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H A GODSON BO HN

A  
DICTIONARY  
OF  
GENERAL KNOWLEDGE.

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C. Whittingham, College House, Chiswick.



H A GODSON BOHN

A  
DICTIONARY

OF  
GENERAL KNOWLEDGE;

OR,  
An Explanation of Words and Things

CONNECTED  
WITH ALL THE ARTS AND SCIENCES.

ILLUSTRATED WITH NUMEROUS WOOD CUTS.

BY GEORGE CRABB, A. M.

AUTHOR OF 'ENGLISH SYNONYMES,' 'TECHNOLOGICAL DICTIONARY,' AND  
'HISTORICAL DICTIONARY.'



MERCURY, guided by MINERVA, bearing SCIENCE round the World.

LONDON:

PRINTED FOR THOMAS TEGG, 73, CHEAPSIDE:

J. CUMMING, DUBLIN;

AND R. GRIFFIN AND CO. GLASGOW.

1830.

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## PREFACE.

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THIS little volume contains definitions of all terms of art and science, with such additional explanations in some cases as serve to illustrate something more than the bare meaning of the word. It is drawn up with special regard to brevity, in order to comprehend within a convenient space all words on which the reader may wish for immediate information. To the juvenile and less informed class of readers, a work of this kind cannot fail to be acceptable, particularly as it has been so liberally supplied with illustrations by means of engravings. Although so small in bulk, yet this book will be found to contain a vast number of words which are not to be met with in any other works whatever, the explanation of which is nevertheless highly necessary for those who are not in the constant habit of hearing them used in ordinary discourse. Of this description are the Latin phrases now adopted into our language, as *Sine qua non*, *Ne plus ultra*, and the like. The historical essays on each science, which have been expressly composed for this Dictionary, serve to show the progress of the arts and sciences from the earliest periods to the present.

JANUARY 1, 1830.

The first thing I did was to go to the  
 bank and see what I could do for  
 the money. I found that I had  
 a good deal of it, and I was  
 glad to see it. I then went to  
 the office and saw the  
 manager. I told him what I  
 had done, and he was  
 very kind to me. He  
 gave me a letter of  
 introduction to the  
 other banks. I then  
 went to the other  
 banks and saw the  
 managers. I told them  
 what I had done, and  
 they were all very  
 kind to me. I then  
 went to the  
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John Smith

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DICTIONARY

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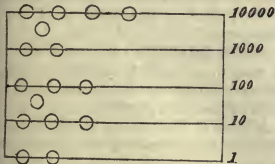
GENERAL KNOWLEDGE.

ABA

**A**, the first letter of the alphabet in most languages. It stands for the indefinite article, as, a man; for the sixth note in the gamut; for the first of the dominical letters in the calendar; as a numeral for one, among the Greeks, and 500 among the Romans, or with a stroke over it,  $\bar{A}$ , 5000; for an abbreviation, as A.M. Anno Mundi, A. B. Baccalaureus Artium, Bachelor of Arts, A. C. Ante Christum, A. D. Anno Domini; in antiquity, A. Augustus, A. A. Augusti, A. A. A. Aurum, Argentum,  $\mathcal{A}$ s; among chymists, Amalgam.

**AAM**. A liquid measure, used by the Dutch, containing 280 pints English measure.

**ABACUS**. An instrument for calculation, consisting of a board of an oblong figure, divided by several lines or wires, and mounted with an equal number of balls arranged so as to express units, tens, hundreds, thousands, &c. The ball on the lowest line expresses 1; each of those on the second line, 10, &c.; those in the middle spaces, half as much as those on the lines above them.



**ABAF**. The hinder part of a ship.  
**ABAGL**. A silver coin in Persia, value about thirty-six sols, French money.

ABE

**ABATIS**, or **ABBATIS**. Trees felled, and laid so as to impede the progress of an enemy.

**ABBESS**. The governess of an abbey or convent of nuns.

**ABBEY**. A house for religious persons, of which 490 were dissolved at the Reformation, having an annual revenue of £.285,000.

