this appears evident to our author, who seems to have observed with great sagacity and attention their *various* operations and proceedings, their ways and means, &c. He thinks it impossible to deduce this variety of action, in any animals (it we except those of the lowest classes in the gradation of intelligence), from a general and uniform instinct. For they accommodate their operations to times and circumstances. They combine; they choose the favourable moment; they avail themselves of the occasion, and seem to receive instruction by experience. Many of their operations announce reflection: the bird repairs a shattered nest, instead of constructing instinctively a new one: the hen, who has been robbed of her eggs, changes her place in order to lay the remainder with more security: the cat discovers both care and artifice in concealing her kittens. Again, it is evident, that, on many occasions, animals know their faults and mistakes, and correct them; they sometimes contrive the most ingenious methods of obtaining their ends, and when one method fails have recourse to another; and they have, without doubt, a kind of language for the mutual communication of their ideas. How is all this to be accounted for (says our author), unless we suppose them endowed with the powers of perceiving, thinking, remembering, comparing, and judging? They have these powers, indeed, in a degree inferior to that in which they are possessed by the human species, and form classes below them in the graduated scale of intelligent beings. But still it seems to our author unreasonable to exclude them from the place which the principles of sound philosophy, and facts ascertained by constant observation, assign to them in the great and diversified sphere of life, sensation, and intelligence;—he does not, however, consider them as beings whose actions are directed to *moral* ends, nor consequently as accountable and proper subjects for *reward* or *punishment* in a future world.

That brute animals possess reflection and sentiment, and are susceptible of the kindly as well as the irascible passions, independently of sexual attachment and natural affection, is evident from the numerous instances of affection and gratitude daily observable in different animals, particularly the dog. Of those and other sentiments, such as pride, and even a sense of glory, the elephant exhibits proofs equally surprising and indubitable,

Brute. table, as the reader may see under the article ELEPHAS.

As to the natural affection of brutes, says an ingenious writer, "the more I reflect on it, the more I am astonished at its effects. Nor is the violence of this affection more wonderful than the shortness of its duration. Thus every hen is in her turn the virago of the yard in proportion to the helplessness of her brood; and will fly in the face of a dog or a fow in defence of those chickens which in a few weeks she will drive before her with relentless cruelty. This affection sublimates the passions, quickens the invention, and sharpens the sagacity of the brute creation. Thus an hen, just become a mother, is no longer that placid bird she used to be, but with feathers standing on end, wings hovering, and clogging note, she runs about like one possessed. Dams will throw themselves in the way of the greatest danger in order to avert it from their progeny. Thus a partridge will tumble along before a sportsman in order to draw away the dogs from her helpless covey. In the time of nidification the most feeble birds will assault the most rapacious. All the hirundines of a village are up in arms at the sight of an hawk, whom they will persecute till he leaves that district. A very exact observer has often remarked, that a pair of ravens nesting in the rock of Gibraltar would suffer no vulture or eagle to rest near their station, but would drive them from the hill with an amazing fury: even the blue-thrush at the season of breeding would dart out from the clefts of the rocks to chase away the kestrel or the sparrow-hawk. If you stand near the nest of a bird that has young, she will not be induced to betray them by an inadvertent fondness, but will wait about at a distance with meat in her mouth for an hour together. The flycatcher builds every year in the vines that grow on the walls of my house. A pair of these little birds had one year inadvertently placed their nest on a naked bough, perhaps in a shady time, not being aware of the inconvenience that followed: but an hot sunny season coming on before the brood was half fledged, the reflection of the wall became insupportable, and must inevitably have destroyed the tender young, had not affection suggested an expedient, and prompted the parent-birds to hover over the nest all the hotter hours, while with wings expanded and mouths gaping for breath they screened off the heat for their suffering offspring. A farther instance I once saw of notable sagacity in a willow-wren, which had built in a bank in my fields. This bird a friend and myself had observed as she sat in her nest; but were particularly careful not to disturb her, though we saw she eyed us with some degree of jealousy. Some days after, as we passed that way, we were desirous of remarking how this brood went on; but no nest could be found, till I happened to take up a large bundle of long green moss as it were carelessly thrown over the nest, in order to dodge the eye of any impertinent intruder."

A wonderful spirit of sociality in the brute creation, independent of sexual attachment, has been frequently remarked. Many horses, though quiet with company, will not stay one minute in a field by themselves: the strongest fences cannot restrain them. A horse has been known to leap out at a stable window, through which dung was thrown, after company; and yet in other

respects is remarkably quiet. Oxen and cows will not fatten by themselves; but will neglect the finest pasture that is not recommended by society. It would be needless to instance in sheep, which constantly flock together. But this propensity seems not to be confined to animals of the same species. In the work last quoted, we are told of "a doe still alive, that was brought up from a little fawn with a dairy of cows; with them it goes a-field, and with them it returns to the yard. The dogs of the house take no notice of this deer, being used to her: but if strange dogs come by, a chase ensues; while the master smiles to see his favourite securely leading her pursuers over hedge, or gate, or stile, till she returns to the cows, who with fierce lowings and menacing horns drive the assailants quite out of the pasture."

Even great disparity of kind and size does not always prevent social advances and mutual fellowship. Of this the following remarkable instance is given in the same work: "A very intelligent and observant person has assured me, that in the former part of his life, keeping but one horse, he happened also on a time to have but one solitary hen. These two incongruous animals spent much of their time together in a lonely orchard, where they saw no creature but each other. By degrees an apparent regard began to take place between these two sequestered individuals. The fowl would approach the quadruped with notes of complacency, rubbing herself gently against his legs; while the horse would look down with satisfaction, and move with the greatest caution and circumspection, lest he should trample on his diminutive companion. Thus by mutual good offices each seemed to console the vacant hours of the other; so that Milton, when he puts the following sentiment in the mouth of Adam, seems to be somewhat mistaken:

Much less can bird with beast, or fish with fowl,
So well converse, nor with the ox the ape."

In the Gentleman's Magazine for March 1788 we have the following anecdotes of a raven, communicated by a correspondent who does not sign his name, but who says it is at the service of the doubtful. The raven alluded to "lives, or did live three years since, at the red lion at Hungerford; his name, I think, is *Rafe*. You must know then, that coming into that inn, my chaise run over or bruised the leg of my Newfoundland dog; and while we were examining the injury done to the dog's foot, *Rafe* was evidently a concerned spectator; for the minute the dog was tied up under the manger with my horse, *Rafe* not only visited but fetched him bones, and attended upon him with particular and repeated marks of kindness. The bird's notice of the dog was so marked, that I observed it to the hollier; for I had not heard a word before of the history of this benevolent creature. John then told me, that he had been bled from his pin-feather in intimacy with a dog; that the affection between them was mutual; and that all the neighbourhood had often been witnesses of the innumerable acts of kindness they had conferred upon each other. *Rafe*'s poor dog, after a while, unfortunately broke his leg; and during the long time he was confined, *Rafe* waited upon him constantly, carried him his provisions daily, and never scarce left him alone! One night by accident the hollier had shut

shut the stable door, and Rafe was deprived of the company of his friend the whole night; but the hostler found in the morning the bottom of the door so pecked away, that had it not been opened, Rafe would in another hour have made his own entrance-port. I then enquired of my landlady (a sensible woman), and heard what I have related confirmed by her, with several other singular traits of the kindnesses this bird shows to all dogs in general, but particularly to *maimed* or wounded ones. I hope and believe, however, the bird is still living; and the traveller will find I have not *over-rated* this wonderful bird's merit."

To these instances of attachment between incongruous animals from a spirit of sociality or the feelings of sympathy, may be added the following instance of fondness from a different motive, recounted by Mr White in the work already so frequently quoted. "My friend had a little helpless leveret brought to him, which the servants fed with milk in a spoon; and about the same time his cat kittened, and the young were dispatched and buried. The hare was soon lost, and supposed to be gone the way of most fondlings, to be killed by some dog or cat. However, in about a fortnight, as the master was sitting in his garden in the dusk of the evening, he observed his cat, with tail erect, trotting towards him, and calling with little short inward notes of complacency, such as they use towards their kittens, and something gambling after, which proved to be the leveret that the cat had supported with her milk, and continued to support with great affection. Thus was a graminivorous animal nurtured by a carnivorous and predaceous one!

"Why so cruel and sanguinary a beast as a cat, of the ferocious genus of *Felis*, the *murium leo*, as Linnæus calls it, should be affected with any tenderness towards an animal which is its natural prey, is not so easy to determine. This strange affection probably was occasioned by that desiderium, those tender maternal feelings, which the less of her kittens had awakened in her breast; and by the complacency and ease she derived to herself from the procuring her teats to be drawn, which were too much distended with milk, till from habit she became as much delighted with this foundling as if it had been her real offspring.

"This incident is no bad solution of that strange circumstance which grave historians as well as the poets assert, of exposed children being sometimes nurtured by female wild beasts that probably had lost their young. For it is not one whit more marvellous that Romulus and Remus, in their infant state, should be nursed by a she-wolf, than that a poor little sucking leveret should be fostered and cherished by a bloody grimalkin.

— — — *Viridi satam Mavortis in antro
Procubuisse lupam: geminos huic ubera circum
Ludere pendentes pueros, et lambere matrem
Impavidos: illam tereti cervicæ reflexam
Mulcere alterros, et corpora fingere lingua."*

But besides the different qualities enumerated, besides reflection and sagacity often in an astonishing degree, and besides the sentiments and actions prompted by social or natural attachments, certain brutes seem on many occasions inspired with a superior faculty, a kind of presentiment or second-sight as it were, with regard to events and designs altogether unforeseen by

the rational beings whom they concern. Of the faculty alluded to, various instances will probably consist with the knowledge or the recollection of most of our readers: We shall therefore only recite the following on account of its unquestionable authenticity. At the seat of the late earl of Lichfield, three miles from Blenheim, there is a portrait in the dining-room of Sir Henry Lee, by Johnston, with that of a mastiff dog which saved his life. It seems a servant had formed the design of assassinating his master and robbing the house; but the night he had fixed on, the dog, which had never been much noticed by Sir Henry, for the first time followed him up stairs, got under his bed, and could not be got from thence by either master or man: in the dead of night, the same servant entered the room to execute his horrid design; but was instantly seized by the dog, and being secured confessed his intentions. There are ten quaint lines in one corner of the picture, which conclude thus:

But in my dog, whereof I made no store,
I find more love than those I trusted more.

Upon what hypothesis can we account for a degree of foresight and penetration such as this? Or will it be suggested, as a solution of the difficulty, that a dog may possibly become capable in great measure of understanding human discourse, and of reasoning and acting accordingly; and that, in the present instance, the villain had either uttered his design in soliloquy, or imparted it to an accomplice, in the hearing of the animal?

It has been much disputed whether the brutes have any language whereby they can express their minds to each other; or whether all the noise they make consists only of cries inarticulate, and unintelligible even to themselves. We are, however, too little acquainted with the intellectual faculties of these creatures to be able to determine this point. Certain it is, that their passions, when excited, are generally productive of some peculiar cry; but whether this be designed as an expression of the passion to others, or only a mechanical motion of the muscles of the larynx occasioned by the passion, is what we have no means of knowing. We may indeed, from analogy, conclude, with great reason, that some of the cries of beasts are really expressions of their sentiments; but whether one beast is capable of forming a design, and communicating that design by any kind of language to others, is what we submit to the judgment of the reader, after giving the following instance which among others is brought as a proof of it by father Bougeant. "A sparrow finding a nest that a martin had just built, standing very conveniently for him, possessed himself of it. The martin, seeing the usurper in her house, called for help to expel him. A thousand martins came full speed, and attacked the sparrow; but the latter being covered on every side, and presenting only his large beak at the entrance of the nest, was invulnerable, and made the boldest of them who durst approach him repent of their temerity. After a quarter of an hour's combat, all the martins disappeared. The sparrow thought he had got the better, and the spectators judged that the martins had abandoned their undertaking. Not in the least. Immediately they returned to the charge; and each of them having procured a little of that tempered

Brute.

Brutti
||
Brutus.

earth with which they make their nests, they all at once fell upon the sparrow, and inclosed him in the nest to perish there, though they could not drive him thence. Can it be imagined that the martins could have been able to hatch and concert this design all of them together, without speaking to each other, or without some medium of communication equivalent to language?"

BRUTTII (anc. geog.), one of the two peninsulas of Italy, the ancient Calabria being the other; stretching to the south towards Sicily; bounded by the sea on every side except by the isthmus, between the river Laus and the Thurii, where it is terminated by Lucania; inhabited by the Bruttii, for whose country the ancient Romans had no peculiar name, calling both the people and the country indifferently *Bruttii*. This and a part of Lucania was the ancient Italia, (Stephanus). It was called, *Bdellia*, which in Greek signifies *pitch*, from the great quantity of it produced there, (Bochart). It is divided into two coasts by the Apennine; that on the Tuscan and that on the Ionian Sea. Now called *Calabria Ultra*. Different from the ancient Calabria or Messapia, to the east on the Adriatic or Ionian sea, and which formed the other peninsula or heel of the leg, now called *Calabria Citra*, the Bruttii forming the foot.

BRUTTON, a town of Somersetshire, in England. It is situated on the river Brew; and is a good place, and well inhabited. It is adorned with a very beautiful church; has a free school, founded by Edward I.; and the alms-house or hospital is so good, that it has the appearance of a college. They have a woollen manufactory of cloth and serges, and they are likewise noted for their malt. W. Long. 2. 30. N. Lat. 51. 15.

BRUTUS, or **BRUTE**, according to the old exploded history of this country by Geoffroy of Monmouth, was the first king of Britain. He is said to have been the son of Sylvius, and he of Afcanius the son of Æneas, and born in Italy: killing his father by chance, he fled into Greece, where he took king Pandrusus prisoner, who kept the Trojans in slavery, whom he released on condition of providing ships, &c. for the Trojans to forsake the land. Being advised by the oracle to sail west beyond Gaul, he, after some adventures, landed at Totness in Devonshire. Albion was then inhabited by a remnant of giants, whom Brutus destroyed; and called the island, after his own name, *Britain*. He built a city called *New Troy*, since London; and having reigned here 24 years, at his death parcelled the island among his three sons: Loerine had the middle, called *Loegria*; Camber had Wales, and Albana & Scotland.

BRUTUS (Lucius Junius), the avenger of the rape of Lucretia, and founder of the Roman republic, flourished 509 years before Christ. See (*History of*) **ROME**.

BRUTUS (Marcus), the passionate lover of his country, and chief conspirator against Cæsar, slew himself on losing the battle of Philippi, 42 years before Christ. See (*History of*) **ROME**.

BRUTUS (John Michael), a man of learning, and a polite writer, in the 16th century. He was a native of Venice; and, having studied at Padua, spent great part of his life in travelling, and became historiographer to his imperial majesty. He wrote, 1. A history of Hun-

N^o 59.

gary. 2. A history of Florence. 3. Notes on Horace, Cæsar, Cicero, &c.; and other works. He was living in the year 1590.

BRUTUS (Stephen Junius), the disguised author of a political work intitled *Vindiciæ contra tyrannos*. See **LANGUET**.

BRUYERE (John de la), a celebrated French author, was born at Dourdan in the year 1664. He wrote Characters, describing the manners of his age, in imitation of Theophrastus; which characters were not always imaginary or general, but descriptive, as was well known, of persons of considerable rank. In the year 1693, he was by an order of the king chosen a member of the French academy; and died in the year 1696.—“The Characters of Bruyere (says Voltaire) may justly be ranked among the extraordinary productions of this age. Antiquity furnishes no examples of such a work. A style rapid, concise, and nervous; expressions animated and picturesque; an use of language altogether new, without offending against its established rules, struck the public at first; and the allusions, which are crowded in almost every page, completed its success. When La Bruyere showed his work in manuscript to Malefieu, this last told him, that the book would have many readers, and its author many enemies. It somewhat sunk in the opinion of men, when that whole generation whose follies it attacked were passed away; yet, as it contains many things applicable to all times and places, it is more than probable that it will never be forgotten.”

BRUYIERS, a town of Lorraine in Vosque, with a provostship. E. Long. 6. 45. N. Lat. 48. 15.

BRYANS-BRIDGE, a town of Ireland, in the county of Clare and province of Connaught, seated on the river Shannon, eight miles north of Limeric. W. Long. 8. 30. N. Lat. 52. 31.

BRYANT (Sir Francis), a soldier, statesman, and a poet of no inconsiderable fame in his time, was born of a genteel family, educated at Oxford, and afterwards spent some time in travelling abroad. In the year 1522, the 14th of Henry VIII. he attended, in a military capacity, the earl of Surrey on his expedition to the coast of Brittany; and commanded the troops in the attack of the town of Morlaix, which he took and burnt. For this service he was knighted on the spot by the earl. In 1528, he was in Spain; but on what service is doubtful. In 1529, he was sent ambassador to France; and, the year following, to Rome on account of the king's divorce. He had also been there in 1522, in the same capacity, when cardinal Woolsey's election to the holy see was in agitation. He was gentleman of the privy chamber to king Henry VIII. and to his successor Edward VI. in the beginning of whose reign he marched with the protector against the Scots; and after the battle of Musselburgh, in which he commanded the light horse, was made banneret. In 1548, he was appointed chief governor of Ireland, where he married the countess of Ormond. He died soon after, and was buried at Waterford. He wrote, 1. Songs and sonnets; some of which were printed with those of the earl of Surrey and Sir Thomas Wyatt. Lond. 1565. 2. Letters written from Rome concerning the king's divorce; manuscript. 3. Various letters of state; which Ant. Wood says he had seen. 4. A dispraise of the life of a cour-

cour-

Brye
||
Bryonia.

courtier, &c. Lond. 1548, 8vo. from the French of Alaygri, who translated it from the Castilian language, in which it was originally written by Guevara.

BRYE (John Theodore de), an excellent engraver, was a native of Liege; but he resided chiefly at Franckfort, where he carried on a considerable commerce in prints. It does not appear when he was born, nor to what master he owed his instructions in the art of designing and engraving. He worked almost entirely with the graver, and seldom called in the assistance of the point. He acquired a neat, free style of engraving, excellently well adapted to small subjects, in which many figures were to be represented; as *funeral parades, processions*, and the like, which he executed in a charming manner. He also drew very correctly. His heads in general are spirited and expressive, and the other extremity of his figures well marked. His back-grounds, though frequently very slight, are touched with a masterly hand. He died, as his sons inform us in the third part of Boissard's collection of portraits, on March 27th, 1598; the two first parts of which collection were engraved by himself, assisted by his sons, who afterwards continued it.

BRYENNIUS (Manuel), a Greek writer on music, is supposed to have flourished under the elder Paleologus, viz. about the year of Christ 1120. He wrote three books on Harmonics; the first whereof is a kind of commentary on Euclid, as the second and third are on Ptolemy. He professes to have studied perspicuity for the sake of young men. Meibomius had given the public expectations of a translation of this work: but not living to complete it, Dr Wallis undertook it; and it now makes a part of the third volume of his works, published at Oxford in three volumes folio, 1699.

BRYENNIUS (Nicephorus), a prince distinguished by his courage, probity, and learning, was born at Orestia in Macedonia; where his father by rebellion provoked the emperor to send his general Alexis Comnenus against him, who ordered his eyes to be pulled out; but being charmed with his son Bryennius, he married him to Anne Comnenus his daughter, so famous by her writings. When Alexis came to the throne, he gave Bryennius the title of *Cæsar*; but would not declare him his successor, though solicited to it by the empress Irene; and was therefore succeeded by his son John Comnenus, to whom Bryennius behaved with the utmost fidelity. Being sent, about the year 1137, to besiege Antioch, he fell sick; and, returning, died at Constantinople. This prince wrote the *History of Alexis Comnenus*, which he composed at the request of his mother-in-law the empress Irene.

BRYGMUS, among physicians, a grating noise made by the gnashing of the teeth.

BRYONIA, **BRVONY**: A genus of the syngenesia order, belonging to the monœcia class of plants; and in the natural method ranking under the 34th order, *Cucurbitacææ*. The calyx of the male is five-toothed, with a quinquefid corolla, and three filaments. In the female the calyx is dentated, the corolla quinquefid, the style trifid, with a roundish many-seeded berry.

Species. 1. The alba, rough, or white bryony with red flowers, is a native of dry banks under hedges in many parts of Britain. The roots of this plant have by impostors been brought into a human shape, and shown for mandrakes. The method practised by these

people was to find a young thriving plant of bryony; then they opened the earth all round, being careful not to disturb the lower fibres; and being provided with such a mould as is used for making plaster figures, they fixed the mould close to the root, fastening it with wire to keep it in its proper situation: then they filled the earth about the root, leaving it to grow to the shape of the mould; which in one summer it will do; so that if this is done in March, by September it will have the shape. The leaves of this plant are also imposed on people for mandrake-leaves; although there is no resemblance between them, nor any agreement in quality.

2. The africana, or African tuberous rooted bryony.

3. The racemosa, or bryony with a red olive-shaped fruit. These are natives of warm climates; and are perennial; but their branches decay every winter. They flower in July, and in warm summers will perfect their seeds in Britain.

4. The cretica, or spotted bryony of Crete.

5. The variegata, or American bryony with a variegated fruit.

6. The bonariensis, or bryony with hairy palmated leaves, divided into five parts, and obtuse segments. These are likewise natives of warm countries; but merit cultivation on account of the pretty appearance they make when the plants are full of fruit.

Culture. The second and third sorts are to be planted in pots filled with fresh light earth; and in winter must be placed in the green-house to protect them from frosts and great rains, which would destroy them if they were exposed thereto. In summer, they may be exposed to the open air, and must be frequently refreshed with water in dry weather. The three last sorts are annual plants: they must be raised on a hot-bed early in the spring; and when the plants are about three inches high, they should be each transplanted into a small pot, and plunged into a hot-bed of tanner's bark. When the plants are grown so large as to ramble about on the surface of the bed, and begin to entangle with other plants, they should be shifted into larger pots, and placed in the bark-stove; where their branches may be trained to the wall, or against an espalier, that they may have sun and air, which is absolutely necessary for their producing fruit.

Medicinal Uses, &c. The roots of the first species are used in medicine. These are very large, sometimes as thick as a man's thigh: their smell, when fresh, is strong and disagreeable; the taste nauseously bitter, acrid, and biting; the juice is so sharp, as in a little time to excoriate the skin; in drying, they lose great part of their acrimony, and almost their whole scent.—Bryony-root is a strong irritating cathartic; and as such has sometimes been successfully exhibited in maniacal cases, in some kinds of dropsies, and in several chronical disorders, where a quick solution of viscid juices and a sudden stimulus on the solids were required. An extract prepared by water acts more mildly, and with greater safety, than the root in substance: given from half a dram to a dram, it is said to prove a gentle purgative, and likewise to operate powerfully by urine.—Bryony-root, applied externally, is said to be a powerful discutient.

Black Bryony. See TAMUS.

BRYUM, in botany: A genus of the 56th natural order, viz. *Musi*, belonging to the cryptogamia class of plants. The anthera is operculated or covered with a lid, the calyptra polished; and there is a filament arising

Bryonia,
Bryum.

Bos
||
Bubastis. from the terminal tubercle. There are 41 species, most of them natives of Britain.

BUA, an island of the gulph of Venice, on the coast of Dalmatia, near the town of Trau; called likewise the *Partridge-island*, because frequented by those birds. It is called *Bubus* by Pliny. In the times of the decay of the empire it was called *Boas*; and several illustrious men that fell under disgrace at court were banished to this island; among whom were Florentius, master of the offices of the emperor Julian, Immentius de Valenti, and the heretic Jovinian. The emperors of Constantinople either were not much acquainted with this pretended Siberia, or were willing to treat the banished with great clemency. It is certain that the climate of this island is exceeding mild; the air perfectly good; the oil, grapes, and fruit excellent; and the sea around it abounds in fish, and the port is large and secure. Neither is it so small that a man has not room to walk and ride about as much as he pleases; for it is ten miles in length, and about twenty-five in circuit; nor can it be said to be rugged, though rather high and mountainous.

BUANES, a town of France, in Gascony, and in the diocese of Aire, seated on the river Bahus, in E. Long. 0. 5. N. Lat. 43. 47.

BUARCOS, a town of Portugal, in the province of Beira. W. Long. 8. 5. N. Lat. 40. 3.

BUBALIS, in zoology, the trivial name of the buffalo, a species of the bos. See Bos.

BUBASTIS, in the Egyptian mythology, one of the names of Isis or the moon. The Egyptians bestowed different names on the sun, either to characterize his effects or his relations with respect to the earth; they followed the same method respecting the moon. Chæremon, a sacred writer of Egypt, leaves no doubt on this subject. "Every thing which is published of Osiris and Isis, all the sacerdotal fables, allude only to the phases of the moon, and the course of the sun." Bubastis was one of the principal attributes of Isis. Theology having personified her, formed of her a divinity, in whose honour a city of that name was built, as described by Herodotus, and where the people collected from all parts of Egypt, at a certain period of the year. A cat was the symbol of this deity. The priests fed it with sacred food; and when it died, they embalmed its body, and carried it in pomp to the tomb prepared for it. The ancients have explained this worship variously. The Greeks pretend that when Typhon declared war against the gods, Apollo transformed himself into a vulture, Mercury into an ibis, and Bubastis into a cat, and that the veneration of the people for the latter animal took rise from that fable; but they ascribe their own ideas to the Egyptians, who thought very differently. However that may be, the cat was greatly honoured in Egypt, and a Roman soldier having imprudently killed one, was immediately put to death by the populace.

Bubastis, in the language of the priests, was deemed the daughter of Isis, and even represented her in certain circumstances. It is for this reason that the Greeks, who honoured the moon by the name of *Diana*, bestowed it also on this Egyptian divinity. Bubastis, says Herodotus, is called *Diana* by the Greeks. The Egyptians attributed to her the virtue of assisting pregnant women. The Greeks and Latins, disciples of

the Egyptians, ascribed the same power to Diana; and Horace does not think it unworthy of his pen to address the following strophe to her:

*Montium custos nemorumque, Virgo,
Quæ laborantes utero puellas
Ter vocata audis, adinisque letho,
Diva Triformis.*

The philosopher will seek for the origin of this ancient worship in the laws imposed by nature on women, and which in some measure follow the lunar revolutions. The natural philosophers and the poets buried it under allegories unintelligible to the people.

A perfect resemblance, however, does not exist between the two deities we have been speaking of. The Greeks constituted Diana goddess of the chase and of the forests; an attribute the Egyptians did not acknowledge in Bubastis. The former added, that she was the daughter of Jupiter and Latona, and Bubastis was produced by Osiris and Isis.

A barbarous custom was introduced at the festivals celebrated in honour of Bubastis, called by the Greeks also *Ilithia* or *Luwina*, to mark her presiding over childbed. The Egyptians adored her under this name in the city of Ilithia, situated near Laropolis.

It remains to resolve a question which naturally arises here: How could Bubastis be called the daughter of Isis, since she also was a symbol of the moon? The Egyptian theology easily explains these apparent contradictions. Isis was the general appellation of the moon, Bubastis a particular attribute. The sun, in conjunction with the star of the night, formed the celestial marriage of Osiris and Isis; the crescent which appears three days after was allegorically called their daughter. It is in this sense that the Hebrews called this same phenomenon, *the birth of the moon*, and that Horace says,

*Cælo supinas si tuleris manus,
Nascente luni, rustica Phisyle, &c. &c.*

These observations inform us, why in the city of Ilithia, where Bubastis was adored, the third day of the lunar month was consecrated by a particular worship. In fact, it is three days after the conjunction that the moon, disengaged from the rays of the sun, appears as a crescent, and is visible to us. The Egyptians celebrated therefore a solemnity in honour of Bubastis, which in their tongue signified *new moon*. The crescent with which her head was crowned, expresses palpably the intention of the priests in creating this symbolical divinity.

BUBBLE, in philosophy, small drops or vesicles of any fluid filled with air; and formed either on its surface by an addition of more of the fluid, as in raining, &c.; or in its substance, by an intestine motion of its component particles. Bubbles are dilatible or compressible, *i. e.* they take up more or less room as the included air is more or less heated, or more or less pressed from without; and are round, because the included air acts equally from within all around.

BUBBLE, in commerce, a cant term given to a kind of project for raising money on imaginary grounds, much practised in France and England in the years 1719, 1720, and 1721.

The pretence of those schemes was the raising a capital for retrieving, setting on foot, or carrying on, some

Bubastis,
Bub'le.

Bubo,
Bubon.

some promising and useful branch of trade, manufacture, machinery, or the like. To this end proposals were made out, showing the advantages to be derived from the undertaking, and inviting persons to be engaged in it. The sum necessary to manage the affair, together with the profits expected from it, were divided into shares or subscriptions, to be purchased by any disposed to adventure therein.

Bubbles, by which the public have been tricked, are of two kinds, viz. 1. Those which we may properly enough term *trading-bubbles*; and, 2. Stock or fund bubbles. The former have been of various kinds; and the latter at different times, as in 1719 and 1720.

BUBO, in ornithology, the trivial name of a species of strix. See STRIX.

BUBO, or *Buboe*, in surgery, a tumour which arises with inflammation, only in certain or particular parts to which they are proper, as in the arm-pits and in the groins. See MEDICINE-Index.

BUBON, MACEDONIAN PARSLEY: A genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellatæ*. The fruit is ovated, striated, and villous.

Species. 1. The macedonicum sends out many leaves from the root; the lowest of which grow almost horizontally, spreading near the surface of the ground: the foot-stalk of each leaf divides into several smaller; which are garnished with smooth rhomb-shaped leaves, which are of a bright pale-green colour, and sawed on their edges. In the centre of the plant arises the flower-stem, which is little more than a foot high, dividing into many branches, each being terminated by an umbel of white flowers, which are succeeded by oblong hairy seeds. This plant, in warm countries, is biennial; the plants, which rise from seeds, one year produce flowers, and seeds the next, and then perish: but in Britain they seldom flower till the third or fourth year from the seed; but whenever the plant flowers, it always dies. 2. The rigidus, hard or rigid ferula, is a native of Sicily. It is a low perennial plant, having short, stiff, and very narrow leaves: the flower-stalk rises a foot high, which is terminated by an umbel of small white flowers; which are succeeded by small, oblong, channelled seeds. It is a plant of little beauty or use, so is only cultivated for the sake of variety. 3. The galbanum or African ferula, rises with an upright stalk to the height of eight or ten feet, which at bottom is woody, having a purplish bark covered with a whitish powder that comes off when handled. The upper part of the stalk is garnished with leaves at every joint, the foot-stalks half-embracing them at their base, and are set with leaves like those of the lovage, but smaller, and of a grey colour: the top of the stalk is terminated by an umbel of yellow flowers; which are succeeded by oblong channelled seeds, which have a thin membrane or wing on their border. When any part of the plant is broken, there issues out a little thin milk of a cream colour, which hath a strong scent of galbanum. 4. The gummiferum, with a mock chervil leaf, rises with a ligeneous stalk about the same height; and is garnished with leaves at each joint, which branch out like the former; but the small leaves or lobes are narrow and indented like those of bastard hemlock. The stalk is

terminated by an umbel of small yellow flowers, which are succeeded by seeds like those of the former sort.— These plants are all propagated by seeds, and require the common culture of other exotic vegetables. The galbanum of the shops is supposed to be procured from the third and fourth sorts.

BUBONOCELE, or HERNIA INGUINALIS, in surgery, a tumor in the inguen, formed by a prolapsus of the intestines, omentum, or both, through the processes of the peritoneum and rings of the abdominal muscles. See SURGERY.

BUBONIUM, in botany, a synonyme of the ISULA.

BUC (George), a learned English antiquarian, flourished in the beginning of the 17th century. In the reign of king James I. he was made one of the gentlemen of his majesty's privy-chamber, and knighted: he was also constituted master of the revels. What he mostly distinguished himself by was his writing, 1. The history of the reign of Richard III.; in which he takes great pains to wipe off the bloody stains that have blotted his character, and represents the person and actions of that prince in a much less odious light than other historians have done. He also wrote, 2. A treatise of the art of revels; and, 3. a work entitled The third univertie of England.

BUCANEER, one who dries and smokes flesh or fish after the manner of the Indians. The name was particularly given to the first French settlers on the island of St Domingo, whose sole employment consisted in hunting bulls or wild boars, in order to sell their hides and flesh. The name has also been applied to those famous piratical adventurers, chiefly English and French, who joined together to make depredations on the Spaniards of America. Of both these we shall give an account.

1. *The Buccaneers of St Domingo.* The Spaniards had not been long in the possession of the West Indies and the continent of America, when other nations, especially the English and French, began to follow them there. But though the Spaniards were unable to people such extensive countries themselves, they were resolved that no others should do it for them; and therefore made a most cruel war on all those of any other nation who attempted to settle in any of the Antilles or Caribbee islands. The French, however, were at last lucky enough to acquire some footing in the island of St Christopher's; but by the time they began to subside into a regular form of government, the Spaniards found means to dislodge them. Upon this the wretched fugitives, considering at how great a distance they were from their mother-country, and how near to the island of Hispaniola or St Domingo, the northern parts of which were then uninhabited and full of swine and black cattle, immediately resolved to take possession of that country, in conjunction with several other adventurers of their own and the English nation; especially as the Dutch, who now began to appear in these seas, promised to supply them plentifully with all kinds of necessaries they might require, in exchange for the hides and tallow they should procure by hunting.

These new settlers obtained the name of *bucaneers*, from their custom of bucanning their beef and pork in order to keep it for sale, or for their own consumption, the method of which will be presently described. But

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Bucaneer some of them soon grew tired of this new way of life, and took to planting; while many more chose to turn pirates, trusting to find among those who remained on shore a quick sale for all the plunder they could make at sea. This new body of adventurers were called *freebooters*, from their making free prey or booty of whatever came in their way.

The colony now began to thrive at a great rate, by the cheap and easy manner in which the free-booters acquired the greatest riches, and the profusion with which they distributed them among their old companions the bucaniers and planters for the merest trifles. This brought numbers of settlers from Old France in quality of indentured servants, though they toiled rather like slaves during the three years for which they generally bound themselves. One of these men presuming to represent to his master, who always fixed upon a Sunday for sending him with skins to the port, that God had forbidden such a practice, when he had declared, "Six days shalt thou labour, and on the seventh day shalt thou rest:" "And I (replied the brutal bucanier) say to thee, Six days shalt thou kill bulls, and strip them of their skins, and on the seventh day shalt thou carry their hides to the sea-shore." This command was followed by blows, which sometimes enforce obedience, sometimes disobedience, to the laws of God.

Thus the colony consisted of four classes: bucaniers; freebooters; planters; and indentured servants, who generally remained with the bucaniers or planters. And these four orders composed what they now began to call the *body of adventurers*. These people lived together in a perfect harmony under a kind of democracy: every freeman had a despotic authority over his own family; and every captain was a sovereign in his own ship, tho' liable to be discarded at the discretion of the crew.

The planters settled chiefly in the little island of Tortuga on the northern coast of Hispaniola: but it was not long before some of them going to the great island to hunt with the bucaniers, the rest were surprised by the Spaniards; and all, even those who had surrendered at discretion in hopes of mercy, were put to the sword or hanged.

The next care of the Spaniards was to rid the great island of the bucaniers; and for this reason they assembled a body of 500 lance-men, who, by their seldom going fewer than 50 in a company, obtained the name of *the Fifties* from their enemies, whose manners and customs we shall now enter upon.

The bucaniers lived in little huts built on some spots of cleared ground, just large enough to dry their skins on, and contain their bucaning houses. These spots they called *Bucans*, and the huts they dwelt in *Ajoupas*, a word which they borrowed from the Spaniards, and the Spaniards from the natives. Though these ajoupas lay open on all sides, they were very agreeable to the hardy inhabitants, in a climate where wind and air are so very desirable things. As the bucaniers had neither wife nor child, they associated by pairs, and mutually rendered each other all the services a master could reasonably expect from a servant, living together in so perfect a community, that the survivor always succeeded his deceased partner. This kind of union or fellowship they called *f'evatekier* [insailing], and each other *m'istek*, [sailor], whence is derived the custom of gi-

Bucaneer ving, at least in some parts of the French Antilles, the name *m'atelotage* [sailorage], to any kind of society formed by private persons for their mutual advantage. They behaved to each other with the greatest justice and openness of heart: it would have been a crime to keep any thing under lock and key; but, on the other hand, the least pilfering was unpardonable, and punished with expulsion from the community. And indeed there could be no great temptation to steal, when it was reckoned a point of honour, never to refuse a neighbour what he wanted; and where there was so little property, it was impossible there should be many disputes. If any happened, the common friends of the parties at variance interposed, and soon put an end to the difference.

As to laws, the bucaniers acknowledged none but an odd jumble of conventions made between themselves, which, however, they regarded as the sovereign rule. They silenced all objections by coolly answering, that it was not the custom of the coast; and grounded their right of acting in this manner, on their baptism under the tropic, which freed them, in their opinion, from all obligations antecedent to that marine ceremony. The governor of Tortuga, when that island was again settled, though appointed by the French court, had very little authority over them; they contented themselves with rendering him from time to time some slight homage. They had in a manner entirely shaken off the yoke of religion, and thought they did a great deal in not wholly forgetting the God of their fathers. We are surprised to meet with nations, among whom it is a difficult matter to discover any trace of a religious worship: and yet it is certain, that had the bucaniers of St Domingo been perpetuated on the same footing they subsisted at the time we are speaking of, the third or fourth generation of them would have as little religion as the Caffres and Hottentots of Africa, or the Topinambous and Cannibals of America.

They even laid aside their surnames, and assumed nick-names, or martial names, most of which have continued in their families to this day. Many, however, on their marrying, which seldom happened till they turned planters, took care to have their real surnames inserted in the marriage-contract; and this practice gave occasion to a proverb, still current in the French Antilles, *a man is not to be known till he takes a wife*.

Their dress consisted of a filthy greasy shirt, dyed with the blood of the animals they killed; a pair of trousers still more nasty: a thong of leather by way of belt, to which they hung a case containing some Dutch knives, and a kind of very short sabre called *Marchette*; a hat without any brim, except a little flap on the front to take hold of it by; and shoes of hogskin all of a piece. Their guns were four feet and a half in the barrel, and of a bore to carry balls of an ounce. Every man had his contract servants, more or fewer according to his abilities; besides a pack of 20 or 30 dogs, among which there was always a couple of beagles. Their chief employment at first was ox-hunting; and, if at any time they chased a wild hog, it was rather for pastime, or to make provision for a feast, than for any other advantage. But, in process of time, some of them betook themselves entirely to hunting of hogs, whose flesh they bucanied in the following manner: First, they cut the flesh into long pieces, an inch and an half thick,

and

and sprinkled them with salt, which they rubbed off after 24 hours. Then they dried these pieces in stoves over the fire made of the skin and bones of the beast, till they grew as hard as a board, and assumed a deep brown colour. Pork prepared in this manner will keep in casks a twelvemonth and longer; and when steeped but a little while in lukewarm water, become plump and rosy, and yield moreover a most grateful smell, either broiled or boiled, or otherwise dressed, enough to tempt the most languid appetite and please the most delicate palate. Those who hunt the wild boar, have of late been called simply *hunters*.

In hunting, they set out at day-break, preceded by the beagles, and followed by their servants with the rest of the dogs; and as they made it a point never to balk their beagles, they were often led by them over the most frightful precipices, and through places which any other mortal would have deemed absolutely impassable. As soon as the beagles had roused the game, the rest of the dogs struck up and surrounded the beast, stopping it, and keeping a constant barking till the bucaneer could get near enough to shoot it; in doing this, he commonly aimed at the pit of the breast; when the beast fell, he hamstringed it, to prevent its rising again. But it has sometimes happened that the creature, not wounded enough to tumble to the ground, has run furiously at his pursuer, and ripped him open. But, in general, the bucaneer seldom missed his aim; and when he did, was nimble enough to get up the tree behind which he had the precaution to place himself. What is more; some of them have been seen to overtake the beast in chace, and hamstring it without any further ceremony.

As soon as the prey was half skinned, the master cut out a large bone, and sucked the marrow for breakfast. The rest he left to his servants, one of whom always remained behind to finish the skinning, and bring the skin with a choice piece of meat for the huntsmens dinner. They then continued the chace till they had killed as many beasts as there were heads in the company. The master was the last to return to the boucan, loaded like the rest with a skin and a piece of meat. Here the bucaneeers found their tables ready: for every one had his separate table; which was the first thing, any way fit for the purpose, that came in their way, a stone, the trunk of a tree, and the like. No table-cloth, no napkin, no bread or wine, graced their board; not even potatoes or bananas, unless they found them ready to their hands. When this did not happen, the fat and lean of the game, taken alternately, served to supply the place. A little pimento, and the squeeze of an orange, their only sauce; contentment, peace of mind, a good appetite, and abundance of mirth, made every thing agreeable. Thus they lived and spent their time, till they had completed the number of hides for which they had agreed with the merchants; which done, they carried them to Tortuga, or some port of the great island.

As the bucaneeers used much exercise, and fed only on flesh meat, they generally enjoyed a good state of health. They were indeed subject to fevers, but either such as lasted only a day, and left no sensible impression the day following; or little slow fevers, which did not hinder them from action, and were of course so little regarded, that it was usual with the patient, when

asked how he did, to answer, "Very well, nothing ails me but the fever." It was impossible, however, they should not suffer considerably by such fatigues under a climate to the heat of which few of them had been early enough inured. Hence the most considerate among them, after they had got money enough for that purpose, turned planters. The rest soon spent the fruits of their labour in taverns and tippling-houses; and many had so habituated themselves to this kind of life, as to become incapable of any other. Nay, there have been instances of young men, who having early embarked through necessity in this painful and dangerous profession, persisted in it afterwards, merely through a principle of libertinism, rather than return to France and take possession of the most plentiful fortunes.

Such were the bucaneeers of St Domingo, and such their situation, when the Spaniards undertook to extirpate them. And at first they met with great success; for as the bucaneeers hunted separately, every one attended by his servants, they were easily surpris'd. Hence the Spaniards killed numbers, and took many more, whom they condemned to a most cruel slavery. But whenever the bucaneeers had time to put themselves into a state of defence, they fought like lions, to avoid falling into the hands of a nation from whom they were sure to receive no quarter; and by this means they often escaped: nay, there are many instances of single men fighting their way through numbers. These dangers, however, and the success of the Spaniards in discovering their boucans, where they used to surprise and cut the throats of them and their servants in their sleep, engaged them to cohabit in greater numbers, and even to act offensively, in hopes that by so doing they might at last induce the Spaniards to let them live in peace. But the fury with which they behaved whenever they met any Spaniards, served only to make their enemies more intent on their destruction; and assistance coming to both parties, the whole island was turned into a slaughter-house, and so much blood spilt on both sides, that many places, on account of the carnage of which they had been the theatres, were intitled, *of the massacre*: such as *the hill of the massacre*; *the plain of the massacre*; *the valley of the massacre*; which names they retain to this day.

At length the Spaniards grew tired of this way of proceeding, and had recourse to their old method of surprise, which against enemies of more courage than vigilance was like to succeed better. This put the bucaneeers under a necessity of never hunting but in large parties, and fixing their boucans in the little islands on the coast, where they retired every evening. This expedient succeeded; and the boucans, by being more fixed, soon acquired the air and consistency of little towns.

When the bucaneeers had once fixed themselves, as related, each boucan ordered scouts every morning to the highest part of the island, in order to reconnoitre the coast, and see if any Spanish parties were abroad. If no enemy appeared, they appointed a place and hour of rendezvous in the evening, and were never absent if not killed or prisoners. When therefore any one of the company was missing, it was not lawful for the rest to hunt again till they had got intelligence of him if taken, or avenged his death if killed.

Things continued in this situation for a long time, till the Spaniards made a general hunt over the whole

Bucaneer. island; and, by destroying their game, put the bucaneeers under a necessity of betaking themselves to another course of life. Some of them turned planters; and thereby increased some of the French settlements on the coast, and formed others. The rest, not relishing so confined and regular a life, entered among the freebooters, who thereby became a very powerful body.

France, who had hitherto disclaimed for her subjects these ruffians whose successes were only temporary, acknowledged them, however, as soon as they formed themselves into settlements; and took proper measures for their government and defence. See the article *St DOMINGO*.

The hunting both of the bull and boar is at this day carried on, and proves of considerable importance. That of the former furnishes France with the finest hides brought from America. The bucaneeers put the hides in packs which they call loads, mixing together hides of full grown bulls, of young bullocks, and of cows. Each of these loads is composed of two bull-hides, or of an equivalent; that is to say, either of two real bull-hides, or of one bull-hide and two cow-hides, or of four cow-hides, or of three young bullocks hides; three bullocks hides being reckoned equivalent to two full-grown bulls hides, and two cows hides equivalent to one bull's hide. These bulls they commonly call *sexen* in France, though they be not gelt. Each load is commonly sold for six pieces of eight rials, which is a Spanish coin, the French coin being but little current, or not at all, in the island of St Domingo.