**ABBOT**. The governor of a religious house.

**ABBREVIATION**. The contracting of a word or sentence, by omitting some of the letters.

**ABDOMEN**. The lower part of the body; the belly.

**ABDOMINALES**. An order of fishes, having ventral fins placed behind the pectoral in the abdomen, as



**ABDUCTION**. The unlawful carrying away a person.

**ABERRATION**. A small apparent motion in the fixed stars, discovered by Mr. Molyneux and Dr. Bradley in the year 1725; also a deviation of the rays of light,

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when inflected by a lens or speculum, by which they are prevented meeting in the same point.

**ABETTOR.** One who instigates another to commit a crime.

**ABEYANCE.** The expectancy of an estate, honour, or title.

**ABJURATION.** A declaration on oath, that the son of James II. and his issue have no right to the throne of these kingdoms; also a voluntary banishment, or leaving the realm on oath never to return.

**ABLACTATION.** A sort of ingrafting trees, by leaving the graft on its proper stock, until it be fully incorporated with the new stock.

**ABLATIVE.** The sixth case of nouns in grammár.

**ABLUTION.** A religious ceremony of washing the body, still used by the Turks and Mahomedans; also the washing away the superfluous salts out of any body in chymistry.

**ABOLLA.** A kind of military garment worn by the Greek and Roman soldiers.

**ABOMASUS** (in Comparative Anatomy). The fourth stomach of ruminating animals.

**ABORIGINES.** The ancient and original inhabitants of Italy, supposed to have been conducted into Latium by Saturn; also the original inhabitants of any country.

**ABOUT.** A sea term, signifying the situation of a ship immediately after she has tacked.

**ABRAUM.** A kind of red clay used by cabinet-makers to deepen the colour of new mohogany.

**ABREAST.** Side by side; a sea term, applied to two or more ships ranged together.

**ABRIDGING** (in Algebra). The reducing a compound equation to a more simple form.

**ABRIDGMENT.** The bringing the contents of a book within a short compass; in Law, the shortening a count or declaration.

**ABSCESS.** An inflammatory tumour containing purulent matter.

**ABSCISSE.** The part of any diameter or axis of a curve line, cut off by a perpendicular line, called the ordinate.

**ABSOLUTION.** The forgiveness of sins, which the Romish Church claims to itself the power of granting; in Civil Law, a sentence whereby the party accused is declared innocent of the crime laid to his charge.

**ABSORBENTS.** Medicines that have the power of drying up redundant humours; also what causes acids to effervesce, as quick lime, soda, &c.

**ABSORBENT VESSELS.** Vessels which carry any fluid into the blood, as the inhalent arteries.

**ABSORPTION** (in Chymistry). The conversion of a gaseous fluid into a liquid or solid, on being united with some other solid.

**ABSTERGENTS.** Medicines for cleansing the body from impurities.

**ABSTINENCE.** An abstaining from meat diet, as practised in the Romish Church.

**ABSTRACTION** (in Logic). The intellectual act of separating accidents or qualities from the subjects in which they reside, as whiteness from snow or a wall, &c.; animal from man or the brutes; in Chymistry, the process of drawing off by distillation any part of a compound, and returning it again any number of times to be redistilled.

**ABUTMENTS.** The extremities of any body adjoining another, as the extremities of a bridge resting on the banks or sides of a river.

**ABYSS.** Any deep place that is bottomless, or supposed to be so, as the deepest or unfathomable parts of the sea.

**ACACIA.** A beautiful shrub, a species of which bears rose-coloured flowers.

**ACADEMICS.** A sect of ancient philosophers; the term is sometimes applied to the followers of Socrates and Plato.

**ACADEMY.** A school or college for the improvement of arts and science, so called from the grove of Academus in Athens, where Plato kept his school of philosophy. The first modern school of this name is said to have been established by Charlemagne at the instance of Alcuin, an English monk. This was followed by the Academia Secretorum Naturæ, established at Naples by Baptista Porta in 1560, and the Academia Lyncei at Rome, &c.

**ACANTHUS** (in Botany). Bearsbreech, or Brank Ursine, a plant, the leaves of which resemble those of the thistle; in Architecture, an ornament representing the leaves of the ancient acanthus, and used in the capitals of the Corinthian and Composite orders.

**ACCELERATION.** Increased velocity of motion, particularly applied to falling bodies tending towards the centre of the earth by the force of gravity.

**ACCENT.** The raising or lowering of the voice in pronouncing certain words or syllables; also the marks on the words or syllables, as the acute accent marked thus (´), the grave accent thus (`), the circumflex thus (˘).

**ACCEPTANCE.** The signing or subscribing a bill of exchange with the word 'accepted,' and one's name, by which the acceptor obliges himself to pay the contents of the bill.

**ACCESSARY, or ACCESSORY** (in Law). One guilty of an offence, not principally, but by participation.

**ACCIDENCE.** The rules of the inflexions of nouns and conjugations of verbs arranged in grammatical order.

**ACCIDENT.** That which belongs accidentally, not essentially, to a thing, as sweetness, softness, &c.; in Grammar, the termination of words.

**ACCIPTRES.** The first order of birds, having an angular toothlike process on the upper mandible, as the vulture, falcon, owl, &c.



**ACCLAMATION.** A shouting in concert, which was practised among the Romans as a token of applause, particularly in the theatres. This consisted in the chanting or repetition of certain words in a modulated tone, so as to make a kind of harmony.

**ACCOMPANIMENT.** An instrumental part added to any piece of music.

**ACCOMPLICE.** The same as Accessary.

**ACCOUNT, or ACCOMPT.** The reckoning or bill of a tradesman; the statement of a merchant's dealings and affairs drawn out in regular order in his books, and called collectively Merchants' Accounts; also the books in which these accounts are kept.

**ACCOUNTANT.** One obliged to render an account to another.

**ACCOUNTANT GENERAL.** An officer in the Court of Chancery, who receives all moneys lodged in court.

**ACCUSATIVE.** The fourth case in Latin nouns.

**ACETATES.** A kind of salts formed by the combination of acetic acid with a salifiable base, as the acetate of potash.

**ACETIC ACID.** Radical vinegar, or the strongest acid of vinegar.

**ACHROMATIC.** Colourless; a term applied to telescopes which were first contrived by Dr. Bevis, to remedy the aberrations of colour.

**ACIDIFIABLE.** An epithet signifying capable of being converted into an acid by an acidifying principle; an acidifiable base or radical is any substance that is capable of uniting with such a quantity of oxygen as to become possessed of acid properties.

**ACIDS.** Substances which are in taste sour, change blue vegetable colours to red, and combine with all the alkalis, and most of the metallic oxides and earths, so as to form the compounds called salts. Acids are distinguished according to the proportion of oxygen which they contain, by the terminations *ic* and *ous*, as nitric acid, and nitrous acid, sulphuric acid, and sulphurous acid, the former of which denotes the larger dose or portion of oxygen, and the latter the smaller; when the syllable *hypo* is added to either of these, it denotes a degree below it in point of oxidizement, as hyposulphuric acid, an intermediate between the sulphuric acid and the sulphurous acid.

**ACONITE, WOLFSBANE, or MONKSHOOD.** A plant, the flower of which resembles the hood of a monk; it is a violent poison.

**ACOUSTICS.** That branch of science which treats of the nature and modifications of sound.

**ACQUITTAL.** A deliverance or setting free from the suspicion of guilt, as where a person, on the verdict of a jury, is found not guilty.

**ACQUITTANCE.** A written discharge for a sum of money that has been paid.

**ACRE.** A measure of land containing four square roods, or 160 square poles of 5 yards and a half, or 4840 square yards. The French acre is equal to one and a quarter of an English acre.

**ACROSTICK.** A set of verses, the first letters of which compose some name, title, or motto.

**ACTION** (in Physics). The pressure or percussion of one body against another. By a law of nature, action and reaction are equal; that is, the resistance of the body moved is always equal to the force communicated to it.

**ACTION** (in Rhetoric). The carriage and motion of the body, and the modulation of the speaker's voice in delivering an address.

**ACTION** (in Law). The same as Law-suit.

**ACTIVE.** An epithet for what communicates action or motion to another thing.

**ACTOR.** One who acts a part; a player.

**ACTS OF PARLIAMENT.** Statutes or laws passed by the two houses of parliament, and assented to by the king. They are distinguished into Public General Acts, which are judicially taken notice of as such by all judges and justices; Local and Personal Acts, which may be especially pleaded in courts of law, or elsewhere, and be judicially taken notice of; Private Acts which are printed, and Private Acts which are not printed.