The boar meat bucaned in the manner above mentioned is sold by the bundle or pack, weighing commonly 60 pounds, at the rate of six pieces of eight per pack. The palmetto leaves serve to pack it up in; but their weight is deducted, so that there must be in each pack 60 pounds of net flesh. These bucaneeers have also a great trade of the lard of boars, which they melt, and gather in large pots called *petiches*. This lard, which is called *mantegua*, is also sold for about eight pieces of eight per pot. There is a great trade, and a great consumption of each of these merchandizes in the French settlements of the island of St Domingo, and in those of Tortuga: besides which, they used to send great quantities of them to the Antilles, and even into the continent of French America. There is also a great deal of it sold for the support of the crews of the ships that come from France for trading, or which the privateers of Tortuga fit out for cruising against the Spaniards.

The Spaniards, who have large settlements in the island of St Domingo, have also their bucaneeers there, whom they call *matadores* or *monteros*. Their chase has something noble, which favours of the Spanish pride: the huntsman being on horseback, uses the lance to strike the bull, thinking it beneath his courage to shoot him at a distance. When the servants, who are on foot, have discovered the beast, and with their dogs have driven it into some savannah or meadow, in which the master waits for them on horseback, armed with two lances, that matadore goes and hamstrings it with the first lance, the head of which is made like a crescent or half-moon, and extremely sharp, and kills it afterwards with the other lance, which is a common one. This chase is very agreeable; the huntsman making com-

monly, in order to attack the bull, the same turns and the same ceremonies which are practised in those festivals so famous in Spain, wherein the greatest lords expose themselves sometimes to the view of the people, to make them admire their dexterity and intrepidity in attacking those furious animals: but then it is a very dangerous chase; those bulls, in their fury, often running directly against the huntsman, who may think himself very happy if he comes off only with the loss of his horse, and if he himself is not mortally wounded.

The Spaniards dress their hides like the French, who have learned it from them; and these hides being carried to the Havannah, a famous harbour in the island of Cuba, are part of the trade of that celebrated town. The flota and the galleons scarce ever sail touching there, on their return from Vera Cruz and Porto Bello, and load there those hides which they carry into Spain, where they are sold for Havannah hides, the most esteemed of any that are brought from America into Europe.

II. *BUCANEERS, the Pirates.* Before the English had made any settlement at Jamaica, and the French at St Domingo, some pirates of both nations, who have since been so much distinguished by the name of *Bucaneers*, had driven the Spaniards out of the small island of Tortuga; and, fortifying themselves there, had with an amazing intrepidity made excursions against the common enemy. They formed themselves into small companies, consisting of 50, 100, or 150 men each. A boat, of a greater or smaller size, was their only armament. Here they were exposed night and day to all the inclemencies of the weather, having scarce room enough to lie down. A love of absolute independence, the greatest blessing to those who are not proprietors of land, rendered them averse from those mutual restraints which the members of society impose upon themselves for the common good; some of them chose to sing, while others were desirous of going to sleep. As the authority they had conferred on their captain was confined to his giving orders in battle, they lived in the greatest confusion. Like the savages, having no apprehension of want, nor any care to preserve the necessaries of life, they were constantly exposed to the severest extremities of hunger and thirst. But deriving, even from their very distresses, a courage superior to every danger, the sight of a ship transported them to a degree of frenzy. They never deliberated on the attack, but it was their custom to board the ship as soon as possible. The smallness of their vessels, and the skill they showed in the management of them, screened them from the fire of the greater ships; and they presented only the fore part of their little vessels filled with fusileers; who fired at the port-holes with so much exactness, that it entirely confounded the most experienced gunners. As soon as they threw out the grappling, the largest vessel seldom escaped them.

In cases of extreme necessity, they attacked the people of every nation, but fell upon the Spaniards at all times. They thought that the cruelties the latter had exercised on the inhabitants of the new world justified the implacable aversion they had sworn against them. But this was heightened by a personal pique, from the mortification they felt in seeing themselves debarred from the privilege of hunting and fishing, which they con-

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considered as natural rights. Such were their principles of justice and religion, that, whenever they embarked on any expedition, they used to pray to heaven for the success of it; and they never came back from the plunder, but they constantly returned thanks to God for their victory.

The ships that sailed from Europe into America seldom tempted their avidity. The merchandize they contained would not easily have been sold, nor been very profitable to these barbarians in those early times. They always waited for them on their return, when they were certain that they were laden with gold, silver, jewels, and all the valuable productions of the new world. If they met with a single ship, they never failed to attack her. As to the fleets, they followed them till they sailed out of the gulph of Bahama; and as soon as any one of the vessels was separated by accident from the rest, it was taken. The Spaniards, who trembled at the approach of the bucaners, whom they called *devils*, immediately surrendered. Quarter was granted, if the cargo proved to be a rich one; if not, all the prisoners were thrown into the sea.

The bucaners, when they had got a considerable booty, at first held their rendezvous at the island of Tortuga, in order to divide the spoil; but afterwards the French went to St Domingo, and the English to Jamaica. Each person, holding up his hand, solemnly protested that he had secreted nothing of what he had taken. If any one among them was convicted of perjury, a case that seldom happened, he was left, as soon as an opportunity offered, upon some desert island, as a traitor unworthy to live in society. Such brave men among them as had been maimed in any of their expeditions, were first provided for. If they had lost a hand, an arm, a leg, or a foot, they received 26l. An eye, a finger, or a toe, lost in fight, was valued only at half the above sum. The wounded were allowed 2s. 6d. a day for two months, to enable them to have their wounds taken care of. If they had not money enough to answer these several demands, the whole company were obliged to engage in some fresh expedition, and to continue it till they had acquired a sufficient stock to enable them to satisfy such honourable contracts.

After this act of justice and humanity, the remainder of the booty was divided into as many shares as there were bucaners. The commander could only lay claim to a single share as the rest; but they complimented him with two or three, in proportion as he had acquitted himself to their satisfaction. Favour never had any influence in the division of the booty; for every share was determined by lot. Instances of such rigid justice as this are not easily met with; and they extended even to the dead. Their share was given to the man who was known to be their companion when alive, and therefore their heir. If the person who had been killed had no intimate, his part was lent to his relations when they were known. If there were no friends or relations, it was distributed in charity to the poor and to churches, which were to pray for the person in whose name these benefactions were given.

When these duties had been complied with, they then indulged themselves in all kinds of profusion. Unbounded licentiousness in gaming, wine, women, every kind of debauchery, was carried to the utmost pitch

of excess, and was stopt only by the want which such profusions brought on. Those men who were enriched with several millions, were in an instant totally ruined, and destitute of clothes and provisions. They returned to sea; and the new supplies they acquired were soon lavished in the same manner.

The Spanish colonies, flattering themselves with the hopes of seeing an end to their miseries, and reduced almost to despair in finding themselves a perpetual prey to these ruffians, grew weary of navigation. They gave up all the power, conveniences, and fortune, which their connections procured them, and formed themselves almost into so many distinct and separate states. They were sensible of the inconveniences arising from such a conduct, and avowed them; but the dread of falling into the hands of rapacious and savage men, had greater influence over them than the dictates of honour, interest, and policy. This was the rise of that spirit of inactivity which continues to this time.

This despondency served only to increase the boldness of the bucaners. As yet they had only appeared in the Spanish settlements, in order to carry off some provisions when they were in want of them. They no sooner found their captures begin to diminish, than they determined to recover by land what they had lost at sea. The richest and most populous countries of the continent were plundered and laid waste. The culture of lands was equally neglected with navigation; and the Spaniards dared no more appear in their public roads, than sail in the latitudes which belonged to them.

Among the bucaners who signalized themselves in this new species of excursions, Montbar, a gentleman of Languedoc, particularly distinguished himself. Having by chance, in his infancy, met with a circumstantial account of the cruelties practised in the conquest of the new world, he conceived an aversion which he carried to a degree of frenzy against that nation which had committed such enormities. The enthusiasm of humanity worked him up to, was turned into a rage more cruel than that of religious fanaticism, to which so many victims had been sacrificed. The names of these unhappy sufferers seemed to rouse him, and call upon him for vengeance. He had heard some account of the bucaners, who were said to be the most inveterate enemies to the Spanish name: he therefore embarked on board a ship, in order to join them.

In the passage, they met with a Spanish vessel; attacked it; and, as it was usual in those times, immediately boarded it. Montbar, with a sabre in his hand, fell upon the enemy; broke through them; and, hurrying twice from one end of the ship to the other, levelled every thing that opposed him. When he had compelled the enemy to surrender, leaving to his companions the happiness of dividing so rich a booty, he contented himself with the savage pleasure of contemplating the dead bodies of the Spaniards, lying in heaps together, against whom he had sworn a constant and deadly hatred.

Fresh opportunities soon occurred, that enabled him to exert this spirit of revenge, without extinguishing it. The ship he was in arrived at the coast of St Domingo; where the bucaners on land immediately applied to barter some provisions for brandy. As the articles they

Bucaneer. they offered were of little value, they alleged in excuse, that their enemies had over-run the country, laid waste their settlements, and carried off all they could. "Why (replied Montbar) do you tamely suffer such insults?" "Neither do we (answered they in the same tone); the Spaniards have experienced what kind of men we are, and have therefore taken advantage of the time when we were engaged in hunting. But we are going to join some of our companions, who have been still more ill treated than we; and then we shall have warm work." "If you approve of it (answered Montbar), I will head you, not as your commander, but as the foremost to expose myself to danger." The bucaners, perceiving from his appearance that he was such a man as they wanted, cheerfully accepted his offer. The same day they overtook the enemy, and Montbar attacked them with an impetuosity that astonished the bravest. Scarce one Spaniard escaped the effects of his fury. The remaining part of his life was equally distinguished as on this day. The Spaniards suffered so much from him, both by land and at sea, that he acquired the name of the *Exterminator*.

His savage disposition, as well as that of the other bucaners who attended him, having obliged the Spaniards to confine themselves within their settlements, these free-booters resolved to attack them there. This new method of carrying on the war required superior forces; and their associations in consequence became more numerous. The first that was considerable was formed by Lolonois, who derived his name from the sands of Olones the place of his birth. From the abject state of a bondsmen, he had gradually raised himself to the command of two canoes, with 22 men. With these he was so successful as to take a Spanish frigate on the coast of Cuba. He then repaired to the Port-au-Prince, in which were four ships, fitted out purposely to sail in pursuit of him. He took them, and threw all the crew into the sea, except one man, whom he saved, in order to send him with a letter to the governor of the Havannah, acquainting him with what he had done, and assuring him that he would treat in the same manner all the Spaniards that should fall into his hands, not excepting the governor himself, if he should be so fortunate as to take him. After this expedition, he ran his canoes and prize-ships aground, and sailed with his frigate only to the island of Tortuga.

Here he met with Michael deBafco, who had distinguished himself by having taken, even under the cannon of Porto-Bello, a Spanish ship, estimated at 218,500*l.* and by other actions equally brave and daring. These two gave out, that they were going to embark together on an expedition equally glorious and profitable; in consequence of which they soon collected together 440 men. This body of men, the most numerous the bucaners had yet been able to muster, sailed to the bay of Venezuela, which runs up into the country for the space of 50 leagues. The fort that was built at the entrance of it for its defence was taken; the cannon were nailed up; and the whole garrison, consisting of 250 men, put to death. They then reembarked, and came to Maracaybo, built on the western coast of the lake of the same name, at the distance of ten leagues from its mouth. This city, which had become flourishing and rich by its trade in skins, tobacco, and cocoa, was deserted. The inhabitants had retired with

their effects to the other side of the bay. If the bucaners had not lost a fortnight in riot and debauch, they would have found at Gibraltar, near the extremity of the lake, every thing that the inhabitants had secreted to secure it from being plundered. On the contrary, they met with fortifications lately erected, which they had the useless satisfaction of making themselves masters of, at the expence of a great deal of blood; for the inhabitants had already removed at a distance the most valuable part of their property. Exasperated at this disappointment, they set fire to Gibraltar. Maracaybo would have shared the same fate, had it not been ransomed. Besides the sum they received for its ransom, they also carried off with them all the crosses, pictures, and bells of the churches; intending, as they said, to build a chapel in the island of Tortuga, and to consecrate this part of their spoils to sacred purposes. Such was the religion of these barbarous people, who could make no other offering to heaven than that which arose from their robberies and plunder.

While they were idly dissipating the spoils they had made on the coast of Venezuela, Morgan, the most renowned of the English bucaners, sailed from Jamaica to attack Porto-Bello. His plan of operations was so well contrived, that he surprised the city, and took it without opposition.

The conquest of Panama was an object of much greater importance. To secure this, Morgan thought it necessary to sail in the latitudes of Costa-Ricca, to procure some guides in the island of St Catharine's, where the Spaniards confined their malefactors. This place was so strongly fortified, that it ought to have held out for ten years against a considerable army. Notwithstanding this, the governor, on the first appearance of the pirates, sent privately to concert measures how he might surrender himself without incurring the imputation of cowardice. The result of this consultation was, that Morgan, in the night-time, should attack a fort at some distance, and the governor should fall out of the citadel to defend a post of so much consequence; that the assailants should then attack him in the rear, and take him prisoner, which would consequently occasion a surrender of the place. It was agreed that a smart firing should be kept on both sides, without doing mischief to either. This farce was admirably carried on. The Spaniards, without being exposed to any danger, appeared to have done their duty; and the bucaners, after having totally demolished the fortifications, and put on board their vessels a prodigious quantity of warlike ammunitions which they found at St Catharine's, steered their course towards the river Chagre, the only channel that was open to them to arrive at the place which was the object of their utmost wishes.

At the entrance of this considerable river, a fort was built upon a steep rock, which the waves of the sea constantly beat against. This bulwark, very difficult of access, was defended by an officer whose extraordinary abilities were equal to his courage, and by a garrison that deserved such a commander. The bucaners, for the first time, here met with a resistance that could only be equalled by their perseverance: it was a doubtful point, whether they would succeed or be obliged to raise the siege, when a lucky accident happened that proved favourable to their glory and their

Bucaneers. their fortune. The commander was killed, and the fort accidentally took fire: the besiegers then taking advantage of this double calamity, made themselves masters of the place.

Morgan left his vessels at anchor, with a sufficient number of men to guard them; and sailed up the river in his sloops for 33 miles, till he came to Cruces, where it ceases to be navigable. He then proceeded by land to Panama, which was only five leagues distant. Upon a large and extensive plain that was before the city, he met with a considerable body of troops, whom he put to flight with the greatest ease, and entered into the city, which was now abandoned. Here were found prodigious treasures concealed in the wells and caves. Some valuable commodities were also taken upon the boats that were left aground at low water; and in the neighbouring forests were also found several rich deposits.

Having burnt the city, they set sail with a great number of prisoners, who were ransomed a few days after; and came to the mouth of the Chagre with a prodigious booty.

In 1603, an expedition of the greatest consequence was formed by Van Horn, a native of Ostend, but who had served all his life among the French. His intrepidity would never let him suffer the least signs of cowardice among those who associated with him. In the heat of an engagement, he went about his ship; successively observed his men; and immediately killed those who shrank at the sudden report of a pistol, gun, or cannon. This extraordinary discipline had made him become the terror of the coward, and the idol of the brave. In other respects, he readily shared with the men of spirit and bravery the immense riches that were acquired by so truly warlike a disposition. When he went upon these expeditions, he generally sailed in his frigate, which was his own property. But these new designs requiring greater numbers to carry them into execution, he took to his assistance Gramont, Godfrey, and Jonqué, three Frenchmen distinguished by their exploits; and Lawrence de Graff, a Dutchman, who had signalized himself still more than they. Twelve hundred bucaners joined themselves to these famous commanders, and sailed in six vessels for Vera Cruz.

The darkness of the night favoured their landing, which was effected at three leagues from the place, where they arrived without being discovered. The governor, the fort, the barracks, and the posts of the greatest consequence; every thing, in short, that could occasion any resistance, was taken by the break of day. All the citizens, men, women, and children, were shut up in the churches, whither they had fled for shelter. At the door of each church were placed barrels of gunpowder to blow up the building. A bucaner, with a lighted match, was to set fire to it upon the least appearance of an insurrection.

While the city was kept in such terror, it was easily pillaged; and after the bucaners had carried off what was most valuable, they made a proposal to the citizens who were kept prisoners in the churches, to ransom their lives and liberties by a contribution of 437,500 l. These unfortunate people, who had neither ate nor drank for three days, cheerfully accepted the terms that were offered them. Half of the money was paid the

same day: the other part was expected from the internal parts of the country; when there appeared on an eminence a considerable body of troops advancing, and near the port a fleet of 17 ships from Europe. At the sight of this armament, the bucaners, without any marks of surprize, retreated quietly, with 1500 slaves they had carried off with them as a trifling indemnification for the rest of the money they expected, the settling of which they referred to a more favourable opportunity.

Their retreat was equally daring. They boldly sailed through the midst of the Spanish fleet; which let them pass without firing a single gun, and were in fact rather afraid of being attacked and beaten. The Spaniards would not probably have escaped so easily, and with no other inconvenience but what arose from their fears, if the vessels of the pirates had not been laden with silver, or if the Spanish fleet had been freighted with any other effects but such merchandise as were little valued by these pirates.

A year had scarce elapsed since their return from Mexico, when on a sudden they were all seized with the rage of going to plunder the country of Peru. It is probable, that the hope of finding greater treasures upon a sea little frequented, than on one long exposed to piracies of this kind, was the cause of this expedition. But it is somewhat remarkable, that both the English and French, and the particular associations of these two nations, had projected this plan at the same time, without any communication, intercourse, or design of acting in concert with each other. About 4000 men were employed in this expedition. Some of them came by Terra-Firma, others by the straits of Magellan, to the place that was the object of their wishes. If the intrepidity of these barbarians had been directed, under the influence of a skilful and respectable commander, to one single uniform end, it is certain that they would have deprived the Spaniards of this important colony. But their natural character was an invincible obstacle to so rare an union; for they always formed themselves into several distinct bodies, sometimes even so few in number as ten or twelve, who acted together, or separated, as the most trifling caprice directed. Grogner, Lécnyer, Picard, and Le Sage, were the most distinguished officers among the French: David, Samms, Peter, Wilner, and Towley, among the English.

Such of those adventurers as had got into the South Sea by the straits of Darien, seized upon the first vessels they found upon the coast. Their associates, who had sailed in their own vessels, were not much better provided. Weak however as they were, they beat several times the squadrons that were fitted out against them. But these victories were prejudicial to them, as they interrupted their navigation. When there were no more ships to be taken, they were continually obliged to make descents upon the coasts to get provisions, or to go by land in order to plunder those cities where the booty was secured. They successively attacked Seppa, Puebla-Nuevo, Leon, Realejo, Puebla-Viejo, Chiriquita, Lesparso, Granada, Villia, Nicoya, Teoanteca, Mucmeluna, Chiloteca, New-Segovia, and Guayaquil, the most considerable of all these places.

Many of them were taken by surprize; and most of them deserted by their inhabitants, who fled at the

Bucaneers. fight of the enemy. As soon as they took a town, it was directly set on fire, unless a sum proportioned to its value was given to save it. The prisoners taken in battle were massacred without mercy, if they were not ransomed by the governor or some of the inhabitants: gold, pearls, or precious stones, were the only things accepted of for the payment of their ransom. Silver being too common, and too weighty for its current value, would have been troublesome to them. The chances of fortune, that seldom leave guilt unpunished, nor adversity without a compensation for its suffering, atoned for the crimes committed in the conquest of the new world, and the Indians were amply revenged of the Spaniards.

While such priacies were committed on the southern ocean, the northern was threatened with the same by Gramont. He was a native of Paris, by birth a gentleman, and had distinguished himself in a military capacity in Europe; but his passion for wine, gaming, and women, had obliged him to join the pirates. He was, however, affable, polite, generous, and eloquent: he was endued with a sound judgment, and was a person of approved valour; which soon made him be considered as the chief of the French bucaneeers. As soon as it was known that he had taken up arms, he was immediately joined by a number of brave men. The governor of St Domingo, who had at length prevailed upon his master to approve of the project, equally wise and just, of fixing the pirates to some place, and inducing them to become cultivators, was desirous of preventing the concerted expedition, and forbid it in the king's name. Gramont, who had a greater share of sense than his associates, was not on that account more inclined to comply, and sternly replied: "How can Louis disapprove of a design he is unacquainted with, and which has been planned only a few days ago?" This answer highly pleased all the bucaneeers; who directly embarked, in 1685, to attack Campeachy.

They landed without opposition. But at some distance from the coast, they were attacked by 800 Spaniards, who were beaten and pursued to the town; where both parties entered at the same time. The cannon they found there was immediately levelled against the citadel. As it had very little effect, they were contriving some stratagem to enable them to become masters of the place, when intelligence was brought that it was abandoned. There remained in it only a gunner; an Englishman; and an officer of such signal courage, that he chose rather to expose himself to the greatest extremities, than basely to fly from the place with the rest. The commander of the bucaneeers received him with marks of distinction, generously released him, gave him up all his effects, and besides complimented him with some valuable presents: such influence have courage and fidelity even on the minds of those who seem to violate all the rights of society.

The conquerors of Campeachy spent two months in searching all the environs of the city, for 12 or 15 leagues, carrying off every thing that the inhabitants, in their flight, thought they had preserved. When all the treasure they had collected from every quarter was deposited in the ships, a proposal was made to the governor of the province, who still kept the field with 900 men, to ransom his capital city. His refusal de-

termined them to burn it, and demolish the citadel. **Bucaneers.** The French, on the festival of St Louis, were celebrating the anniversary of their king; and in the transports of their patriotism, intoxication, and national love of their prince, they burnt to the value of a million of logwood; a part, and a very considerable one too, of the spoil they had made. After this singular and extravagant instance of folly, of which Frenchmen only could boast, they returned to St Domingo.

In 1697, 1200 bucaneeers were induced to join a squadron of seven ships that sailed from Europe under the command of Pointis, to attack the famous city of Carthagena. This was the most difficult enterprise that could be attempted in the new world. The situation of the port, the strength of the place, the badness of the climate, were so many obstacles that seemed insurmountable to any but such men as the bucaneeers were. But every obstacle yielded to their valour and good fortune: the city was taken, and booty gained to the amount of 1,750,000 l. Their rapacious commander, however, deprived them of the advantages resulting from their success. He scrupled not, as soon as they set sail, to offer 5250 l. for the share of those who had been the chief instruments in procuring him so considerable a spoil.

The bucaneeers, exasperated at this treatment, resolved immediately to board the vessel called the *Sceptre*, where Pointis himself was, and which at that time was too far distant from the rest of the ships to expect to be assisted by them. This avaricious commander was upon the point of being massacred, when one of the malecontents cried out: "Brethren, why should we attack this rascal? he has carried off nothing that belongs to us. He has left our share at Carthagena, and there we must go to recover it." This proposal was received with general applause. A savage joy at once succeeded that gloomy melancholy which had seized them; and without further deliberation, all their ships sailed towards the city.

As soon as they had entered the city without meeting with any resistance, they shut up all the men in the great church; and exacted payment of 218,750 l. the amount of their share of booty which they had been defrauded of; promising to retreat immediately upon their compliance, but threatening the most dreadful vengeance if they refused. Upon this, the most venerable priest in the city mounted the pulpit, and made use of the influence his character, his authority, and his eloquence gave him, to persuade his hearers to yield up without reserve all the gold, silver, and jewels they had. The collection, which was made after the sermon, not furnishing the sum required, the city was ordered to be plundered.

At length, after amassing all they could, these adventurers set sail; when unfortunately they met with a fleet of Dutch and English ships, both which nations were then in alliance with Spain. Several of the pirates were either taken or sunk, with all the cargo they had on board their ships; the rest escaped to St Domingo.

Such was the last memorable event in the history of the bucaneeers. The separation of the English and French, when the war, on account of the prince of Orange, divided the two nations: the successful means they both made use of to promote the cultivation of land

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buccinum.

land among their colonies, by the assistance of these enterprising men; and the prudence they showed in fixing the most distinguished among them, and entrusting them with civil and military employments: the protection they were both under a necessity of affording to the Spanish settlements, which till then had been a general object of plunder: all these circumstances, and various others, besides the impossibility there was of supplying the place of these remarkable men, who were continually dropping off, concurred to put an end to a society as extraordinary as ever existed. Without any regular system, without laws, without any degree of subordination, and even without any fixed revenue, they became the astonishment of that age in which they lived, as they will be also of posterity.

BUCCELLARIUM, an order of soldiery under the Greek emperors, appointed to guard and distribute the ammunition bread; though authors are somewhat divided as to their office and quality. Among the Visigoth, buccellarius was a general name for a client or vassal who lived at the expence of his lord. Some give the denomination to parasites in the courts of princes, some make them the body-guards of emperors, and some fancy they were only such as emperors employed in putting persons to death privately.

BUCCELLATUM, among ancient military writers, denotes camp-bread, or biscuit baked hard and dry, both for lightness and keeping. Soldiers always carried with them enough for a fortnight, and sometimes much longer, during the time that military discipline was kept up.

BUCCHINA, an ancient musical and military instrument. It is usually taken for a kind of trumpet; which opinion is confirmed by Festus, by his defining it a crooked horn, played on like a trumpet. Vegetius observes, that the buccina bent in a semicircle, in which respect it differed from the tuba or trumpet. It is very hard to distinguish it from the cornu or horn, unless it was something less, and not quite so crooked; yet it certainly was of a different species, because we never read of the cornu in use with the watch, but only the buccina. Besides, the sound of the buccina was sharper, and to be heard much farther than either the cornu or the tuba. In scripture, the like instrument, used both in war and in the temple, was called *ramus-hornus*, *kiren-jobel*, and *sopheroth hagijobelim*.

This instrument was in use among the Jews to proclaim their feast-days, new-moons, jubilees, sabbatic years, and the like. At Lacedæmon, notice was given by the buccina when it was supper-time; and the like was done at Rome, where the grandees had a buccina blown both before and after they sat down to table. The sound of the buccina was called *buccinus*, or *buctus*; and the musician who played on it was called *buccinator*.

BUCCHINUM, or **WHELK**, a genus of shell-fish belonging to the order of *vermes testaceæ*. This animal is one of the snail kind. The shell is univalve, spiral, and gibbous. The aperture is oval, ending in a small strait canal. Linnæus enumerates about 60 species, most of which are found in the southern seas. The six following are found in the British seas.

1. The pullus, or brown whelk, with five spires striated, waved, and tuberculated. Aperture wrink-

led; upper part replicated. Length five eighths of an inch.

2. The undatum, or waved whelk, with seven spires, is spirally striated, and deeply and transversely undulated. Length three inches. Inhabits deep water.

3. The striatum has eight spires, with elevated striæ, undulated near the apex. Length near four inches.

4. The reticulatum, with spires scarcely raised, and strongly reticulated, is of a deep brown colour, and of an oblong form. The aperture white, glossy, and denticulated. Size of a hazel nut.

5. The minutum, or small whelk, with five spires, striated spirally, ribbed transversely. Size less than a pea. Found also in Norway.

6. The lappillus, or massy whelk, with about five spires; side of the mouth slightly toothed: a very strong thick shell, of a whitish colour. A variety yellow, or fasciated with yellow, on a white ground; or fulcated spirally, and sometimes reticulated. Length near an inch and an half. Inhabits, in a vast abundance, rocks near low-water mark. This is one of the British shells that produce the purple dye analogous to the *purpura* of the ancients. See **MUREX**.

The process of obtaining the English *purpura* is well described by Mr William Cole of Bristol, in 1684, in *Phil. Transf. abr. ii. 826*.

The shells, being harder than most other kinds, are to be broken with a smart stroke of a hammer, on a plate of iron or firm piece of timber (with their mouths downwards) so as not to crush the body of the fish within; the broken pieces being picked off, there will appear a white vein lying transversely in a little furrow or cleft next to the head of the fish, which must be digged out with the stiff point of a horse-hair pencil, being made short and tapering. The letters, figures, or what else shall be made on the linen, (and perhaps silk too), will presently appear of a pleasant light green colour; and if placed in the sun, will change into the following colours; (*i. e.* if in winter, about noon; if in summer, an hour or two after sun-rising, and so much before setting; for in the heat of the day in summer, the colours will come on so fast, that the succession of each colour will scarcely be distinguished.) Next to the light green, it will appear of a deep green; and in a few minutes, change into a sea-green; after which, in a few minutes more, it will alter to a watchet-blue; from that, in a little time more, it will be of a purple-red; after which (supposing the sun still shining), it will be of a very deep purple-red, beyond which the sun can do no more. But then, the last and most beautiful colour, after washing in scalding water and soap, will (the matter being again put into the wind or sun to dry) be of a fair bright crimson, or near to the prince's colour; which afterwards, notwithstanding there is no use of any llyptic to bind the colour, will continue the same if well ordered; as I have found in handkerchiefs, that have been washed more than 40 times; only it will be somewhat allayed from what it was after the first washing. While the cloth so writ upon lies in the sun, it will yield a very strong and fetid smell, as if garlic and asafetida were mixed together."

BUCCLEUGH, a village in the county of Selkirk in Scotland, from which the noble family of Scott have the title of Duke; and would likewise have been

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duke of Monmouth, had it not been for the attainder, they being the lineal descendants of his Grace: they are now also heirs to the noble family of Montague in England.

BUCCO, the **BARBET**, in ornithology, a genus belonging to the order of picæ. The beak is cultrated, turned inwards, compressed on the sides, and emarginated on each side at the apex; and there is a long slit below the eyes. The nostrils are covered with feathers. The feet have four toes, two before and two behind. Linnæus mentions only one species, the capensis; but ornithologists enumerate several, either as such or as individuals, differing only in age or sex, all found in Asia, Africa, or the southern parts of America.

BUCENTAUR, a galeas, or large galley of the lagoon of Venice, adorned with fine pillars on both sides, and gilt over from the prow to the stern. This vessel is covered over head with a kind of tent, made of purple silk. In it the doge receives the great lords and persons of quality that go to Venice, accompanied with the ambassadors and counsellors of state, and all the senators seated on benches by him. The same vessel serves also in the magnificent ceremony of ascension-day, on which the duke of Venice throws a ring into the sea to espouse it, and to denote his dominion over the gulph of Venice.

BUCENTAUR is also the name of a ship, as great and as magnificent as that of the Venetians, built by order of the elector of Bavaria, and lanchod on a lake which is six leagues in length.

BUCEPHALA, or **BUCEPHALOS**, (anc. geog.) a town built by Alexander, on the west side of the Hydaspis, a river of the Hither India, in memory of his horse Bucephalus, which was killed in the action with Porus, after crossing that river. Others say, this horse died of age, 30 years old; and not in the battle, but some time after. His being branded or marked on the buttock with the head of an ox, gave rise to his name, (Hesychius).—This generous animal, who had so long shared the toils and dangers of his master, had formerly received signal marks of royal regard. Having disappeared in the country of the Uxii, Alexander issued a proclamation, commanding his horse to be restored, otherwise he would ravage the whole country with fire and sword. This command was immediately obeyed. "So dear," says Arrian, "was Bucephalus to Alexander, and so terrible was Alexander to the Barbarians."

BUCER (Martin), one of the first authors of the reformation at Straßburgh, was born in 1491, in Alface; and took the religious habit of St Dominic, at seven years of age: but meeting afterward with the writings of Martin Luther, and comparing them with the Scriptures, he began to entertain doubts concerning several things in the Romish religion. After some conferences with Luther at Heidelberg in 1521, he adopted most of his sentiments; but in 1532 he gave the preference to those of Zuinglius. He assisted in many conferences concerning religion; and in 1548 was sent for to Augsburg to sign the agreement between the Papists and Protestants, called the *interim*. His warm opposition to this project exposed him to many difficulties and hardships; the news of which reaching England, where his fame had already arrived,

Buceros.

Cranmer archbishop of Canterbury gave him an invitation to come over, which he readily accepted. In 1549, a handsome apartment was assigned him in the university of Cambridge, and a salary to teach theology. King Edward VI. had the greatest regard for him. Being told that he was very sensible of the cold of the climate, and suffered much for want of a German stove, he sent him 100 crowns to purchase one. He died of a complication of disorders in 1551; and was buried at Cambridge with great funeral pomp. Five years after, in the reign of queen Mary, his body was dug up, and publicly burnt, and his tomb demolished; but it was afterwards set up by order of queen Elizabeth. He composed many works, among which are commentaries on the evangelists and gospels.

BUCEROS, in ornithology, a genus belonging to the order of picæ. The beak is convex, cultrated, very large, and ferrated outwards: the fore-head is naked, with a bony gibbosity. The nostrils are behind the base of the beak. The tongue is sharp and short. The feet are of the gressarii kind, *i. e.* the toes are distinct from each other. There are four species of the buceros, *viz.* 1. The bicornis, with a flat bony fore-head, and two horns before. The body is black, and about the size of a hen; but the breast, belly, and thighs are white. There is a white spot on the wings; the tail is long, with ten black prime feathers, and the four outermost on each are white. The feet are greenish, with three toes before and one behind. It is a native of China, and called *calao* by Willoughby and other authors. The pied hornbill, described by Mr Latham (*Synops.* Vol. I. p. 349.) from a living specimen which came from the East Indies, the author supposes to be the same species, differing merely in sex or age. In size, it was a trifle bigger than a crow. The manners of this bird were peculiar: it would leap forwards or sideways with both legs at once like a magpie or jay, never walking: when at rest, it folded its head back between the wings: the general air and appearance was rather stupid and dull, though it would sometimes put on a fierce look if at any time it was surpris'd or the like: it would eat lettuce after bruising it with its bill, and swallow raw flesh; as well as devour rats, mice, and small birds, if given to him: it had different tones of voice on different occasions; sometimes a hoarse sound in the throat, most like oück, oück; at other times very hoarse and weak, not unlike the clucking of a Turkey hen. This bird used to display the wings and enjoy itself in a warm sun, but shivered in the cold; and as the winter approached died, unable to bear the severity of the climate, so different to its nature. Another variety, the *calao* (Phil. Transf. vol. xxiii. p. 394), is about the size of a hen. It inhabits the Philippine islands, and has a cry more like that of a hog or a calf than of a bird. The Gentoos rank it among their gods, and pay worship to it. It lives altogether in woods, feeding on fruits, such as the Indian fig, also pistachios, &c. which it swallows whole; and after the external parts have been digested, it brings up the nuts again whole, without the kernels being anywise damaged or unfit for vegetation. 2. The hydrocorax or Indian crow of Ray, has a plain bony fore-head without any horns. The body is yellowish, and blackish below. It inhabits the Molucca

illes.

Buchan
Buchanan

isses. Willoughby observes, that it resembles our raven in the bill, but is red on the temples like some kinds of turkeys; has wide nostrils and ill-favoured eyes; and that it feeds chiefly on nutmegs, whence its flesh is very delicate, and has a fine aromatic relish. This in its native places is frequently tamed, and is useful in destroying rats and mice in houses. 3. The rhinoceros, has a crooked horn in the fore-head joined to the upper mandible. It is a native of India. These birds are said to feed on flesh and carrion; and that they follow the hunters for the purpose of feeding on the entrails of the beasts which they kill; that they chase rats and mice, and after pressing them flat with the bill in a peculiar manner, tossing them up into the air, swallow them whole immediately on their descent. 4. The *nasutus*, has a smooth forehead. It is about the size of a magpye, and is a native of Senegal. These are very common at Senegal and other warm parts of the old continent, where they are called *tock*. They are very tame and foolish birds while young, insomuch as to suffer themselves to be taken by the hand; but having learned experience with mature age, they then become rather shy. When taken young, they immediately become familiar; but are so stupid as not to feed of themselves, though food be offered to them, requiring it to be put into their mouths. In their wild state they feed on fruits, but when domesticated eat bread, and will swallow almost any thing that is offered to them.

BUCHAN, a county or district of Scotland, lying partly in the shire of Aberdeen and partly in that of Banff: it gives the title of earl to the noble and ancient family of Eiskine.

BUCHANAN (George), the best Latin poet of his time, perhaps inferior to none since the Augustan age, was born in February 1506. This accomplished scholar and distinguished wit was not descended of a family remarkable for its rank. He had no occasion for the splendor of ancestry. He wanted not a reflected greatness, the equivocal, and too often the only ornament of the rich and noble. The village of Kilmearn, in Stirling-shire, Scotland, was the place of his nativity; and the abject poverty in which his father died might have confined him to toil at the lowest employments of life, if the generosity of an uncle had not assisted him in his education, and enabled him to pursue for two years his studies at Paris. But that short space was scarcely elapsed, when the death of his benefactor made it necessary that he should return to his own country, and forsake, for a time, the paths of science.

He was yet under his 20th year, and surrounded with the horrors of indigence. In this extremity, he enlisted as a common soldier under John duke of Albany, who commanded the troops which France had sent to assist Scotland in the war it waged, at this period, against England. But nature had not destined him to be a hero. He was disgusted with the fatigues of one campaign; and, fortunately, John Major, then professor of philosophy at St Andrew's, hearing of his necessity and his merit, afforded him a temporary relief. He now became the pupil of John Maiz, a celebrated teacher in the same university, under whom he studied the subtleties of logic; and contracting an attachment

to his master, he followed him to Paris. There, after having encountered many difficulties, he was invited to teach grammar in the college of St Barbe. In this slavish occupation he was found by the earl of Castels; with whom, having remained five years at Paris, he returned into Scotland. He next acted as preceptor to the famous earl of Murray, the natural son of James V. But while he was forming this nobleman for public affairs, he found that his life was in danger; and from enemies, whose vindictive rage could suffer no abatement, and who would not scruple the most dishonourable means of gratifying it.

The scandalous lives of the clergy had, it seems, excited his indignation; and, more than reasoning or argument, had estranged him from the errors of Popery. The Franciscan monks, in return to the beautiful but poignant satires he had written against them, branded him with the appellation of *atheist*; a term which the religious of all denominations are too apt indiscriminately to lavish where they have conceived a prejudice; and, not satisfied with the outrage of abuse and calumny, they conspired his destruction. Cardinal Beaton gave orders to apprehend him, and bribed king James with a very considerable sum to permit his execution. He was seized upon accordingly; and the first genius of his age was about to perish by the halter, or by fire, to satisfy a malignant resentment, when, escaping the vigilance of his guards, he fled into England. Henry VIII. at all times the slave of caprice and passion, was then burning, on the same day, and at the same stake, the Lutheran and the Papist. His court did not suit a philosopher or a satyrist. After a short stay, Buchanan crossed the sea to France; and, to his extreme disappointment, found, at Paris, cardinal Beaton, as ambassador from Scotland. He retired privately to Bourdeaux, dreading, perhaps, new misfortunes, and concerned that he could not prosecute his studies in obscurity and in silence. Here he met Andrew Govea, a Portuguese of great learning and worth, with whom he had formerly been acquainted during his travels, and who was now employed in teaching a public school. He disdained not to act as the assistant of his friend; and during the three years he resided at this place, he composed the tragedies which do him so much honour. It was here, also, that he wrote some of the most pleasant of those poems, in which he has rallied the muses, and threatened to forsake them, as not being able to maintain their votary. About this time, too, he presented a copy of verses to the emperor Charles V. who happened to pass through Bourdeaux.

His enemies, mean while, were not inactive. Cardinal Beaton wrote about him to the archbishop of Bourdeaux; and by every motive which a cunning and a wicked heart can invent, he invited him to punish the most pestiferous of all heretics. The archbishop, however, was not so violent as the cardinal. On enquiring into the matter, he was convinced that the poet had committed a very small impropriety; and allowed himself to be pacified. But fortune was not long to continue her smiles. Andrew Govea being called by the king of Portugal, his master, to establish an academy at Coimbra, he intreated Buchanan to accompany him. He obtained his request; and had not been a year

Buchanan.

Buchanan

year in his own country, when he died, and left his associate exposed to the malice of his inveterate enemies the monks. They loudly objected to him, that he was a Lutheran; that he had written poems against the Franciscans; and that he had been guilty of the abominable crime of eating flesh in lent. He was confined to a monastery till he should learn what these men fancied to be religion: and they enjoined him to translate the Psalms of David into Latin verse; a task which every man of taste knows with what admirable skill and genius he performed.

On obtaining his liberty, he had the offer of a speedy promotion from the king of Portugal; the issue of which, his aversion to the clergy did not allow him to wait. He hastened to England; but the perturbed state of affairs during the minority of Edward VI. not giving him the promise of any lasting security, he set out for France. There he had not been long, when he published his *Jephtha*, which his necessities made him dedicate to the marshal de Brissac. This patron did not want generosity, and could judge of merit. He sent him to Piedmont, as preceptor to his son Timoleon de Cossi. In this employ he continued several years; and during the leisure it afforded him, he fully examined the controversies which now agitated Europe; and he put the last hand to many of the most admired of his smaller poems.

When his pupil had no longer any use for him, he passed into Scotland, and made an open profession of the reformed faith. But he soon quitted his native country for France; which appears to have been more agreeable to his taste. Queen Mary, however, having determined that he should have the charge of educating her son, recalled him: and till the prince should arrive at a proper age, he was nominated to the principality of St Andrew's. His success as James's preceptor is well known. When it was reproached to him, that he had made his majesty a pedant; "It is a wonder (he replied) that I have made so much of him." Mackenzie relates a story concerning his tutelage of his pedantic majesty, which is strongly expressive of Buchanan's character as a man of humour, and at the same time shows the degree of his veneration for royalty. The young king being one day at play with his fellow-pupil the master of Erskine, Buchanan, who was then reading, desired them to make less noise. Finding that they disregarded his admonition, he told his majesty, if he did not hold his tongue, he would certainly whip his breech. The king replied, he would be glad to see who would *hell the cat*, alluding to the fable. Buchanan, in a passion, threw the book from him, and gave his majesty a sound flogging. The old countess of Mar, who was in the next apartment, rushed into the room, and taking the king in her arms, asked how he dared to lay his hand on *the Lord's anointed*, "Madam (says Buchanan), I have whipped his a—; you may kiss it, if you please."

On the misfortunes which befel the amiable but imprudent Mary, he went over to the party of the earl of Murray; and at his earnest desire he was prevailed upon to write his "Detection," a work which his greatest admirers have read with regret. Having been sent with other commissioners to England, against his mistress, he was, on his return, rewarded with the abbacy of Cross Raguel; made director to the chancery;

and some time after lord of the privy council and privy seal. He was likewise rewarded by queen Elizabeth with a pension of 100l. a-year. The twelve last years of his life he employed in composing his *History of Scotland*. After having vied with almost all the more eminent of the Latin poets, he contested with Livy and Sallust the palm of eloquence and political sagacity. But it is to be remembered with pain, that, like the former of these historians, he was not always careful to preserve himself from the charge of partiality. In the year 1582, he expired at Edinburgh, in the 76th year of his age.

Various writers who have mentioned this author, speak of him in very different language, according to their religious and political principles. From his works, however, it is evident, that, both as a Latin poet and prose writer, he hath rarely been equalled since the reign of Augustus; nor is he less deserving of remembrance as a friend to the natural liberties of mankind, in opposition to usurpation and tyranny. "The happy genius of Buchanan (says Dr Robertson), equally formed to excel in prose and in verse, more various, more original, and more elegant, than that of almost any other modern who writes in Latin, reflects, with regard to this particular, the greatest lustre on his country." To his memory an obelisk 100 feet high is at this time (1788) erecting by subscription, at Killearn the place of his nativity, designed by Mr J. Craig nephew to the celebrated poet Thomson.

The following is a list of his works. 1. *Rerum Scotticarum, &c.* 2. *Psalmodium Davidis paraphrasis poetica.* 3. *De jure regni apud Scotos dialogus.* 4. *Psalmus civ. cum judicio Barclaii, &c.* 5. *Psalms cxx. cum analysi organica Beuzeri.* 6. *Baptistes, sive calumnia.* 7. *Alcestis, tragædia.* 8. *Tragædia sacra, et extera.* 9. *De Caeto recepto carmen, apud Stephan.* 10. *Franciscanus et Fratres, &c.* 11. *Elegia, Sylvia, &c.* 12. *De sphaera Herbornæ.* 13. *Poemata.* 14. *Satyra in cardinalem Lotharingium.* 15. *Rudimenta grammaticæ, Tho. Linacri ex Anglico sermone in Latinum versæ.* 16. An admonition to the true lords. 17. *De prosodia.* 18. *Chamaeleon, 1572.* 19. *Ad viros sui seculi epistola.* 20. *Literæ reginæ Scoticæ ad com. Bothwelliæ.* 21. A detection of the doings of Mary queen of Scots, and of James earl of Bothwell, against Henry lord Darnly. 22. *Vita ab ipso scripta biennio ante mortem, cum commentario D. Rob. Sibbaldi, M. D.* 23. Life of Mary queen of Scots. These have been severally printed often, and in various countries. An edition of them all collected together was printed at Edinburgh in 1704, in 2 vols folio.

BUCHANNESS, a cape or promontory of Scotland, which is the farthest point of Buchan, not far from Peterhead, and the most eastern of all Scotland. E. Long. 0. 30. N. Lat. 57. 28.

BUCHAW, a free and imperial town of Germany, in Suabia, seated on the river Tedersee, 22 miles south-west of Ulm. Here is a monastery, whose abbots have a voice in the diets of the empire. E. Long. 9. 37. N. Lat. 48. 5.

BUCHAW, a small territory of Germany, in the circle of the Upper Rhine, which comprehends the district of the abbot of Flud.

BUCHOREST, a pretty large town of Turkey, in Europe, seated in the middle of Walachia, and the ordinary

Buchanan

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Bucharest

BUCHOM, a small town in Buckinghamshire, the ordinary residence of a hospodar. The houses are mean and very ill built, except a few that belong to the principal persons. In 1716, a party of Germans sent from Transylvania entered this town, and took the prince prisoner with all his court, and carried them off. This expedition was the more easily performed, as several lords of the country had a secret intelligence with the governor of Transylvania. This prince had no other way to regain his liberty, but by giving up that part of Walachia which lies between the river Aluth and Transylvania, to the emperor of Germany, by the peace concluded at Passarowitz in 1718. The Germans entered again into the capital of his dominions, and levied excessive contributions. But affairs took another turn after the fatal battle of Crotzka in 1737; for the emperor was obliged to restore this part of Walachia to the hospodar, in virtue of the treaty of Belgrade. E. Long. 26. 30. N. Lat. 44. 30.

BUCHOM, a small, free, and imperial town of Suabia in Germany, seated on the lake of Constance, in E. Long. 9. 20. N. Lat. 47. 41.

BUCIOCHE, in commerce, a sort of woollen cloth manufactured in Provence in France, which the French ships carry to Alexandria and Cairo.

BUCK, in zoology, a male horned beast of venery or chase, whose female is denominated a *doe*. See **CERVUS**, and **Buck-HUNTING**.

BUCK, is also applied to the males of the hare and rabbit kind. See **LEPUS**, and **Hare-HUNTING**.

Buck-Bean, in botany. See **MENYANTHES**.

Buck-Thorn, the English name of the **RHAMNUS**.

Buck-Wheat. See **POLYGONUS**.

BUCKENHAM (New), a town of Norfolk in England, which formerly had a strong castle, but now demolished. It is seated in a flat, in E. Long. 1. 10. N. Lat. 52. 30.

BUCKET, a small portable vessel to hold water, often made of leather for its lightness and easy use in cases of fire.—It is also the vessel let down into a well, or the sides of ships, to fetch up water.

BUCKING, the first operation in the whitening of linen yarn or cloth. See **BLEACHING**.

BUCKINGHAM, the chief town of Buckinghamshire in England, stands in a low ground, on the river Ouse, by which it is almost surrounded, and over which there are three handsome stone-bridges: The town is large and populous, sends two members to parliament, and had the title of a duchy. It seems, however, to have been but an inconsiderable place at the conquest; for, according to Doomsday-book, it paid only for one hide, and had but 26 burghesses. Edward the elder fortified it in the year 918 against the incursions of the Danes, with a rampart and turrets. It also had formerly a castle in the middle of the town, of which no vestiges now remain. The shrine of St Rumbald, the patron of fishermen, preserved in the church, was held in great veneration. The county-goal stands in this town, and here the assizes are sometimes kept. It was formerly a staple for wool, but that advantage it hath now lost. It is governed by a bailiff and 12 burghesses, who are the sole electors of the members. In its neighbourhood are many paper-mills upon the Ouse. W. Long. 0 58. N. Lat. 51. 30.

Buckingham-Shire (supposed to derive its name from the Saxon word *Buc*, denoting a hart or buck),

an inland county of England. During the time prior to the landing of the Romans it was included in the division of Catieuchlani; and after their conquest it was included in their third province of Flavia Casariensis. During the heptarchy it belonged to the kingdom of Mercia, which commenced in 582, and terminated in 827, having had 18 kings; and it is now included in the Norfolk circuit, the diocese of Lincoln, and the province of Canterbury. It is bounded on the north by Northamptonshire; south by Berkshire; east by Bedfordshire, Hertfordshire, and Middlesex; and west by Oxfordshire. It is of an oblong form, whose greatest extent is from north to south. It contains 441,000 acres, has above 111,400 inhabitants, 185 parishes, 73 vicarages, is 39 miles long, 18 broad, and 109 in circumference. It has 15 market towns, viz. Buckingham and Aylesbury the county towns, Marlow, Newport Pagnel, Winslow, Wendover, Beaconsfield, Wiccomb, Chessham, Amersham, Stony Stratford, Colnbrook, Ivingho, Oulney, Risborough; besides the considerable villages of Eaton and Fenny Stratford, and 613 others inferior. It is divided into eight hundreds, provides 560 men for the militia, sends 14 parliament-men, and pays 12 parts of the land-tax. Its rivers are the Thames, Ouse, Coln, Wicham, Amersham, Isa, Tame, and Loddon. Its chief produce is bone-lace, paper, corn, fine wool, and breeding rams. The most noted places are the Chiltern Hills, Vale of Aylesbury, Bernwood-Forest, Wooburn-Heath, and 15 parks. The air is generally good, and the soil mostly chalk or marle.

BUCKINGHAM (George Villiers duke of). See **VILLIERS**.

BUCKINGHAM (John Sheffield duke of). See **SHEFFIELD**.

BUCKLE, a well known utensil, made of divers sorts of metals, as gold, silver, steel, brass, &c.

The fashion or form of buckles is various; but their use, in general, is to make fast certain parts of dress, as the shoes, garters, &c.

BUCKLE, in heraldry. The buckle was so much esteemed in former times, that few persons of repute and honour wore their girdle without it; and it may be considered, in coats of arms, as a token of the surety, the faith, and service of the bearer.

BUCKLER, a piece of defensive armour used by the ancients. It was worn on the left arm; and composed of wickers woven together, or wood of the lightest sort, covered with hides, and fortified with plates of brass or other metal. The figure was sometimes round, sometimes oval, and sometimes almost square. Most of the bucklers were curiously adorned with all sorts of figures of birds and beasts, as eagles, lions; nor of these only, but of the gods, of the celestial bodies, and all the works of nature; which custom was derived from the heroic times, and from them communicated to the Grecians, Romans, and Barbarians.

The scutum, or Roman buckler, was of wood, the parts being joined together with little plates of iron, and the whole covered with a bull's hide. An iron plate went about it without, to keep off blows; and another within, to hinder it from taking any damage by lying on the ground. In the middle was an iron boss or *umbo* jutting out, very serviceable to glance off stones and darts; and sometimes to press violently upon the

Buckingham
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Buckler.

Votive
Bucklers
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Buda.

the enemy, and drive all before them. They are to be distinguished from the clypei, which were less, and quite round, belonging more properly to other nations, though for some little time used by the Romans. The scuta themselves were of two kinds; the *ovata*, and the *imbricata*: the former is a plain oval figure; and the other oblong, and bending inward like half a cylinder. Polybius makes the scuta four feet long, and Plutarch calls them *τοβηεις*, reaching down to the feet. And it is very probable that they covered almost the whole body, since in Livy we meet with soldiers who stood on the guard, sometimes sleeping with their head on their shield, having fixed the other part of it in the earth.

Votive BUCKLERS: Those consecrated to the gods, and hung up in their temples, either in commemoration of some hero, or as a thanksgiving for a victory obtained over an enemy; whose bucklers, taken in war, were offered as a trophy.

BUCKOR, a province of Asia, subject to the great mogul. It is seated on the river Indus, on the banks of which there are coin and cattle; but the west part, which is bounded by Sagestan in Persia, is a desert. The inhabitants are strong, robust, and apt to mutiny; for which reason the mogul has a garrison at the chief town, called *Buckor*, which is seated in an island made by the river Indus. They are all Mahometans, and drive a great trade in cotton cloth, and other Indian commodities. E. Long. 70. 5. N. Lat. 28. 20.

BUCKRAM, in commerce, a sort of coarse linen cloth stiffened with glue, used in the making of garments to keep them in the form intended. It is also used in the bodies of womens gowns; and it often serves to make wrappers to cover cloths, serges, and such other merchandises, in order to preserve them and keep them from the dust, and their colours from fading. Buckrams are sold wholesale by the dozen of small pieces or remnants, each about four ells long, and broad according to the piece from which they are cut. Sometimes they use new pieces of linen cloth to make buckrams, but most commonly old sheets and old pieces of fails.

BUCKSTALL, a toil to take deer, which must not be kept by any body that has not a park of his own, under penalties.

BUCOLIC, in ancient poetry, a kind of poem relating to shepherds and country affairs, which, according to the most generally received opinion, took its rise in Sicily. Bucolics, says Vossius, have some conformity with comedy. Like it, they are pictures and imitations of ordinary life; with this difference, however, that comedy represents the manners of the inhabitants of cities, and bucolics the occupations of country people. Sometimes, continues he, this last poem is in form of a monologue, and sometimes of a dialogue. Sometimes there is action in it, and sometimes only narration; and sometimes it is composed both of action and narration. The hexameter verse is the most proper for bucolics in the Greek and Latin tongues. Moschus, Bion, Theocritus, and Virgil, are the most renowned of the ancient bucolic poets.

BUD, in botany. See the article GEMMA.

BUDA, the capital city of Hungary, called *Ofen* by the inhabitants, and *Buden* by the Turks. It is large, well fortified, and has a castle that is almost im-

pregnable. The houses are tolerably handsome, being most of them built with square stone. It was a much finer place before the Turks had it in their possession; but they being masters of it 135 years, have suffered the finest buildings to fall to decay. The lower city, or Jews town, extends like suburbs from the upper city to the Danube. The upper town takes up all the declivity of a mountain; and is fortified with good walls, which have towers at certain distances. The castle, which is at the extremity of the hill, on the east side, and commands the greatest part of it, is surrounded with a very deep ditch, and defended by an old-fashioned tower, with the addition of new fortifications. There is also a suburb, inclosed with hedges, after the Hungarian manner. The most sumptuous structures now are the caravanferas, the mosques, bridges, and baths. These last are the finest in Europe, for the magnificence of the building, and plenty of water. Some of the springs are used for bathing and drinking; and others are so hot, that they cannot be used without a mixture of cold water. The Danube is about three quarters of a mile in breadth; and there is a bridge of boats between this city and Pest, consisting of 63 large pontoons. The Jews have a synagogue near the castle-gardens. The adjacent country is fruitful and pleasant, producing rich wines; though in some places they have a sulphureous flavour.

This city was the residence of the Hungarian monarchs till the Turks took it in 1526. Ferdinand archduke of Austria recovered it the next year; but in 1529 the Turks became masters of it again. In 1684 the Christians laid siege to it; but they were obliged to raise it soon after, though they had an army of 80,000 men. Two years after, the Turks lost it again, it being taken by assault in the sight of a very numerous army. The booty that the Christians found there was almost incredible, because the rich inhabitants had lodged their treasury in this city as a place of safety. However, part of these riches were lost in the fire occasioned by the assault. This last siege cost the Christians a great deal of blood, because there were many in the camp who carried on a secret correspondence with the Turks. When the seraskier saw the city on fire, and found he could not relieve it, he beat his head against the ground for anger. In 1687, this city had like to have fallen into the hands of the Turks again, by treachery. After this, the Christians augmented the fortifications of this place, to which the Pope contributed 100,000 crowns, for this is looked upon as the key of Christendom. It is seated on the Danube, 105 miles south-east of Vienna, 63 north by west of Belgrade, and 563 north-west of Constantinople. E. Long. 19. 22. N. Lat. 47. 20.

BUDA (the beglerbeglic of), was one of the chief governments of the Turks in Europe. It included all the countries of Upper Hungary between the rivers Teisse and Danube, and between Agria and Novi-grad all Lower Hungary, from Gran and Canisca, the eastern part of Sclavonia, and almost all Servia: but a good part of this government now belongs to the queen of Hungary.

BUDÆUS (William), the most learned man in France in the 15th century, was descended of an ancient and illustrious family, and born at Paris in 1467.

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Budæus.

Buddæus
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Budding.

He was placed young under masters; but barbarism prevailed so much in the schools of Paris, that Buddæus took a dislike to them, and spent his whole time in idleness, till his parents sent him to the university of Orleans to study law. Here he passed three years without adding to his knowledge; for his parents sending for him back to Paris, found his ignorance no less than before, and his reluctance to study, and love to gaming and other useful pleasures, much greater. They talked no more to him of learning of any kind; and as he was heir to a large fortune, left him to follow his own inclinations. He was passionately fond of hunting, and took great pleasure in horses, dogs, and hawks. The fire of youth beginning to cool, and his usual pleasures to pall upon his senses, he was seized with an irresistible passion for study. He immediately disposed of all his hunting equipage, and even abstracted himself from all business to apply himself wholly to study; in which he made, without any assistance, a very rapid and amazing progress, particularly in the Latin and Greek languages. The work which gained him greatest reputation was his treatise *de Affe*. His erudition and high birth were not his only advantages; he had an uncommon share of piety, modesty, gentleness, and good-breeding. The French king Francis I. often sent for him; and at his persuasion, and that of Du Bellay, founded the royal college of France, for teaching the languages and sciences. The king sent him to Rome with the character of his ambassador to Leo X. and in 1522 made him master of requests. The same year he was chosen provost of the merchants. He died at Paris in 1540. His works, making four volumes in folio, were printed at Basil in 1557.

BUDDÆUS (John Francis), a celebrated Lutheran divine, and one of the most learned men Germany has produced, was born in 1667, at Anclam, a town of Pomerania, where his father was minister. He was at first Greek and Latin professor at Colburg; afterwards professor of morality and politics in the university of Hall; and at length, in 1705, professor of divinity at Jena, where he lived, and where he died, after having acquired a very great reputation. His principal works are, 1. A large historical German dictionary. 2. *Historia ecclesiastica Veteris Testamenti*, 2 vols. 4to. 3. *Elementa philosophiæ practiciæ, instrumentalis, et theoreticæ*, 3 vols. 8vo, which has had a great number of editions, because, in most of the universities of Germany, the professors take this work for the text of their lessons. 4. *Selecta juris nature et gentium*. 5. *Miscellanea sacra*, 3 vols. 4to. 6. *Spæge historico-theologica ad theologiam univèrsam, singulasque ejus partes*, 2 vols. 4to; which is much valued by the Lutherans. 7. A treatise on atheism and superstition.

BUDDSDALE, or BETTSDALE, a town of Suffolk in England, seated in a dale or valley, and its street takes in a good part of Ricking, all which together make up the town, for of itself it is but a hamlet, having a small chapel, and an endowed grammar-school, to which belong certain scholarships, assigned to Bennet or Corpus Christi-college in Cambridge, being the gift of Sir Nicholas Bacon, lord keeper of the great seal. E. long. 1. 8. N. Lat. 52. 25.

BUDDING, in gardening. See ENGRAFTING.

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BUDDLE, in mineralogy, a large square frame of boards, used in washing the tin ore.

BUDDLEIA, in botany: a genus of the monogynia order, belonging to the tetrandria class of plants. The calyx and corolla are quadrifid; the lamina placed at the incisures of the corolla. The capsule is bifurcated, bilocular, and polyspermous. There are two species, viz. the americana, and occidentalis. The first is a native of Jamaica and most of the other American islands; where it rises to the height of ten or twelve feet, with a thick woody stem covered with a grey bark; and sends out many branches towards the top, which come out opposite: at the ends of the branches the flowers are produced in long close spikes branching out in clusters, which are yellow, consisting of one leaf cut into four segments; these are succeeded by oblong capsules filled with small seeds. The second grows naturally at Carthagen; and rises much higher than the other, dividing into a great number of slender branches covered with a russet hairy bark, garnished with long spear-shaped leaves ending in sharp points: at the end of the branches are produced branching spikes of white flowers growing in whorls round the stalks, with small spaces between each.— These plants grow in gullies, or other low sheltered spots; their branches being too tender to resist the force of strong winds. They may be propagated by seeds procured from those places where they are natives; and are to be managed like other exotics: only their seeds must be sown in pots as soon as they arrive, and very lightly covered; for if they are buried deep in the earth, they will all perish.

BUDELICH, a town of Germany, in the electoral circle of the Rhine and archbishopric of Treves, seated on the little river Traen, in E. Long. 6. 55. N. Lat. 49. 52.

BUDGE-BARRELS, among engineers, small barrels well hooped, with only one head; on the other end is nailed a piece of leather, to draw together upon strings like a purse. Their use is for carrying powder along with a gun or mortar; being less dangerous, and easier carried, than whole barrels. They are likewise used upon a battery of mortars, for holding meal-powder.

BUDGELL (Enstace), Esq; an ingenious and polite writer, was the son of Gilbert Budgell, doctor of divinity; and was born at St Thomas, near Exeter, about the year 1685. He was educated at Christ-church college, Oxford; from which he removed to the Inner Temple, London; but instead of studying the law, for which his father intended him, he applied to polite literature; kept company with the genteel persons in town; and particularly contracted a strict intimacy with the ingenious Mr Addison, who was first cousin to his mother, and who, on his being made secretary to lord Wharton lord lieutenant of Ireland, took him with him as one of the clerks of his office. Mr Budgell, who was about 20 years of age, and had read the classics, and the works of the best English, French, and Italian authors, now became concerned with Sir Richard Steele and Mr Addison in writing the Tatler, as he had, soon after, a share in writing the Spectator, where all the papers written by him are marked with an X; and when that work was completed, he had likewise a hand in the Guardian, where his performances are marked with an at-

Budgell
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Budgell.

Eu'ge'l.

risk. He was afterwards made under-secretary to Mr Addison, chief secretary to the lords justices of Ireland, and deputy-clerk of the council. Soon after, he was chosen member of the Irish parliament; and in 1717, Mr Addison, having become principal secretary of state in England, procured him the place of accountant and comptroller general of the revenue in Ireland. But the next year, the duke of Bolton being appointed lord-lieutenant, Mr Budgell wrote a lampoon against Mr Webster, his secretary, in which his Grace himself was not spared; and upon all occasions treated that gentleman with the utmost contempt. This imprudent step was the primary cause of his ruin: for the Duke of Bolton, in support of his secretary, got him removed from the post of accountant-general; upon which, returning to England, he, contrary to the advice of Mr Addison, published his case in a pamphlet, intitled, "A letter to the lord * * *", from Eustace Budgell, Esq; accountant-general," &c. Mr Addison had now resigned the seals, and was retired into the country for the sake of his health: Mr Budgell had also lost several other powerful friends, who had been taken off by death; particularly the lord Halifax and the earl of Sunderland: he, however, made several attempts to succeed at court, but was constantly kept down by the duke of Bolton. In the year 1720 he lost 20,000*l.* by the South-sea scheme, and afterwards spent 5000*l.* more in unsuccessful attempts to get into Parliament. This completed his ruin. He at length employed himself in writing pamphlets against the ministry, and wrote many papers in the *Craftsman*. In 1733, he began a weekly pamphlet, called *The Bee*; which he continued for above 100 numbers, printed in eight volumes 8vo. During the progress of this work, Dr Tindal's death happened, by whose will Mr Budgell had 2000*l.* left him; and the world being surpris'd at such a gift from a man entirely unrelated to him, to the exclusion of the next heir, a nephew, and the continuator of Rapin's history of England, immediately imputed it to his making the will himself. Thus the satyrist;

Let Budgell charge low Grub-street on my quill,
And write whate'er he please, except my will.

It was thought he had some hand in publishing Dr Tindal's *Christianity as old as the creation*; for he often talked of another additional volume on the same subject, but never published it. After the cessation of the *Bee*, Mr Budgell became so involved in law-suits, that he was reduced to a very unhappy situation. He got himself called to the bar, and attended for some time in the courts of law; but finding himself unable to make any progress, and being distress'd to the utmost, he determin'd at length to make away with himself. Accordingly, in the year 1736, he took a boat at Somerset-stairs, after filling his pockets with stones, order'd the waterman to shoot the bridge; and, while the boat was going under, threw himself into the river. He had several days before been visibly distracted in his mind. Upon his bureau was found a slip of paper, on which were these words:

What Cato did, and Addison approv'd,
Cannot be wrong.

Besides the above works, he wrote a Translation of

Theophrastus's Characters. He was never married; but left one natural daughter, who afterwards assumed his name, and became an actress in Drury-lane.

BUDINUS (anc. geog.), a mountain of Sarmatia Europæa, from which the more northern spring of the Borysthenes is said to take its rise, according to Ptolemy. But this is contradicted by later accounts. Now *Potolia*.

BUDNÆANS, in ecclesiastical history, so called from the name of their leader, Simon Budnæus. They not only denied all kind of religious worship to Jesus Christ, but asserted, that he was not begotten by any extraordinary act of divine power; being born, like other men, in a natural way. Budnæus was deposed from his ministerial functions in the year 1584, and publicly excommunicated, with all his disciples; but afterwards abandoning his peculiar sentiments, he was readmitted to the communion of the Socinian sect. Crellius ascribes the origin of the above opinion to Adam Neuser.

BUDOVA, a maritime town of Dalmatia, with a bishop's see, subject to the Venetians. It is seated between the gulf of Cattaro and the city of Dulugno, on the coast of Albany; and is an important fortress, where the Venetians always keep a strong garrison. In 1667, it suffered greatly by an earthquake: and in 1685 was besieged by Soliman, basha of Scutari; but general Cornaro oblig'd him to raise the siege. E. long. 19. 22. N. lat. 42. 12.

BUDRIO, a town of Italy, in the Bolognese. The adjacent fields produce large quantities of fine hemp, which renders the town of more consequence than larger places. E. long. 11. 35. N. lat. 44. 27.

BUDUN, is the name of one of the Ceylonesse gods: he is supposed to have arrived at supremacy, after successive transmigration from the lowest state of an insect, through the various species of living animals. There have been three deities of this name, each of which is supposed to reign as long as a bird removes a hill of sand, half a mile high, and six miles round, by a single grain in a thousand years. See *SARRADAWENDRA*.

BUDWEIS, a royal city of Bohemia, in Germany. It is pretty large and well built, surrounded with strong walls, fortified with a good rampart, and might be made an important place. It was taken by the king of Prussia in 1744, but he did not keep it very long. E. long. 14. 19. N. lat. 42. 15.

BUDZIAC TARTARY, lies on the rivers Neister, Bog, and Nieper; having Poland and Russia on the north, Little Tartary on the east, the black sea on the south, and Bessarabia on the west. The chief town is Oczakow. It is subject to Turkey.

BUENA VISTA, one of the Cape de Verd islands, lying in N. lat. 15. 56. It is also called *Bonvista*, and *Bonnevue*; but the first is the true appellation, the others being only abbreviations and corruptions of the original name, which signifies a *good prospect*, intimating the beautiful appearance it makes to ships at sea. This island is reckoned near 20 leagues in circumference, and is distinguished on the north side by a ridge of white rocks that bound it. The coast that stretches east and north-west is terminated with sundry banks to the sea; but the interior part is chiefly mountainous. From the northern point there is a large ridge

Budinus
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Buena.

Buenos
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Buff.

ridge of rocks projecting near a whole league into the sea, against which the waves break with incredible fury. Another point of rocks stretches into the sea on the southern point of the island eastward, a league and a half beyond that point; and in that bay is the best road for shipping.

BUENOS AYRES, a country of South America, belonging to the Spaniards. This name, given from the pleasantness of the climate, is extended to all that country lying between Tucuman on the east, Paraguay on the north, and Terra Magellanica on the south, or to the vertex of that triangular point of land which composes South America. The country is watered by the great river La Plata; first discovered in 1515 by Juan Diaz de Solis, who with two of his attendants was massacred by the natives; and partly subdued by Sebastian Gaboto, who gave the great river the appellation of *La Plata*, from the abundance of the precious metals he procured from the inhabitants, imagining them to be the produce of the country, though in fact they were brought from Peru.—No country in the world abounds more in horned cattle and horses than Buenos Ayres, where the greatest expence of a horse or cow is in the catching it, and they are frequently to be had at the small price of two or three rials. In such abundance are these useful animals, that the hide alone is deemed of any value, as this constitutes a main article in the trade of the country. All rove wild in the fields; but they are now become more difficult of access, the terrible havoc made among them having taught the cautious brutes to keep at a greater distance. All kinds of fish are in the same abundance; the fruits produced by every quarter of the globe grow up here in the utmost perfection; and for the enjoyment of life, and the salubrity of the air, a finer country cannot be imagined. The principal cities are Buenos Ayres the capital, Monte Video, Corientco, and Santa Fe.

Buenos Ayres (Nuestra Sennora de), the capital of the country called *Buenos Ayres*, in South America, was founded in the year 1535, under the direction of Don Pedro de Mendoza, at that time governor. It stands on a point called *Cape Blanco*, on the south side of the Plata, fronting a small river, on S. Lat. 34° 34'. 38'. according to the observations of Father Feville. The situation is in a fine plain, rising by a gentle ascent from the river; and truly paradisaical, whether we regard the temperature of the climate, the fertility of the soil, or that beautiful verdure which overspreads the whole face of the country, of which the inhabitants have a prospect as far as the eye can reach. The city is very considerable in extent, containing 3000 houses, inhabited by Spaniards and others of different complexions. The streets are straight, broad, and pretty equal in the heights and dimensions of the buildings; one very handsome square adorns it, the front being a castle in which the governor holds his court, and presides over a garrison of 3000 soldiers. Most of the buildings are of chalk or brick, except the cathedral, a magnificent structure, composed chiefly of stone.

BUFALMACO (Boracico), an Italian painter; the first who put labels to the mouths of his figures, with sentences; since followed by bad masters, but more frequently in caricatura engravings. He died in 1340.

BUFF, in commerce, a sort of leather prepared from

the skin of the buffalo; which drest with oil, after the manner of shammy, makes what we call *buff-skin*. This makes a very considerable article in the French, English, and Dutch commerce at Constantinople, Smyrna, and all along the coast of Africa. The skins of elks, oxen, and other like animals, when prepared after the same manner as that of the buffalo, are likewise called *buffs*.

Of buff-skin, or buff-leather, are made a sort of coats for the horse or *gens d'armes* of France, bandaliers, belts, pouches, and gloves.

In France, there are several manufactories designed for the dressing of those sorts of hides, particularly at Corbeil, near Paris; at Niort, at Lyons, at Rone, at Etanepus, at Cone.

BUFFALO, in zoology. See *Bos*.

BUFFET was anciently a little apartment, separated from the rest of the room by slender wooden columns, for the disposing of china, glass-ware, &c.

It is now properly a large table in a dining-room, called also a *side-board*, for the plate, glasses, bottles, basons, &c. to be placed on, as well for the service of the table as for magnificence. In houses of persons of distinction in France, the buffet is a detached room, decorated with pictures relative to the subject, with fountains, cisterns, and vases. It is commonly faced with marble or bronze.

BUFFIER (Claude), a French writer, in 1661, became a Jesuit in 1679, and died at Paris in 1737. There are many works of this author, which show deep penetration and accurate judgment; the principal of which is, "Un Cours des Sciences," &c. that is, a Course of Sciences upon principles new and simple, in order to form language, the understanding, and the heart, 1732," in folio. This collection includes an excellent "French grammar upon a new plan; a philosophic and practical treatise upon eloquence; an art of poetry," which however is not reckoned the best part of this miscellany; "elements of metaphysics; an examination into vulgar prejudices; a treatise of civil society; and an exposition of the proofs of religion;" all full of reflections, just as well as new. He was the author of other works, in verse and prose, of which no great account is had; and it is remarkable, that his style in both is rather easy than accurate and correct, notwithstanding the precepts in his "grammar," which is really philosophic.

BUFFON (Count de). See *CLERIC*.

BUFFOON, a droll, or mimic, who diverts the public by his pleasantries and follies. Menage, after Salmastius, derives the word from *buffo*; a name given to those who appeared on the Roman theatre with their cheeks blown up; that, receiving blows thereon, they might make the greater noise, and set the people a laughing. Others, as Rhodiginus, makes the origin of buffoonery more venerable; deriving it from a feast instituted in Attica by K. Erictheus, called *buphonia*.

Buffoons are the same with what we otherwise find denominated *jeu r.e.*, *gelastiani*, *mimologi*, *mimicelli*, *gelardi*, *joclatores*, &c. whose chief scene is laid at the tables of great men. Gallienus never sat down to meat without a second table of buffoons by him; Tillemont also renders *pantomimes* by buffoons. In which sense he observes, the shows of the buffoons were taken

Buffalo
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Buffoon.

Bufo
||
Bug.

away by Domitian, restored by Nerva, and finally abolished by Trajan.

BUFONIA, TOAD-GRASS: A genus of the monogynia order, belonging to the diandria class of plants; and in the natural method ranking under the 22d order, *Caryophyllea*. The calyx is quinque-dentate; there is no corolla; the berry is monospermous. There is but one species, *viz.* the *tenuifolia*, a native of Britain.

BUFONITA, in natural history, the toad-stone. This has been received not only among the list of native stones by the generality of authors, but even has held a place among the gems, and is still worn in rings by some people; though undoubtedly it is an extraneous fossil. There has been a strong opinion in the world, that it was found in the head of an old toad; and that this animal voided it at the mouth, on being put on a red cloth. The general colour of the *bufonitæ* is a deep dusky brown; but it varies greatly in this respect in several specimens, some of which are quite black, others of an extremely pale, simple brown, a chestnut colour, liver colour, black, grey, or whitish. The *bufonitæ* are usually found immersed in beds of stone; and so little doubt is there of what they have originally been, *viz.* the petrified teeth of the *lupus piscis*, or wolf-fish, that part of the jaw of the fish has sometimes been found with the teeth petrified in it. The *bufonitæ* are said to be cordial and astringent: many other fanciful virtues are ascribed to them, which the present practice has rejected.

BUG, or BUGG, in zoology, the English name of a species of *cimex*. See **CIMEX**.

Cheap, easy, and clean mixture for effectually destroying Bugs. Take of the highest rectified spirit of wine, (*viz.* lamp-spirits) that will burn all away dry, and leave not the least moisture behind it, half a pint; new distilled oil, or spirit, of turpentine, half a pint: mix them together; and break into it, in small bits, half an ounce of camphire, which will dissolve it in a few minutes: shake them well together; and with a piece of sponge, or a brush dipt in some of it, wet very well the bed or furniture wherein those vermin harbour and breed, and it will infallibly kill and destroy both them and their nits, although they swarm ever so much. But then the bed and furniture must be well and thoroughly wet with it (the dust upon them being first brushed and shook off), by which means it will neither soil, stain, nor in the least hurt, the finest silk or damask bed that is. The quantity here ordered of this mixture (that costs but about a shilling) will rid any one bed whatever, tho' it swarms with bugs. If any bugs should happen to appear after once using it, it will only be for want of well wetting the lacing, &c. of the bed, or the folding of the linens or curtains near the rings, or the joints or holes in and about the bed or head-board, wherein the bugs and nits nestle and breed; and then their being wetted all again with more of the same mixture, which dries in as fast as you use it, pouring some of it into the joints and holes where the brush or sponge cannot reach, will never fail absolutely to destroy them all. Some beds that have much wood-work can hardly be thoroughly cleared without being first taken down; but others that can be drawn out, or that you can get well behind, to be done as it should be, may. The smell this mixture occasions will be all gone in two or three days; which yet is very wholesome, and to many people agreeable.

Remember always to shake the mixture together very well, whenever you use it, which must be in the day-time, not by candle-light, lest the subtlety of the mixture should catch the flame as you are using it, and occasion damage.

Early in the spring, even in February, the larva of these creatures begins to burst from the egg; and it is at this season that attention is so very requisite. The bed ought to be stripped of all its furniture; which should be washed, and even boiled, if linen; if stuff, it should be hot-pressed. The bedstead should be taken to pieces, dusted, and washed with spirit of wine in the joints; for in those parts the females lay their eggs. This done, the joints, crevices, cavities, &c. should be well filled with the best soft soap mixed with verdigris and Scots snuff. On this substance the larva, if any escape the cleansing, or any, which is common in old houses, creep into the bedstead, will feed at first, and of course be destroyed: this last will effect the purpose in houses where these vermin are not so numerous, by repeating the operation every three months.—Professor Kalm † mentions, that, from repeated trials, he has been convinced that sulphur, if it be properly employed, entirely destroys bugs and their eggs in beds or walls, though they were ten times more numerous than the ants on an ant-hill. His translator, Dr Forster, adds, that a still more effectual remedy is, to wash all the infested furniture with a solution of arsenic. See further the article **CIMICIFUGA**.

BUGEY, a province of France, bounded on the east by Savoy, on the west by Bresse, on the south by Dauphiny, and on the north by the territory of Gex and the Franche Comte. It is about 40 miles long and 25 broad. Though it is a country full of hills and rivers, yet it is fertile in some places, the rivers abound with trouts, and there are plenty of all sorts of game. The chief places are Belley the capital, Seifel, St Rambert, Fort l'Ecluse, and Chateau-Nenf.

BUGGERS, *Bulgarii*, anciently signified a kind of heretics, otherwise called *Paterini*, *Cathari*, and *Albigenses*.

The word is formed of the French *Bugres*, and that from *Bougria* or *Bulgaria*, the country where they chiefly appeared. Among other errors, they held, that men ought to believe no scripture but the New Testament; that baptism was not necessary to infants; that husbands who conversed with their wives could not be saved; and that an oath was absolutely unlawful. They were strenuously refuted by Fr. Robert, a Dominican, surnamed the *Bugger*, as having formerly made profession of this heresy.

The Buggers are mentioned by Matthew Paris, in the reign of Henry III. under the name of *Bugares*. *Circa dies autem illos incubat heretica pravitas eorum qui vulgariter dicuntur Paterini & Bugares, de quorum erroribus malo tacere quam loqui.*

BUGGER, or BUGGERER, came afterwards to be used for a Sodomite; it being one of the imputations laid, right or wrong, on the Bulgarian heretics, that they taught, or at least practised, this abominable crime.

BUGGER (Bulgarius) is also a denomination given to usurers; usury being a vice to which the same heretics are said to have been much addicted.

BUGGERY, or SODOMY, is defined by Sir Edward Coke to be a carnal copulation against nature, either

Bugey
||
Buggery.

† Travels in
America.

Bugia
||
Building
Levit. xx.
1. 14.

Building
||
Bukharia.

ther by a confusion of species, that is to say, either a man or woman with a brute beast; or sexes, as a man with a man, or a man unnaturally with a woman. It is said this sin against God and nature was first brought into England by the Lombards. As to its punishment, the voice of nature and of reason, and the express law of God †, determine it to be capital. Of this we have a signal instance, long before the Jewish dispensation, by the destruction of two cities by fire from heaven; so that this is an universal, not merely a provincial, precept. Our ancient law, in some measure, imitated this punishment, by commanding such miscreants to be burnt to death; though Fleta says, they should be buried alive; either of which punishments was indifferently used for this crime among the ancient Goths. But now the general punishment of all felonies is the same, namely, by hanging: and this offence (being in the times of Popery only subject to ecclesiastical censures) was made felony without benefit of clergy by statute 25 Hen. VIII. c. 6. revived and confirmed by 5 Eliz. c. 17. And the rule of law herein is, that, if both parties are arrived at the years of discretion, *agentes et consentientes pari pena pleantur*, "both are liable to the same punishment."

BUGIA, a province of the kingdom of Algiers in Africa. It is almost surrounded with mountains; and is divided into three parts, Benjubar, Auraz, and Labez. These mountains are peopled with the most ancient Arabs, Moors, or Saracens. The province is very fertile in corn.

BUGIA, by the Africans called *Bugeiab*, a maritime town of Africa, in the kingdom of Algiers, and once the capital of the province of that name. It is supposed to be the *Saldæ* of Strabo, built by the Romans. It hath a handsome port formed by a narrow neck of land running into the sea; a great part of whose promontory was formerly faced with a wall of hewn stone; where was likewise an aqueduct, which supplied the port with water, discharging it into a capacious basin; all which now lie in ruins. The city itself is built on the ruins of a large one, at the foot of a high mountain that looks towards the north-east; a great part of whose walls run up quite to the top of it; where there is also a castle that commands the whole town, besides two others at the bottom, built for a security to the port. The inhabitants drive a considerable trade in ploughshares, mattocks, and other iron tools, which they manufacture from the neighbouring mines. The town is watered by a large river, supposed to be the *Nafava* of Ptolemy. The place is populous, and hath a considerable market for iron work, oil, and wax, which is carried on with great tranquillity; but is no sooner over than the whole place is in an uproar, so that the day seldom concludes without some flagrant instance of barbarity. E. Long. 4. N. Lat. 35. 30.

BUGIE, a town of Egypt, situated on the western shore of the Red Sea almost opposite to Ziden, the port-town to Mecca, and about 100 miles west of it. E. Long. 36. N. Lat. 22. 15.

BUGLE, in botany. See *ALUGA*.
BUGLOSS, in botany. See *ANCHUSA*.
Vipers Bugloss, in botany. See *ECHEM*.
BUILDING, a fabric erected by art, either for devotion, magnificence, or conveniency.
BUILDING is also used for the art of constructing and

raising an edifice; in which sense it comprehends as well the expences as the invention and execution of the design. See *ARCHITECTURE*.

The modern buildings are much more commodious, as well as beautiful, than those of former times. Of old they used to dwell in houses, most of them with a blind stair-case, low ceilings, and dark windows; the rooms built at random, without any thing of contrivance, and often with steps from one to another; so that one would think the people of former ages were afraid of light and fresh air: whereas the genius of our times is altogether for light stair-cases, fine sash-windows, and lofty ceilings. And such has been our builders industry in point of compactness and uniformity, that a house after the new way will afford, on the same quantity of ground, almost double the conveniences which could be had from an old one.

By act 11 Geo. I. and 4 Geo. III. for the regulation of building within the weekly bills of mortality, and in other places therein specified, party walls are required to be erected of brick or stone, which shall be two bricks and a half thick in the cellar, two bricks thick upwards to the garret floor, &c. and other limitations are enacted respecting the disposition of the timbers, &c. And every building is to be surveyed; and the person who offends against the statute in any of the particulars recited, is liable to a forfeit of 250l. to be levied by warrant of justices of the peace. The other principal statutes relating to building are 19 Car. II. c. 3. 22 Car. II. c. 11 5 Eliz. c. 4. 35 Eliz. c. 6. 6 Ann. c. 31. 7 Ann. c. 17. 33 Geo. II. c. 30. and 6 Geo. III. c. 37.

Building of Ships. See *SHIP-BUILDING*.

BUILTH, or **BEALT**, a town of South-Wales in Brecknockshire, pleasantly seated on the river Wye, over which there is a wooden bridge that leads into Radnorshire. W. Long. 3. 10. N. Lat. 52. 8.

BUIS, a territory of France, in Dauphiny. It is a small mountainous country, but pretty fertile; and Buis and Nions are the principal places.

BUKARI, a small well-built town of Hungarian Dalmatia, situated on the Golfo di Bikeriza, in E. Long. 20. 51. N. Lat. 45. 20.

BUKHARIA, a general name for all that vast tract of land lying between Karazm and the *great Kobi*, or sandy desert bordering on China. It derives its name of *Bukharia* from the mogul word *Bukhar*, which signifies a learned man; it being formerly the custom for those who wanted instruction in the languages and sciences to go into Bukharia. Hence this name appears to have been given to it by the Mogul, who under Jenghiz Khan conquered the country. It is nearly the same with that called by the Arabs *Marwarahnah*, which is little other than a translation of the word *Transoxana*, the name formerly given to these provinces.

This region is divided into Great and Little Bukharia.

Great Bukharia (which seems to comprehend the *Sogdiana* and *Bactriana* of the ancient Greeks and Romans with their dependencies) is situated between the 34th and 46th degrees of north latitude, and between the 76th and 92d degrees of east longitude. It is bounded on the north by the river *Sir*, which separates it from the dominions of the *Eluts* or Kalmuck;

Bukharia.

the kingdom of *Kashgar* in Little Bukharia, on the east; by the dominions of the great Mogul and Persia on the south; and by the country of Karazm on the west: being about 770 miles long from west to east, and 730 miles broad from south to north. It is an exceeding rich and fertile country; the mountains abound with the richest mines; the valleys are of an astonishing fertility in all sorts of fruit and pulse; the fields are covered with grass the height of a man; the rivers abound with excellent fish; and wood, which is scarce over all Grand Tartary, is here in great plenty. But all these benefits are of little use to the Tartar inhabitants, who are naturally so lazy, that they would rather go rob and kill their neighbours, than apply themselves to improve the benefits which nature so liberally offers them. This country is divided into three large provinces, *viz.* Bukharia proper, Samarcand, and Balk; each of which generally has its proper khan. The province of Bukharia proper is the most western of the three; having on the west Karazm, on the north a desert called by the Arabs *Gaznah*, on the east the province of Samarcand, and on the south the river Amu. It may be about 390 miles long, and 120 broad. The towns are Bokhara, Zam, Wardansi, Karakul, Siunbala, Karshi, Zarjui, Nersim, Karmina, &c.

Little Bukharia is so called, not because it is less in dimensions than the other, for in reality it is larger; but because it is inferior to it as to the number and beauty of its cities, goodness of the soil, &c. It is surrounded by deserts: it has on the west, Great Bukharia; on the north, the country of the Kalmucks; on the east, that of the Moguls subject to China; on the south, Thibet, and the north-west corner of China. It is situated between the 93d and 118th degrees of east longitude, and between 35°. 30'. and 45° of north latitude; being in length from east to west about 850 miles, and in breadth from north to south 580: but if its dimensions be taken according to its semicircular course from the south to the north-east, its length will be 1200 miles. It is sufficiently populous and fertile; but the great elevation of its land, joined to the height of the mountains which bound it in several parts, particularly towards the south, renders it much colder than from its situation might naturally be expected. It is very rich in mines of gold and silver; but the inhabitants reap little benefit by them, because neither the Eluths nor Kalmucks, who are masters of the country, nor the Bukhars, care to work in them. Nevertheless, they gather abundance of gold from the beds of the torrents formed by the melting of the snow in the spring; and from hence comes all that gold dust which the Bukhars carry into India, China, and Siberia. Much musk is likewise found in this country; and all sorts of precious stones, even diamonds; but the inhabitants have not the art of either cutting or polishing them.

The inhabitants both of Great and Little Bukharia, are generally those people called *Bukhars*. They are commonly sun-burned and black-haired; although some of them are very fair, handsome, and well made. They do not want politeness, and are addicted to commerce; which they carry on with China, the Indies, Persia, and Russia: but those who deal with them will be sure of being over-reached, if they do not take great care. The

Bukharia.

habits of the men differ very little from those of the Tartars. Their girdles are like those of the Poles. The garments of the women differ in nothing from those of the men, and are commonly quilted with cotton. They wear bobs in their ears, 12 inches long; part and twist their hair in tresses, which they lengthen with black ribbands embroidered with gold or silver, and with great tassels of silk and silver, which hang down to their heels; three other tufts of a smaller size cover their breasts. Both sexes carry about with them prayers written by their priests, which they keep in a small leathern purse by way of relics. The girls, and some of the women, tinge their nails red with the juice of an herb called by them *kera*: they dry and pulverize it; then mixing it with powder-alum, expose it in the air for 24 hours before they use it, and the colour lasts a long time. Both sexes wear close breeches, and boots of Russia leather, very light, and without heels, or leather soles; putting on galloches, or high-heeled slippers like the Turks, when they go abroad. They wear also the same sort of bonnets and covering for the head; only the women set off theirs with tinkets, small pieces of money, and Chinese pearls. Wives are distinguished from maids by a long piece of linen worn under their bonnets; which folding round the neck, they tie in a knot behind, so that one end of it hangs down to the waist.

The Bukhar houses are of stone, and pretty good; but their moveables consist mostly of some China trunks plated with iron. Upon these, in the day-time, they spread the quilts they have made use of at night, and cover them with a cotton carpet of various colours. They have likewise a curtain sprigged with flowers and various figures; also a sort of bedstead half a yard high, and four yards long, which is hidden in the day-time with a carpet. They are very neat about their victuals; which are dressed in the master's chamber by his slaves, whom the Bukhars either take or buy from the Russians, Kalmucks, or other neighbours. For this purpose there are in the chamber, according to the largeness of the family, several iron pots, set in a kind of range near a chimney. Some have little ovens, made, like the rest of the walls, with a stiff clay or bricks. Their utensils consist of some plates and porringers made of Cagua wood or of China, and some copper vessels. A piece of coloured calico serves them instead of a table-cloth and napkins. They use neither chairs nor tables, knives nor forks; but sit cross-legged on the ground; and the meat being served up, they pull it to pieces with their fingers. Their spoons resemble our wooden ladles. Their usual food is minced meats, of which they make pies of the form of a half-moon: these serve for provision when the Bukhars go long journeys, especially in winter. They carry them in a bag, having first exposed them to the frost; and when boiled in water, they make very good broth. Tea is their common drink, of which they have a black sort prepared with milk, salt, and butter; eating bread with it, when they have any.

As the Bukhars buy their wives, paying for them more or less according to their handfomeness; so the surest way to be rich is to have many daughters. The persons to be married must not see or speak to each other from the time of their contract to the day of marriage. This is celebrated with three days feasting,

as

Bukharia as they do great annual festivals. The evening before the wedding, a company of young girls meet at the bride's house, and divert themselves till midnight, playing, dancing, and singing. Next morning the guests assemble, and help her to prepare for the ceremony. Then, notice being given to the bridegroom, he arrives soon after, accompanied by ten or twelve of his relations and friends. These are followed by some playing on flutes, and by an *Abus* (a kind of priest), who sings, while he beats two little timbrels. The bridegroom then makes a horse-race; which being ended, he distributes the prizes, six, eight, or twelve, in number, according to his ability. They consist of damasks, fables, fox-skins, calico, or the like. The parties do not see each other while the marriage ceremony is performing, but answer at a distance to the questions asked by the priest. As soon as it is over, the bridegroom returns home with his company; and after dinner carries them to the bride's house, and obtains leave to speak to her. This done, he goes back, and returns again in the evening, when he finds her in bed; and, in presence of all the women, lays himself down by her in his cloaths, but only for a moment. The same farce is acted for three days successively; but the third night he passes with her entirely, and the next day carries her home.

Although the prevailing religion throughout all Little Bukharia is the Mahometan, yet all others enjoy a perfect toleration. The Bukhars say that God first communicated the koran to mankind by Moses and the prophets; that afterwards Mahomet explained, and drew a moral from it, which they are obliged to receive and practise. They hold Christ to be a prophet, but have no notion of his sufferings. Yet they believe in the resurrection, but cannot be persuaded that any mortal shall be eternally damned: on the contrary, they believe, that as the dæmons led them into sin, so the punishment will fall on them. They believe moreover, that at the last day every thing but God will be annihilated; and, consequently, that all creatures, the devils, angels, and Christ himself, will die. Likewise, that, after the resurrection, all men, excepting a few of the elect, will be purified or chastised by fire, every one according to his sins, which will be weighed in the balance. They say there will be eight different paradises for the good; and seven hells, where sinners are to be purified by fire: that those who will suffer most, are liars, cheats, and others of that kind: that the elect who do not feel the fire will be chosen from the good; viz. one out of 100 men, and one out of 1000 women; which little troop will be carried into one of the paradises, where they shall enjoy all manner of felicity, till it shall please God to create a new world. It is a sin, according to them, to say, that God is in heaven. God, say they, is every where; and therefore it derogates from his omnipotence to say that he is confined to any particular place. They keep an annual fast of 30 days, from the middle of July to the middle of August, during which time they taste nothing all day; but eat twice in the night, at sun-set and midnight; nor do they drink any thing but tea, all strong liquors being forbidden. Whoever transgresses these ordinances is obliged to emancipate his most valuable slave, or to give an entertainment to 60 people: he is likewise to receive 85 strokes on the back with a lathern strap

called *dura*. The common people, however, do not observe this fast exactly, and workmen are allowed to eat in the day-time. The Bukhars say prayers five times a day; before morning, towards noon, afternoon, at sun-set, and in the third hour of the night.

Jenghis Khan, who conquered both the Bukharias from the Arabs, left the empire of them to his son Jugatay Khan. He died in the year 1240, and left the government to his son Kara Kulaku, and of Little Bukharia to another called *Amul Khoja Khan*. A long succession of khans is enumerated in each of these families, but their history contains no interesting particulars. They are long since extinct, and the Kalmuck Tartars are masters of the country.

BUL, in the ancient Hebrew chronology, the eighth month of the ecclesiastical, and the second of the civil, year; it has since been called *Marshevan*, and answers to our October.

BULAC, a town of Egypt, situated on the eastern shore of the river Nile, about two miles west of Grand Cairo, of which it is the port town, and contains about 4000 families. It is a place of great trade, as all the vessels going up and down the Nile make some stay here. It is also at this place that they cut the banks of the river every year, in order to fill their canals and overflow the neighbouring grounds, without which the soil would produce neither grain nor herbage. E. Long. 32. N. Lat. 30.

BULAFU, a musical instrument, consisting of several pipes of wood tied together with thongs of leather, so as to form a small interstice between each pipe. It is used by the negroes of Guinea.

BULARCHUS, a Greek painter; the first who introduced (among the Greeks at least) different colours in the same picture. He flourished 740 B. C.

BULB, in the anatomy of plants, a kind of large bud, generally produced under the ground, upon or near the root of certain herbaceous plants, hence denominated *bulbous*.

A bulb is defined by Linnæus to be a species of hybernaculum, produced upon the descending caudex or root; consisting of stipulæ, petioli, the rudiments of the former leaves, and scales or bark.

To elucidate this definition, it is proper to remark, that every bud contains, in miniature or embryo, a plant, in every respect similar to the parent plant upon which it is seated. Plants therefore are perpetuated in the buds, as well as in the seeds; and the species may be renewed with equal efficacy in either way.

The tender rudiments of the future vegetable of which the bud is composed, are inclosed, and during the severities of winter defended from cold and other external injuries, by a hard bark or rind which generally consists of a number of scales placed over each other like tiles, and fastened together by means of a tenacious, resinous, and frequently odoriferous, substance. Thus defended, the buds remain upon different parts of the mother plant, till the ensuing spring; and are, therefore, with great propriety, denominated by Linnæus the *hybernaculum* or winter-quarters of the future vegetable.

With respect to their place, buds are situated either upon the stem and branches, or upon the roots: the former are styled *gemmæ*, or buds properly so called; but as they subsist several years by their roots, may be

Bulb. furnished with the other species of *hybernaculum*, called *bulbs*, which, according to the definition, are seated upon the descending *caudex* or root.

Again, trees which are perennial, with a woody and durable stem or trunk, have generally proper buds or gemmæ, but no bulbs.

In bulbous plants, as the tulip, onion, or lily, what we generally call the *root*, is in fact a bulb or *hybernaculum*, which incloses and secures the embryo or future shoot.

At the lower part of this bulb may be observed a fleshy knob or tubercle, from whence proceed a number of fibres or threads. This knob, with the fibres attached to and hanging from it, is, properly speaking, the true root; the upper part being only the cradle or nursery of the future stem, which after the bulb has repaired a certain number of times, it perishes; but not till it has produced at its sides a number of smaller bulbs or suckers for perpetuating the species.

One part of Linnæus's definition still remains obscure. The bulb, says he, is composed of the remains or rudiments of the former leaves of the plant; *e rudimento foliorum præteritorum*.

It is easy to comprehend that buds contain the rudiments of the future leaves: but how can bulbs be said to contain the rudiments of leaves that, to all appearance, are already perished? To explain this, let it be observed, that, in the opinion of very eminent botanists, the root, in a very great number of perennial herbs, is annually renewed or repaired out of the trunk or stalk itself; in which sense only, roots are properly said to descend.

In the perennials alluded to, the basis of the stalk continually, and by insensible degrees, descends below the surface of the earth, and is thus changed into a true root; which root, by the continuance of the said motion of the stalk, also descends; and thus, according to the durability of its substance, becomes a longer or shorter root; the elder or lower part rotting off in proportion as the upper is generated out of the stalk. Thus, in brownwort, the basis of the stalk, sinking down by degrees till it is hid under the ground, becomes the upper part of the root; and continuing still to sink, the next year becomes the lower part, and the following year rots away.

This is exactly what obtains in bulbous roots, as well as in the far greater number of other herbaceous perennials, as arum, valerian, tanfy, samphire, primrose, woodforrel, iris, and others.

The immediate visible cause of this descent is the string-roots which this kind of trunks frequently puts forth; which descending themselves directly into the ground, serve like so many ropes for pulling the trunk after them. Hence the tuberous roots of iris are sometimes observed to reascend a little upon the rotting or fading away of the string-roots which hang at them.

In bulbous roots, where the stalk and former leaves of the plant are sunk below, and formed into what is called the *bulb* or wintering of the future vegetable, the radicles or small fibres that hang from the bulb are to be considered as the root; that is, the part which furnishes nourishment to the plant: the several rinds and shells whereof chiefly the bulb consists, successively

perish, and shrink up into so many dry skins; betwixt which, and in their centre, are formed other leaves and shells, and thus the bulb is perpetuated.

What has been said of the descent of roots by the sinking of the stalk, is further confirmed by the appearance of certain roots; as of valerian, plantago major, and devil's-bit, in which the lower part appears bitten or chopped off. In these the lower part rotting off as the upper descends, the living remainder becomes slumped, or seems bitten.

All bulbous roots, says the learned Dr Grew in his anatomy of plants, may be considered as hermaphrodite roots, or root and trunk both together: for the radicles or strings only are absolute roots; the bulb actually containing those parts which springing up make the body or leaves of the plant; so that it may be regarded as a large bud under ground.

Bulbous roots are said to be solid, when composed of one uniform lump of matter: tunicated, when formed of multitudes of coats surrounding one another; squamose, when composed of, or covered with, lesser flakes; duplicate, when there are only two to each plant; and aggregate, when there is such a congeries of such roots to each plant.

BULBOCASTANUM, in botany. See **BULBIUM**.

BULBOCODIUM, MOUNTAIN-SAFFRON: A genus of the monogynia order, belonging to the hexandria class of plants; and, in the natural method, ranking under the 9th order, *Spathaceæ*. The corolla is funnel-shaped, and hexapetalous, with the heels narrow, supporting the stamina. There are two species, the alpinum and vernal. The first sort grows naturally on the Alps, and also on Snowdon in Wales. It hath a small bulbous root, which sends forth a few long narrow leaves somewhat like those of saffron, but narrower. In the middle of these the flower comes out, which stands on the top of the footstalk, growing erect, and is shaped like those of the crocus, but smaller; the foot-stalk rises about three inches high, and hath four or five short narrow leaves placed alternately upon it below the flower. This flowers in March, and the seeds are ripe in May. The second is a native of Spain. It hath a bulbous root shaped like those of the snow-drop, which sends out three or four spear-shaped concave leaves, between which comes out the flower, standing on a very short footstalk. The flowers appear about the same time with the last; at first they are of a pale colour, but afterwards change to a whitish purple. These plants may be propagated by off-sets at the decay of the flower and leaf every second or third year; also, by sowing the seed in pots in autumn, sheltering them in a frame from frost; and the plants will appear in the spring, which, at the decay of the leaves, may be taken up for planting in the borders in October, where they will flower the year following.

BULBOSE, or **BULBOUS**. See **BULB**.

BULEUTÆ, in Grecian antiquity, were magistrates answering to the decuriones among the Romans. See **DECURIO**.

BULFINCH, in ornithology. See **LOXIA**.

BULGARIA, a small province of Turkey in Europe, bounded on the north by Wallachia, on the east by the Black sea, on the south by Romania and Macedonia,

Bulgaria
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cedonia, and on the west by Servia. It is very narrow, but 325 miles long on the side of the Danube, from Servia till it falls into the Black sea.

The Bulgarians anciently inhabited the plains of Sarmatia that extended along the banks of the Volga. Thence they migrated, about the middle of the 7th century of the Christian era, in quest of new settlements. A large body of them passed the Danube, and took possession of the country adjacent to the western coast of the Euxine sea. Several attempts were made by the Romans to dispossess and extirpate them: But they defended themselves with equal resolution and success. Constantine III. being defeated and intimidated, concluded an ignominious peace with them (A. D. 678), and purchased their friendship by the payment of an annual tribute. Justinian II. refused to comply with these dishonourable terms, and invaded their territories (A. D. 687); but he was defeated, and constrained to renew the treaty. War was carried on, almost without interruption, between them and the eastern emperors, during the course of several centuries. After a long and doubtful struggle, the Romans prevailed; and the emperor Basil reduced Bulgaria to the form of a province (A. D. 1019). From this time the Bulgarians remained in subjection, and were governed by Roman dukes, until the reign of Isaac Angelus, when they revolted (A. D. 1186).

The history of Bulgaria, in the subsequent period, scarcely merits attention. Stephen IV. king of Hungary, having defeated the Bulgarians, obliged them to acknowledge him as their sovereign. His successors were styled kings of Hungary and Bulgaria; and this title was transmitted, together with the kingdom of Hungary, to the house of Austria.

By the aid of the eastern emperors they threw off the Hungarian yoke; and, in return, they assisted their ally in an attempt to recover Adrianople (A. D. 1369). Provoked by this combination, Amurath invaded their country; and Bajazet, his successor, completed the conquest of it (A. D. 1396).

Bulgaria still remains a province of the Ottoman empire. The inhabitants are Christians; but extremely ignorant, inasmuch that they seem to know nothing of Christianity but baptism and fasting. It is divided into four sangiacates; Byden, Sardice, Nicopolis, and Silistria. The chief towns are of the same names, except Sardice, which is now called *Sophia*.

BULGARIAN Language, the same with the *SLAVONIC*.

BULIMY, a disease in which the patient is affected with an insatiable and perpetual desire of eating; and, unless he is indulged, he often falls into fainting fits. It is also called *James canina*, canine appetite. See *MEDICINE-Index*.

BULITHUS, a stone found either in the gall-bladder, or in the kidneys and bladder, of an ox. See *Bos*.

BULK of a SHIP, the whole content in the hold for the stowage of goods.

BULK-Heads are partitions made athwart the ship with boards, by which one part is divided from the other; as the great cabin, gun-room, bread-room, and several other divisions. The *bulk-head afore* is the partition between the fore-castle and gratings in the head.

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BULL (Dr John), a celebrated musician and composer, was born in Somersetshire about the year 1563, and, as it is said, was of the Somerset family. He was educated under Blitheman. In 1586, he was admitted at Oxford to the degree of bachelor of music, having practised in that faculty 14 years; and in 1592, was created doctor in the university of Cambridge. In 1591, he was appointed organist of the queen's chapel, in the room of his master, Blitheman.

Bull was the first Gresham professor of music, and was appointed to that station upon the special recommendation of queen Elizabeth. However skilful he might be in his profession, it seems he was not able to read his lectures in Latin; and therefore, by a special provision in the ordinances respecting the Gresham professors, made anno 1597, it is declared, that because Dr Bull is recommended to the place of music-professor by the queen's most excellent majesty, being not able to speak Latin, his lectures are permitted to be altogether English, so long as he shall continue music-professor there.

In the year 1601, he went abroad for the recovery of his health, which at that time was declining; and during his absence was permitted to substitute, as his deputy, a son of William Bird, named *Thomas*. He travelled incognito into France and Germany; and Wood takes occasion to relate a story of him while abroad, which the reader shall have in his own words.

“ Dr Bull hearing of a famous musician belonging to a cathedral in St Omer's, he applied himself, as a novice, to him, to learn something of his faculty, and to see and admire his works. This musician, after some discourse had passed between them, conducted Bull to a vestry or music-school joining to the cathedral, and shewed him a lesson or song of 40 parts; and then made a vaunting challenge to any person in the world to add one part more to them, supposing it to be so complete and full, that it was impossible for any mortal man to correct or add to it. Bull thereupon, desiring the use of pen, ink, and ruled paper, such as we call *musical paper*, prayed the musician to lock him up in the said school for two or three hours; which being done, not without great disdain by the musician, Bull, in that time or less, added 40 more parts to the said lesson or song. The musician thereupon being called in, he viewed it, tried it, and retired it; at length he burst out into a great ecstasy, and swore by the great God, that he that added these 40 parts must either be the devil or Dr Bull. Whereupon Bull making himself known, the musician fell down and adored him. Afterwards, continuing there and in those parts for a time, he became so much admired, that he was courted to accept of any place of preferment suitable to his profession, either within the dominions of the emperor, the king of France, or Spain; but the tidings of these transactions coming to the English court, queen Elizabeth commanded him home.” *Fifth*, anno 1586.

Dr Ward, who has given the life of Dr Bull, in his lives of the Gresham professors, relates, that upon the decease of queen Elizabeth he became chief organist to king James, and had the honour of entertaining his majesty and prince Henry at Merchant Taylor's hall with his performance on the organ. The same author proceeds to relate, that in 1613 Bull quitted Eng-

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land and went to reside in the Netherlands, where he was admitted into the service of the archduke. He suggests, as the reason of Bull's retirement, that the science began to sink in the reign of king James; which he infers from that want of court-patronage, which, it seems, induced the musicians of that day to dedicate their works to one another. But surely Bull had none of these reasons to complain of being slighted that others had. He was in the service of the chapel, and at the head of the prince's musicians; and in the year 1604 his salary for the chapel-duty had been augmented. The circumstances of his departure from England may be collected from the following entry now to be seen in the cheque book: "1613, John Bull doctor of music went beyond seas without licence, and was admitted into the archduke's service, and entered into paie there about Mich. and Peter Hopkins a base from Paul's was sworn into his place the 27th of December following. His wages from Mich. unto the day of the swearing of the said Peter Hopkins was disposed of by the deane of his majesty's chapel." Wood says, that Dr Bull died at Hamburg: others have said at Lubeck.

The only works of Bull in print are lessons in the "Parthenia, or the maiden-head of the first music that ever was printed for the virginals." An anthem of his, "Deliver me, O God," is to be found in Bernard's collection of church-music. Dr Ward has given a long list of compositions of Dr Bull in manuscript in the collection of the late Dr Pepusch, by which it appears that he was equally excellent in vocal and instrumental harmony. By some of the lessons in the Parthenia it seems that he was possessed of a power of execution on the harpsichord far beyond what is generally conceived of the masters of that time. As to his lessons, they were, in the estimation of Dr Pepusch, not only for the harmony and contrivance, but for air and modulation, so excellent, that he scrupled not to prefer them to those of Couperin, Scarlatti, and others of the modern composers for the harpsichord.

BULL (George), bishop of St David's, was born at Wells, in 1634; and educated at Exeter college, in Oxford. The first benefice he enjoyed was that of St George's, near Bristol, whence he rose successively to be rector of Suddington in Gloucestershire, prebendary of Gloucester, archdeacon of Llandaff, and in 1705 bishop of St David's. This dignity he enjoyed about four years, and died in 1709. During the usurpation of Cromwell, he adhered steadily, though still with great prudence, to the forms of the church of England; and in the reign of James II. preached very strenuously against the errors of Popery. He wrote, 1. A defence of the Nicene faith. 2. Apostolical harmony. 3. Primitive apostolical tradition; and other works.

BULL, in zoology. See **BOS**.

Wild BULLS. The wild bulls now so numerous on the continent of America, are said to have sprung from one bull and seven cows, which were carried thither by some of the first conquerors. For the manner of hunting these, see **BUCANEERS**.

BULL, in astronomy. See **ASTRONOMY**, n° 406.

BULL'S-EYE, among seamen, a small, obscure, sub-lime cloud, ruddy in the middle, that sometimes appear to mariners, and is the immediate forerunner of a great storm at sea.

BULL-FIGHTING, a sport or exercise much in vogue a-

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mong the Spaniards and Portuguese, consisting in a kind of combat of a cavalier or torreadore against a wild bull, either on foot or on horseback, by riding at him with a lance. The Spaniards have bull-fights, i. e. feasts attended with shews, in honour of St John, the Virgin Mary, &c. This sport the Spaniards received from the Moors, among whom it was celebrated with great eclat. Some think that the Moors might have received the custom from the Romans, and they from the Greeks. Dr Plot is of opinion, that the Ταυροκαταψιν ημετας among the Thessalians, who first instituted this game, and of whom Julius Cæsar learned and brought it to Rome, were the origin both of the Spanish and Portuguese bull-fighting, and of the English bull-running. This practice was prohibited by Pope Pius V. under pain of excommunication incurred *ipso facto*. But succeeding popes have granted several mitigations in behalf of the toradors.

From the following account of a bull-feast in the Coliseum at Rome 1332, extracted from Muratori by Mr Gibbon, the reader may form some idea of the pomp, the ceremonies, and the danger, which attended these exhibitions. "A general proclamation as far as Rimini and Ravenna invited the nobles to exercise their skill and courage in this perilous adventure. The Roman ladies were marshalled in three squadrons, and seated in three balconies, which on this day, the third of September, were lined with scarlet cloth. The fair Jacova di Rovere led the matrons from beyond the Tiber, a pure and native race, who still represent the features and character of antiquity. The remainder of the city was divided between the Colonna and Urfini families: the two factions were proud of the number and beauty of their female bands: the charms of Savella Urfini are mentioned with praise; and the Colonna regretted the absence of the youngest of their house, who had sprained her ankle in the garden of Nero's tower. The lots of the champions were drawn by an old and respectable citizen; and they descended into the arena, or pit, to encounter the wild-bulls, on foot as it should seem, with a single spear. Amidst the crowd, our annalist has selected the names, colours, and devices, of 20 of the most conspicuous knights. Several of the names are the most illustrious of Rome and the ecclesiastical state; Malatesta, Polenta, della Valle, Cafarello, Savelli, Capoccio, Conti, Annibaldi, Altieri, Corsi. The colours were adapted to their taste and situation. And the devices are expressive of hope or despair, and breathe the spirit of gallantry and arms. "I am alone, like the youngest of the Horatii," the confidence of an intrepid stranger: "I live disconsolate," a weeping widower: "I burn under the ashes," a discreet lover: "I adore Lavinia or Lucretia," the ambiguous declaration of a modern passion: "My faith is as pure," the motto of a white livery: "Who is stronger than myself?" of a lion's hide: "If I am drowned in blood, what a pleasant death!" the wish of ferocious courage. The pride or prudence of the Urfini restrained them from the field, which was occupied by three of their hereditary rivals, whose inscriptions denoted the lofty greatness of the Colonna name: "Though sad, I am strong:" "Strong as I am great:" "If I fall (addressing himself to the spectators) you fall with me:"—intimating (says the writer), that while the other families were the subjects of

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the Vatican, they alone were the supporters of the Capitol. The combats of the amphitheatre were dangerous and bloody. Every champion successively encountered a wild bull; and the victory may be ascribed to the quadrupeds, since no more than eleven were left on the field, with the loss of nine wounded and 18 killed on the side of their adversaries. Some of the noblest families might mourn; but the pomp of the funerals, in the churches of St John Lateran and St Maria Maggiore, afforded a second holiday to the people."— Doubtless it was not in such conflicts that the blood of the Romans should have been shed: yet, in blaming their rashness, we are compelled to applaud their gallantry; and the noble volunteers, who display their magnificence and risk their lives under the balconies of the fair, excite a more generous sympathy than the thousands of captives and malefactors who were reluctantly dragged to the scene of slaughter."

A striking relic of barbarity in the Spanish manners of the present day, is the excessive attachment of that nation to bull-fights, a spectacle which shocks the delicacy of every other people in Europe. Many Spaniards consider this practice as the sure means of preserving that energy by which they are characterised, and of habituating them to violent emotions, which are terrible only to timid minds. But it seems difficult to comprehend what relation there is between bravery and a spectacle where the assistants now run no danger; where the actors prove by the few accidents which befall them, that theirs has nothing in it very interesting; and where the unhappy victims meet only with certain death as the reward of their vigour and courage. Another proof that these spectacles have little or no influence on the disposition of the mind is, that children, old men, and people of all ages, stations, and characters, assist at them; and yet their being accustomed to such bloody entertainments appears neither to correct their weakness and timidity, nor alter the mildness of their manners.

The bull-fights are very expensive; but they bring great gain to the undertakers. The worst places cost two or four rials, according as they are in the sun or in the shade. The price of the highest is a dollar. When the price of the horses and bulls, and the wages of the *Torreadores*, have been paid out of this money, the rest is generally appropriated to pious foundations: at Madrid it forms one of the principal funds of the hospital. It is only during summer that these combats are exhibited, because the season then permits the spectators to sit in the open air, and because the bulls are then more vigorous. Those which are of the best breed are condemned to this kind of sacrifice; and connoisseurs are so well acquainted with their distinguishing marks, that as soon as a bull appears upon the arena, they can mention the place where he was reared. This arena is a kind of circus surrounded by about a dozen of seats, rising one above another; the highest of which only is covered. The boxes occupy the lower part of the edifice. In some cities, Valladolid for example, which have no place particularly set apart for these combats, the principal square is converted into a theatre. The balconies of the houses are widened, so as to project over the streets which end there; and it is really a very interesting sight to see the different classes of people assembled around this square, wait-

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ing for the signal when the entertainment is to commence, and exhibiting every external sign of impatience and joy. The spectacle commences by a kind of procession around the square, in which appear, both on horseback and on foot, the combatants who are to attack the fierce animal; after which two alguazils, dressed in perukes and black robes, advance with great gravity on horseback; who go and ask from the president of the entertainment an order for it to commence. A signal is immediately given; and the animal, which was before shut up in a kind of hovel with a door opening into the square, soon makes his appearance. The officers of justice, who have nothing to do with the bull, prudently hasten to retire, and their fright is a prelude to the cruel pleasure which the spectators are about to enjoy. The bull, however, is received with loud shouts, and almost stunned by the noisy expressions of their joy. He has to contend first against the picadores, combatants on horseback, who, dressed according to the ancient Spanish manner, and as it were fixed to their saddles, wait for him, each being armed with a long lance. This exercise, which requires strength, courage, and dexterity, is not considered as disgraceful. Formerly the greatest lords did not disdain to practise it; even at present some of the hidalgos solicit for the honour of fighting the bull on horseback, and they are then previously presented to the people, under the auspices of a patron, who is commonly one of the principal personages at court.

The picadores, whoever they may be, open the scene. It often happens that the bull, without being provoked, darts upon them, and every body entertains a favourable opinion of his courage. If, notwithstanding the sharp pointed weapon which defends his attack, he returns immediately to the charge, their shouts are redoubled, as their joy is converted into enthusiasm; but if the bull, struck with terror, appears pacific, and avoids his persecutors, by walking round the square in a timid manner, he is hooted at and hissed by the whole spectators, and all those near whom he passes load him with blows and reproaches. He seems then to be a common enemy, who has some great crime to expiate; or a victim, in the sacrifice of which all the people are interested. If nothing can awaken his courage, he is judged unworthy of being tormented by men; the cry of *perros, perros*, brings forth new enemies against him, and large dogs are let loose upon him, which seize him by the neck and ears in a furious manner. The animal then finds the use of those weapons with which nature has furnished him; he tosses the dogs into the air, who fall down stunned, and sometimes mangled; they however recover, renew the combat, and generally finish by overcoming their adversary, who thus perishes ignobly. If, on the other hand, he presents himself with a good grace, he runs a longer and nobler, but a much more painful career. The first act of the tragedy belongs to the combatants on horseback; this is the most animated and bloody of all the scenes, and often the most disgusting. The irritated animal braves the pointed steel which makes deep wounds in his neck, attacks with fury the innocent horse who carries his enemy, rips up his sides, and overturns him together with his rider. The latter, then dismounted and disarmed, would be exposed to imminent danger, did not combatants on foot, called

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chulos, come to divert the bull's attention, and to provoke him, by shaking before him different pieces of cloth of various colours. It is, however, at their own risk that they thus save the dismounted horseman; for the bull sometimes pursues them, and they have then need for all their agility. They often escape from him by letting fall in his way the piece of stuff which was their only arms, and against which the deceived animal expends all his fury. Sometimes he does not accept this substitute, and the combatant has no other resource but to throw himself speedily over a barrier, six feet high, which incloses the interior part of the arena. In some places this barrier is double, and the intermediate space forms a kind of circular gallery, behind which the pursued torreadore is in safety. But when the barrier is single, the bull attempts to jump over it, and often succeeds. The reader may easily imagine in what consternation the nearest of the spectators then are; their haste to get out of the way, and to crowd to the upper benches, becomes often more fatal to them than even the fury of the bull, who, stumbling at every step, on account of the narrowness of the place and the inequality of the ground, thinks rather of his own safety than of revenge, and besides soon falls under the blows which are given him from all quarters.

Except in such cases, which are very rare, he immediately returns. His adversary recovered, has had time to get up; he immediately remounts his horse, provided the latter is not killed or rendered unfit for service, and the attack commences; but he is often obliged to change his horse several times. Expressions cannot then be found to celebrate these acts of prowess, which for several days become the favourite topic of conversation. The horses, very affecting models of patience, courage, and docility, may be seen treading under their feet their own bloody entrails, which drop from their sides half torn open, and yet obeying, for some time after, the hand which conducts them to new tortures. Spectators of delicacy are then filled with disgust, which converts their pleasure into pain. A new act is however preparing, which reconciles them to the entertainment. As soon as it is concluded that the bull has been sufficiently tormented by the combatants on horseback, they retire and leave him to be irritated by those on foot. The latter, who are called *banderilleros*, go before the animal; and the moment he darts upon them they plunge into his neck, two by two, a kind of darts called *banderillas*, the points of which are hooked, and which are ornamented with small streamers made of coloured paper. The fury of the bull is now redoubled; he roars, tosses his head, and the vain efforts which he makes serve only to increase the pain of his wounds: this last scene calls forth all the agility of his adversaries. The spectators at first tremble for them, when they behold them braving so near the horns of this formidable animal; but their hands, well exercised, aim their blows so skilfully, and they avoid the danger so nimbly, that after having seen them a few times, one neither pities nor admires them, and their address and dexterity seem only to be a small episode of the tragedy, which concludes in the following manner: When the vigour of the bull appears to be almost exhausted; when his blood, issuing from twenty wounds, streams along his neck and moi-

stens his robust sides; and when the people, tired of one object, demand another victim; the president of the entertainment gives the signal of death, which is announced by the sound of trumpets. The matador then advances, and all the rest quit the arena; with one hand he holds a long dagger, and with the other a kind of flag, which he waves backwards and forwards before his adversary. They both stop and gaze at one another; and while the agility of the matador deceives the impetuosity of the bull, the pleasure of the spectators, which was for some time suspended, is again awakened into life. Sometimes the bull remains motionless, throws up the earth with his foot, and appears as if meditating revenge.

The bull in this condition, and the matador who calculates his motions and divines his projects, form a group which an able pencil might not disdain to delineate. The assembly in silence behold this dumb scene. The matador at length gives the mortal blow; and if the animal immediately falls, a thousand voices proclaim with loud shouts the triumph of the conqueror; but if the blow is not decisive, if the bull survives and seeks still to brave the fatal steel, murmurs succeed to applause, and the matador, whose glory was about to be raised to the skies, is considered only as an unskilful butcher. He endeavours to be soon revenged, and to disarm his judges of their severity. His zeal sometimes degenerates into blind fury, and his partizans tremble for the consequences of his imprudence. He at length directs his blow better. The animal vomits up blood; he staggers and falls, while his conqueror is intoxicated with the applauses of the people. Three mules, ornamented with bells and streamers, come to terminate the tragedy. A rope is tied around the bull's horns, which have betrayed his valour, and the animal, which but a little before was furious and proud, is dragged ignominiously from the arena which he has honoured, and leaves only the traces of his blood and the remembrance of his exploits, which are soon effaced on the appearance of his successor. On each of the days set apart for these entertainments, six are thus sacrificed in the morning, and twelve in the afternoon, at least in Madrid. The three last are given exclusively to the matador, who, without the assistance of the picadores, exerts his ingenuity to vary the pleasure of the spectators. Sometimes he causes them to be combated by some intrepid stranger, who attacks them mounted on the back of another bull, and sometimes he matches them with a bear: this last method is generally destined for the pleasure of the populace. The points of the bull's horns are concealed by something wrapped round them, which breaks their force. The animal, which in this state is called *Embolado*, has power neither to pierce nor to tear his antagonist. The amateurs then descend in great numbers to torment him, each after his own manner, and often expiate this cruel pleasure by violent contusions; but the bull always falls at length under the stroke of the matador. The few spectators who are not infected by the general madness for this sport, regret that those wretched animals do not, at least, purchase their lives at the expence of so many tortments and so many efforts of courage; they would willingly assist them to escape from their persecutors. In the minds of such spectators disgust succeeds compassion, and satiety suc-

ceeds

Bull.

ceeds disgust. Such a series of uniform scenes makes that interest become languid, which this spectacle, on its commencement, seemed to promise. But to connoisseurs, who have thoroughly studied all the stratagems of the bull, the resources of his address and fury, and the different methods of irritating, tormenting, and deceiving him, none of these scenes resembles another, and they pity those frivolous observers who cannot remark all their varieties.

The Spanish government are very sensible of the moral and political inconveniences arising from this species of phrensy. They have long since perceived, that among a people whom they wish to encourage to labour, it is the cause of much disorder and dissipation; and that it hurts agriculture, by destroying a great number of robust animals, which might be usefully employed: but they are obliged to manage with caution a taste which it might be dangerous to attempt to abolish precipitately. They are, however, far from encouraging it. The court itself formerly reckoned bull-fights among the number of its festivals, which were given at certain periods. The *Plaza-Mayor* was the theatre of them, and the king and the royal family honoured them with their presence. His guards presided there in good order. His halberdiers formed the interior circle of the scene; and their long weapons, held out in a defensive posture, were the only barrier which they opposed against the dangerous caprices of the bull. These entertainments, which, by way of excellence, were called *Fiestas Reales*, are become very rare. Charles III. who endeavoured to polish the nation, and to direct their attention to useful objects, was very desirous of destroying a taste in which he saw nothing but inconveniences; but he was too wise to employ violent means for that purpose. He, however, confined the number of bull-fights to those, the profits of which were applied to the support of some charitable institution, with an intention of substituting for these other funds afterwards. Bull-fights, by these means being rendered less frequent, will, perhaps, gradually lose their attractions, until more favourable circumstances permit the entire abolition of them.

Bull-Running, denotes a feudal custom obtaining in the honour of Tutbury in Staffordshire; where, anciently, on the day of the assumption of our Lady, a bull is turned loose by the lord to the minstrels; who, if they can catch him before he passes the river Dove, are to have him for their own, or, in lieu thereof, to receive each 40 pence; in consideration of which custom they pay 20 pence yearly to the said lord.

Bull and Boar. By the custom of some places, the parson is obliged to keep a bull and boar for the use of his parishioners, in consideration of his having tithes of calves and pigs, &c.

Bull-Frog, in zoology. See RANA.

Bull-Head, or *Müller's Thumb*, in ichthyology. See CORIUS.

BULL, among ecclesiastics, a written letter, dispatched, by order of the Pope, from the Roman chancery, and sealed with lead, being written on parchment, by which it is partly distinguished from a brief: see the article BRIEF.—It is a kind of apostolical rescript, or edict; and is chiefly in use in matters of justice or grace. If the former be the intention of the

Bull.

bull, the lead is hung by a hempen chord; if the latter, by a silken thread. It is this pendent lead, or seal, which is, properly speaking, the bull, and which is impressed on one side with the heads of St Peter and St Paul, and on the other with the name of the Pope and the year of his pontificate. The bull is written in an old, round, Gothic letter, and is divided into five parts, the narrative of the fact, the conception, the clause, the date, and the salutation, in which the Pope styles himself *servus servorum*, i. e. the servant of servants. These instruments, besides the lead hanging to them, have a cross, with some text of scripture, or religious motto, about it. Bulls are granted for the consecration of bishops, the promotion to benefices, and the celebration of jubilees, &c.

Bull in cana Domini, a particular bull read every year, on the day of the Lord's supper, or Maundy Thursday, in the Pope's presence, containing excommunications and anathemas against heretics, and all who disturb or oppose the jurisdiction of the holy see. After the reading of the bull, the Pope throws a burning torch in the public place, to denote the thunder of this anathema.

Golden Bull, an edict, or imperial constitution, made by the emperor Charles IV. reputed to be the magna charta, or the fundamental law of the German empire.

It is called *golden*, because it has a golden seal, in the form of a pope's bull, tied with yellow and red cords of silk: upon one side is the emperor represented sitting on his throne, and on the other the capital of Rome. It is also called *Caroline*, on Charles IV's account. Till the publication of the golden bull, the form and ceremony of the election of an emperor were dubious and undetermined, and the number of the electors not fixed. This solemn edict regulated the functions, rights, privileges, and pre-eminences, of the electors. The original, which is in Latin, on vellum, is preserved at Francfort: this ordinance, containing 30 articles or chapters, was approved of by all the princes of the empire, and remain still in force.

Silver Bulls were not in so frequent use; tho' we do not want instances of them.

Leadn Bulls were sent by the emperors of Constantinople to despots, patriarchs, and princes; and the like were also used by the grandees of the Imperial court, as well as by the kings of France, Sicily, &c. and by bishops, patriarchs, and popes. It is to be observed, that the leaden bulls of these last had, on one side, the name of the pope or bishop inscribed. Polydore Virgil makes pope Stephen III. the first who used leaden bulls, about the year 772. But others find instances of them as early as Silvester, Leo. I. and Gregory the Great. The latter popes, beside their own names, strike the figures of St Peter and St Paul on their bulls; a practice first introduced by Pope Paschal II. But why, in these bulls, the figure of St Paul is on the right, and that of St Peter on the left side, is a question which has occasioned many conjectures and disputes.

Waxen Bulls are said to have been first brought into England by the Normans. They were in frequent use among the Greek emperors, who thus sealed letters to their wives, mothers, and sons. Of these there were two sorts, one red, and the other green.

BULLA

Bulla,
Bullæ.

BULLA, or DIPPER, in zoology, a genus belonging to the order of vermes testaceæ. It is an animal of the snail-kind: the shell consists of one valve, convoluted, and without any prickles; the aperture is narrowish, oblong, longitudinal, and entire at the base; the colomella is smooth and oblique. There are 23 species; four of them found in the British seas; the rest chiefly natives of the Asiatic and Atlantic oceans.

BULLÆ, in antiquity, a kind of ornaments much in use among the ancient Romans. Mr Whittaker * is of opinion that they were originally formed of leather among all ranks of people; and it is certain that they continued so to the last among the commonalty. He also imagines, that at first the bulla was intended as an amulet rather than an ornament; as a proof of which he tells us that the bullæ were frequently impressed with the figure of the sexual parts. It is universally asserted by the critics, that the bullæ were made hollow for the reception of an amulet; but this Mr Whittaker contradicts from the figure of a golden one lately found at Mancheller, which had no aperture whereby an amulet could have been introduced.—Pliny refers the original of the bulla to the elder Tarquin, who gave one with the prætexta to his son, because at the age of 4 he had with his own hand killed an enemy; and in imitation of him it was afterwards assumed by other patricians. Others affirm that the bulla was given by that king to the sons of all the patricians who had borne civil offices. Lastly, others allege that Romulus first introduced the bulla, and gave it to Tullus Hostilius, the first child born of the rape of the Sabines.—As to the form of the bullæ, Mr Whittaker informs us that they were originally made in the shape of hearts; but they did not always retain the form of an heart, any more than they were always made of leather. As the wealth of the state and the riches of individuals increased, the young patrician distinguished himself by a bulla of gold, while the common people wore the amulet of their ancestors. The figure of an heart then became so generally round, some even having the impression of an heart upon them, that there are not many of the original form to be found in the cabinets of the curious. The form is naturally varied from a complete circle to that of a segment; and this was the shape of the abovementioned bulla found at Manchester. When the youth arrived at 15 years of age, they hung up their bullæ about the necks of their gods lars. We are further informed, that the bullæ were not only hung about the necks of young men, but of horses also. We may add, that bullæ were sometimes allowed to statues; whence the phrase *statua bullatæ*.

BULLÆ was also the denomination given to divers other metalline ornaments made after the same form; and in this sense *bullæ* seem to include all gold and silver ornaments of a roundish form, whether worn on the habits of men, the trappings of horses, or the like. Such were those decorations used by the ancients on their doors and belts. The bullæ of doors were a kind of large-headed nails fastened on the doors of the rich, and kept bright with great care. The doors of temples were sometimes adorned with golden bullæ. Mr Banelot takes the bullæ worn by soldiers on their belts to be something more than mere ornaments. They seem to have been considered as preservations from dangers

and diseases, and even means of acquiring glory, and other advantages. The like may perhaps be extended to the bullæ on doors, which were probably placed there as a security to them from being broken or violated.

BULLÆ also denoted a table hung up in the public courts, to distinguish which days were fasti, and which nefasti; answering in some measure to our kalender.

BULLETT, an iron or leaden ball or shot, wherewith fire arms are loaded. Bullets are cast in iron moulds, consisting of two concave hemispheres, with a handle whereby to hold them; and between them is a hole, called *the gate*, at which to pour in the melted metal. The chaps or hemispheres of hullet-moulds are first punched, being blood-red hot, with a round ended punch, of the shape and nearly of the size of the intended bullets. To cleanse the insides, they make use of a bullet bore, which consists of a steel shank, having a globe at one end, wherewith to bore the inside of a mould clean, and of the intended size.

BULLEYN (William), a learned physician and botanist, was born in the isle of Ely, in the former part of the reign of Henry VIII. and educated at Cambridge. Botany being his favourite study, he travelled through various parts of England, Scotland, and Germany, chiefly with an intention to improve his knowledge in that science. In the reign of Edward VI. or of queen Mary, Mr Bulleyn appears, from his remarks on the natural productions of that country, to have resided at Norwich, or in that neighbourhood, and also to have spent some time at Bloxhall in Suffolk: but he afterwards removed into the north, and settled at Durham, where he practised physic with considerable reputation and success. His great patron at this time was Sir Thomas Hilton, knight, baron of Hilton, who was governor of Tinmouth castle in the reign of Philip and Mary. In 1560, he came to London; and soon after his arrival, was accused by William Hilton of Bidick, of having murdered his brother Sir Thomas, our author's friend and patron. He was arraigned before the duke of Norfolk, and honourably acquitted. This Hilton afterwards hired some villains to assassinate the doctor; but this attempt proving ineffectual, he had him arrested on an action for debt, and he remained for a long time in prison. During this confinement, Dr Bulleyn composed several of those works which raised his reputation as a medical writer. He died in January 1576, and was buried in St Giles's Cripplegate, in the same grave with his brother the divine, who died 13 years before, and in which John Fox the martyrologist was interred 11 years after. Dr Bulleyn appears from his writings to have been well acquainted with the works of the ancient Greek, Roman, and Arabian physicians. According to the modern practice, his books, were they generally known, would be of little use; but as he was a man of genius and fertile imagination, they are by no means barren of entertainment. He wrote, 1. The government of health, 1559, 8vo. 2. A regimen against the pleurisy, 8vo. London, 1562. 3. Bulleyn's bulwark of defence against all sickness, forenes, and wounds that dooe daily assault mankind, London printed by John Kingston, 1562, folio. This includes, The government of health. 4. A dialogue both pleasant and pietifull, wherein is a goodlie regimen against the fever pestilence,

Bullet,
Bulleyn.

Bullaldus lence, with a consolation and comfort against death, London, 1564, 8vo. 1569, 8vo. Very scarce. There is a wooden print of the author prefixed to the first edition of his government of health; also a small one engraved by Stukeley in 1722.

BULLIALDUS (Ismael), an eminent astronomer, was born at Laon in the isle of France in 1605. He travelled in his youth for the sake of improvement; and afterwards published several works, among which are, 1. *De natura lucis*. 2. *Philolaus*. 3. *Astronomia philolaica, opus novum, in quo motus planetarum per novam et veram hypothesein demonstrantur*. 4. *Astronomia philolaica fundamenta clarius explicata et asserta adversus Zothi Wardi impugnationem*. He also wrote a piece or two upon Geometry and Arithmetic. In 1661, he paid Hevelius a visit at Dantzic, for the sake of seeing his optical and astronomical apparatus. Afterwards he became a presbyter at Paris, and died there in 1694.

BULLINGER (Henry), born at Bremgarten in Switzerland in 1504, was an eminent Zuinglian minister, a great supporter of the reformation, and employed in many ecclesiastical negotiations. He composed many books, one against Luther in particular. He died in 1575.

BULLION, uncoined gold or silver in the mass.

Those metals are called so, either when smelted from the native ore, and not perfectly refined; or when they are perfectly refined, but melted down in bars or ingots, or in any unwrought body, of any degree of fineness.

When gold and silver are in their purity, they are so soft and flexible, that they cannot well be brought into any fashion for use, without being first reduced and hardened with an alloy of some other baser metal.

To prevent these abuses which some might be tempted to commit in the making of such alloys, the legislators of civilized countries have ordained, that there shall be no more than a certain proportion of a baser metal to a particular quantity of pure gold or silver, in order to make them of the fineness of what is called the standard gold or silver of such a country.

According to the laws of England, all sorts of wrought plate in general ought to be made to the legal standard; and the price of our standard gold and silver is the common rule whereby to set a value on their bullion, whether the same be ingots, bars, dust, or foreign specie: whence it is easy to conceive that the value of bullion cannot be exactly known, without being first essayed, that the exact quantity of pure metal therein contained may be determined, and consequently whether it be above or below the standard.

Silver and gold, whether coined or uncoined (though used for a common measure of other things), are no less a commodity than wine, tobacco, or cloth; and may, in many cases, be exported as much to the national advantage as any other commodity.

BULLOCK, the same with an ox, or gelded bull. See **Bos**.

BULTER, a term used to denote the refuse of meal after dressing, or the cloth wherein it is dressed, otherwise called *buller-cloth*.

BULWARK, in the ancient fortification. See **RAMPART**.

BUMICILLI, a religious sect of Mahometans in Egypt and Barbary, who pretend to fight with devils,

and commonly appear in a fright and covered with wounds and bruises. About the full moon they counterfeited a combat in the presence of all the people, which lasts for two or three hours, and is performed with assagaias, or javelins, till they fall down quite spent; in a little time, however, they recover their spirits, get up, and walk away.

BUNDLE, a collection of things wrapped up together. Of halter-ropes, harness-plates, and glovers knives, ten make a bundle; of Hamburgh yarn, twenty skeans; of basket rods, three feet the band.

BUNEL (Peter), a native of Toulouse, was one of the most elegant writers of the Latin tongue in the 16th century, but was still more conspicuous for the regularity of his manners. He did not seek either for riches or lucrative employments; but, contented with the bare necessaries of life, applied himself wholly to the improvement of his mind. He died at Turin in 1547, aged 47; and has left behind him some Latin epistles, which are written with the utmost purity. The magistrates of Toulouse have a bust of him in marble, placed in their town-house. The most correct edition of his Letters is that of Henry Stephens in 1581.

BUNGAY, a market-town of Suffolk, situated on the river Wavenny, about 32 miles north-east of Bury. E. Long. 1. 35. N. Lat. 52. 35.

BUNIAS, in botany; a genus of the 39th natural order, *Siliquesæ*, belonging to the tetradynamia class of plants, for which there is no English name. The silicula is deciduous, four-sided, mucicated, or shagreened with unequal pointed angles. There are eight species; all of them annual plants, but none of them possessed of any remarkable property.

BUNIAM, *fig-nut*, or *earth-nut*, in botany: A genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellatæ*. The corolla is uniform, the umbel thick, and the fruit ovate. There is but one species, the *bulbocastanum*, with a globular root. This grows naturally in moist pastures in many parts of Britain. It hath a tuberous solid root, which lies deep in the ground. The leaves are finely cut, and lie near the ground. The stalk rises a foot and an half-high; is round, channelled, and solid; the lower part being naked; but above, where it branches out, there is one leaf placed below every branch. The flowers are white, and shaped like those of other umbelliferous plants; the seeds are small, oblong, and when ripe are channelled. The roots of this sort are frequently dug up, and by some people eaten raw. They have much resemblance in taste to a chestnut, whence the plant obtains the name of *bulbocastanum*.

BUNT of a *SAIL*, the middle part of it, formed designedly into a bag or cavity, that the sail may gather more wind. It is used mostly in top-sails, because courses are generally cut square, or with but small allowance for bunt or compass. The bunt holds much leeward wind; that is, it hangs much to leeward.

Bunt-lines are small lines made fast to the bottom of the sails, in the middle part of the bolt-rope, to a cringle, and to are reeved through a small block, seized to the yard. Their use is to trice up the bunt of the sail for the better furling it up.

BUNTING, in ornithology. See **EMBERIZA**.

BUNT-

Bundic

Bunting.

Boating-
ford
||
Buoy.

BUNTINGFORD, a town of Hertfordshire, with a market on Mondays, and two fairs, on June 29th, and November 30th, for pedlars ware. It is a good thoroughfare town, but small, and is accounted only a large hamlet. W. Long. o. 6. N. Lat. 51. 55.

BUNTZEL, or **BUNTZLAU**, a town of Silesia, in the duchy of Jauer. The greatest part of the houses are built with stone, and there were formerly rich mines in the neighbourhood. It is in the common road to Leipzig; and their trade is earthen ware, of which they make great quantities. E. Long. 15. 50. N. Lat. 51. 12.

BUNYAN (John), author of the *Pilgrim's Progress*, was born at Elstow, near Bedford, in 1628. He was the son of a tinker; and, in the early part of his life, was a great reprobate, and a soldier in the parliament army: but being at length deeply struck with a sense of his guilt, he laid aside his profligate courses, became remarkable for his sobriety, and applied himself to obtain some degree of learning. About the year 1655, he was admitted a member of a Baptist congregation at Bedford, and was soon after chosen their preacher: but, in 1660, being taken up, and tried for presuming to preach, he was cruelly sentenced to perpetual banishment; and in the mean time committed to jail, where necessity obliged him to learn to make long-tugged thread-laces for his support: to add to his distresses, he had a wife and several children, among whom was a daughter who was blind. In this unjust and cruel confinement he was detained twelve years and a half, and during that time wrote many of his tracts; but he was at length discharged, by the humane interposition of Dr Barlow. When king James's declaration for liberty of conscience was published, he was chosen pastor of a congregation at Bedford. He at length died of the fever at London, on the 31st of August 1688, aged 60. He also wrote an allegory, called *The Holy War*. His *Pilgrim's Progress* has been translated into most European languages; and his works have been collected together, and printed in two volumes folio.

BUONOCARSI, or **PIERINO DEL VAGA**. See **PIERINO**.

BUOY, in sea affairs, a sort of close cask, or block of wood, fastened by a rope to the anchor, to determine the place where the anchor is situated, that the ship may not come too near it, to entangle her cable about the stock or the flukes of it.

Buoys are of various kinds; as,

Can-Buoys: these are in the form of a cone; and of this construction are all the buoys which are floated over dangerous banks and shallows, as a warning to passing ships, that they may avoid them. They are extremely large, that they may be seen at a distance; and are fastened by strong chains to the anchors which are sunk for this purpose at such places. See Plate CVIII. fig. 6.

Nun-Buoys are shaped like the middle frustum of two cones, abutting upon one common base, being casks, which are large in the middle, and tapering nearly to a point at each end. Plate CVIII. fig. 7.

Wooden Buoys are solid pieces of timber, sometimes in the shape of a cylinder, and sometimes in that of a nun-buoy; they are furnished with one or two holes, in which to fix a short piece of rope, whose two ends, being spliced together, make a sort of circle or ring called the *strop*.

N^o 60.

Cable-Buoys, are common casks employed to buoy up the cables in different places from rocky ground. In the harbour of Alexandria in Egypt, every ship is moored with at least three cables, and has three or four of these buoys on each cable for this purpose.

Buoyant
||
Buphonia.

Slings of the Buoy, the ropes which are fastened about it, and by which it is hung: they are curiously spliced round it, something resembling the braces of a drum.

To stream the Buoy, is to let it fall from the ship's side into the water; which is always done before they let go the anchor, that it may not be retarded by the buoy-rope as it sinks to the bottom.

Buoy-Rope, the rope which fastens the buoy to the anchor: it should be little more than equal in length to the depth of the water where the anchor lies, as it is intended to float near, or immediately above, the bed of it, that the pilot may at all times know the situation thereof. See Plate XXIX. fig. 1. n^o 3. where *b* is the anchor, *c* the buoy-rope, and *d* the buoy floating on the surface of the water. The buoy-rope is often extremely useful otherwise, in drawing up the anchor when the cable is broke. It should always, therefore, be of sufficient strength for this purpose, or else the anchor may be lost through negligence.

Buoy of the Nore, is a buoy placed at the mouth of the river Thames, to direct mariners how to avoid a dangerous sand.

BUOYANT, something which, by its aptness to float, bears up other more ponderous and weighty things. See **BUOY**.

BUPALUS, a celebrated sculptor, and native of the island of Chios, was son, grandson, and great-grandson of sculptors. He had a brother, named *Athenis*, of the same profession. They flourished in the 60th Olympiad; and were cotemporary with Hipponax, a poet of an ugly and despicable figure. Our sculptors diverted themselves in representing him under a ridiculous form. But Hipponax wrote so sharp a satire against them, that they hanged themselves, as some say. Pliny, however, does not allow this; but says, on the contrary, that, after Hipponax had taken his revenge, they made several fine statues in several places; particularly a Diana at Chios, which was placed very high, and appeared with a frowning countenance to those that came in, and with a pleasant one to those that went out. There were several statues at Rome made by them; and they worked only in the white marble of the isle of Paros. Pausanias mentions Bupalus as a good architect as well as sculptor; but says nothing of Athenis.

BUPHAGA, in ornithology, a genus belonging to the order of *picæ*. The beak is straight and quadrangular; the mandibles are gibbous, entire, and the gibbosity is greater on the outside. The feet are of the ambulatory kind. The body is greyish above, and of a dirty yellow below; the tail is shaped like a wedge. There is but one species, viz. the *africana*, a native of Senegal. It frequently perches upon oxen, and picks out the worms from their backs.

Plate CXI.

BUPHONIA (from *Buc ox*, and *phôn slaughter*), in antiquity, an Athenian feast or ceremony, denominated from a bullock slain therein, with quaint formalities. For the origin of the *buphonia*, we are told it was forbidden by the laws of Attica to kill an ox: but it once happened, at the feast of the *diipolia*, that an ox

ophthal-
mum
H
suprestis.

eat the corn, others say the cakes, which had been dressed for the sacrifice. Thaulon the priest, enraged at this, presently killed him, and fled for it. On which the Athenians, fearing the resentment of the gods, and feigning themselves ignorant who had committed the fact, brought the bloody axe before the judges, where it was solemnly arraigned, tried, found guilty, and condemned. And, in memory of this event, a feast was instituted under the denomination of *buphonia*. In which it was still customary for the priest to fly, and judgment to be given about the slaughter of the ox.

BUPHTHALMUM, OX-EYE: A genus of the polygamia superflua order, belonging to the syngenesia class of plants; and in the natural method ranking under the 49th order, *Compositæ*. The receptacle is paleaceous; the pappus an indifferent rim; the seeds, especially those of the radius, emarginated on the sides; the stigmata of the hermaphrodite florets undivided. There are ten species; of which the following are the most remarkable.

Species. 1. The *helianthoides*, a native of North America. This hath a perennial root, and an annual stalk, which rises six or eight feet high, garnished at each joint with two oblong heart-shaped leaves, which have three longitudinal veins, and the base on one side shorter than the other. The flowers come out at the extremities of the branches, and are of a bright yellow colour, resembling a small sun-flower. 2. The *arborescens*, rises with several woody stems to the height of eight or ten feet, garnished with leaves very unequal in size; some are narrow and long, others are broad and obtuse; these are intermixed at the same joint, and often at the intermediate one; they are green, and placed opposite. The flowers are produced at the ends of the branches; they are of a pale yellow colour, and have scaly empalements.

Culture. All the species may be propagated by seeds; and those which do not, by parting their roots, or cutting of their branches. Some of the species are tender, and require to be raised on a hot-bed.

BUPLEURUM, HARE'S-EAR, or *Thorough-wax*: A genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellatæ*. The involuera of the partial umbels are large in proportion, and pentaphyllous; the petals involuted or rolled inwards; the fruit roundish, compressed, and striated. The principal species is the frutescens or shrubby Ethiopian hartwort. This rises with a shrubby stem, dividing into numerous branches, forming a bushy head five or six feet high, adorned with oblong, oval, entire leaves of a pale green colour, placed alternate, with yellow flowers in umbels at the ends of the branches, which appear in July and August, and are sometimes succeeded by ripe seeds. It may be propagated by cuttings.

BUPRESTIS, in zoology, a genus of insects belonging to the order of coleoptera. The antennæ are fetaceous, and as long as the thorax: The head is half drawn back within the thorax; to which may be added, that the antennæ are ferrated: The mouth is armed with jaws, and furnished with palpi: The elytra are margined, and cover the abdomen; and the tarsi have five articulations: The feet are saltatorii. There are 27 species of this insect, most of them natives of

the Indies. The French have given the name of *Richard* to this genus, on account of the beautiful rich colours with which most of the insects belonging to it are adorned. Insects of this genus are not common in England. They are of the richest splendor; and some appear, when alive, to be united in colour with the resplendent particles of emeralds, rubies, diamonds, and gold. Applied to the microscope, the splendor is so great as to dazzle the eye. The *guttata* is one of the most oblong species. The whole body is green and gold, with a bluish cast underneath; but what distinguishes it, are four white dents or depressed spots that are seen upon the elytra, two upon each. One of those dots is on the outward rim of the elytrum, about the middle of it, near the abdomen, and is the larger one. The other is on the inner edge, close to the future, about three-fourths of that future downwards, and exactly opposite its fellow on the other elytrum. This latter one is the smaller. The whole upper part of the insect, viewed through a glass, appears finely dotted. This species has been found in timber-

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Burden.

BUQUOI, a town of Artois, in the French Netherlands, situated on the confines of Picardy. E. Long. 2. 40. N. Lat. 50. 12.

BUR, a broad ring of iron, behind the place made for the hand on the spears used formerly in tilting; which bur was brought to rest, when the tilter charged his spear.

BURBAS, in commerce, a small coin at Algiers, with the arms of the dey struck on both sides: it is worth half an asper.

BURCHAUSEN, a town of Germany, in the Lower Bavaria, situated on the river Saltz. E. Long. 13. 25. N. Lat. 48. 5.

BURDEGALA, or **BURDIGALA**, (anc. geog.) a trading port town of Aquitania, situated on a lake of the sea, formed by the mouth of the Garunna. It was a famous seat of the Muses, as appears by Ausonius's book entitled *Prosopopœia*; and birth-place of Ausonius: Now Bourdeaux, capital of the Bourdelois, on the river Garonne. W. Long. 40', Lat. 44' 54'.

BURDEN, or **BURDON**, in music, the drone or bass, and the pipe or string which plays it: hence that part of a song, that is repeated at the end of every stanza, is called the *burden* of it.—A chord which is to be divided, to perform the intervals of music, when open and undivided, is also called the *burden*.

BURDEN properly signifies a heavy weight or load. Ringelberg recommends the bearing burdens as the best sort of exercise; especially to strengthen men of study. To this end, he had a gown lined with plates of lead, which he could just lift with both his hands. This load he bore six or seven days together, either increasing or diminishing it as he found occasion; by which means he could both write and exercise at the same time.

BURDEN also denotes a fixed quantity of certain commodities. A burden of gad-steel is two score, or 120 pounds.

BURDEN of a Ship is its contents, or number of tons it will carry. The burden of a ship may be determined thus: Multiply the length of the keel, taken within board, by the breadth of the ship, within board, taken from the midship-beam, from plank to plank; and

5 F

multiply

Burdock
||
Burgage.

multiply the product by the depth of the hold, taken from the plank below the keelson, to the under part of the upper deck plank; and divide the last product by 94: the quotient is the content of the tonnage required. See FREIGHT.

BURDOCK, in botany. See ARCTIUM and XANTHIUM.

BURELL, or CIVITA BURRELLA, a town of Italy in the kingdom of Naples, and in Abruzzo Citra, near the river Sangro. E. Long. 15. 5. N. Lat. 41. 56.

BUREN, a town of the United Provinces, in Guelderland. It gives the title of count de Buren to the prince of Orange. E. Long. 5. 22. N. Lat. 52. 0.

BUREN, a town of Germany, in the circle of Westphalia, and bishopric of Paderborn. It is seated on the river Alme, five miles south of Paderborn. E. Long. 8. 25. N. Lat. 51. 35.

BURFORD, a town of Oxfordshire, seated on an ascent on the river Windrush, is a handsome place, chiefly noted for the making of saddles. The Downs near it, noted for horse-races, are of great advantage to the town. Burford is an earldom in the family of St Albans. It is 23 miles west-north-west of Banbury, and 85 west of London. W. Long. 1. 43. N. Lat. 51. 40.

BURG, BURGH, or DUN, in northern topography. See DUN.

BURG, a town of Lincolnshire, seated in a marsh, 12 miles south-east of Boston, and 127 north of London. E. Long. 0. 5. N. Lat. 53. 12.

BURG, a town of the Dutch Netherlands, in Zutphen, seated on the old Iffel, 18 miles east of Nimeguen. E. Long. 6. 12. N. Lat. 52. 0.

BURG-Castle, or Borough-Castle, a fortress on the edge of the county of Suffolk, three miles west of Yarmouth, where the rivers Yare and Waveny meet. It was formerly a delightful place; but now only the ruins of its walls remain, near which Roman coins are often dug up.

BURGAGE, or Tenure in BURGAGE, is where the king, or other person, is lord of an ancient borough, in which the tenements are held by a rent certain. It is indeed only a kind of town soccage; as common soccage †, by which other lands are holden, is usually of a rural nature. A borough is distinguished from other towns by the right of sending members to parliament; and where the right of election is by burgage-tenure, that alone is a proof of the antiquity of the borough. Tenure in burgage, therefore, or burgage-tenure, is where houses or lands which were formerly the site of houses in an ancient borough, are held of some lord in common soccage, by a certain established rent. And these seem to have withstood the shock of the Norman encroachments principally on account of their insignificance, which made it not worth while to compel them to an alteration of tenure, as 100 of them put together would scarce have amounted to a knight's fee. Besides, the owners of them, being chiefly artificers, and persons engaged in trade, could not with any tolerable propriety be put on such a military establishment as the tenure in chivalry was. The free soccage, therefore, in which these tenements are held, seems to be plainly a remnant of Saxon liberty; which may also account for the great variety of customs affecting many of these tenements so held in ancient burgage; the

† See Soc-
cage.

principal and most remarkable of which is that called Borough-English. See the article Borough-English.

Burgau
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Burggrave.

BURGAU, in natural history, the name of a large species of sea-snail, of the lunar or round-mouthed kind. It is very beautifully lined with a coat, of the nature of the mother of pearl; and the artificers take this out, to use under the name of mother of pearl, though some call it after the name of the shell they take it from, *burgaudine*.

BURGAUDINE, the name given by the French artificers to what we call mother of pearl. In their works, they do not use the common nacre-shell for this, but the lining of the American burgau. Hence some call the mother of pearl *burgaudine*, and others the *burgaudine* mother of pearl.

BURGDORF, a handsome and pretty large town of Switzerland, in the canton of Bern, seated on an eminence. The river Emma is about a pistol-shot from the town; and as it often changes its bed, it frequently does a great deal of mischief. It runs at the foot of a rock of a prodigious height, and there is a stone-bridge over it. Near the town there is a sulphureous spring which supplies their baths with water, which is good against palsies and diseases of the nerves. E. Long. 7. 35. N. Lat. 47. 6.

BURGEON, in gardening, a knot or button put forth by the branch of a tree in the spring. The word is formed from the French *bourgeon*, which signifies the same, formed from the Latin *burris*, of *burra*. Bourgeon amounts to the same with what is otherwise called eye, bud, or germ. Frosts are chiefly dangerous when the burgeons begin to appear. The burgeons have the same skin, same pith, same ligneous body, and the same insertions as the stalk; that is, all the parts are the same in both, only more contracted in the former.

BURGESS, an inhabitant of a borough, or walled town, or one who possesses a tenement therein. The word is also applied to the magistrates of some towns; as the bailiff and burgesses of Leominster.

Anciently, burgesses were held in great contempt; being reputed servile, base, and unfit for war; so that the gentry were not allowed to intermarry in their families, or fight with them; but, in lieu thereof, were to appoint champions. A burgess's son was reputed of age, when he could distinctly count money, measure cloth, &c.

BURGESS is now ordinarily used for the representative of a borough-town in parliament. Burgesses are supposed to represent the mercantile part or trading interest of the nation. They were formerly allowed, by a rate established in the reign of Edward III. two shillings a day as wages. It is much to be regretted, that the members for boroughs bear above a quadruple proportion to those for counties. The right of election of burgesses depends on several local charters and customs: though, by 2 Geo. II. c. 24. the right for the future shall be allowed according to the last determination of the house of commons concerning it: and by 3 Geo. III. c. 15. no freeman, except such as claim by birth, servitude, or marriage, shall be intitled to vote, unless he hath been admitted to his freedom twelve months before. No person is eligible as a burgess, who hath not a clear estate of L. 300 a-year.

BURGGRAVE, properly denotes the hereditary governor

Burgh || **Burglary.**
 governor of a castle, or fortified town, chiefly in Germany. The word is compounded of *bourg*, *town*, and *graf*, or *grave count*. The burgraves were originally the same with what we otherwise call *castellans*, or *comites castellani*; but their dignity was considerably advanced under Rudolph of Hapsburgh; before his time they were ranked only as counts, and below the princes, but under him began to be esteemed on a footing with princes. In some parts, the dignity is much degenerated, especially in the palatinate. There were formerly, according to Leti, fifteen families who enjoyed the title of burgraves, thirteen of which are now extinct. But this is differently represented by others. In Bohemia the title of burgrave is given to the chief officer, or to him that commands in quality of viceroy. In Prussia, the burgrave is one of the four chief officers of the province. In Guelderland, the burgrave of Nimeguen is president of the states of the province.

BURGH. See **BOROUGH.**

BURGH, OR DUN. See **DUN.**

BURGH-BOTE signifies a contribution towards the building or repairing of castles, or walls, for the defence of a borough or city.

By the law of king Athelstan, the castles and walls of towns were to be repaired, and burgh-bote levied every year within a fortnight after rogation days. No person whatever was exempt from this service; the king himself could not exempt a man from burgh-bote; yet, in after times, exemptions appear to have been frequently granted; insomuch, that, according to Cowel, the word *burgh-bote* came to be chiefly used to denote not the service but the liberty or exemption from it.

BURGH-BRECHE, or *brech*, a fine imposed on the community of a town, or burgh, for the breach of peace among them.

BURGH Mails, were yearly payments to the crown of Scotland, introduced by Malcolm III. and resembling the *fee-farm* rents of burghs in England. See **MAIL.**

BURGH-MASTER, an officer in the tin-mines, who directs and lays out the meers for the workmen, &c. otherwise denominated bailiff and bar-master.

BURGH-MASTERS. See **BURGH-MASTER.**

BURGHMOTE, the court of a borough. By the laws of king Edgar, the burghmote was to be held thrice in the year; by those of Henry I. 12 times.

BURGLARY, or **NOCTURNAL HOUSE-BREAKING**, (*burgi latrocinium*;) which by the ancient English law was called *hamesucken*, a word also used in the law of Scotland, but in a somewhat different sense, has always been looked upon as a very heinous offence: not only because of the abundant terror it carries with it, but also as it is a forcible invasion and disturbance of that right of habitation which every individual might acquire even in a state of nature; an invasion which, in such a state, would be sure to be punished with death, unless the assailant were stronger. But, in civil society, the laws come in to the assistance of the weaker party: and, besides that they leave him this natural right of killing the aggressor if he can, they also protect and avenge him in case the assailant is too powerful. And the law has so particular and tender a regard to the immunity of a man's house, that it styles it his *castle*, and will never suffer it to be violated with impunity; agreeing herein with the sentiments of ancient Rome. For this reason no outward doors can in gene-

ral be broken open to execute any civil process; though in criminal causes the public safety supercedes the private *. Hence also in part arises the animadversion of the law upon eaves-droppers, nufaneers, and incendiar-articles: and to this principle it must be assigned, that a man may assemble people together lawfully (at least if they do not exceed 11), without danger of raising a riot, rout, or unlawful assembly, in order to protect his house; which he is not permitted to do in any other case.

The definition of a burglar, as given us by Sir Edward Coke, is, "he that by night breaketh and entereth into a mansion house, with intent to commit a felony." In this definition there are four things to be considered; the *time*, the *place*, the *manner*, and the *intent*.

1. The *time* must be by night, and not by day; for in the day-time there is no burglary; *i. e.* if there be day-light or crepusculum enough, begun or left, to discern a man's face withal. But this does not extend to moonlight; for then many midnight burglaries would go unpunished: and besides, the malignity of the offence does not consist so much in its being done in the dark, as at the dead of night; when all the creation, except beasts of prey, are at rest; when sleep has disarmed the owner, and rendered his castle defenceless.

2. As to the *place*. It must be, according to Sir Edward Coke's definition, in a mansion-house: for no distant barn, warehouse, or the like, are under the same privileges, nor looked upon as a man's castle of defence; nor is a breaking open of houses wherein no man resides, and which for the time being are not mansion-houses, attended with the same circumstances of midnight terror. A house, however, wherein a man sometimes resides, and which the owner hath left only for a short season, *animo revertendi*, is the object of burglary, though no one be in it at the time of the fact committed. And if the barn, stable, or warehouse, be parcel of the mansion-house, though not under the same roof or contiguous, a burglary may be committed therein; for the capital house protects and privileges all its branches and appurtenants, if within the curtilage or homestead. A chamber in a college, or an inn of court, where each inhabitant hath a distinct property, is, to all other purposes as well as this, the mansion-house of the owner. So also is a room or lodging in any private house, the mansion for the time being of the lodger; if the owner doth not himself dwell in the house, or if he and the lodger enter by different outward doors. But if the owner himself lies in the house, and hath but one outward door at which he and his lodgers enter, such lodgers seem only to be inmates, and all their apartments to be parcel of the one dwelling-house of the owner.

3. As to the *manner* of committing burglary: there must be both a breaking and an entry to complete it. But they need not be both done at once; for if a hole be broken one night, and the same breakers enter the next night through the same, they are burglars. There must be an actual breaking; as, at least, by breaking or taking out the glass of, or otherwise opening, a window; picking a lock, or opening it with a key; nay, by lifting up the latch of a door, or unloosing any other fastening which the owner has provided. But if a person leaves his doors or windows open, it is his own lolly

Burglary
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Burgro.Burgos
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Burial.

and negligence; and if a man enters therein, it is no burglary; yet, if he afterwards unlocks an inner or chamber door, it is so. But to come down a chimney is held a burglarious entry; for that is as much closed as the nature of things will permit. So also, to knock at a door, and, upon opening it, to rush in with a felonious intent; or, under pretence of taking lodgings, to fall upon the landlord and rob him; or to procure a constable to gain admittance in order to search for traitors, and then to bind the constable and rob the house; all these entries have been adjudged burglarious, though there was no actual breaking: for the law will not suffer itself to be trifled with by such evasions, especially under the cloak of legal process. As for the *entry*, any the least degree of it, with any part of the body, or with an instrument held in the hand, is sufficient: as, to step over the threshold, to put a hand or hook in at a window to draw out goods, or a pistol to demand one's money, are all of them burglarious entries. The entry may be before the breaking, as well as after; for by statute 12 Anne c. 7. if a person enters into the dwelling house of another, without breaking in either by day or by night, with an intent to commit felony, or, being in such house, shall commit any felony; and shall in the night break out of the same; this is declared to be burglary.

4. As to the *intent*; it is clear that such breaking and entry must be with a felonious intent, otherwise it is only a trespass. And it is the same, whether such intention be actually carried into execution, or only demonstrated by some attempt or overt act, of which the jury is to judge.

Burglary is a felony at common law, but within the benefit of clergy. Burglary in any house belonging to the plate-glass company, with intent to steal the stock or utensils, is by statute 13 Geo III. c. 38. declared to be single felony, and punished with transportation seven years.

BURGOMASTER, BURGHMASTER, *Bourgermeister*, or *Burgmeister*, the chief magistrate of the great towns in Flanders, Holland, and Germany. The power and jurisdiction of the burgomaster is not the same in all places, every town having its particular customs and regulations: at Amsterdam there are four chosen by the voices of all those people in the senate who have either been burgomasters or schepens. They dispose of all under offices that fall in their time, keep the key of the bank, and enjoy a salary but of 500 guildres; all feasts, public entertainments, &c. being defrayed out of the common treasury. The word is formed from the two Flemish words, *berger*, *burgher*, or *citizen*; and *meister*, *master*. Some express it in Latin by *consul*, others by *senator*.—M. Bruneau observes, that *burghermeister* in Holland, answers to what is called *alderman* and *sheriff* in England, *attorney* at Compeigne, *capitoul* at Toulouse, *consul* at Languedoc, &c.

BURGOO, or BURGOV, a sea-faring dish, made of whole oatmeal, or groats, boiled in water till they burst; then mixed with butter. It is a cheap and strengthening diet. Burgoo, otherwise called *leblolly*, is held by Cockburn very proper to correct that thickness of humours and costiveness to which the other diet of sailors much disposes them. Yet the burgoo vicualling is the least liked of all their provisions, because

of the scanty allowance of butter to it. The same author thinks it might be worth the consideration of those to whom the care of the seamen is committed, to contrive to render this food more agreeable to them.

BURGOS, a city of Spain, the capital of Old Castile, with an archbishop's see, erected in 1574. It is surrounded with mountains, which render the air very cold nine months in the year, and the other three excessive hot. It is seated on the declivity of a hill, on the top of which there is a strong castle, and the lower part of the town is watered by the river Alagon. The principal avenue to the city is by a handsome bridge over this river, which leads to a beautiful gate, adorned with the statues of several kings of Spain. The town is large and populous; but the houses are ill built, and the streets are narrow and dirty, except some few, especially that which leads to the cathedral. There are several squares, adorned with fountains and statues. The great square in the middle of the city is surrounded with fine houses, with piazzas to each. The cathedral church is a master-piece of Gothic architecture, and one of the finest in all Spain. The church of the Augustines is remarkable for its beautiful and rich chapel of the holy crucifix. There are several fine convents and nunneries; one of which last contains 150 nuns, who must all be of noble extraction. They have likewise a royal hospital, very richly endowed; and at this place they speak the best Castilian, that is, the purest Spanish in the kingdom. W. Long. 4. 7. N. Lat. 42. 20.

BURGUNDIONES, a part or branch of the Vindili or Wardili. Cluverius places them about the Warta, a river of Poland: though the conjectures on the seat of these people are doubtful; and no wonder, because the Roman expeditions terminated at the Elbe. They afterwards removed to the Cisalpin, Germany, and at length to Celtic Gaul, and gave name to the duchy and county of Burgundy.

BURGUNDY, a province or government of France. It contains, besides the government of Burgundy, La Bresse, La Bugy, and the district of Gex; having Champagne on the north, Lyonnais on the south, Franche Comte on the east, and Nivernois and Bourbonnois on the west. Its length from north to south is about 45 leagues, and its breadth from east to west about 30. It is very fertile in corn, wine, fruit, and tobacco; being watered by the Seine, the Dehune which falls into the Soane, the Brebince or Bourbince, the Armançon, the Oucke, and the Tille. There are some noted mineral springs in it, with subterraneous lakes, and plenty of ochre. For a long time it had dukes of its own, subordinate to the crown of France; but at last, Louis XI. upon the failure of the heirs male, seized upon it, and annexed it to his crown. The whole government lies within the jurisdiction of the parliament of Burgundy, except a small part that is subject to that of Paris. The states meet regularly every three years, to raise the money required of them by the court. The principal places are Dijon, Auxerre, Autun, Bourbon, L'Ancy, &c.

BURIAL, the interment of a deceased person.

The rites of burial are looked upon in all countries, and at all times, as a debt so sacred, that such as neglected to discharge it were thought accursed: hence the

Burial. the Romans called them *justa*, and the Greeks *νομιμα, δικαιο, οσια*, words implying the inviolable obligations which nature has laid upon the living to take care of the obsequies of the dead. Nor are we to wonder, that the ancient Greeks and Romans were extremely solicitous about the interment of their deceased friends, since they were strongly persuaded, that their souls could not be admitted into the Elylian fields till their bodies were committed to the earth; and if it happened that they never obtained the rites of burial, they were excluded from the happy mansions for the term of 100 years. For this reason it was considered as a duty incumbent upon all travellers who should meet with a dead body in their way, to cast dust or mould upon it three times; and of these three handfuls one at least was cast upon the head. The ancients likewise considered it as a great misfortune if they were not laid in the sepulchres of their fathers; for which reason, such as died in foreign countries had usually their ashes brought home, and interred with those of their ancestors. But notwithstanding their great care in the burial of the dead, there were some persons whom they thought unworthy of that last office, and to whom therefore they refused it: such were, 1. Public or private enemies. 2. Such as betrayed or conspired against their country. 3. Tyrants, who were always looked upon as enemies to their country. 4. Villains guilty of sacrilege. 5. Such as died in debt, whose bodies belonged to their creditors. And, 6. Some particular offenders, who suffered capital punishment.

Of those who were allowed the rites of burial, some were distinguished by particular circumstances of disgrace attending their interment: thus persons killed by lightning were buried apart by themselves, being thought odious to the gods; those who wasted their patrimony forfeited the right of being buried in the sepulchres of their fathers; and those who were guilty of self-murder were privately deposited in the ground, without the accustomed solemnities. Among the Jews, the privilege of burial was denied only to self-murderers, who were thrown out to rot upon the ground. In the Christian church, though good men always desired the privilege of interment, yet they were not, like the heathens, so concerned for their bodies, as to think it any detriment to them, if either the barbarity of an enemy, or some other accident, deprived them of this privilege. The primitive Christian church denied the more solemn rites of burial only to unbaptized persons, self-murderers, and excommunicated persons who continued obstinate and impenitent, in a manifest contempt of the church's censures.

The place of burial among the Jews was never particularly determined. We find they had graves in the town and country, upon the highways, in gardens, and upon mountains. Among the Greeks, the temples were made repositories for the dead in the primitive ages; yet the general custom in latter ages, with them, as well as with the Romans and other heathen nations, was to bury their dead without their cities, and chiefly by the highways. Among the primitive Christians, burying in cities was not allowed for the first 300 years, nor in churches for many ages after, the dead bodies being first deposited in the atrium or churchyard, and porches and porticos of the church: hereditary burying-places were forbidden till the 12th century. As to

the time of burial, with all the ceremonies accompanying it, see the article *FUNERAL-RITES*.

BURICK, a town of Germany, in the circle of Westphalia, and duchy of Cleves, subject to the king of Prussia. It was taken by the French in 1672, who demolished the fortifications. It is agreeably seated on the river Rhine, over against Wesel, in E. Long. 6. 8. N. Lat. 51. 38.

BURIDAN (John), a native of Bethune, in Artois, was one of the most celebrated philosophers of the 14th century. He taught in the university of Paris with great reputation; and wrote commentaries on logic, morality, and Aristotle's metaphysics. Aventinus relates, that he was a disciple of Ockam; and that, being expelled Paris by the power of the Realists, which was superior to that of the Nominalists, he went into Germany, where he founded the university of Vienna. From him came the proverb of the *ass of Buridan*, so famous in the schools. Buridan supposed an hungry ass fixed at an exactly equal distance between two bushels of oats; or an ass, as much pressed by thirst as hunger, between a bushel of oats and a pail of water, each of them acting equally on his senses. Having made this supposition, he desired to know what the ass would do? If he was answered that he would remain immoveable, then he concluded he would die of hunger between two bushels of oats, or of both hunger and thirst, with both corn and water within his reach. This appeared absurd, and brought the laughter on his side; but if it was replied, that the ass would not be so stupid as to die of hunger or thirst in such a situation, Then (said he), the ass has free will, or is it possible that of two equal weights one should outweigh the other? These two consequences appeared equally absurd; and thus Buridan, by this sophism, perplexed the philosophers, and his ass became famous in the schools.

BURKITT (William), a celebrated commentator on the New Testament, was born at Hitcham in Northamptonshire, July 25th 1650, and educated at Pembroke-hall, Cambridge. He entered young upon the ministry, being ordained by bishop Reynolds: and the first employment which he had was at Milden in Suffolk, where he continued 21 years a constant preacher, first as a curate, and afterwards as rector of that church. In the year 1692, he had a call to the vicarage of Dedham in Essex, where he continued to the time of his death, which happened in the latter end of October 1703. He was a pious and charitable man. He made great collections for the French Protestants in the years 1687, &c. and by his great care, pains, and charges, procured a worthy minister to go and settle in Carolina. Among other clarities, by his last will and testament, he bequeathed the house wherein he lived, with the lands thereunto belonging, to be an habitation for the lecturer that should be chosen from time to time, to read the lecture at Dedham. Besides his Commentary upon the New Testament, written in the same plain, practical, and affectionate manner in which he preached, he wrote a volume, entitled, *The poor man's help, and rich man's guide*.

BURLAW. See *Br-Law*.

BURLEIGH. See *Cirel*.

BURLESQUE, a species of composition, which, though a great engine of ridicule, is not confined to

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that subject; for it is clearly distinguishable into burlesque that excites laughter merely, and burlesque that excites derision or ridicule. A grave subject, in which there is no impropriety, may be brought down by a certain colouring so as to be risible, as in Virgil travestie; the author first laughs at every turn, in order to make his readers laugh. The *Lutrin* is a burlesque poem of the other sort, laying hold of a low and trifling incident to expose the luxury, indolence, and contentious spirit, of a set of monks. Boileau, the author, turns the subject into ridicule, by dressing it in the heroic style, and affecting to consider it as of the utmost dignity and importance. Though ridicule is the poet's aim, he always carries a grave face, and never once betrays a smile. The opposition between the subject and the manner of handling it, is what produces the ridicule; and therefore, in a composition of this kind, no image professedly ludicrous ought to have quarter, because such images destroy the contrast.

Though the burlesque that aims at ridicule produces its effects by elevating the style far above the subject; yet the poet ought to confine himself to such images as are lively, and readily apprehended. A strained elevation, soaring above the ordinary reach of fancy, makes not a pleasant impression. The mind is soon disgusted by being kept long on the stretch. Machinery may be employed in a burlesque poem, such as the *Lutrin*, the *Dispensary*, or *Hudibras*, with more success and propriety than in any other species of poetry. For burlesque poems, though they assume the air of history, give entertainment chiefly by their pleasant and ludicrous pictures: it is not the aim of such a poem to raise sympathy; and for that reason, a strict imitation of nature is not necessary. And hence, the more extravagant the machinery in a ludicrous poem, the more entertainment it affords.

BURLINGTON, a sea-port town in the east riding of Yorkshire, situated on the German ocean, about 37 miles north-east of York. E. Long. 10. and N. Lat. 54. 15. It gave the title of *earl* to a branch of the noble family of Boyle, but the earldom is now extinct.

NEW BURLINGTON, the capital of New-Jersey, in North America; situated in an island of Delawar river, about 20 miles north of Philadelphia. W. Long. 74. 0. N. Lat. 40. 40.

BURMAN (Francis), a Protestant minister, and learned professor of divinity at Utrecht, was born at Leyden in 1628; and died on the 10th of November 1679, after having published a course of divinity, and several other works.

He is not to be confounded with *Francis Burman*, his son; or with *Peter Burman*, a laborious commentator on Phædrus, Lucan, Petronius, and other profane authors, who died in 1741.

BURN, in medicine and surgery, an injury received in any part of the body by fire. See **SURGERY**.

BURNET (Gilbert), bishop of Salisbury in the latter end of the 16th century, was born at Edinburgh, in 1643, of an ancient family in the shire of Aberdeen. His father being bred to the law, was, at the restoration of king Charles II. appointed one of the lords of session, with the title of *lord Crimond*, in reward for his constant attachment to the royal party during the troubles of Great Britain. Our author, the youngest son

of his father, was instructed by him in the Latin tongue: at ten years of age he was sent to continue his studies at Aberdeen, and was admitted M. A. before he was 14. His own inclination led him to the study of the civil and feudal law; and he used to say, that it was from this study he had received more just notions concerning the foundations of civil society and government, than those which some divines maintain. About a year after, he changed his mind, and began to apply to divinity, to the great satisfaction of his father. He was admitted preacher before he was 18; and Sir Alexander Burnet, his cousin-german, offered him a benefice; but he refused to accept of it.

In 1663, about two years after the death of his father, he came into England; and after six months stay at Oxford and Cambridge, returned to Scotland; which he soon left again to make a tour for some months, in 1664, in Holland and France. At Amsterdam, by the help of a Jewish rabbi, he perfected himself in the Hebrew language; and likewise became acquainted with the leading men of the different persuasions tolerated in that country; as Calvinists, Arminians, Lutherans, Anabaptists, Brownists, Papists, and Unitarians; amongst each of which he used frequently to declare, he met with men of such unfeigned piety and virtue, that he became fixed in a strong principle of universal charity, and an invincible abhorrence of all severities on account of religious dissensions.

Upon his return from his travels, he was admitted minister of Salton; in which station he served five years in the most exemplary manner. He drew up a memorial, in which he took notice of the principal errors in the conduct of the Scots bishops, which he observed not to be conformable to the primitive institution; and sent a copy of it to several of them. This exposed him to their resentments: but, to show he was not actuated with a spirit of ambition, he led a retired course of life for two years; which so endangered his health, that he was obliged to abate his excessive application to study. In 1669, he published his "Modest and free conference between a conformist and non-conformist." He became acquainted with the duchess of Hamilton, who communicated to him all the papers belonging to her father and her uncle; upon which he drew up the "Memoirs of the dukes of Hamilton." The duke of Lauderdale, hearing he was about this work, invited him to London, and introduced him to king Charles II. He returned to Scotland, and married the lady Margaret Kennedy, daughter of the earl of Cassilis; a lady of great piety and knowledge, highly esteemed by the presbyterians, to whose sentiments she was strongly inclined. As there was some disparity in their ages, that it might remain past dispute that this match was wholly owing to inclination, and not to avarice or ambition, the day before their marriage our author delivered the lady a deed, whereby he renounced all pretensions to her fortune, which was very considerable, and must otherwise have fallen into his hands, she herself having no intention to secure it. The same year he published his "Vindication of the authority, constitution, and laws of the church and state of Scotland;" which at that juncture was looked upon as so great a service, that he was again offered a bishopric, and a promise of the next vacant archbishopric; but

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Burnet. but did not accept of it, because he could not approve of the measures of the court, the grand view of which he saw to be the advancement of popery.

Mr Burnet's intimacy with the duke of Hamilton and Lauderdale occasioned him to be frequently sent for by the king and the duke of York, who had conversations with him in private. But Lauderdale conceiving a resentment against him on account of the freedom with which he spoke to him, represented at last to the king, that Dr Burnet was engaged in an opposition to his measures. Upon his return to London, he perceived that these suggestions had entirely thrown him out of the king's favour, though the duke of York treated him with greater civility than ever, and dissuaded him from going to Scotland. Upon this, he resigned his professorship at Glasgow, and staid at London. About this time the living at Cripple-gate being vacant, the dean and chapter of St Paul's (in whose gift it was), hearing of his circumstances, and the hardships he had undergone, sent him an offer of the benefice; but as he had been informed of their first intention of conferring it on Dr Fowler, he generously declined it. In 1675, at the recommendation of lord Hollis, whom he had known in France, ambassador at that court, he was, by Sir Herbottle Grimstone, master of the rolls, appointed preacher of the chapel there, notwithstanding the opposition of the court. He was soon after chosen a lecturer of St Clement's, and became one of the preachers that were most followed in town. In 1697, he published his *History of the reformation*, for which he had the thanks of both houses of parliament. The first part of it was published in 1679, and the second in 1681. Next year he published an abridgement of these two parts.

Mr Burnet about this time happened to be sent for to a woman in sickness, who had been engaged in an amour with the earl of Rochester. The manner in which he treated her during her illness, gave that lord a great curiosity for being acquainted with him. Whereupon, for a whole winter, he spent one evening in a week with Dr Burnet, who discoursed with him upon all those topics upon which sceptics and men of loose morals attack the Christian religion. The happy effect of these conferences occasioned the publication of his account of the life and death of that earl. In 1682, when the administration was changed in favour of the duke of York, being much resorted to by persons of all ranks and parties, in order to avoid returning visits, he built a laboratory, and went for above a year through a course of chemical experiments. Not long after, he refused a living of 300l. a-year offered him by the earl of Essex, on the terms of his not residing there, but in London. When the inquiry concerning the popish plot was on foot, he was frequently sent for and consulted by king Charles with relation to the state of the nation. His majesty offered him the bishopric of Chichester, then vacant, if he would engage in his interests; but he refused to accept it on these terms. He preached at the Rolls till 1684, when he was dismissed by order of the court. About this time he published several pieces.

On king James's accession to the throne, having obtained leave to go out of the kingdom, he first went to Paris, and lived in great retirement, till contracting an acquaintance with brigadier Stoupe, a Protestant

gentleman in the French service, he made a tour with him into Italy. He met with an agreeable reception at Rome. Pope Innocent II. hearing of our author's arrival, sent the captain of the Swiss guards to acquaint him he would give him a private audience in bed, to avoid the ceremony of kissing his holiness's slipper. But Dr Burnet excused himself as well as he could. Some disputes which our author had here concerning religion, beginning to be taken notice of, made it proper for him to quit the city; which, upon an intimation given him by prince Borghese, he accordingly did.

He pursued his travels through Switzerland and Germany. In 1688, he came to Utrecht, with an intention to settle in some of the seven provinces. There he received an invitation from the prince and princess of Orange (to whom their party in England had recommended him) to come to the Hague, which he accepted. He was soon made acquainted with the secret of their counsels, and advised the sitting out of a fleet in Holland sufficient to support their designs and encourage their friends. This, and the *Account of his travels*, in which he endeavoured to blend Popery and tyranny together, and represent them as inseparable, with some papers reflecting on the proceedings of England, that came out in single sheets, and were dispersed in several parts of England, most of which Mr Burnet owned himself the author of, alarmed king James; and were the occasion of his writing twice against him to the princess of Orange, and insisting, by his ambassador, on his being forbid the court; which, after much importunity, was done, though he continued to be trusted and employed as before, the Dutch minister consulting him daily. To put an end to these frequent conferences with the ministers, a prosecution for high treason was set on foot against him both in England and Scotland. But Burnet receiving the news thereof before it arrived at the States, he avoided the storm, by petitioning for, and obtaining without any difficulty, a bill of naturalization, in order to his intended marriage with Mary Scot, a Dutch lady of considerable fortune, who, with the advantage of birth, had those of a fine person and understanding.

After his marriage with this lady, being legally under the protection of Holland, when Mr Burnet found king James plainly subverting the constitution, he omitted no method to support and promote the design the prince of Orange had formed of delivering Great Britain, and came over with him in quality of chaplain. He was soon advanced to the see of Salisbury. He declared for moderate measures with regard to the clergy who scrupled to take the oaths, and many were displeas'd with him for declaring for the toleration of nonconformists. His pastoral letter concerning the oaths of allegiance and supremacy to king William and queen Mary, 1689, happening to touch upon the right of conquest, gave such offence to both houses of parliament, that it was ordered to be burnt by the hands of the common executioner. In 1698 he lost his wife by the small-pox; and, as he was almost immediately after appointed preceptor to the duke of Gloucester, in whose education he took great care, this employment, and the tender age of his children, induced him the same year to supply her loss by a marriage with Mrs Berkeley,

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ly, eldest daughter of Sir Richard Blake, knight. In 1699 he published his Exposition of the 39 articles; which occasioned a representation against him in the lower house of convocation in the year 1701; but he was vindicated by the upper house. His speech in the house of lords in 1704 against the bill to prevent occasional conformity was severely attacked. He died in 1715, and was interred in the church of St James, Clerkenwell, where he has a monument erected to him. He formed a scheme for augmenting the poor livings; which he pressed forward with such success, that it ended in an act of parliament passed in the 2d year of queen Anne, "for the augmentation of the livings of the poor clergy."

BURNET (Thomas), a polite and learned writer in the end of the 17th century, was born in Scotland, but educated in Cambridge under the tuition of Mr John Tillotson, afterwards archbishop of Canterbury. In the beginning of 1685, he was made master of Sutton's hospital in London, after which he entered into holy orders. During the reign of king James, he made a noble stand in his post as master of the charter-house against the encroachments of that monarch, who would have imposed one Andrew Popham, a Papist, as a pensioner upon the foundation of that house. In 1680 he published his *Telluris theoria sacra*, so universally admired for the purity of the style and beauty of the sentiments, that king Charles gave encouragement to a translation of it into English. This theory was however attacked by several writers. In 1692 he published his *Archæologia philisophica*, dedicated to king William, to whom he was clerk of the closet. He died in 1715. Since his death hath been published, his book *De statu mortuorum et resurgentium*, and his treatise *De fide et officii Christianorum*.

BURNEL, in botany. See POTERIUM and SANGUISORBA.

BURNHAM, a market town of Norfolk in England, situated in E Long. o. 50. N. Lat. 53. o.

BURNING, the action of fire on some pabulum or fuel, by which the minute parts thereof are put into a violent motion, and some of them assuming the nature of fire themselves, fly off *in orbem*, while the rest are dissipated in form of vapour or reduced to ashes. See IGNITION.

Extraordinary Cases of BURNING. We have instances of persons burnt by fire kindled within their own bodies. A woman at Paris, who used to drink brandy to excess, was one night reduced to ashes by a fire from within, all but her head and the ends of her fingers. Signora Corn. Zangari, or, as others call her, *Corn. Bandi*, an aged lady, of an unblemished life, near Cesena in Romagna, underwent the same fate in March 1731. She had retired in the evening into her chamber somewhat indisposed; and in the morning was found in the middle of the room reduced to ashes, all except her face, legs, skull, and three fingers. The stockings and shoes she had on were not burnt in the least. The ashes were light; and, on pressing between the fingers, vanished, leaving behind a gross stinking moisture with which the floor was smeared; the walls and furniture of the room being covered with a moist cineritious foot, which had not only stained the linen in the chests, but had penetrated into the closet, as well as into the room overhead, the walls of which were moistened with

the same viscous humour.—We have various other relations of persons burnt to death in this unaccountable manner.

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Sig. Mondini, Bianchini, and Maffei, have written treatises express to account for the cause of so extraordinary an event: common fire it could not be, since this would likewise have burnt the bed and the room; besides that it would have required many hours, and a vast quantity of fuel, to reduce a human body to ashes; and, after all, a considerable part of the bones would have remained entire, as they were anciently found after the fiercest funeral fires. Some attribute the effect to a mine of sulphur under the house; others, to a miracle; while others suspect that art or villany had a hand in it. A philosopher of Verona maintains, that such a conflagration might have arisen from the inflammable matters wherewith the human body naturally abounds. Sig. Bianchini accounts for the conflagration of the lady above mentioned, from her using a bath or lotion of camphorated spirit of wine when she found herself out of order. Maffei supposes it owing to lightning, but to lightning generated in her own body, agreeable to his doctrine, which is, That lightning does not proceed from the clouds, but is always produced in the place where it is seen and its effects perceived. We have had a late attempt to establish the opinion, that these destroying internal fires are caused in the entrails of the body by inflamed effluvia of the blood; by juices and fermentations in the stomach; by the many combustible matters which abound in living bodies for the purposes of life; and, finally, by the fiery evaporations which exhale from the settlings of spirit of wine, brandies, and other hot liquors, in the tunica villosa of the stomach and other adipose or fat membranes; within which those spirits engender a kind of camphor, which in the night-time, in sleep, by a full respiration, are put in a stronger motion, and are more apt to be set on fire. Others ascribe the cause of such persons being set on fire to lightning; and their burning so entirely, to the greater quantity of phosphorus and other combustible matter, they contained.—For our own part, we can by no means pretend to explain the cause of such a phenomenon: but for the interests of humanity we wish it could be derived from something external to the human body; for if, to the calamities of human life already known, we superadd a suspicion that we may unexpectedly and without the least warning be consumed by an *internal* fire, the thought is too dreadful to be borne.

BURNING, or *Brenning*, in our old customs, denotes an infectious disease, got in the stews by conversing with lewd women, and supposed to be the same with what we now call the *venereal disease*.

In a manuscript of the vocation of John Bale to the bishopric of Ossory, written by himself, he speaks of Dr Hugh Welton, who was dean of Windsor in 1556, but deprived by cardinal Pole for adultery, thus: "At this day is leacherous Welton, who is more practised in the arts of breech-burning, than all the whores of the stews. He not long ago brent a beggar of St Botolph's parish." See STEWS.

BURNING, in antiquity, a way of disposing of the dead much practised by the ancient Greeks and Romans, and still retained by several nations in the East and West Indies. The antiquity of this custom

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rises as high as the Theban war, where we are told of the great solemnity accompanying this ceremony at the pyre of Menæceus and Archemorus, who were contemporary with Jair the eighth judge of Israel. Homer abounds with funeral obsequies of this nature. In the inward regions of Asia, the practice was of very ancient date, and the continuance long: for we are told, that, in the reign of Julian, the king of Chionia burnt his son's body, and deposited the ashes in a silver urn. Coeval almost with the first instances of this kind in the east, was the practice in the western parts of the world. The Herulians, the Getes, and the Thracians, had all along observed it; and its antiquity was as great with the Celts, Sarmatians, and other neighbouring nations. The origin of this custom seems to have been out of friendship to the deceased: their ashes were preserved as we preserve a lock of hair, a ring, or a seal, which had been the property of a deceased friend.

Kings were burnt in cloth made of the asbestos stone, that their ashes might be preserved pure from any mixture with the fuel and other matters thrown on the funeral pile. The same method is still observed with the princes of Tartary. Among the Greeks, the body was placed on the top of a pile, on which were thrown divers animals, and even slaves and captives, besides unguents and perfumes. In the funeral of Patroclus we find a number of sheep and oxen thrown in, then four horses, followed by two dogs, and lastly by 12 Trojan prisoners. The like is mentioned by Virgil in the funerals of his Trojans; where, besides oxen, swine, and all manner of cattle, we find eight youths condemned to the flames. The first thing was the fat of the beasts wherewith the body was covered, that it might consume the sooner; it being reckoned great felicity to be quickly reduced to ashes. For the like reason, where numbers were to be burnt at the same time, care was taken to mix with the rest some of humid constitutions, and therefore more easily to be inflamed. Thus we are assured by Plutarch and Macrobius, that for every ten men it was customary to put in one woman. Soldiers usually had their arms burnt with them. The garments worn by the living were also thrown on the pile, with other ornaments and presents; a piece of extravagance which the Athenians carried to so great a height, that some of the law-givers were forced to restrain them, by severe penalties, from defrauding the living by their liberality to the dead.—In some cases, burning was expressly forbid among the Romans, and even looked upon as the highest impiety. Thus infants, who died before the breeding of teeth, were intombed unburnt in the ground, in a particular place set apart for this purpose, called *suggrundarium*. The like was practised with regard to those who had been struck dead with lightning, who were never to be burnt again. Some say that burning was denied to suicides.—The manner of burning among the Romans was not unlike that of the Greeks: the corpse, being brought out without the city, was carried directly to the place appointed for burning it; which, if it joined to the sepulchre, was called *bustum*; if separate from it, *ustrina*; and there laid on the *rogus* or *pyra*, a pile of wood prepared on which to burn it, built in shape of an altar, but of different height according to the quality of the deceased. The wood used was commonly from such trees as contain most pitch or resin; and if any other were used,

they split it for the more easy catching fire: round the pile they set cypress trees, probably to hinder the noisome smell of the corpse. The body was not placed on the bare pile, but on the couch or bed whereon it lay. This done, the next of blood performed the ceremony of lighting the pile; which they did with a torch, turning their faces all the while the other way, as if it were done with reluctance. During the ceremony, deceptions and games were celebrated; after which came the *offitium*, or gathering of the bones and ashes; also walking and anointing them, and repositing them in urns.

BURNING, among surgeons, denotes the application of an actual cautery, that is, a red-hot iron instrument, to the part affected; otherwise denominated *cauterization*.—The whole art of physic among the Japanese lies in the choice of places proper to be burnt; which are varied according to the disease. In the country of the Mogul, the colic is cured by an iron ring applied red-hot about the patient's navel. Certain it is, that some very extraordinary cures have been performed accidentally by burning. The following case is recorded in the Memoires of the academy of sciences by M. Homberg. A woman of about 35 became subject to a head-ach, which at times was so violent, that it drove her out of her senses, making her sometimes stupid and foolish, at other times raving and furious. The seat of the pain was in the forehead, and over the eyes, which were inflamed, and looked violently red and sparkling; and the most violent fits of it were attended with nausea and vomitings. In the times of the fits, she could take no food; but, out of them, had a very good stomach. Mr Homberg had in vain attempted her cure for three years with all kinds of medicines: only opium succeeded; and that but little, all its effect being only the taking off the pain for a few hours. The redness of her eyes was always the sign of an approaching fit. One night, feeling a fit coming on, she went to lie down upon the bed; but first walked up to the glass with the candle in her hand, to see how her eyes looked: in observing this, the candle set fire to her cap; and as she was alone, her head was terribly burnt before the fire could be extinguished. Mr Homberg was sent for, and ordered bleeding and proper dressings; but it was perceived, that the expected fit this night never came on; the pain of the burning wore off by degrees; and the patient found herself from that hour cured of the head-ach, which had never returned in four years after, which was the time when the account was communicated.—Another case, not less remarkable than the former, was communicated to Mr Homberg by a physician at Bruges. A woman, who for several years had her legs and thighs swelled in an extraordinary manner, found some relief from rubbing them before the fire with brandy every morning and evening. One evening the fire chanced to catch the brandy she had rubbed herself with, and slightly burnt her. She applied some brandy to her burn; and in the night all the water her legs and thighs were swelled with was entirely discharged by urine, and the swelling did not again return.

BURNING Bush. See Bush.

BURNING Glass, a convex glass commonly spherical, which being exposed directly to the sun, collects all the rays falling thereon into a very small space called the *focus*;

Burning. *cur;* where wood or any other combustible matter being put, will be set on fire. The term *burning glass* is also used to denote those concave mirrors, whether composed of glass quick-silvered, or of metalline matters, which burn by reflection, condensing the sun's rays into a focus similar to the former.

The use of burning-glasses appears to have been very ancient. Diodorus Siculus, Lucian, Dion, Zonaras, Galen, Anthemius, Eustathius, Tzetzes, and others, attest, that by means of them Archimedes set fire to the Roman fleet at the siege of Syracuse. Tzetzes is so particular in his account of this matter, that his description suggested to Kircher the method by which it was probably accomplished. That author says, that "Archimedes set fire to Marcellus's navy, by means of a burning-glass composed of small square mirrors, moving every way upon hinges; which, when placed in the sun's rays, directed them upon the Roman fleet, so as to reduce it to ashes at the distance of a bow-shot." A very particular testimony we have also from Anthemius of Lydia, who takes pains to prove the possibility of setting fire to a fleet, or any other combustible body, at such a distance.

That the ancients were also acquainted with the use of catoptric or refracting burning-glasses, appears from a passage in Aristophanes's comedy of the clouds, which clearly treats of their effects. The author introduces Socrates as examining Strepsiades about the method he had discovered of getting clear of his debts. He replies, that "he thought of making use of a burning-glass which he had hitherto used in kindling his fire;" "for (says he) should they bring a writ against me, I'll immediately place my glass in the sun at some little distance from it, and set it on fire." Pliny and Lactantius have also spoken of glasses that burnt by refraction. The former calls them *balls* or *globes of glass* or *crystal*, which, exposed to the sun, transmit a heat sufficient to set fire to cloth, or corrode the dead flesh of those patients who stand in need of caustics; and the latter, after Clemens Alexandrinus, takes notice that fire may be kindled by interposing glasses filled with water between the sun and the object, so as to transmit the rays to it.

It seems difficult to conceive how they should know such glasses would burn without knowing they would magnify, which it is granted they did not, till towards the close of the 13th century, when spectacles were first thought on. For as to those passages in Plautus which seem to intimate the knowledge of spectacles, M. de la Hire observes, they do not prove any such thing; and he solves this, by observing, that their burning-glasses being spheres, either solid or full of water, their foci would be one-fourth of their diameter distant from them. If then their diameter were supposed half a foot, which is the most we can allow, an object must be at an inch and a half distance to perceive it magnified; those at greater distances do not appear greater, but only more confused through the glass than out of it. It is no wonder, therefore, the magnifying property of convex glasses was unknown, and the burning one known. It is more wonderful there should be 300 years between the invention of spectacles and telescopes.

Among the ancients, the burning mirrors of Archimedes and Proclus are famous: the former we have already taken notice of; by the other, the navy of Vi-

tellius besieging Byzantium, according to Zonaras, was burnt to ashes. *Burning.*

Among the moderns, the most remarkable burning mirrors are those of Settala, of Villette, of Tschirnhäufen, of Buffon, of Trudaine, and of Parker.

Settala, canon of Padua, made a parabolic mirror, which, according to Schottus, burnt pieces of wood at the distance of 15 or 16 paces. The following things are noted of it in the *Acta Eruditorum*. 1. Green wood takes fire instantaneously, so as a strong wind cannot extinguish it. 2. Water boils immediately; and eggs in it are presently edible. 3. A mixture of tin and lead, three inches thick, drops presently; and iron and steel plate becomes red-hot presently, and a little after burns into holes. 4. Things not capable of melting, as stones, bricks, &c. become soon red-hot, like iron. 5. Slate becomes first white, then a black glass. 6. Tiles are converted into a yellow glass, and shells into a blackish yellow one. 7. A pumice stone, emitted from a volcano, melts into white glass; and, 8. A piece of crucible also vitrifies in eight minutes. 9. Bones are soon turned into an opaque glass, and earth into a black one. The breadth of this mirror is near three Leipzig ells, its focus two ells from it; it is made of copper, and its substance is not above double the thickness of the back of a knife.

Villette, a French artist of Lyons, made a large mirror, which was bought by Tavernier, and presented to the king of Persia; a second, bought by the king of Denmark; a third, presented by the French king to the royal academy; a fourth has been in England, where it was publicly exposed. The effects hereof, as found by Dr Harris and Dr Desaguliers, are, that a silver sixpence is melted in 7" and $\frac{1}{2}$, a king George's halfpenny in 16", and runs with a hole in 34". Tin melts in 3', cast iron in 16', slate in 3"; a fossil shell calcines in 7'; a piece of Pompey's pillar at Alexandria vitrifies the black part in 50', in the white in 54"; copper ore in 8"; bone calcines in 4', vitrifies in 33". An emerald melts into a substance like a torquois stone; a diamond weighing four grains loses $\frac{7}{8}$ of its weight: the asbestos vitrifies; as all other bodies will do, if kept long enough in the focus; but when once vitrified, the mirror can go no farther with them. This mirror is 47 inches wide, and is ground to a sphere of 76 inches radius; so that its focus is about 38 inches from the vertex. Its substance is a composition of tin, copper, and tin-glass.

Every lens, whether convex, plano-convex, or convexo-convex, collects the sun's rays, dispersed over its convexity, into a point by refraction; and is therefore a burning-glass. The most considerable of this kind is that made by M. de Tschirnhäufen: the diameters of his lenses are three and four feet, the focus at the distance of 12 feet, and its diameter an inch and a half. To make the focus the more vivid, it is collected a second time by a second lens parallel to the first, and placed in that point where the diameter of the cone of rays formed by the first lens is equal to the diameter of the second; so that it receives them all; and the focus, from an inch and a half, is contracted into the space of eight lines, and its force increased proportionably.

This glass vitrifies tiles, slates, pumice-stones, &c. in a moment. It melts sulphur, pitch, and all resins, under

Burning. under water; the ashes of vegetables, woods, and other matters, are transmuted into glass; and every thing applied to its focus is either melted, turned into a calx, or into smoke. Tschirnhausen observes, that it succeeds best when the matter applied is laid on a hard charcoal well burnt.

Sir Isaac Newton presented a burning-glass to the royal society, consisting of seven concave glasses, so placed, as that all their foci join in one physical point. Each glass is about 11 inches and a half in diameter: six of them are placed round the seventh, to which they are all contiguous; and they form a kind of segment of a sphere, whose subtense is about 34 inches and a half, and the central glass lies about an inch farther in than the rest. The common focus is about 22 inches and a half distant, and about an inch in diameter. This glass vitrifies brick or tile in 1", and melts gold in 30".

It would appear, however, that glass quicksilvered is a more proper material for burning-glasses than metals; for the effects of that speculum wherewith Mr Macquer melted the platina, seem to have been superior to those above mentioned, though the mirror itself was much smaller. The diameter of this glass was only 22 inches, and its focal distance 28. Black flint, when exposed to the focus, being powdered to prevent its crackling and flying about, and secured in a large piece of charcoal, bubbled up and ran into transparent glass in less than half a minute. Hessian crucibles, and glass-house pots, vitrified completely in three or four seconds. Forged iron smoked, boiled, and changed into a vitrescent scoria as soon as it was exposed to the focus. The gypsum of Montmartre, when the flat sides of the plates or leaves of which it is composed were presented to the glass, did not show the least disposition to melt; but, on presenting a transverse section of it, or the edges of the plates, it melted in an instant, with a hissing noise, into a brownish yellow matter. Calcareous stones did not completely melt; but there was detached from them a circle more compact than the rest of the mass, and of the size of the focus; the separation of which seemed to be occasioned by the shrinking of the matter which had begun to enter into fusion. The white calx of antimony, commonly called *diphoretic antimony*, melted better than the calcareous stones, and changed into an opaque pretty glossy substance like white enamel. It was observed, that the whiteness of the calcareous stones and the antimonial calx was of great disadvantage to their fusion, by reason of their reflecting great part of the sun's rays; so that the subject could not undergo the full activity of the heat thrown upon it by the burning-glass. The case was the same with metallic bodies, which melted so much the more difficultly as they were more white and polished; and this difference was so remarkable, that in the focus of this mirror, so fusible a metal as silver, when its surface was polished, did not melt at all.

Plate CIX. fig. 3. represents M. Buffon's burning mirror, which he with great reason supposes to be of the same nature with that of Archimedes. It consists of a number of small mirrors of glass quicksilvered, all of which are held together by an iron frame. Each of these small mirrors is also moveable by a contrivance on the back part of the frame, that so their reflections

may all coincide in one point. By this means they are capable of being accommodated to various heights of the sun, and to different distances. The adjusting them in this manner takes up a considerable time; but after they are so adjusted, the focus will continue unaltered for an hour or more.

Fig. 4. represents a contrivance of M. Buffon's for diminishing the thickness of very large refracting lenses. He observes, that in large lenses of this kind, and which are most convenient for many purposes, the thickness of the glass in the middle is so great, as very much to diminish their force. For this reason he proposes to form a burning-glass of concentric circular pieces of glass, each resting upon the other, as represented in the figure. His method is to divide the convex arch of the lens into three equal parts. Thus, suppose the diameter to be 26 inches, and the thickness in the middle to be three inches: By dividing the lens into three concentric circles, and laying the one over the other, the thickness of the middle piece needs be only one inch; at the same time that the lens will have the same convexity, and almost the same focal distance, as in the other case; while the effects of it must be much greater, on account of the greater thinness of the glass.

M. Trudaine, a French gentleman, constructed a burning lens on a new principle. It was composed of two circular segments of glass spheres, each four feet in diameter, applied with their concave sides towards each other. The cavity was filled with spirit of wine, of which it contained 40 pints. It was presented by the maker to the royal academy of sciences, but was, not long after, broken by accident. The expence of constructing it amounted to about 1000l. sterling. After all, it does not appear that the effects of this lens were very great. Mr Magellan informs us, that it could only coagulate the particles of platina in 20 minutes, while Mr Parker's lens entirely melted them in less than two.

A large burning lens, indeed, for the purpose of fusing and vitrifying such substances as resist the fires of ordinary furnaces, and especially for the application of heat in vacuo, and in other circumstances in which heat cannot be applied by any other means, has long been a desideratum among persons concerned in philosophical experiments: And it appears now to be in a great degree accomplished by Mr Parker. His lens is three feet in diameter, made of flint glass, and which, when fixed in its frame, exposes a surface two feet eight inches and a half in the clear.

In the *Elevation* represented on the plate, A is the lens of the diameter mentioned: thickness in the centre, 3 inches and one fourth: weight, 212 pounds: length of the focus, 6 feet 8 inches; diameter of ditto, 1 inch. B, a second lens, whose diameter in the frame is 16 inches, and shows in the clear 13 inches: thickness in the centre, 1 inch five-eighths: weight 21 pounds: length of focus, 29 inches: diameter of ditto, three-eighths of an inch. When the two above lenses are compounded together, the length of the focus is 5 feet 3 inches; diameter of ditto, half an inch. C, a truncated cone, composed of 21 ribs of wood; at the larger end is fixed the great lens A, at the smaller extremity the lesser lens B: near the smaller end is also fixed a rack, D, passing through the pillar I, moveable by a pinion turning in the said pillar, by

Burning.

Plate CIX.

Burning. means of the handle E, and thus giving a vertical motion to the machine. F, a bar of wood, fixed between the two lower ribs of the cone at G; having, within a chased mortice in which it moves, an apparatus, H, with the iron plate, I, fixed thereto; and this part turning on a ball and socket, K, a method is thereby obtained of placing the matter under experiment, so as to be acted upon by the focal rays in the most direct and powerful manner. L L, a strong mahogany frame, moving on castors, M M. Immediately under the table N are three friction wheels, by which the machine moves horizontally. O, a strong iron bow, in which the lens and the cone hang.

Section. a, The great lens marked A in the elevation. b, The frame which contains the lens. c, The small lens marked B. d, The frame which contains the small lens. e, The truncated cone, marked C. f, The bar on which the apparatus marked F moves. g, The iron plate marked I. h, The cone of rays formed by the refraction of the great lens a, and falling on the lens c. i, The cone of rays formed by the refraction of the lens e. *Front-view.* k, The great lens. l, The frame containing it. m, The strong iron bow in which it hangs.

From a great number of experiments made with this lens, in the presence of many scientific persons, the following are selected as specimens of its powers.

Substances fused, with their weight and time of fusion.	Weight in Grains	Time in Seconds
Gold, pure, - - - -	20	4
Silver, do. - - - -	20	3
Copper, do. - - - -	33	20
Platina, do. - - - -	10	3
Nickell, - - - -	16	3
Bar iron, a cube, - - - -	10	12
Cast iron, a cube, - - - -	10	3
Steel, a cube, - - - -	10	12
Scoria of wrought iron, - - - -	12	2
Kearsh, - - - -	10	3
Cauk, or terra ponderosa, - - - -	10	7
A topaz, or chrysolite, - - - -	3	45
An oriental emerald, - - - -	2	25
Crystal pebble, - - - -	7	6
White agate, - - - -	10	30
Flint oriental, - - - -	10	30
Rough cornelian, - - - -	10	75
Jasper, - - - -	10	25
Onyx, - - - -	10	20
Garnet, - - - -	10	17
White rhomboidal spar, - - - -	10	60
Zeolites, - - - -	10	23
Rotten stone, - - - -	10	80
Common slate, - - - -	10	2
Asbestos, - - - -	10	10
Common lime-stone, - - - -	10	55
Pumice stone, - - - -	10	24
Lava, - - - -	10	7
Volcanic clay, - - - -	10	60
Cornish moor-stone, - - - -	10	60

BURNING Mountains. See *ÆTNA, ETNA, HECLE, VESUVIUS, and VOLCANO,* with the plates accompany ing them.

BURNING Springs. Of these there are many in dif ferent parts of the world; particularly one in Dau phiny near Grenoble; another near Hermanstadt in Transylvania; a third at Chermay, a village near Switzerland; a fourth in the canton of Friburg; and a fifth not far from the city of Cracow in Poland. There also is, or was, a famous spring of the same kind at Wigan in Lancashire, which, upon the ap proach of a lighted candle, would take fire and burn like spirit of wine for a whole day. But the most remarkable one of this kind, or at least that of which we have the most particular description, was discovered in 1711 at Brofely in Shropshire. The following account of this remarkable spring was given by the reverend Mr Mason Woodwardian professor at Cambridge, dated February 18th 1746. "The well for four or five feet deep is six or seven feet wide; within that is another less hole of like depth dug in the clay, in the bottom whereof is placed a cylindric earthen vessel, of about four or five inches diameter at the mouth, having the bottom taken off, and the sides well fixed in the clay rammed close about it. Within the pot is a brown water, thick as puddle, continually forced up with a violent motion beyond that of boiling water, and a rumbling hollow noise, rising or falling by fits five or six inches; but there was no appearance of any vapour rising, which perhaps might have been visible, had not the sun shone so bright. "Upon putting a candle down at the end of a stick, at about a quarter of a yard distance, it took fire, darting and flashing after a very violent manner for about half a yard high, much in the manner of spirits in a lamp, but with great agitation. It was said, that a tea-kettle had been made to boil in about nine minutes time, and that it had been left burn ing for 48 hours without any sensible diminution. It was extinguished by putting a wet mop upon it; which must be kept there for a little time, otherwise it would not go out. Upon the removal of the mop there arises a sulphureous smoke lasting about a minute, and yet the water is very cold to the touch." In 1755, this well totally disappeared by the sinking of a coal-pit in its neighbourhood.

The cause of the inflammable property of such wa ters, is with great probability supposed to be their mixture with petroleum, which is one of the most in flammable substances in nature, and has the property of burning on the surface of water.

BURNING of Colours, among painters. There are several colours that require burning; as,

First, *Lamp-black,* which is a colour of so greasy a nature, that, except it is burnt, it will require a long time to dry. The method of burning, or rather dry ing, lamp-black, is as follows: Put it into a crucible over a clear fire, letting it remain till it be red hot, or so near it that there is no manner of smoke arises from it.

Secondly, *Umber,* which if it be intended for col our for a horse, or to be a shadow for gold, then burning fits it for both these purposes. In order to burn umber, you must put it into the naked fire, in large lumps, and not take it out till it is thoroughly red hot; if you have a mind to be more curious, put it into a crucible, and keep it over the fire till it be red hot.

Ivory also must be burnt to make black, thus: fill

Fig. 1. *Blatta*
The Cockroach.



Fig. 2.
Bruchus



Fig. 6. *Brachypus*
two tooth Sloth.



Fig. 5. Burroughs's Machine.

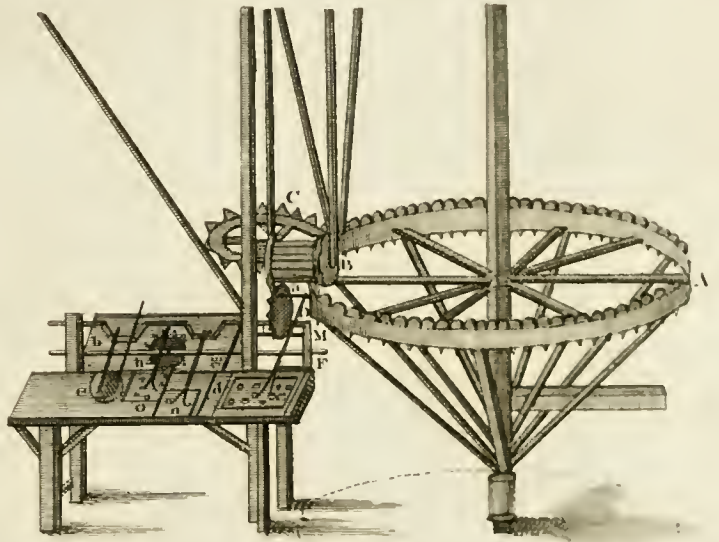


Fig. 7.

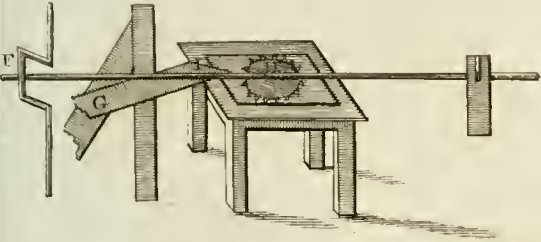


Fig. 8. Burning Mirror
with elevations.

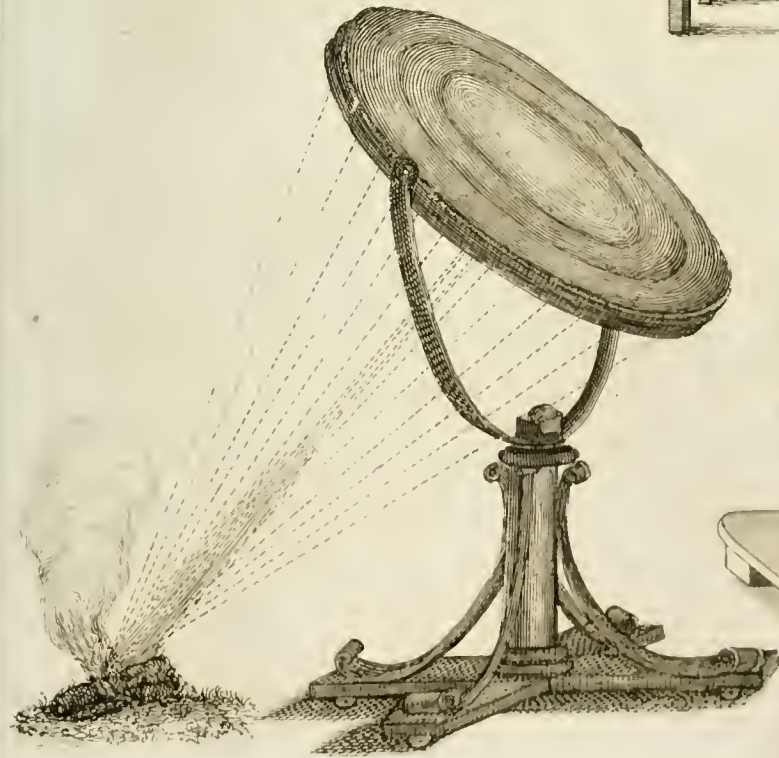
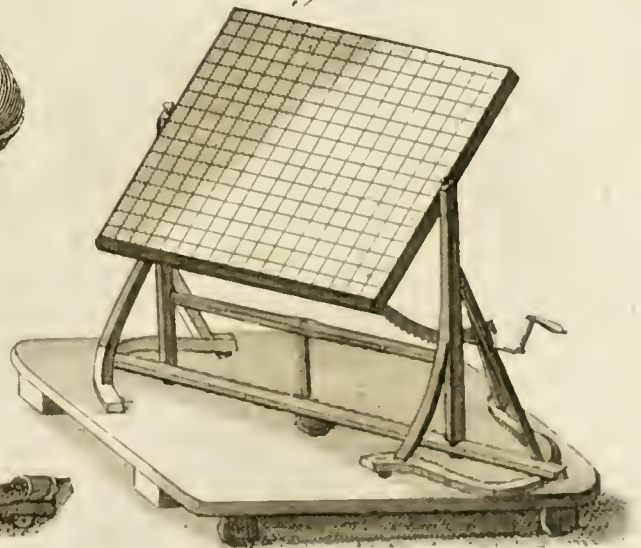
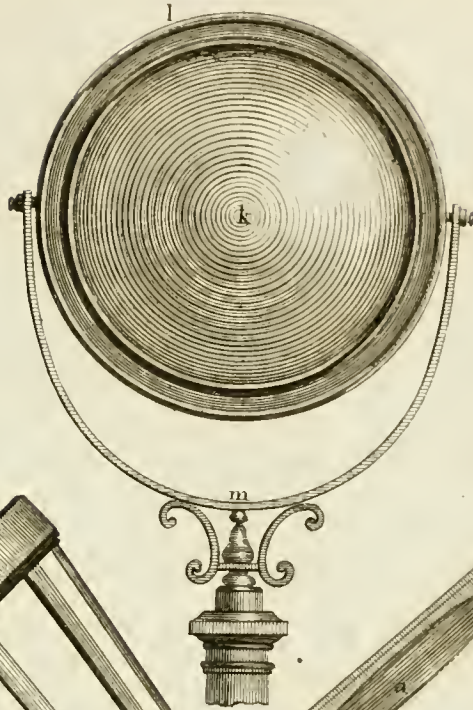


Fig. 3. Burning Mirror
of Archimedes.

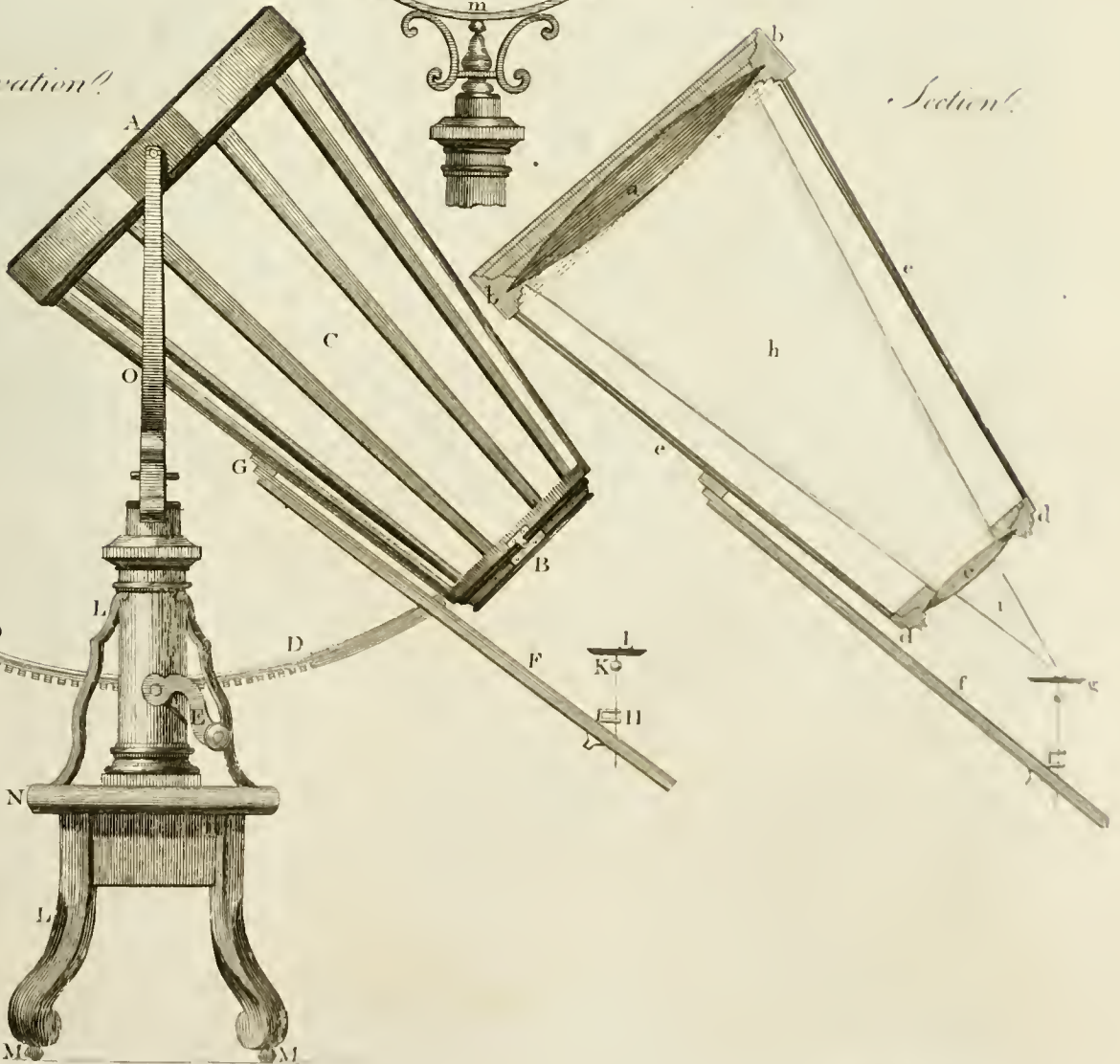


*Burning Lens.
Parker's.*



Elevation!

Section!



Burnisher
||
Bur-
roughs's

Bur-
roughs's,
Burrow.

two crucibles with shavings of ivory, then clap their two mouths together, and bind them fast with an iron wire, and lute the joints close with clay, salt, and horse-dung, well beaten together; then set it over the fire, covering it all over with coals; let it remain in the fire till you are sure that the matter inclosed is thoroughly red-hot: then take it out of the fire; but do not open the crucibles till they are perfectly cold; for were they opened while hot, the matter would turn to ashes; and so it will be if the joints are not luted close.

BURNISHER, a round polished piece of steel, serving to smooth and give a lustre to metals.

Of these there are different kinds of different figures, straight, crooked, &c. Half burnishers are used to solder silver, as well as to give a lustre.

Burnishers for gold and silver are commonly made of a dog's or wolf's tooth, set in the end of an iron or wooden handle. Of late, agates and pebbles have been introduced, which many prefer to the dog's tooth.

The burnishers used by engravers in copper, usually serve with one end to burnish and with the other to scrape.

BURNISHING, the art of smoothing or polishing a metalline body, by a brisk rubbing of it with a burnisher.

Book-binders burnish the edges of their books, by rubbing them with a dog's tooth.

BURNLEY, a town of Lancashire in England, situated in W. Long. 2. 5. N. Lat. 51. 38.

BURNTISLAND. See **BRUNTSISLAND**.

BURNTWOOD, a town of Essex in England, situated on a hill, in E. Long. 0. 25. N. Lat. 51. 38.

BURR, the round knob of a horn next a deer's head.

BURRE, **BOUREE**, or *Berce*, a kind of dance composed of three steps joined together in two motions, begun with a crotchet rising. The first couplet contains twice four measures, the second twice eight. It consists of a balance and coupee.

BURR PUMP, or *Bilge-Pump*. See **BILDGE**.

BURROCK, a small wier, or dam, where wheels are laid in a river, for the taking of fish.

BURROUGHS'S MACHINE, invented by Mr Burroughs of Southwark, and for which the society for the encouragement of arts gave him a premium of L. 70.

This machine consists of a cog-wheel A (fig. 5.), 12 feet in diameter, carrying 72 cogs; which turn a trundle-head B, one foot four inches in diameter, and furnished with eight rounds; and also an horizontal spur-wheel C, of 12 cogs, and one foot eight inches in diameter. The trundle-head B turns a spur-wheel D of ten cogs, and two feet eight inches in diameter. This spur-wheel has two cranks, *a b*, in its shaft; one of which *a* gives motion to a wooden frame *c*, about 34 inches long and 19 broad. On the under side of this frame are fastened by screws twelve pieces of polished metal, each five inches and a half long, and three broad, covered with leather; and underneath these polishers, a glass plate cemented in another frame is placed on the bench *d*, and polished with tripoli by the motion given to the upper frame by the crank *a*. The nuts of the screws which fasten the polishers to the upper frame are not screwed close to the wood, in order to give the frame room to play; by which contrivance the perpendicular rise of the crank is avoided, and the motion of the polishers always parallel and equal. The under frame may be moved by the hand in any direc-

tion without stopping the machine; by which means the plate, when larger than the polishing frame can cover in its motion, will be equally polished in every part.

The other crank *b* gives motion to two other polishers marked *n*, *o*, which have an alternate motion by the bending of the crank; they move upon the same plate, and have an equal number of polishers as that already described.

The same crank also gives motion to a contrivance represented at *e* for polishing spectacle-glasses. It consists of two segments of the same sphere; one concave and the other convex. On the latter the glasses are cemented; and polished by the former, which is moved by the crank *b*. The convex segment may be moved round by the hand without stopping the machine, so that all the glasses on its superficies will be equally polished.

The other spur-wheel C, by means of a crank in its shaft, gives motion to another frame *g*, employed in grinding the glass plates. The rod *b*, extended from the crank *f* to the frame *g*, is fastened to the latter by means of a pivot, in order to admit of a rotatory motion, as well as that given it by the crank in a longitudinal direction. This rotatory motion is effected by means of a rod of iron *i*, called a *trigger*, sharp at the extremity next the frame, where it touches the teeth of an horizontal spur-wheel, or circular piece of wood, fixed on the grinding-plate, while the other end is extended three feet two inches to the centre of motion.

But this contrivance, in which the merit of the machine principally consists, will be much better conceived from a small delineation of it by itself (fig. 6.), where F is the crank marked *f* in fig. 5. and turned by the spur-wheel C in the same figure. G is the trigger, three feet two inches long. I, a roll fixed on the trigger for the rod to slide on. H, the horizontal spur-wheel, eleven inches in diameter, fixed on the grinding-plate; the teeth of which is touched by the trigger; but with a very unequal force, as it will wholly depend upon the grinding-plate's being farther from, or nearer to, the centre of motion of the trigger. By this simple contrivance, the grinding-plate has a very compound motion, never moving exactly in the same tract, and therefore must grind the plates equally in every part. Several attempts have been made by others for producing the same effect: but without success; the grinding-plate always follows the same tract, and consequently the plates were ground unequally.

BURROW (Sir James), master of the crown office, was elected F. R. S. and F. A. S. 1751. On the death of Mr Weit in 1772, he was prevailed on to fill the president's chair at the royal society till the anniversary election, when he resigned it to Sir John Pringle; and August 10. 1773, when the society presented an address to his majesty, he received the honour of knighthood. He published two volumes of Reports in 1766; two others in 1771 and 1776; and a volume of Decisions of the Court of King's Bench upon settlement cases from 1732 to 1772 (to which was subjoined An Essay of Punctuation), in three parts, 4to, 1768, 1772, 1776. The essay was also printed separately in 4to, 1773. He published, without his name, "A few Anecdotes and Observations relating to Oliver Cromwell and his family, serving to rectify several errors concerning him," published by Nicol. Conn. Papadopoli, in his *Historia Gymnasii Patavinii*, 1763, 4to. He died in 1782.

Burrow
||
Burse.

BURROWS, holes in a warren, serving as a covert for rabbits, &c. A coney's coming out of her burrow is called *bolting*. To catch coney, they sometimes lay purse-nets over the burrows, then put in a terrier close muzzled, which making the creature bolt, she is caught in the net.

BURROWSTOUNNESS, or **BORROWSTOUNNESS**, a sea-port town of West Lothian, situated on the Forth, 18 miles west from Edinburgh. It is a small town, and continually enveloped in smoke from the numerous salt-works and coaleries that are near it; but is a place of considerable trade, and has a very commodious harbour. The town-house is built in form of a castle, and stands behind a great reservoir used for cleansing the harbour when it is much choaked with mud and sand.—Next to Leith, Borrowstounness was the principal trading town on the Forth before the canal was finished between it and the Clyde; and it is still much frequented by shipping: its exports in salt and coals are very great, and it has also several vessels employed in the Greenland fishery.

BURSA, or **PRUSA**, in geography, the capital of Bithinia in Asia Minor, situated in a fine fruitful plain, at the foot of mount Olympus, about 100 miles south of Constantinople. E. Long. 29. 0. N. Lat. 40. 30.

Bursa Pastoris, in botany. See **THLASPI**.

BURSA, *Burse*, originally signifies a purse. In middle-age writers it is more particularly used for a little college or hall in an university, for the residence of students, called *burfals* or *burfarii*. In the French universities it still denotes a foundation for the maintenance of poor scholars in their studies. The nomination to burfes is in the hands of the patrons and founders thereof. The burfes of colleges are not benefices, but mere places assigned to certain countries and persons. A burse becomes vacant by the burfer's being promoted to a cure.

BURSÆ MUCOSÆ. See **ANATOMY**, n^o 8.

BURSAR, or **BURSER**, (*Burfarius*), is used in middle age writers for a treasurer or cash-keeper. In this sense we meet with burfars of colleges. Conventual burfars were officers in monasteries, who were to deliver up their account yearly on the day after Michaelmas. The word is formed from the Latin *burfa*, whence also the English word *purse*; hence also the officer, who in a college is called *burfar*, in a ship is called *purfer*.

BURSARS, or *Burfors*, (*Burfarii*), also denote those to whom stipends are paid out of a burse or fund appointed for that purpose.

BURSARIA, the burfary, or exchequer of collegiate and conventual bodies; or the place of receiving, paying, and accounting by the burfarii or burfers.

BURSE, in matters of commerce, denotes a public edifice in certain cities, for the meeting of merchants to negotiate bills, and confer on other matters relating to money and trade. In this sense, burse amounts to the same with what we otherwise call an *exchange*.

The first place of this kind to which the name *Burse* was given, Guiechardin assures us was at Bruges; and it took its denomination from an hotel adjoining to it, built by a lord of the family de la Bourse, whose arms, which are three purses, are still found on the crowning over the portal of the house. Cattel's account is somewhat different, viz. that the merchants of Bruges

bought a house or apartment to meet in, at which was the sign of the purse. From this city the name was afterwards transferred to the like places in others, as in Antwerp, Amsterdam, Bergen in Norway, and London. This last, anciently known by the name of the *common burse of merchants*, had the denomination since given it by queen Elizabeth, of the *royal exchange*. The most considerable burse is that of Amsterdam, which is a large building 230 feet long and 130 broad, round which runs a peristyle 20 feet wide. The columns of the peristyle, which are 46, are numbered, for the convenience of finding people. It will hold 4500 persons.

In the times of the Romans there were public places for the meeting of merchants in most of the trading cities of the empire; that built at Rome, in the 259th year after its foundation, under the consulate of Appius Claudius and Publius Servilius, was denominated the *college of merchants*; some remains of it are still to be seen, and are known by the modern Romans under the name *loggia*. The Hans towns, after the example of the Romans, gave the name of *colleges* to their burfes.

BURSEREA, in botany; a genus of the monogynia order, belonging to the hexandria class of plants. The calyx is triphyllous; the corolla tripetalous; the capsule carnos, trivalved, and monospermous. There is but one species, the *gummifera*, or *gum elemi*. This is frequent in woods in most of the Bahama islands, and grows speedily to a great height and thickness. The bark is brown, and very like the birch of Britain. The wood is soft and useless, except when pieces of the limbs are put into the ground as fences, when it grows readily, and becomes a durable barrier. The leaves are pinnate, the middle rib five or six inches long, with the pinnae set opposite to one another on footstalks half an inch long. It has yellow flowers, male and female on different trees. These are succeeded by purple-coloured berries bigger than large peas, hanging in clusters on a stalk of about five inches long, to which each berry is joined by a footstalk of half an inch long. The seed is hard, white, and of a triangular figure, inclosed within a thin capsule, which divides in three parts, and discharges the seed. The fruit, when cut, discharges a clear balsam or turpentine, esteemed a good vulnerary, particularly for horses. On wounding the bark, a thick milky liquor is obtained, which soon concretes into a resin no way different from the *gum elemi* of the shops (see **AMYRIS**). Dr Browne, and after him Linnæus, have, according to Dr Wright, mistaken the bark of the roots for the simarouba, which is a species of **QUASSIA**.

BURTON upon **TRENT**, a town of Staffordshire, in England. It had formerly a large abbey; and over the river Trent it has now a famous bridge of free stone, about a quarter of a mile in length, supported by 37 arches. It consists chiefly of one long street, which runs from the place where the abbey stood to the bridge; and has a good market for corn and provisions. Burton ale is reckoned the best of any brought to London. E. Long. 1. 36. N. Lat. 52. 48.

BURTON, a town of Lincolnshire in England, seated on a hill near the river Trent. It is but a small place, and situated in W. Long. 0. 30. N. Lat. 53. 40.

BURTON, a town of Westmorland in England, seat-

Bursera
||
Burt-on.

Plate CX.

Burton. ed in a valley near a large hill called *Farleton-knot-hill*. It is pretty well built, and lies on the great road from Lancaster to Carlisle. W. Long. 2. 35. N. Lat. 54. 10.

BURTON (Robert), known to the learned by the name of *Democritus junior*, was younger brother to William Burton who wrote "The antiquities of Leicestershire;" and born of an ancient family at Lindley, in that county, upon the 8th of February 1576. He was educated in grammatical learning in the free school of Sutton Colfield in Warwickshire; in the year 1593 was sent to Brazen-nose college in Oxford; and in 1599 was elected student of Christ-church. In 1616, he had the vicarage of St Thomas, in the west suburb of Oxford, conferred upon him by the dean and canons of Christ-church, to the parishioners of which, it is said, that he always gave the sacrament in wafers; and this, with the rectory of Segrave in Leicestershire, given him some time after by George lord Berkeley, he held to the day of his death, which happened in January 1639.

He was a man of general learning; a great philosopher; an exact mathematician; and (what makes the peculiarity of his character) a very curious calculator of nativities. He was extremely studious, and of a melancholy turn; yet an agreeable companion, and very humorous. *Treatise of melancholy*, by *Democritus junior*, as he calls himself, shows, that these different qualities were mixed together in his composition. This book was printed first in 4to, afterwards in folio, in 1624, 1632, 1638, and 1652, to the great emolument of the bookseller, who, as Mr Wood tells us, got an estate by it. Some circumstances attending his death occasioned strange suspensions. He died in his chamber at or very near the time which, it seems, he had some years before predicted from the calculation of his nativity; and this exactness made it whispered about, that for the glory of astrology, and rather than his calculation should fail, he became indeed a *felo de se*. This, however, was generally discredited; he was buried with due solemnity in the cathedral of Christ-church, and had a fair monument erected to his memory. He left behind him a very choice collection of books. He bequeathed many to the Bodleian library; and 100*l.* to Christ-church, the interest of which was to be laid out yearly in books for their library.

BURTON (John), D. D. a late worthy and learned divine, was born in 1696, at Wembworth, in Devonshire, his father being rector of that parish; and was educated at Corpus Christi college, Oxford. In 1725, being then pro-rector and master of the schools, he spoke a Latin oration before the determining bachelor, which is entitled "*Heli*;" or, An instance of a magistrate's erring through unseasonable lenity;" written and published with a view to encourage the salutary exercise of academical discipline; and afterwards treated the same subject still more fully in four Latin sermons before the university, and published them with appendixes. He also introduced into the schools, Locke, and other eminent modern philosophers, as suitable companions to Aristotle; and printed a double series of philosophical questions, for the use of the younger students; from which Mr Johnson of Magdalene college, Cambridge, took the hint of his larger work of the same kind, which has gone through several editions.

When the settling of Georgia was in agitation, Dr Bray, justly revered for his institution of parochial libraries, Dr Stephen Hales, Dr Brinman, and other learned divines, intreated Mr Burton's pious assistance in that undertaking. This he readily gave, by preaching before the society in 1732, and publishing his sermon, with an appendix on the state of that colony; and he afterwards published an account of the designs of the associates of the late Dr Bray, with an account of their proceedings.

About the same time, on the death of Dr Edward Littleton, he was presented by Eton college to the vicarage of Maple-Derham, in Oxfordshire. Here a melancholy scene, which too often appears in the mansions of the clergy, presented itself to his view; a widow, with three infant daughters, without a home, without a fortune: from his compassion arose love, the consequence of which was marriage; for Mrs Littleton was handsome, elegant, accomplished, ingenious, and had great sweetness of temper. In 1760, he exchanged his vicarage of Maple-Derham, for the rectory of Worplesdon in Surry. In his advanced age, finding his eyes begin to fail him, he collected and published, in one volume, all his scattered pieces, under the title of *Opuscula miscellanea*; and soon after died, February 11th, 1771.

BURTON, in the sea-language, a small tackle consisting of two single blocks, and may be made fast anywhere at pleasure, for hoisting small things in and out.

BURY, is sometimes used to denote the hole or den of some animal under ground. In this sense we say the *bury* of a mole, a tortoise, or the like. The grillo-talpa, or mole-cricket, digs itself a bury with its fore-feet, which are made broad and strong for that purpose. Naturalists speak of a kind of urehins in the island of Maraguan, which have two entries to their buries, one towards the north, the other to the south, which they open and shut alternately as the wind happens to lie.

BURY, in geography, a market town of Lancashire, about 30 miles south-east of Lancaster. It is a barony in the family of Albemarle. W. Long. 2. 20. N. Lat. 53. 36.

BURY (St Edmund's), or *St Edmund's bury*, the county town of Suffolk, about 12 miles east of Newmarket, and 70 north-east of London. E. Long. 0. 45. N. Lat. 52. 20.

BURYING, the same with interment or BURIAL.

BURYING Alive was the punishment of a vestal who had violated her vow of virginity. The unhappy priestess was let down into a deep pit, with bread, water, milk, oil, a lamp burning, and a bed to lie on. But this was only for show; for the moment she was let down, they began to cast in the earth upon her till the pit was filled up. Some middle-age writers seem to make burying alive (*despolio*) the punishment of a woman thief. Lord Bacon gives instances of the resurrection of persons who have been buried alive. The famous Duns Scotus is of the number; who, having been seized with a catalepsy, was thought dead, and laid to sleep among his fathers, but raised again by his servant in whose absence he had been buried. Bartholin gives an account of a woman, who, on recovering from an apoplexy, could not be convinced but that she was dead, and solicited so long and so earnestly to be buried,

Burton
||
Burying.

See the
1st
1771

Burying
||
Bulby.

ried, that they were forced to comply; and performed the ceremonies, at least in appearance. The famous emperor Charles V. after his abdication, took it into his head to have his burial celebrated in his lifetime, and assisted at it. See CHARLES V.

BURYING-Place. The ancients buried out of cities and towns; an usage which we find equally among Jews, Greeks, and Romans. Among the last, burying within the walls was expressly prohibited by a law of the 12 tables. The usual places of interment were in the suburbs and fields, but especially by the waysides. We have instances, however, of persons buried in the city; but it was a favour allowed only to a few of singular merit in the commonwealth. Plutarch says, those who had triumphed were indulged in it. Be this as it will, Val. Publicola, and C. Fabricius, are said to have had tombs in the forum; and Cicero adds Tubertus to the number. Lycurgus allowed his Lacedaemonians to bury their dead within the city and around their temples, that the youth, being inured to such spectacles, might be the less terrified with the apprehension of death. Two reasons are alleged why the ancients buried out of cities: the first, an opinion, that the sight, touch, or even neighbourhood, of a corpse defiled a man, especially a priest; whence that rule in A. Gellius, that the *flamen Dialis* might not on any account enter a place where there was a grave: the second, to prevent the air from being corrupted by the stench of putrefied bodies, and the buildings from being endangered by the frequency of funeral fires.

Burying in churches was not allowed for the first 200 years after Christ; and the same was severely prohibited by the Christian emperors for many ages afterwards. The first step towards it appears to have been the practice of erecting churches over the graves of some martyrs in the country, and translating the relics of others into churches in the city: the next was, allowing kings and emperors to be buried in the atrium or church-porch. In the 6th century, the people began to be admitted into the church-yards; and some princes, founders, and bishops, into the church. From that time the matter seems to have been left to the discretion of the bishop.

BUSBEC (Auger Gillen, lord of), a person illustrious on account of his embassies, was born at Commines, in the year 1522; and educated at the most famous universities, at Louvain, at Paris, at Venice, at Bologna, and at Padua. He was engaged in several important employments and negotiations, and particularly was twice sent ambassador by the king of the Romans to the emperor Soliman. He collected inscriptions; bought manuscripts; searched after rare plants; enquired into the nature of animals; and, in his second journey to Constantinople, carried with him a painter, that he might be able to communicate to the curious, the figures, at least, of the plants and animals that were not well known in the west. He wrote a Discourse of the state of the Ottoman empire, and a Relation of his two journeys to Turkey, which are much esteemed. He died in 1592.

BUSBY (Dr Richard), son of a gentleman in Westminster, was born at Lutton in Lincolnshire, in 1606. He passed through the classes in Westminster school, as king's scholar; and completed his studies at

No. 60.

Christ-church, Oxford. In 1640, he was appointed master of Westminster school; and by his skill and diligence in the discharge of this important and laborious office, for the space of 55 years, bred up the greatest number of eminent men in church and state that ever at one time adorned any age or nation. He was extremely severe in his school; though he applauded wit in his scholars, even when it reflected on himself. This great man, after a long and healthy life purchased by temperance, died in 1695, aged 89; and was buried in Westminster abbey, where there is a fine monument erected for him, with a Latin inscription. He composed several books for the use of his school.

BUSH (Paul), the first bishop of Bristol, became a student in the university of Oxford about the year 1513, and in 1518 took the degree of bachelor of arts. He afterwards became a brother of the order called *bonhomis*; of which, after studying some time among the friars of St Austin (now Wadham college), he was elected provincial. In that station he lived many years; till at length king Henry VIII. being informed of his great knowledge in divinity and physic, made him his chaplain, and in 1542 appointed him to the new episcopal see of Bristol: but having in the reign of Edward VI. taken a wife, he was, on the accession of Mary, deprived of his dignity, and spent the remainder of his life in a private station at Bristol, where he died in the year 1558, aged 68, and was buried on the north side of the choir of the cathedral. Wood says, that while he was a student at Oxford, he was numbered among the celebrated poets of that university; and Pits gives him the character of a faithful catholic, his want of chaity notwithstanding. He wrote, 1. An exhortation to Margaret Burges, wife to John Burges, clothier, of King's-wood, in the county of Wilts. Lond.-printed in the reign of Edward VI. 8vo. 2. Notes on the Psalms. 3. Treatise in praise of the cross. 4. Answer to certain queries concerning the abuses of the mass. Records, No. 25. 5. Dialogue between Christ and the Virgin Mary. 6. Treatise of felves and curing remedies. 7. A little treatise in English, called *The extirpation of ignorancy*, &c. in verse, Lond. by Pinson, 4to. 8. *Carmina diversa*.

BUSH, a term used for several shrubs of the same kind growing close together: thus we say, a *furze-bush*, *bramble-bush*, &c.

BUSH is sometimes used, in a more general sense, for any assemblage of thick branches interwoven and mixed together.

BUSH also denotes a coronated frame of wood hung out as a sign at taverns. It takes the denomination from hence, that, anciently, signs where wine was sold were *bushes* chiefly of ivy, cypress, or the like plant, which keeps its verdure long. And hence the English proverb, "Good wine needs no *bush*."

Burning-BUSH, that bush wherein the Lord appeared to Moses at the foot of mount Horeb, as he was feeding his father-in-law's flocks.

As to the person that appeared in the bush, the text says, "That the angel of the Lord appeared unto him in a flame of fire, out of the middle of the bush;" but whether it was a created angel, speaking in the person of God, or God himself, or (as the most received opinion is) Christ the son of God, has been matter of

some

Bush.

Buceros.
Pied Hornbill



Buphagafyricana
African Bupfaler.



Byrrhus.



Bucco,
The Bull-jard Barbet.



Bursera
Gummifera.

Bursera Gummifera.

B. sh.
Bushel.

some controversy among the learned. Those who suppose it no more than an angel seem to imply that it would be a diminution of the majesty of God, to appear upon every occasion, especially when he has such a number of celestial ministers, who may do the business as well. But considering that God is present every where, the notification of his presence by some outward sign in one determinate place (which is all we mean by his appearance), is in our conception less laborious (if any thing laborious could be conceived of God) than a delegation of angels upon every turn from heaven, and seems in the main to illustrate rather than debase the glory of his nature and existence. But however this be, it is plain that the angel here spoken of was no created being, from the whole context, and especially from his saying, "I am the Lord God, the Jehovah," &c. since this is not the language of angels, who are always known to express themselves in such humble terms as these, "I am sent from God; I am thy fellow-servant," &c. It is a vain pretext to say, that an angel, as God's ambassador, may speak in God's name and person; for what ambassador of any prince ever yet said, "I am the king?" Since therefore no angel, without the guilt of blasphemy, could assume these titles; and since neither God the Father, nor the Holy Ghost, are ever called by the name of *angel*, *i. e.* "messenger, or person sent," whereas God the Son is called by the prophet Malachi (chap. iii. 1.), "The angel of the covenant;" it hence seems to follow, that this angel of the Lord was God the Son, who might very properly be called an *angel*, because in the fulness of time he was sent into the world in our flesh, as a messenger from God, and might therefore make these his temporary apparitions, presages, and forerunners, as it were, of his more solemn mission. The emblem of the burning-bush is used as the seal of the church of Scotland, with this motto: *i. e.* "Thou burning, is never consumed."

BUSHEL, a measure of capacity for things dry; as grains, pulse, dry fruits, &c. containing four pecks, or eight gallons, or one-eighth of a quarter.

Du Cange derives the word from *bussellus*, *bussellus*, or *bissellus*, a diminutive of *buz*, or *buzza*, used in the corrupt Latin for the same thing; others derive it from *bussulus*, an *urn*, wherein lots were cast; which seems to be a corruption from *bussulus*. *Bussellus* appears to have been first used for a liquid measure of wine, equal to eight gallons. *Octo librae faciunt galonem vini, & octo galones vini faciunt bussellum London, quae est octava pars quarterii.* It was soon after transferred to the dry measure of corn of the same quantity — *Pondus octo librarum frumenti facit bussellum, de quibus octo consistit quarterium.*

By 12 Hen. VII. cap. 5. a bushel is to contain eight gallons of wheat; the gallon eight pounds of wheat troy-weight; the pound twelve ounces troy-weight; the ounce twenty sterlings; and the sterling thirty-two grains, or corn of wheat, growing in the middle of the ear. This standard bushel is kept in the Exchequer; when being filled with common spring water, and the water measured before the house of commons in 1696, in a regular parallelepiped, it was found to contain 2145,6 solid inches; and the said water being weighed, amounted to 1134 ounces and 14 penny weights troy. Besides the standard or legal

bushel, we have several local bushels, of different dimensions in different places. At Abingdon and Andover, a bushel contains nine gallons; at Appleby and Penrith, a bushel of pease, rye, and wheat, contains 16 gallons; of barley, big, malt, mixt malt, and oats, 20 gallons. A bushel contains, at Carlisle, 24 gallons; at Chester, a bushel of wheat, rye, &c. contains 32 gallons, and of oats 40; at Dorchester, a bushel of malt and oats contains 10 gallons; at Falmouth, the bushel of stricken coals is 16 gallons, of other things 20, and usually 21 gallons; at Kingston upon Thames, the bushel contains eight and a half; at Newbury 9; at Wycomb and Reading, eight and three-fourths; at Stamford 16 gallons. Houghton. Collect. tom. i. n. 46. p. 42.

At Paris, the bushel is divided into two half bushels; the half bushel into two quarts; the quart into two half quarts; the half quart into two litrons; and the litron into two half litrons. By a sentence of the provost of the merchants of Paris, the bushel is to be eight inches two lines and an half high, and ten inches in diameter; the quart four inches nine lines high, and six inches nine lines wide; the half quart four inches three lines high, and five inches diameter; the litron three inches and an half high, and three inches ten lines in diameter. Three bushels make a minot, six a mine, twelve a septier, and an hundred and forty-four a muid. In other parts of France, the bushel varies: fourteen one-eighth bushels of Amboise and Tours make the Paris septier. Twenty bushels of Avignon make three Paris septiers. Twenty bushels of Blois make one Paris septier. Two bushels of Bourdeaux make one Paris septier. Thirty-two bushels of Rochel make nineteen Paris septiers. Oats are measured in a double proportion to other grains; so that twenty-four bushels of oats make a septier, and 248 a muid. The bushel of oats is divided into four picotins, the picotin into two half quarts, or four litrons. For salt four bushels make one minot, and six a septier. For coals eight bushels make one minot, sixteen a mine, and 320 a muid. For lime, three bushels make a minot, and forty-eight minots a muid. See MEASURE and WEIGHT.

BUSIRIS, (anc. geog.); a city of the Lower Egypt, to the south of Leontopolis, on that branch of the Nile called Busiriticus: Built by Busiris, noted for his cruelty, and slain by Hercules, (Ovid, Virgil, Diodorus Siculus). Strabo denies such a tyrant ever existed; Isocrates has written his panegyric. In this city there stood a grand temple of Isis, which gave it the appellation of the city of Isis. It was destroyed on a revolt by Dioclesian.

BUSIRITICUS FLUVIUS, (anc. geog.) that branch of the Nile which empties itself at the mouth called Ollium Pathmeticum, or Phatniticum, (Ptolemy); also a part, according to an ancient map, at the Ollium Mendesium; this river, or branch, dividing itself at Diospolis into two branches: called Busiriticus, from the city of Busiris, which stood on its left, or west branch. It is the second branch of the Nile, reckoning from the east.

Busiriticus Nomos, (anc. geog.), a prefecture, or division of the Lower Egypt; so called from the city Busiris, (Herodotus, Pliny, Ptolemy)

BUSITTIS, (anc. geog.), a district of Arabia De-

B. sh.
Bushel.

Buskin
||
Busta.

ferta; so called from Bus, or Buz, Nahor's second son; the country of Elihu, the fourth interlocutor in Job; called *Buzites*, by the Septuagint.

BUSKIN, a kind of shoe, somewhat in manner of a boot, and adapted to either foot, and worn by either sex. This part of dress, covering both the foot and mid-leg, was tied underneath the knee; it was very rich and fine, and principally used on the stage by actors in tragedy. It was of a quadrangular form; and the sole was so thick, as that, by means thereof, men of the ordinary stature might be raised to the pitch and elevation of the heroes they personated. The colour was generally purple on the stage; herein it was distinguished from the sock worn in comedy, that being only a low common shoe. The buskin seems to have been worn not only by actors but by girls, to raise their height; travellers and hunters also made use of it, to defend themselves from the mire. In classic authors, we frequently find the buskin used to signify tragedy itself, in regard it was a mark of tragedy on the stage. It was also to be understood for a lofty strain or high style.

BUSS, in maritime affairs, a small sea-vessel, used by us and the Dutch in the herring fishery, commonly from 48 to 60 tons burden, and sometimes more: a buss has two small sheds or cabins, one at the prow and the other at the stern; that at the prow serves for a kitchen. Every buss has a master, an assistant, a mate, and seamen in proportion to the vessel's bigness; the master commands in chief, and without his express orders the nets cannot be cast nor taken up; the assistant has the command after him; and the mate next, whose business is to see the seamen manage their rigging in a proper manner, to mind those who draw in their nets, and those who kill, gut, and cure the herrings, as they are taken out of the sea: the seamen do generally engage for a whole voyage in the lump. The provision which they take on board the busses, consist commonly in biscuit, oat-meal, and dried or salt fish; the crew being content for the rest with what fresh fish they catch. See **FISHERIES**.

BUST, or **BUSTO**, in Sculpture, denotes the figure or portrait of a person in relievo, showing only the head, shoulders, and stomach, the arms being lopped off; ordinarily placed on a pedestal, or console.

In speaking of an antique, we say the head is marble, and the bust porphyry, or bronze, that is, the stomach and shoulders. Felibien observes, that though in painting, one may say a figure appears in busto, yet it is not properly called a *bust*, that word being confined to things in relievo.

The bust is the same with what the Latins called *Herma*, from the Greek *Hermes*, Mercury, the image of that god being frequently represented in this manner among the Athenians.

BUST is also used, especially by the Italians, for the trunk of an human body, from the neck to the hips.

BUSTA Gallica, was a place in ancient Rome, wherein the bones of the Gauls, who first took the city, and were slain by Camillus, were deposited. It differed from

BUSTA Gallorum, a place on the Apennines, thus called by reason of many thousand of Gauls killed there by Fabius.

BUSTARD, in ornithology. See **OTIS**.

BUSTUARIE ΜΟΕΧΛΕ, according to some, women that were hired to accompany the funeral and lament the loss of the deceased: but others are of opinion, that they were rather the more common prostitutes, that stood among the tombs, graves, and other such lonely places.

BUSTUARII, in Roman antiquity, gladiators who fought about the bustum or funeral pile of a person of distinction, that the blood which was spilt might serve as a sacrifice to the infernal gods, and render them more propitious to the manes of the deceased. This custom was introduced in the room of the more inhuman one of sacrificing captives at the bustum, or on the tombs of warriors.

BUSTUM, in antiquity, denotes a pyramid or pile of wood, whereon were anciently placed the bodies of the deceased, in order to be burnt.

The Romans borrowed the custom of burning their dead from the Greeks. The deceased, crowned with flowers, and dressed in his richest habits, was laid on the bustum. Some authors say, it was only called *bustum*, after the burning, *quasi beneustum*: before the burning it was more properly called *pyra*; during it, *rigus*; and afterwards, *bustum*. When the body was only burnt there, and buried elsewhere, the place was not properly called *bustum*, but *ustrina*, or *ustrinum*.

BUSTUM, in the Campus Martius, was a structure whereon the emperor Augustus first, and, after him, the bodies of his successors were burnt. It was built of white stone, surrounded with an iron palisade, and planted within with alder trees.

BUSTUM was also figuratively applied to denote any tomb. Whence those phrases, *facere bustum*, *violare bustum*, &c.

BUSTUM of an altar, was the hearth or place where the fire was kindled.

BUTCHER, a person who slaughters cattle for the use of the table, or who cuts up and retails the same.

Among the ancient Romans, there were three kinds of established butchers, whose office it was to furnish the city with the necessary cattle, and to take care of preparing and vending their flesh. The *suarii* provided hogs; the *pecuarii* or *boarii*, other cattle, especially oxen; and under these was a subordinate class, whose office was to kill, called *lanii*, and *carnifices*.

To exercise the office of butcher among the Jews with dexterity, was of more reputation than to understand the liberal arts and sciences. They have a book concerning shamble-constitution; and in case of any difficulty, they apply to some learned rabbi for advice: nor was any allowed to practise this art, without a licence in form; which gave the man, upon evidence of his abilities, a power to kill meat, and others to eat what he killed; provided he carefully read every week for one year, and every month the next year, and once a quarter during his life, the constitution abovementioned.

We have some very good laws for the better regulation and preventing the abuses committed by butchers. A butcher that sells swine's flesh meased, or dead of the murrain, for the first offence shall be amerced; for the second, have the pillory; for the third, be imprisoned, and make fine; and for the fourth, abjure the town. Butchers not selling meat at reasonable prices,

Bustard
||
Butchers

Butcher
||
Butler.

Butler.

shall forfeit double the value, leviable by warrant of two justices of the peace. No butcher shall kill any flesh in his scalding-house, or within the walls of London, on pain to forfeit for every ox so killed, 12 d. and for every other beast, 8d. to be divided betwixt the king and the profecutor.

BUTCHER-BIRD, in ornithology. See *LANIUS*.

BUTCHER-BROOM, in botany. See *RUSCUS*.

BUTCHER'S ISLAND, in the East Indies, a small island about two miles long and scarce one broad. It has its name from cattle being kept there for the use of Bombay, from which it is about three miles distant. It has a small fort, but of very little consequence.

BUTE, an island lying to the west of Scotland, being separated from Cowal, a district of Argyshire, only by a narrow channel. In length it is about 18 miles; the broadest part from east to west is about five. Part of it is rocky and barren; but from the middle southwards, the ground is cultivated, and produces pease, oats, and barley. Here is a quarry of red stone, which the natives have used in building a fort and chapel in the neighbourhood of Rothsay, which is a very ancient royal borough, head town of the shire of Bute and Arran; but very thinly peopled, and maintained chiefly by the herring fishery, with the profits of which all the rents of this island are chiefly paid. On the north side of Rothsay are the ruins of an ancient fort, with its draw-bridge, chapel, and barracks. Here are likewise the remains of some Danish towers. The natives are healthy and industrious, speak the Erse and the dialect of the Lowlands indifferently, and profess the Protestant religion. The island is divided into two parishes, accommodated with four churches; and belongs chiefly to the earl of Bute, who possesses an elegant seat near Rothsay. This island, with that of Arran, the greater and lesser Cumbray, and *Inch-marnoc*, form a county under the name of *Bute*. This shire and that of Caithness send a member to parliament alternately. The earl of Bute is admiral of the county, by commission from his majesty; but no way dependent on the lord high admiral of Scotland: so that if any maritime case occurs within this jurisdiction, (even crimes of as high a nature as murder or piracy), his lordship, by virtue of the powers as admiral, is sufficient judge, or he may delegate his authority to any deputies. The name of this isle has by several authors, and in different periods, been very differently written, as *Bote*, *Both*, *Bothe*, *Bot*, but now generally *Bute*. Our ancient writers suppose that it derived its name from a cell erected therein by St Brendan, an Irish abbot who flourished in the 6th century, because in his language such a cell was called *Botb*. It is, however, probable, that this name was of greater antiquity, since we find it denominated *Botis* by the anonymous geographer of Ravenna. It was from very early times part of the patrimony of the Stuarts: large possessions in it were granted to Sir John Stuart, son of Robert II. by his beloved mistress Elizabeth More; and it has continued in that line to the present time.

BUTEO, in ornithology, the trivial name of a species of *FALCO*.

BUTLER (Charles), a native of Wycomb in the county of Bucks, and a master of arts in Magdalen college, Oxford, published a book with this title, "The principles of music in singing and setting; with the

two-fold use thereof, ecclesiastical and civil." Quarto, London 1636. The author of this book was a person of singular learning and ingenuity, which he manifested in sundry other works enumerated by Wood in the *Athen. Oxon*. Among the rest is an English grammar, published in 1633, in which he proposes a scheme of regular orthography, and makes use of characters, some borrowed from the Saxon, and others of his own invention, so singular, that we want types to exhibit them: and of this imagined improvement he appears to have been so fond, that all his tracts are printed in like manner with his grammar; the consequence whereof has been an almost general disgust to all that he has written. His "Principles of music" is, however, a very learned, curious, and entertaining book: and, by the help of the advertisement from the printer to the reader, prefixed to it, explaining the powers of the several characters made use of by him, may be read to great advantage, and may be considered as a judicious supplement to Morley's introduction.

BUTLER (Samuel), a celebrated poet of the last century, was the son of a reputable Worcestershire farmer, and born in 1612. He passed some time at Cambridge, but was never matriculated in that university. Returning to his native country, he lived some years as clerk to a justice of peace; where he found sufficient time to apply himself to history, poetry, and painting. Being recommended to Elizabeth countess of Kent, he enjoyed in her house, not only the use of all kinds of books, but the conversation of the great Mr Selden, who often employed Butler to write letters, and translate for him. He lived also some time with Sir Samuel Luke, a gentleman of an ancient family in Bedfordshire, and a famous commander under Oliver Cromwell: and he is supposed at this time to have wrote, or at least to have planned, his celebrated *Hudibras*; and under that character to have ridiculed the knight. The poem itself furnishes this key; where, in the first canto, *Hudibras* says,

" 'Tis sung, there is a valiant mamaluke
" In foreign land yclep'd — — —
" To whom we oft have been compar'd
" For person, parts, address, and beard."

After the restoration, Mr Butler was made secretary to the earl of Carbury, lord-president of Wales, who appointed him steward of Ludlow castle, when the court was revived there. No one was a more generous friend to him than the earl of Dorset and Middlesex, to whom it was owing that the court tasted his *Hudibras*. He had promises of a good place from the earl of Clarendon, but they were never accomplished; though the king was so much pleas'd with the poem, as often to quote it pleasantly in conversation. It is indeed said, that Charles ordered him the sum of 3000l.: but the sum being expressed in figures, somebody through whose hands the order pass'd, by cutting off a cypher, reduced it to 300l. which, though it pass'd the officers without fees, proved not sufficient to pay what he then owed; so that Butler was not a shilling the better for the king's bounty. He died in 1680: and though he met with many disappointments, was never reduced to any thing like want, nor did he die in debt. Mr Granger observes, that Butler "stands without rival in burlesque poetry. His *Hudibras* (says

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he) is, in its kind, almost as great an effort of genius, as the Paradise Lost itself. It abounds with uncommon learning, new rhimes, and original thoughts. Its images are truly and naturally ridiculous. There are many strokes of temporary satire, and some characters and allusions which cannot be discovered at this distance of time."

BUTLER (Joseph), late bishop of Durham, a prelate distinguished by his piety and learning, was the youngest son of Mr Thomas Butler, a reputable shop-keeper at Wantage, in Berkshire, where he was born in the year 1692. His father, who was a presbyterian, observing that he had a strong inclination to learning, after his being at a grammar-school, sent him to an academy in Gloucestershire, in order to qualify him for a dissenting minister; and while there, he wrote some remarks on Dr Clerk's first sermon at Boyle's lecture. Afterwards, resolving to conform to the established church, he studied at Oriel college, where he contracted an intimate friendship with Mr Edward Talbot, son of the bishop of Durham, and brother to the lord chancellor, who laid the foundation of his subsequent advancement. He was first appointed preacher at the Rolls, and rector of Haughton and Stanhope, two rich benefices in the bishopric of Durham. He quitted the Rolls in 1726; and published in 8vo a volume of sermons, preached at that chapel. After this he constantly resided at Stanhope, in the regular discharge of all the duties of his office, till the year 1733, when he was called to attend the lord chancellor Talbot as his chaplain, who gave him a prebend in the church of Rochester. In the year 1736, he was appointed clerk of the closet to queen Caroline, whom he attended every day, by her majesty's special command, from seven to nine in the evening. In 1738 he was appointed to the bishopric of Bristol; and not long afterwards to the deanery of St Paul's, London. He now resigned his living of Stanhope. In the year 1746, he was made clerk of the closet to the king; and in 1750, was translated to Durham. This rich preferment he enjoyed but a short time; for he died at Bath June 16th, 1752. His corpse was interred in the cathedral at Bristol; where there is a monument, with an inscription, erected to his memory. He died a bachelor. His deep learning and comprehensive mind appear sufficiently in his writings, particularly in that excellent treatise intitled, *The Analogy of religion, natural and revealed, to the constitution and course of nature*, published in 8vo, 1736.

BUTLER, the name anciently given to an officer in the court of France, being the same as the grand echançon, or great cup-bearer of the present times.

BUTLER, in the common acceptance of the word, is an officer in the houses of princes and great men, whose principal business is to look after the wine, plate, &c.

BUTLERAGE of wine, is a duty of 2 s. for every ton of wine imported by merchants strangers; being a composition in lieu of the liberties and freedoms granted to them by king John and Edward I. by a charter called *charta mercatoria*.

Butlerage was originally the only custom that was payable upon the importation of wines, and was taken and received by virtue of the regal prerogative, for the proper use of the crown. But for many years past,

there having been granted by parliament subsidies to the kings of England, and the duty of butlerage not repealed, but confirmed, they have been pleased to grant the same away to some nobleman, who, by virtue of such grant, is to enjoy the full benefit and advantage thereof, and may cause the same to be collected in the same manner that the kings themselves were formerly wont to do.

BUTMENT. Butments of arches are the same with buttresses. They answer to what the Romans call *sublicas*, the French *culees* and *butees*.

BUTMENTS, or *Abutments*, of a bridge, denote the two massives at the end of a bridge, whereby the two extreme arches are sustained and joined with the shore on either side.

BUTOMUS, the FLOWERING-RUSH, or *Water-gladiole*: A genus of the hexagynia order, belonging to the eneandria class of plants. There is no calyx, but it has six petals, and as many monospermous capsules. There is but one species, *viz.* the *umbellatus*; of which there are two varieties, the one with a white, the other with a rose-coloured, flower. Though common plants, they are very pretty, and are worth propagating in a garden where there is conveniency for an artificial bog, or where there are ponds of standing water, as is many times the case. Where these conveniences are wanting, they may be planted in cisterns, which should be kept filled with water, with about a foot thickness of earth in the bottom; and into this earth the roots should be planted, or the seeds sown as soon as they are ripe.

BUTRINTO, a port-town of Epirus, or Canina, in Turkey in Europe, situated opposite to the island of Corfu, at the entrance of the gulph of Venice. E. Long. 20. 40. N. Lat. 39. 45.

BUTT is used for a vessel, or measure of wine, containing two hogheads, or 126 gallons; otherwise called *pipe*. A butt of currans is from 15 to 2,200 weight.

Бутъ, or *Butt-ends*, in the sea-language, are the fore-ends of all planks under water, as they rise, and are joined one end to another.—Butt-ends in great ships are most carefully bolted; for if any one of them should spring or give way, the leak would be very dangerous and difficult to stop.

BUTTS, the place where archers meet with their bows and arrows to shoot at a mark, which we call shooting at the *butts*: (See ARCHERY).—Also *butts* are the short pieces of land in arable ridges and furrows.

BUTTER, a fat unctuous substance, prepared from milk by heating or churning.

It was late ere the Greeks appear to have had any notion of butter; their poets make no mention of it, and yet are frequently speaking of milk and cheese.

The Romans used butter no otherwise than as a medicine, never as a food.

The ancient Christians of Egypt burnt butter in their lamps instead of oil; and in the Roman churches, it was anciently allowed, during Christmas time, to burn butter instead of oil, on account of the great consumption of it otherwise.

Butter is the fat, oily, and inflammable part of the milk. This kind of oil is naturally distributed through all the substance of the milk in very small particles, which are interposed betwixt the caseous and serous parts, amongst which it is suspended by a slight adhesion, but without being dissolved. It is in the same itat:

Butter. in which oil is in emulsions: hence the same whiteness of milk and emulsions; and hence, by rest, the oily parts separate from both these liquors to the surface, and form a cream. See EMULSION.

When butter is in the state of cream, its proper oily parts are not yet sufficiently united together to form an homogeneous mass. They are still half separated by the interposition of a pretty large quantity of serous and caseous particles. The butter is completely formed by pressing out these heterogeneous parts by means of continued percussion. It then becomes an uniform soft mass.

Fresh butter which has undergone no change, has scarcely any smell; its taste is mild and agreeable, it melts with a weak heat, and none of its principles are disengaged by the heat of boiling water. These properties prove, that the oily part of butter is of the nature of the fat, fixed, and mild oils obtained from many vegetable substances by expression. See OILS.—The half fluid consistence of butter, as of most other concrete oily matters, is thought to be owing to a considerable quantity of acid united with the oily part; which acid is so well combined, that it is not perceptible while the butter is fresh and has undergone no change; but when it grows old, and undergoes some kind of fermentation, then the acid is disengaged more and more; and this is the cause that butter, like oils of the same kind, becomes rancid by age.

Butter is constantly used in food, from its agreeable taste: but to be wholesome, it must be very fresh and free from rancidity, and also not fried or burnt; otherwise its acrid and even caustic acid, being disengaged, disorders digestion, renders it difficult and painful, excites acrid empyreumatic belchings, and introduces much acrimony into the blood. Some persons have stomachs so delicate, that they are even affected with these inconveniences by fresh butter and milk. This observation is also applicable to oil, fat, chocolate, and in general to all oleaginous matters.

For the making of butter: When it has been churned, open the churn, and with both hands gather it well together, take it out of the butter-milk, and lay it into a very clean bowl, or earthen pan; and if the butter be designed to be used sweet, fill the pan with clear water, and work the butter in it to and fro, till it is brought to a firm consistence of itself, without any moisture. When this has been done, it must be scotched and sliced over with the point of a knife, every way as thick as possible, in order to fetch out the smallest hair, mote, bit of rag, strainer, or any thing that may have happened to fall into it. Then spread it thin in a bowl, and work it well together, with such a quantity of salt, as you think fit, and make it up into dishes, pounds, halfpounds, &c.

In the *Georgical Essays*, Vol. V. p. 209. we have the following method of making well-tasted butter from the milk of cows fed on turnips. "Let the bowls, either lead or wood, be kept constantly clean, and well scalded with boiling water before using. When the milk is brought into the dairy, to every eight quarts mix one quart of boiling water; then put up the milk into the bowls to stand for cream."

The trade in butter is very considerable. Some compute 50,000 tons annually consumed in London. It is chiefly made within 40 miles round the city. Fifty

thousand firkins are said to be sent yearly from Cambridge and Suffolk alone; each firkin containing 56 lbs. Uttoxeter in Staffordshire is a market famous for good butter, inasmuch that the London merchants have established a factory there for that article. It is bought by the pot, of a long cylindrical form, weighing 14 lb.

But no butter is esteemed equal to that which is made in the county of Essex, well known by the name of Epping butter, and which in almost every season of the year yields at London from one shilling to 14 pence per pound averdupoise. The following directions concerning the making and management of butter, including the Epping method, are extracted from the 3d volume of the Bath Society Papers.

In general it is to be observed, that the greater the quantity made from a few cows, the greater will be the farmer's profit; therefore he should never keep any but what are esteemed good milkers. A bad cow will be equally expensive in her keep, and will not perhaps (by the butter and cheese that is made from her) bring in more than from three to six pounds a-year; whereas a good one will bring from seven to ten pounds per annum: therefore it is obvious that bad cows should be parted with, and good ones purchased in their room. When such are obtained, a good servant should be employed to milk them; as through the neglect and mismanagement of servants, it frequently happens that the best cows are spoiled. No farmer should trust entirely to servants, but sometimes to see themselves that their cows are milked clean: for if any milk is suffered to remain in the udder, the cow will daily give less, till at length she will become dry before the proper time, and the next season she will scarce give milk sufficient to pay for her keep.

It sometimes happens that some of a cow's teats may be scratched or wounded so as to produce foul or corrupted milk: when this is the case, we should by no means mix it with the sweet milk, but give it to the pigs; and that which is conveyed to the dairy-house should remain in the pail till it is nearly cool, before it be strained, that is, if the weather be warm; but in frosty weather it should be immediately strained, and a small quantity of boiling water may be mixed with it, which will cause it to produce cream in abundance, and the more so if the pans or vats have a large surface.

During the hot summer-months, it is right to rise with or before the sun, that the cream may be skimmed from the milk ere the dairy becomes warm; nor should the milk at that season stand longer in the vats, &c. than 24 hours, nor be skimmed in the evening till after sun-set. In winter milk may remain unskimmed for 36 or 48 hours; the cream should be deposited in a deep pan, which should be kept during the summer in the coolest part of the dairy; or in a cool cellar where a free air is admitted, which is still better. Where people have not an opportunity of churning every other day, they should shift the cream daily into clean pans, which will keep it cool, but they should never fail to churn at least twice in the week in hot weather; and this work should be done in a morning before the sun appears, taking care to fix the churn where there is a free draught of air. If a pump-churn be to be used, it may be plunged a foot deep into a tub of cold water, and should remain there during the whole

Butter. whole time of churning, which will very much harden the butter. A strong rancid flavour will be given to butter, if we churn so near the fire as to heat the wood in the winter season.

After the butter is churned, it should be immediately washed in many different waters till it is perfectly cleansed from the milk; but here it must be remarked, that a warm hand will soften it, and make it appear greasy, so that it will be impossible to obtain the best price for it. The cheesemongers use two pieces of wood for their butter; and if those who have a very hot hand were to have such, they might work the butter so as to make it more saleable.

The Epping butter is made up for market in long rolls, weighing a pound each; in the county of Somerset they dish it in half pounds for sale; but if they forget to rub salt round the inside of the dish, it will be difficult to work it so as to make it appear handsome.

Butter will require and endure more working in winter than in summer; but it is remarked, that no person whose hand is warm by nature makes good butter.

Those who use a pump-churn must endeavour to keep a regular stroke; nor should they admit any person to assist them, except they keep nearly the same stroke: for if they churn more slowly, the butter will in the winter *go back*, as it is called; and if the stroke be more quick and violent in the summer, it will cause a fermentation, by which means the butter will imbibed a very disagreeable flavour.

Where people keep many cows, a barrel-churn is to be preferred; but if this be not kept very clean, the bad effects will be discovered in the butter; nor must we forget to shift the situation of the churn when we use it, as the seasons alter, so as to fix it in a warm place in winter, and where there is a free air in summer.

In many parts of this kingdom they colour their butter in winter, but this adds nothing to its goodness; and it rarely happens that the farmers in or near Epping use any colour, but when they do, it is very innocent. They procure some found carrots, whose juice they express through a sieve, and mix with the cream when it enters the churn, which makes it appear like May butter; nor do they at any time use much salt, though a little is absolutely necessary.

As they make in that country but very little cheese, so of course very little whey-butter is made: nor indeed should any person make it, except for present use, as it will not keep good more than two days; and the whey will turn to better account to fatten pigs with. Nothing feeds these faster, nor will any thing make them so delicately white. At the same time it is to be observed, that no good bacon can be made from pigs thus fattened; where much butter is made, good cheese for servants may be obtained from skimmed milk, and the whey will afterwards do for store pigs.

The foregoing rules will suffice for making good butter in any country; but as some people are partial to the west-country method, it shall be described as briefly as possible.

In the first place, they deposit their milk in earthen pans in their dairy-house, and (after they have stood twelve hours in the summer, and double that space in

Butter. the winter) they remove them to stoves made for that purpose, which stoves are filled with hot embers; on these they remain till bubbles rise, and the cream changes its colour, it is then deemed heated enough, and this they call scalded cream; it is afterwards removed steadily to the dairy, where it remains twelve hours more, and is then skimmed from the milk and put into a tub or churn: if it be put into a tub, it is beat well with the hand, and thus they obtain butter; but a cleaner way is to make use of a churn. Some scald it over the fire, but then the smoke is apt to affect it; and in either case, if the pans touch the fire, they will crack or fly, and the milk and cream will be wasted.

The Cambridgeshire salt butter is held in the highest esteem, and is made nearly after the same method as the Epping; and by washing and working the salt from it the cheesemongers in London often sell it at a high price for fresh butter. They deposit it when made into wooden tubs or firkins, which they expose to the air for two or three weeks, and often wash them; but a readier way is to season them with unslaked lime, or a large quantity of salt and water well boiled will do: with this they must be scrubbed several times, and afterwards thrown into cold water, where they should remain three or four days, or till they are wanted; then they should be scrubbed as before, and well rinsed with cold water; but before they receive the butter, care must be taken to rub every part of the firkin with salt; then if the butter be properly made, and perfectly sweet, it may be gently pressed into the firkin; but it must be well salted when it is made up, and the salt should be equally distributed through the whole mass, and a good handful of salt must be spread on the top of the firkin before it is headed, after which the head should be immediately put on.

They pursue nearly the same method in Suffolk and Yorkshire; nor is the butter that is made in these counties much inferior to that made in Cambridgeshire; indeed it is often sold in London for Cambridge butter; and no people make more butter from their cows than the Yorkshire farmers do, which is certainly owing to the care they take of their cows in the winter; as at that season they house them all, feed them with good hay, and never suffer them to go out (except to water) but when the weather is very serene; and when their cows calve, they give them comfortable malt mashes for two or three days after; but these cows never answer if they are removed to other counties, except the same care and attendance be given them, and then none answer better.

Land whereon cows feed does very often affect the butter. If wild garlic, charlock, or May-weed, be found in a pasture ground, cows should not feed therein till after they have been mown, when such pernicious plants will appear no more till the following spring; but those cows that give milk must not partake of the hay made therefrom, as that will also diffuse its bad qualities.

Great part of the Epping butter is made from cows that feed during the summer months in Epping forest, where the leaves and shrubby plants contribute greatly to the flavour of the butter. The mountains of Wales, the highlands of Scotland, and the moors, commons, and heaths in England, produce excellent butter where it is properly managed; and though not equal in quantity,

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quantity, yet far superior in quality to that which is produced from the richest meadows; and the land is often blamed when the butter is bad through mismanagement, stultifness, or inattention.

Turnips and rape affect milk and butter, but brewers grains are sweet and wholesome food, and will make cows give abundance of milk; yet the cream thereon will be thin, except good hay be given at the same time, after every meal of grains. Coleworts and cabbages are also excellent food; and if these and favours were cultivated for this purpose, the farmers in general would find their account in it.

Cows should never be suffered to drink improper water; stagnated pools, water wherein frogs, &c. spawn, common sewers, and ponds that receive the drainings of stables, are improper.

Divers abuses are committed in the packing and salting of butter, to increase its bulk and weight, against which we have a statute express. Pots are frequently laid with good butter for a little depth at the top, and with bad at the bottom; sometimes the butter is set in rolls, only touching at top, and standing hollow at bottom. To prevent these cheats, the factors at Utoxeter keep a surveyor, who, in case of suspicion, tries the pots with an iron instrument called a *butter-bore*, made like a cheese-taster, to be struck in obliquely to the bottom.

Shower of BUTTER. Naturalists speak of showers and dews of a butyraceous substance. In 1695, there fell in Ireland, during the winter and ensuing spring, a thick yellow dew, which had the medicinal properties of butter.

BUTTER, among chemists, a name given to several preparations, on account of their consistence resembling that of butter; as butter of antimony, &c. See CHEMISTRY-Index.

BUTTER-Bur, in botany. See TUSSILAGO.

BUTTER-Milk, the milk which remains after the butter is come by churning. Butter-milk is esteemed an excellent food, in the spring especially, and is particularly recommended in hectic fevers. Some make curds of butter-milk, by pouring into it a quantity of new milk hot.

BUTTER-Wort; in botany. See PINGVICULA.

BUTTERFLY, the English name of a numerous genus of insects. See PAPILIO.

BUTTERFLY-Shell, in natural history. See VOLUTA.

Method of preserving BUTTERFLIES. See INSECTS.

Method of making Pictures of BUTTERFLIES. "Take

butterflies or field-moths, either those caught abroad, or such as are taken in caterpillars and nursed in the house till they be flies; clip off their wings very close to their bodies, and lay them on clean paper, in the form of a butterfly when flying; then have ready prepared gum arabic that hath been some time dissolved in water, and is pretty thick; if you put a drop of ox-gall into a spoonful of this, it will be better for the use; temper them well with your finger, and spread a little of it on a piece of thin white paper, big enough to take both sides of your fly; when it begins to be clammy under your finger, the paper is in proper order to take the feathers from the wings of the fly; then lay the gummed side on the wings, and it will take them up; then double your paper so as to have all the wings between the paper; then lay it on a table, pres-

sing it close with your fingers; and you may rub it gently with some smooth hard thing; then open the paper and take out the wings, which will come forth transparent: the down of the upper and under side of the wings, sticking to the gummed paper, form a just likeness of both sides of the wings in their natural shapes and colours. The nicety of taking off lies depends on a just degree of moisture of the gum'd paper: for if it be too wet, all will be blotted and confused; and if too dry, your paper will stick so fast together, that it will be torn in separation. When you have opened your gum'd papers, and they are dry, you must draw the bodies from the natural ones, and paint them in water-colours: you must take paper that will bear ink very well for this use; for sinking paper will separate with the rest, and spoil all."

BUTTERIS, in the manege, an instrument of steel, fitted to a wooden handle, wherewith they pare the foot, or cut off the hoof, of a horse.

BUTTOCK *of a SHIP*, is that part of her which is her breadth right astern, from the tack upwards; and a ship is said to have a broad or a narrow buttock, according as she is built broad or narrow at the transum.

BUTTON, an article in dress, whose form and use are too well known to need description. They are made of various materials, as mohair, silk, horse-hair, metal, &c.

Method of making common BUTTONS. Common buttons are generally made of mohair; some indeed are made of silk, and others of thread; but the latter are of a very inferior sort. In order to make a button, the mohair must be previously wound on a bobbin; and the mould fixed to a board by means of a bodkin thrust through the hole in the middle of it. This being done, the workman wraps the mohair round the mould in three, four, or six columns, according to the button.

Horse-hair BUTTONS. The moulds of these buttons are covered with a kind of stuff composed of silk and hair; the warp being belladine silk, and the shoot horse-hair. This stuff is wove with two selvages, in the same manner and in the same loom as ribbands. It is then cut into square pieces proportional to the size of the button, wrapped round the moulds, and their selvages stitched together, which form the under part of the button.

Cleaning of BUTTONS. A button is not finished when it comes from the maker's hands; the superfluous hairs and hubs of silk must be taken off, and the button rendered glossy and beautiful before it can be sold. This is done in the following manner: A quantity of buttons are put into a kind of iron sieve, called by workmen a *singeing box*. Then a little spirit of wine being poured into a kind of shallow iron dish, and set on fire, the workman moves and shakes the singeing box, containing the buttons, briskly over the flame of the spirit, by which the superfluous hairs, hubs of silk, &c. are burnt off, without damaging the buttons. Great care, however, must be taken that the buttons in the singeing box be kept continually in motion; for if they are suffered to rest over the flame, they will immediately burn. When all these loose hairs, &c. are burnt off by the flame of the spirit, the buttons are taken out of the singeing box, and put, with a proper

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Button.

Button. quantity of the crumbs of bread, into a leather bag, about three feet long, and of a conical shape; the mouth or smaller end of which being tied up, the workman takes one of the ends in one hand and the other in the other, and shakes the hand briskly with a particular jerk. This operation cleanses the buttons, renders them very glossy, and fit for sale.

Gold-twist Buttons. The mould of these buttons is first covered in the same manner with that of common buttons. This being done, the whole is covered with a thin plate of gold or silver, and then wrought over of different forms, with purl and gimp. The former is a kind of thread composed of silk and gold-wire twisted together; and the latter, capillary tubes of gold or silver, about the tenth of an inch long. These are joined together by means of a fine needle, filled with silk, thrust through their apertures, in the same manner as beads or bugles.

The manner of making Metal-Buttons. The metal with which the moulds are intended to be covered is first cast into small ingots, and then flatted into thin plates or leaves, of the thickness intended, at the flattening mills; after which it is cut into small round pieces proportionable to the size of the mould they are intended to cover, by means of proper punches on a block of wood covered with a thick plate of lead. Each piece of metal thus cut out of the plate is reduced into the form of a button, by beating it successively in several cavities, or concave moulds, of a spherical form, with a convex punchon of iron, always beginning with the shallowest cavity or mould, and proceeding to the deeper, till the plate has acquired the intended form: and the better to manage so thin a plate, they form ten, twelve, and sometimes even twenty-four, to the cavities, or concave moulds, at once; often sealing the metal during the operation, to make it more ductile. This plate is generally called by workmen the *cap of the button*.

The form being thus given to the plates or caps, they strike the intended impression on the convex side, by means of a similar iron punchon, in a kind of mould engraven *en creux*, either by the hammer or the press used in coining. The cavity or mould, wherein the impression is to be made, is of a diameter and depth suitable to the sort of button intended to be struck in it; each kind requiring a particular mould. Between the punchon and the plate is placed a thin piece of lead, called by workmen a *bob*, which greatly contributes to the taking off all the strokes of the engraving; the lead, by reason of its softness, easily giving way to the parts that have relievó, and as easily insinuating itself into the traces or indentures.

The plate thus prepared makes the cap or shell of the button. The lower part is formed of another plate, in the same manner, but much flatter, and without any impression. To the last or under plate is soldered a small eye made of wire, by which the button is to be fastened.

The two plates being thus finished, they are soldered together with soft solder, and then turned in a lathe. Generally indeed they use a wooden mould, instead of the under plate; and in order to fasten it, they pass a thread or gut across, through the middle of the mould, and fill the cavity between the mould and the cap with cement, in order to render the button firm and solid;

for the cement entering all the cavities formed by the relievó of the other side, sustains it, prevents its flattening, and preserves its hofse or design.

Button, in the manege. Button of the reins of a bridle, is a ring of leather, with the reins passed thro' it, which runs all along the length of the reins. To put a horse under the button, is when a horse is stopped without a rider upon his back, the reins being laid on his neck, and the button lowered so far down that the reins bring in the horse's head, and fix it to the true posture or carriage. It is not only the horses which are managed in the hand that must be put under the button; for the same method must be taken with such horses as are brid between two pillars, before they are backed.

Button-Wood. See CEPHALANTHUS.

Button's-Bay, the name of the north part of Hudson's bay, in North America, whereby Sir Thomas Button attempted to find out a north-west passage to the East Indies. It lies between 80° and 100° west longitude, and between 60° and 66° north latitude.

Button-Stone, in natural history, a kind of figured stone, so denominated from its resembling the button of a garment. Dr Hook gives the figure of three sorts of button-stones, which seem to have been nothing else but the filling up of three several sorts of shells. They are all of them very hard flints; and have this in common, that they consist of two bodies, which seem to have been the filling up of two holes or vents in the shell. Dr Plot describes a species finely striated from the top, after the manner of some hair buttons. This name is also given to a peculiar species of slate found in the marquise of Bareith, in a mountain called *Fichtelberg*; which is extremely different from the common sorts of slate, in that it runs with great ease into glass in five or six hours time, without the addition of any salt or other foreign substance, to promote its vitrification, as other stones require. It contains in itself all the principles of glass, and really has mixed in its substance the things necessary to be added to promote the fusion of other stony bodies. The Swedes and Germans make buttons of the glass produced from it, which is very black and shining, and it has hence its name *button-stone*. They make several other things also of this glass, as the handles of knives and the like, and send a large quantity of it unwrought in round cakes as it cools from the fusion into Holland.

BUTTRESS, a kind of butment built archwise, or a mass of stone or brick, serving to prop or support the sides of a building, wall, &c. on the outside, where it is either very high, or has any considerable load to sustain on the other side, as a bank of earth, &c.—Buttresses are used against the angles of steeples and other buildings of stone, &c. on the outside, and along the walls of such buildings as have great and heavy roofs, which would be subject to thrust the walls out, unless very thick, if no buttresses were placed against them. They are also placed for a support and butment against the feet of some arches, that are turned across great halls in old palaces, abbeys, &c.

BUTUS (anc. geog.), a town of Lower Egypt, on the west side of the branch of the Nile, called *Thermuthiacus*; towards the mouth called *Ossium Sebennyticum*: in this town stood an oracle of Latona, (Strabo, Herodotus). Ptolemy places Butus in the Nomos

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Buxton.

H. 100.

Phthenotes: it is also called *Buto, ur*, (Herodotus, Stephanus). It had temples of Apollo and Diana, but the largest was that of Latona where the oracle stood.

BUTZAW, a town of lower Saxony, in Germany; it stands upon the river Varnow, on the road from Schwerin to Roslock, lying in E. Long. 13. 12. N. Lat. 54. 50.

BUVETTE, or **BEUVETTE**, in the French laws, an established place in every court, where the lawyers and counsellors may retire, warm themselves, and take a glass of wine by way of refreshment, at the king's charge. There is one for each court of parliament, but these are only for persons belonging to that body; there are others in the *palais*, whither other persons also resort.

BUXENTUM, (Livy, Velleius, Ptolemy, Mela, Pliny); **Pyxus**, (Strabo, Pliny): a town of Lucania, first built by the people of Messana, but afterwards deserted, (Strabo). A Roman colony was sent thither, (Livy, Velleius): and when found still thin of inhabitants, a new colony was sent by a decree of the senate. Its name is from *buxus*, the box-tree, growing plentifully there. Strabo says, the name *Pyxus* includes a promontory, port, and river, under one. Now *Policastro*, in the Hither Principato of Naples. E. Long. 15. 40. N. Lat. 40. 20.

BUXTON, a place in the peak of Derbyshire, celebrated for its medicinal waters, and lying in W. Long. 0. 20. N. Lat. 53. 20.

It has been always believed by our antiquaries, that the Romans were acquainted with these wells, and had frequented them much, as there is a military way still visible, called the *Bath-gate*, from Burgh to this place. This was verified about 50 years ago, when Sir Thomas Delves, of Cheshire, in memory of a cure he received here, caused an arch to be erected; in digging the foundations for which, they came to the remains of a solid and magnificent structure of Roman workmanship; and in other places of the neighbourhood, very capacious leaden vessels, and other utensils, of Roman workmanship, have been discovered. These waters have always been reckoned inferior to those in Somersetshire; but seem never to have been totally defused. They are mentioned by Leland, as well known 200 years ago; but it is certain they were brought into greater credit by Dr Jones in 1572, and by George earl of Shrewsbury, who erected a building over the bath, then composed of nine springs. This building was afterwards pulled down, and a more commodious one erected at the expence of the earl of Devonshire. In doing this, however, the ancient register of cures drawn up by the bath-warden, or physician attending the baths, and subscribed by the hands of the patients, was lost.

The warm waters of Buxton are, the bath, consisting of nine springs, as already mentioned, St Ann's well, and St Peter's or Bingham well. St Ann's well rises at the distance of somewhat more than 32 yards north-east from the bath. It is chiefly supplied from a spring on the north side, out of a rock of black limellone or bastard marble. It formerly rose into a stone basin, shut up within an ancient Roman brick wall, a yard square within, a yard high on three sides, and open on the fourth. But, in 1709, Sir Thomas Delves, as already mentioned, erected an arch over it which still

continues. It is 12 feet long, and as many broad, set round with stone steps on the inside. In the midst of this dome the water now springs up into a stone basin two feet square. St Peter's or Bingham well rises about 20 yards south-east of St Ann's. It is also called *Leigh's well*, from a memorable cure received from it by a gentleman of that name. It rises out of a black limellone, in a very dry ground; and is not so warm as St Ann's well.

From the great resort of company to the waters, this place has grown into a large straggling town, which is daily increasing. The houses are chiefly, or rather solely, built for the reception of invalids; and many of them are not only commodious, but elegant. The duke of Devonshire has lately erected a most magnificent building in the form of a crescent, with piazzas, under which the company walk in wet or cold weather. It is divided into different hotels, shops, &c. with a public coffee-room, and a very elegant room for assemblies and concerts.

The hot water resembles that of Bristol. It has a sweet and pleasant taste. It contains the calcareous earth, together with a small quantity of sea salt, and an inconsiderable portion of a purging salt; but no iron can be discovered in it. This water taken inwardly is esteemed good in the diabetes; in bloody urine; in the bilious elolic; in loss of appetite, and coldness of the stomach; in inward bleedings; in atrophy; in contraction of the vessels and limbs, especially from age; in cramps and convulsions; in the dry asthma without a fever; and also in barrenness. Inwardly and outwardly, it is said to be good in rheumatic and scorbutic complaints; in the gout; in inflammation of the liver and kidneys, and in consumptions of the lungs; also in old strains; in hard callous tumours; in withered and contracted limbs; in the itch, scabs, nodes, chalky swellings, ring-worms, and other similar complaints.—Besides the hot water, there is also a cold chalybeate water, with a rough iron taste: It resembles the Tunbridge water in virtues.

For the methods of composing artificial Buxton water, or of impregnating the original water with a greater quantity of its own gas or with other gases, see *WATERS (Medicinal)*.

BUXTON (Jedediah), a prodigy with respect to skill in numbers. His father, William Buxton, was schoolmaster of the same parish, where he was born in 1704: yet Jedediah's education was so much neglected, that he was never taught to write; and with respect to any other knowledge but that of numbers, seemed always as ignorant as a boy of ten years of age. How he came first to know the relative proportions of numbers, and their progressive denominations, he did not remember; but to this he applied the whole force of his mind, and upon this his attention was constantly fixed, so that he frequently took no cognizance of external objects, and when he did it, it was only with respect to their numbers. If any space of time was mentioned, he would soon after say it was so many minutes; and if any distance of way, he would assign the number of hairs breadth, without any question being asked, or any calculation expected by the company. When he once understood a question, he began to work with amazing facility, after his own method, without the use of a pen, pencil, or chalk, or even understanding the common

Buxton,
Buxtorf.Buxtorf,
Buxus.

rules of arithmetic as taught in the schools. He would stride over a piece of land or a field, and tell you the contents of it almost as exact as if you had measured it by the chain. In this manner he measured the whole lordship of Elmtou, of some thousand acres, belonging to Sir John Rhodes, and brought him the contents, not only in acres, roods, and perches, but even in square inches. After this, for his own amusement, he reduced them into square hair-breadths, computing 48 to each side of the inch. His memory was so great, that while resolving a question, he could leave off, and resume the operation again where he left off the next morning, or at a week, a month, or at several months, and proceed regularly till it was completed. His memory would doubtless have been equally retentive with respect to other objects, if he had attended to other objects with equal diligence; but his perpetual application to figures prevented the smallest acquisition of any other knowledge. He was sometimes asked, on his return from church, whether he remembered the text, or any part of the sermon, but it never appeared that he brought away one sentence; his mind, upon a closer examination, being found to have been busied, even during divine service, in his favourite operation, either dividing some time, or some space, into the smallest known parts, or resolving some question that had been given him as a test of his abilities.

This extraordinary person living in laborious poverty, his life was uniform and obscure. Time, with respect to him, changed nothing but his age; nor did the seasons vary his employment, except that in winter he used a flail, and in summer a ling-hook. In the year 1754, he came to London, where he was introduced to the royal society, who, in order to prove his abilities, asked him several questions in arithmetic, and he gave them such satisfaction, that they dismissed him with a handsome gratuity. In this visit to the metropolis, the only object of his curiosity, except figures, was his desire to see the king and royal family; but they being just removed to Kensington, Jedediah was disappointed. During his residence in London, he was taken to see King Richard III. performed at Drury-lane playhouse; and it was expected, either that the novelty and the splendor of the show would have fixed him in astonishment, or kept his imagination in a continual hurry, or that his passions would, in some degree, have been touched by the power of action, if he had not perfectly understood the dialogue. But Jedediah's mind was employed in the playhouse just as it was employed in every other place. During the dance, he fixed his attention upon the number of steps; he declared, after a fine piece of music, that the innumerable sounds produced by the instruments had perplexed him beyond measure; and he attended even to Mr Garrick, only to count the words that he uttered, in which he said he perfectly succeeded. Jedediah returned to the place of his birth, where, if his enjoyments were few, his wishes did not seem to be more. He applied to his labour, by which he subsisted with cheerfulness; he regretted nothing that he left behind him in London; and it continued to be his opinion, that a slice of rusty bacon afforded the most delicious repast.

BUXTORF (John), a learned professor of Hebrew at Basil, who, in the 17th century, acquired the highest reputation for his knowledge of the Hebrew and Chal-

dee languages. He died of the plague at Basil in 1629, aged 65. His principal works are, 1. A small but excellent Hebrew grammar; the best edition of which is that of Leyden in 1701, revised by Leusden. 2. A treasure of the Hebrew grammar. 3. An Hebrew concordance, and several Hebrew lexicons. 4. *Institutio epistolaris Hebraica*. 5. *De abbreviaturis Hebræorum*, &c.

BUXTORF (John), the son of the former, and a learned professor of the oriental languages at Basil, distinguished himself, like his father, by his knowledge of the Hebrew language, and his rabbinical learning. He died at Basil in 1664, aged 65 years. His principal works are, 1. His translation of the *Mora Nivochim*, and the *Cozri*. 2. A Chaldee and Syriac lexicon. 3. An anticritic against Cappel. 4. A treatise on the Hebrew points and accents against the same Cappel.

BUXUS, the BOX-TREE: A genus of the tetrandria order, belonging to the monœcia class of plants; and in the natural method ranking under the 38th order, *Tricoccæ*. The male calyx is triphyllous, the germen an embryo, or imperfect rudiment. The female calyx is tetraphyllous: there are three petals, and as many styles: the capsule three beaked and trilocular, with three seeds.

Species. 1. The arborefcens, with oval leaves. 2. The angustifolia, or narrow-leaved box. These two sorts grow in great plenty upon Boxhill near Dorking in Surry in England. Here were formerly large trees of that kind; but now they are much fewer in number. There are two or three varieties of the first sort which are propagated in gardens; one with yellow, and the other with white striped leaves. Another hath the tips of the leaves only marked with yellow, and is called *tipped box*. 3. The suffruticosa, dwarf, or Dutch box, commonly used for bordering of flower-beds.

Culture. The two first sorts may be raised from seeds; and may be also propagated by cuttings, which are to be planted in the autumn in a shady border. The best season for removing these trees is in October; though, if care be used to take them up with a good ball of earth, they may be transplanted almost at any time except the middle of summer. The dwarf box is increased by parting the roots, or planting the slips; but as it makes so great an increase of itself, and so easily parts, it is hardly worth while to plant the slips that have no roots.

Uses. The tree or large box is proper to intermix in clumps of evergreens, &c. where it adds to the variety of such plantations: they are a very great ornament to cold and barren soils where few other things will grow. The dwarf kind of box is used for bordering flower-beds, or other purposes of that nature; and for this it far excels any other plant, being subject to no injuries from cold or heat. It is of long duration; is easily kept handsome; and, by the firmness of its rooting, keeps the mould in the borders from washing into the gravel walks more effectually than any plant whatever.—Boxwood is extremely hard and smooth, and therefore well adapted to the use of the turner. Combs, mathematical instruments, knife-handles, and button-moulds, are made of it. It may properly enough be substituted in default of ebony, the yellow alburnum of which it perfectly resembles. In the Ephemerides of the curious there is the following account of the efficacy.

Buying
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Buzet.

ficacy of boxwood in making hair grow. "A young woman of Gunberg in Lower Silesia, having had a malignant dysentery which occasioned the falling off of all her hair, was adviſed by a perſon, ſome time after her recovery (as her hair was not likely to grow again of itſelf, her head being then as bare as the hand), to waſh it all over with a decoction of boxwood; which ſhe readily did, without the addition of any other drug. Hair of a cheſnut colour grew on her head, as ſhe was told it would do; but having uſed no precaution to ſecure her neck and face from the lotion, they became covered with red hair to ſuch a degree, that ſhe ſeemed little different from an ape or a monkey." This decoction has been recommended by ſome as a powerful ſudorific, preferable even to guaiacum; but the taſte readily diſcovers that it wants the qualities of that wood. Neither the wood nor the leaves of the box-tree at preſent are uſed for any other medicinal purpoſe than the diſtillation of an empyreumatic oil; and an oil of nearly the ſame quality is obtained from almoſt every other wood.

BUYING, the act of making a purchaſe, or of acquiring the property of a thing for a certain price.

Buying ſtands oppoſed to ſelling, and differs from borrowing or hiring, as in the former the property of the thing is alienated for perpetuity, which in the latter is not. By the civil law, perſons are allowed to buy hope, *ſpem pretio emere*, that is, to purchaſe the event or expectation of any thing. E. gr. The fiſh or birds a perſon ſhall catch, or the money he ſhall win in gaming.

There are different ſpecies of buying in uſe among traders; as, buying on one's own account, oppoſed to buying on commiſſion; buying for ready money, which is when the purchaſer pays in actual ſpecie on the ſpot; buying on credit, or for a time certain, is when the payment is not to be preſently made, but, in lieu thereof, an obligation given by the buyer for payment at a time future; buying on delivery, is when the goods purchaſed are only to be delivered at a certain time future.

Buying the reſuſal, is giving money for the right or liberty of purchaſing a thing at a fixed price, in a certain time to come; chiefly uſed in dealing for ſhares in ſtock. This is ſometimes alſo called by a cant name, *buying the bear*.

Buying the ſmall-pox, is an appellation given to a method of procuring that diſeaſe by an operation ſimilar to inoculation; frequent in South Wales, where it has obtained time out of mind. It is performed either by rubbing ſome of the *pus* taken out of a puſtule of a variolous perſon on the ſkin, or by making a puncture in the ſkin with a pin dipped in ſuch pus.

BUYS, a town of Dauphiny in France, ſituated on the borders of Provence. E. Long. 5. 20. N. Lat. 44. 25.

BUZANCOIS, a ſmall town of Berry in France, ſituated on the borders of Tourain, in E. Long. 1. 29. N. Lat. 46. 38.

BUZBACH, a town of Germany, in Weſteravia and the county of Holmes, one the confines of Hanau. E. Long. 10. 51. N. Lat. 50. 22.

BUZET, a ſmall town of France, in Languedoc, ſeated on the river Torne, in E. Long. 1. 45. N. Lat. 43. 47.

BUZZARD, in ornithology, the name of ſeveral ſpecies of the hawk kind. See FALCO.

BYBLUS, (anc. geog.) a town of Phœnicia, ſituated between Berytus and Botrys: it was the royal reſidence of Cinyras; ſacred to Adoniſ. Pompey delivered it from a tyrant, whom he cauſed to be beheaded. It ſtood at no great diſtance from the ſea, on an eminence, (Strabo): near it ran the Adoniſ into the Mediterranean. Now in ruins.

BYCHOW, a ſmall town of Lithuania in Poland, ſituated on the river Nieper, in E. Long. 30. 2. N. Lat. 53. 57.

BY-LAWS, are laws made *obiter*, or by the by; ſuch as orders and conſtitutions of corporations for the governing of their members, of court-lects, and courts baron; commoners, or inhabitants in vills, &c. made by common aſſent, for the good of thoſe that made them, in particular caſes whereunto the public law doth not extend; ſo that they bind farther than the common or ſtatute law: guilds and fraternities of trades by letters patent of incorporation, may likewiſe make by-laws for the better regulation of trade among themſelves or with others. In Scotland theſe laws are called laws of *birlaw*, or *burlaw*; which are made by neighbours elected by common conſent in the *birlaw courts*, wherein knowledge is taken of complaints betwixt neighbour and neighbour; which men ſo choſen are judges and arbitrators, and ſtyled *birlaw-men*. And birlaws, according to Skene, are *leges ruſticorum*, laws made by huſbandmen, or townſhips, concerning neighbourhood among them. All by-laws are to be reaſonable, and for the common benefit, not private advantage of particular perſons, and muſt be agreeable to the public laws in being.

BYNG (George), lord viſcount Torrington, was the ſon of John Byng, Eſq; and was born in 1663. At the age of 15, he went volunteer to ſea with the king's warrant. His early engagement in this courſe of life gave him little opportunity of acquiring learning or cultivating the polite arts; but by his abilities and activity as a naval commander he furniſhed abundant matter for the pens of others. After being ſeveral times advanced, he was in 1702 raiſed to the command of the Naſſau, a third rate, and was at the taking and burning the French fleet at Vigo; and the next year he was made rear-admiral of the red. In 1704, he ſerved in the grand fleet ſent to the Mediterranean under Sir Cloudeſly Shovel, as rear-admiral of the red; and it was he who commanded the Squadron that attacked, cannonaded, and reduced Gibraltar. He was in the battle of Malaga, which followed ſoon after; and for his behaviour in that action queen Anne conferred on him the honour of knighthood. In 1705, in about two months time, he took 12 of the enemies largeſt privateers, with the *Thetis*, a French man of war of 44 guns; and alſo ſeveral merchant ſhips, moſt of them richly laden. The number of men taken on board was 2070, and of guns 334. In 1718, he was made admiral and commander in chief of the fleet; and was ſent with a Squadron into the Mediterranean for the protection of Italy, according to the obligation England was under by treaty, againſt the invaſion of the Spaniards; who had the year before ſurprized Sardinia, and had this year landed an army in Sicily. In this expedition he diſpatched captain Walton in the *Canterbury*, with five more ſhips in

Buzzard

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Buzet.

Byng
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Byrom.

pursuit of six Spanish men of war, with galleys, fire-ships, bomb-vessels, and store-ships, who separated from the main fleet, and stood in for the Sicilian shore. The captain's laconic epistle on this occasion is worthy of notice; which showed that fighting was his talent as well as his admiral's, and not writing.

" Sir,

" We have taken and destroyed all the Spanish ships and vessels which were upon the coast, as per margin.

Canterbury, off Syracuse,

" I am, &c.

August 16th, 1718.

G. Walton."

From the account referred to, it appeared that he had taken four Spanish men of war, with a bomb-vessel and a ship laden with arms; and burned four, with a fire-ship and bomb-vessel. The king made the admiral an handsome present, and sent him plenipotentiary powers to negotiate with the princes and states of Italy as there should be occasion. He procured the emperor's troops free access into the fortresses that still held out in Sicily; sailed afterwards to Malta, and brought out the Sicilian galleys, and a ship belonging to the Turkey company. Soon after he received a gracious letter from the emperor Charles VI. written with his own hand, accompanied with a picture of his imperial majesty, set round with very large diamonds, as a mark of the grateful sense he had of his services. It was entirely owing to his advice and assistance that the Germans retook the city of Messina in 1719, and destroyed the ships that lay in the bay; which completed the ruin of the naval power of Spain. The Spaniards being much distressed, offered to quit Sicily; but the admiral declared, that the troops should never be suffered to quit the island till the king of Spain had acceded to the quadruple alliance. And to his conduct it was entirely owing that Sicily was subdued, and his Catholic majesty forced to accept the terms prescribed him by the quadruple alliance. After performing so many signal services, the king received him with the most gracious expressions of favour and satisfaction; made him rear-admiral of England and treasurer of the navy, one of his most honourable privy-council, baron Byng of Southill in the county of Bedford, viscount Torrington in Devonshire, and one of the knights companions of the Bath upon the revival of that order. In 1727, George II. on his accession to the crown, placed him at the head of his naval affairs, as first lord commissioner of the admiralty; in which high station he died January 15th 1733, in the 70th year of his age, and was buried at Southill in Bedfordshire.

BYNG (the honourable George), Esq; the unhappy son of the former, was bred to sea, and rose to the rank of admiral of the blue. He gave many proofs of courage; but was at last shot, upon a dubious sentence for neglect of duty, in 1757. See BRITAIN, N 433.

BYRLAW or BURLAW-*Larus* in Scotland. See BY-LAWS.

BYROM (John), an ingenious poet of Manchester, born in 1691. His first poetical essay appeared in the Spectator, N^o 603, beginning, " My time, O ye muses, was happily spent;" which, with two humorous letters on dreams, are to be found in the eighth volume. He was admitted a member of the royal society in 1724; and having originally entertained thoughts of practising physic, to which the title of *doctor* is incident, that was

the appellation by which he was always known: but reducing himself to narrow circumstances by a precipitate marriage, he supported himself by teaching a new method of writing short-hand, of his own invention; until an estate devolved to him by the death of an elder brother. He was a man of lively wit; of which, whenever a favourable opportunity tempted him to indulge it, he gave many humorous specimens. He died in 1763; and a collection of his Miscellaneous poems was printed at Manchester, in 2 vols 8vo. 1773.

BYRRHUS, in zoology, a genus of insects belonging to the order of coleoptera. The feelers are clavate, pretty solid, and a little compressed: There are five species, all of which are to be found on particular plants; and principally distinguished from one another by the colour and figure of the elytra, or crustaceous wing-cases.

The *byrrhus ferophularix*, which is very common upon flowers, it is very hard to describe properly. Its body is almost oval; the ground colour black; but the under part of the abdomen appears almost entirely white, owing to an infinite number of minute scales, of that colour with which it is covered. The head is small, and often drawn back under the thorax, which latter is broad, covered with white and reddish scales, through which the black ground in some places appears. The elytra are bent in, and even rather inclose the sides and under part of the body. They are black, with white and red scales, which form a kind of embroidered work. First, there is observable a white transversal stripe, somewhat broad on the top of the elytra; at the bottom of them, there are two white distinct spots near the future, one upon each elytrum. The ruddy colour occupies chiefly the lower end of the future of the elytra, and the upper part of them, near their connection with the thorax. This species is common in gardens. If rubbed, the small coloured scale comes off, and the insect appears almost entirely black.

The *Byrrhus verbasci* is much smaller than the preceding species; its figure and form are however the same; only that the scales which cover the elytra are more numerous and closer set, so that the black colour, which constitutes the ground of the elytra, is no where to be seen. The scales form three stripes, white, transversal, and undulated, between which intervene stripes of a reddish brown shaped in the same manner. They are sometimes to be met with stripped of part of their scales, which renders them so different as not to be known for the same creatures. The larvæ of this insect, as also those of the preceding species, are extremely voracious, and much resemble those of the dermestæ. People who collect subjects of natural history, are greatly pestered, and but too well acquainted with them.

BYSSUS, in botany: A genus of the 57th natural order, viz. *Alga*, belonging to the cryptogamia class of plants. It has a *dawn*, or very fine uniform powder. The character is taken from this circumstance, that they are covered with a simple capillary filament or down, resembling soft dust. There are 15 species, all natives of Britain, growing upon rotten wood, old walls, &c.

Byssus, or *Byssum*, a fine thready matter produced

Byrrhus,
Byssus.

in India, Egypt, and about Elis in Achaia, of which the richest apparel was anciently made, especially that wore by the priests both Jewish and Egyptian. Some interpreters render the Greek *βυσσος*, which occurs both in the Old and New Testament, by *fine linen*. But other versions, as Calvin's, and the Spanish printed at Venice in 1556, explain the word by *silks*; and yet byssus must have been different from our silk, as appears from a multitude of ancient writers, and particularly from Jul. Pollux. M. Simon, who renders the word by fine linen, adds a note to explain it; viz. "that there was a fine kind of linen very dear, which the great lords alone wore in this country as well as in Egypt." This account agrees perfectly well with that given by Hesychius, as well as what is observed by Bochart, that the byssus was a finer kind of linen, which was frequently dyed of a purple colour. Some authors will have the byssus to be the same with our cotton; others take it for the *linum asbestinum*; and others for the lock or bunch of silky hair found adhering to the pinna marina, by which it fastens itself to the neighbouring bodies. Authors usually distinguish two sorts of byssus; that of Elis; and that of Judæa, which was the finest. Of this latter were the priestly ornaments made. Bonfrerius notes, that there must have been two sorts of byssus, one finer than ordinary, by reason there are two Hebrew words used in Scripture to denote byssus; one of which is always used in speaking of the habit of the priests, and the other of that of the Levites.

Brævus Asbestinus, a species of asbestus or incombustible flax, composed of fine flexible fibres parallel to one another. It is found plentifully in Sweden, either white, or of different shades of green. At a copper mine in Westmannland it forms the greatest part of the vein out of which the ore is dug; and by the heat of the furnace which smelts the metal, is changed into a pure semitransparent slag or glass.

BYZANTIUM, an ancient city of Thrace, situated on the Bosphorus. It was founded, according to Eusebius, about the 30th Olympiad, while Tullus Hostilius reigned in Rome. But according to Diodorus Siculus, the foundations of this metropolis were laid in the time of the Argonauts, by one Byfas, who then reigned in the neighbouring country, and from whom the city was called *Byzantium*. This Byfas, according to Eustathius, arrived in Thrace a little before the Argonauts came into those seas, and settled there with a colony of Megarenses. Velleius Patereulus ascribes the founding of Byzantium to the Milesians, and Ammianus Marcellinus to the inhabitants of Attica. Some ancient medals of Byzantium, which have reached our times, bear the name and head of Byfas, with the prow of a ship on the reverse. The year after the destruction of Jerusalem by Titus, Byzantium was reduced to the form of a Roman province. In the year 193 this city took part with Niger against Severus. It was strongly garrisoned by Niger, as being a place of the utmost importance. It was soon after invested by Severus; and as he was universally hated on account of his cruelty, the inhabitants defended themselves with the greatest resolution. They had been supplied with a great number of warlike machines, most of them invented and built by Periscus a native of Nicæa, and the greatest engineer of his age. For a long time they

baffled all the attempts of the assailants, killed great numbers of them, crushed such as approached the walls with large stones; and when stones began to fail, they used the statues of their gods and heroes. At last they were obliged to submit, through famine, after having been reduced to the necessity of devouring one another. The conqueror put all the magistrates and soldiers to the sword; but spared the engineer Periscus. Before this siege, Byzantium was the greatest, most populous, and wealthiest city of Thrace. It was surrounded by walls of an extraordinary height and breadth; and defended by a great number of towers, seven of which were built with such art, that the least noise heard in one of them was immediately conveyed to all the rest. Severus, however, no sooner became master of it, than he commanded it to be laid in ashes. The inhabitants were stripped of all their effects, publicly sold for slaves, and the walls levelled with the ground. But by the chronicle of Alexandria we are informed, that soon after this terrible catastrophe, Severus himself caused a great part of the city to be rebuilt, calling it *Antonina*, from his son Caracalla, who assumed the surname of *Antoninus*. In 262, the tyrant Gallienus wreaked his fury on the inhabitants of Byzantium. He intended to besiege it; but on his arrival, despairing of being able to make himself master of such a strong place. He was admitted the next day, however, into the city; and without any regard to the terms he had agreed to, caused the soldiers and all the inhabitants to be put to the sword. Trebellius Pollio says, that not a single person was left alive. What the reason was for such an extraordinary massacre, we are no where informed. In the wars between the emperors Licinius and Maximin, the city of Byzantium was obliged to submit to the latter, but was soon after recovered by Licinius. In the year 323, it was taken from Licinius by Constantine the Great, who in 330 enlarged and beautified it, with a design to make it the second, if not the first, city in the Roman empire. He began with extending the walls of the ancient city from sea to sea; and while some of the workmen were busied in rearing them, others were employed in raising within them a great number of stately buildings, and among others a palace no way inferior in magnificence and extent to that of Rome. He built a capitol and amphitheatre, made a circus maximus, several forums, porticoes, and public baths. He divided the whole city into 14 regions, and granted the inhabitants many privileges and immunities. By this means Byzantium became one of the most flourishing and populous cities of the empire. Vast numbers of people flocked thither from Pontus, Thrace, and Asia, Constantine having by a law, enacted this year (330), decreed, that such as had lands in those countries should not be at liberty to dispose of them, nor even leave them to their proper heirs at their death, unless they had an house in his new city. But however desirous the emperor was that his city should be filled with people, he did not care that it should be inhabited by any but Christians. He therefore caused all the idols to be pulled down, and all their churches consecrated to the true God. He built besides an incredible number of churches, and caused crosses to be erected in all the squares and public places. Most of the buildings being finished, it was solemnly dedicated

Byzantium, to the Virgin Mary, according to Cedrenus, but, according to Eusebius, to the God of Martyrs. At the same time Byzantium was equalled to Rome. The same rights, immunities, and privileges, were granted to its inhabitants as to those of the metropolis. He established a senate and other magistrates, with a power and authority equal to those of old Rome. He took up his residence in the new city; and changed its name to CONSTANTINOPLE.

BZOVIVS (Abraham), one of the most celebrated

writers in the 17th century, with respect to the astonishing number of pieces composed by him. His chief work is the continuation of Baronius's annals. He was a native of Poland, and a Dominican friar. Upon his coming to Rome, he was received with open arms by the Pope, and had an apartment assigned him in the Vatican. He merited that reception, for he has imitated Baronius to admiration in his design of making all things conspire to the despotic power and glory of the papal see. He died in 1637, aged 70.

END OF THE THIRD VOLUME.

ERRATA in ASTRONOMY, Vol. II. Part II.

The following omissions and mistakes in the Plates and References the Reader will be pleased to rectify with his pen.

Page 531. col. 1. under N^o 367. l. 8: of the paragraph: For 4, write 194.

In fig. 156. (Plate LXXV.), *y* is wanting at the Sun's place, and C at the centre of the Earth.

P. 550. margin. For 157, 158, write 30, 31.

P. 556. l. 21. from bottom. For fig. 204 write 205. In the figure itself, the circle most to the left hand wants N at the North Pole, and *Æ* at one extremity of the Equator. The circle next to it wants likewise N at the North Pole, and *ÆQ* at the Equator, represented there by a double arch of a circle. S is wanting at the southern extremity of the axis, and T at the extremity of the Tropic of Cancer, represented by a black single arch of a circle. In the next circle Q is wanting at the right-hand extremity of the Equator, represented there by a double straight line. And in the fourth circle to the right hand, Q ought to be substituted in the place of O at the right-hand extremity of the Equator.

P. 580. N^o 489, line 1. For fig. 209, write 210.

P. 581. col. 1. middle. For fig. 210, wr. 211.

Ib. col. 2. For 211, wr. 212; and for 209, wr. 210.

P. 584. col. 2. middle. For 217, wr. 216.

P. 585. col. 1. For fig. 218, wr. 217.

Ibid. col. 2. For fig. 218, wr. 217; and for 217, wr. 216.

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