**ACTUARY.** A clerk that registers the Acts of Convocation, or that compiles minutes of the proceedings of any public company.

**ACUMEN.** Acuteness or sharpness of talent.

**ACUPUNCTURATION.** A method of bleeding, in use among the Chinese and Japanese, by making punctures or pricks with a gold or silver needle in any part of the body. It is chiefly employed in headaches, convulsions, lethargies, &c.

**A. D. Anno Domini,** In the Year of our Lord.

**ADAGIO.** Softly, leisurely; a term in music books, denoting the lowest time except the grave, as 'adagio, adagio.'

**ADAMANT.** The hardest sort of diamond.

**ADAMANTINE SPAR.** A sort of earth brought from India and China, that is of the hardness of adamant.

**ADDER.** A small poisonous serpent with plaits on the belly, and scales under the tail; it is not rare in Britain.

**ADDITION.** The first of the four fundamental rules in arithmetic, whereby several small sums are added or collected into one that is larger.

**ADHESION.** The property of certain bodies to attract other bodies to themselves, or the force by which they adhere to each other. Adhesion denotes a union to a certain point between two distinct bodies; cohesion, the union of the parts of the same body so as to form one mass.

**AD INFINITUM.** Indefinitely, or to infinity.

**ADIPOCERE.** A substance resembling spermaceti, which is formed from an animal in its progress towards decomposition.

**ADIT.** The shaft or entrance into a mine.

**ADJECTIVE.** A part of speech in grammar, which is added to a noun to qualify its signification, as bitter, sweet, &c.

**ADJUTANT.** One who assists a superior officer in a regiment; the adjutant-general

assists the general with his counsel and personal service.

**AD LIBITUM.** At pleasure.

**ADMEASUREMENT (in Law).** A writ against those who usurp more than their own share, as the Admeasurement of Pasture, or the Admeasurement of Dower.

**ADMINISTRATOR (in Law).** The person to whom the estate and effects of an intestate are committed, for which he is to be accountable when required.

**ADMIRAL.** An officer of the first rank and command in a fleet. The Lord High Admiral has the government of the king's navy. The admiral of the fleet is the highest officer in the command of a fleet. There are besides two gradations of admirals, namely, the vice admiral and the rear admiral, each of which is distinguished into three classes by the colour of their flags, as white, blue, and red.

**ADMIRALTY.** The office of the Lord High Admiral, whether discharged by one person, or by several commissioners called Lords of the Admiralty.

**ADMONITIO FUSTIUM.** A punishment among the Romans, which consisted in beating the offender with vine branches.

**ADONAI.** The name of Jehovah among the Jews.

**ADONIS.** A beautiful youth, the favourite of Venus, who was killed by a wild boar.

**ADOPTION.** A practice among the Greeks and Romans, of making a person one's heir, and investing him with all the rights and privileges of a son.

**ADORATION.** A mode of reverence or worship anciently shown to the gods by raising the right hand to the mouth, and gently applying it to the lips; also, in general, any outward sign of worship, by kissing the hand or feet, walking barefoot, and the like.

**AD VALOREM.** According to the value.

**ADVANCE (in Commerce).** Money paid before goods are delivered, work done, or any consideration given.

**ADVANCED-GUARD, or VANGUARD (in the Military Art).** The first line or division of an army ranged or marching in order of battle.

**ADVENT.** The coming of our Saviour; also the festival commemorative of the Advent, which falls about a month before Christmas.

**ADVERB.** A part of speech in grammar, added to a verb to complete its signification, as largely, neatly, &c.

**ADVERSARIA.** A term among literary men for a common-place book, wherein



they enter whatever occurs to them in reading or conversation that is worthy of notice.

**ADVERTISEMENT.** Any printed publication of circumstances, either of public or private interest, particularly that inserted in the newspapers.

**ADULT** (in civil law). Any person between the ages of fourteen and twenty-five.

**ADULTERATION.** The debasing of the coin by the mixture of impure metals; also the debasing and corrupting any article of trade by putting improper ingredients in it, as is done very frequently by bakers, brewers, and other traders.

**ADVOCATE.** A pleader in civil or ecclesiastical causes. The Lord Advocate is an officer of state in Scotland, who pleads in all causes of the crown, or where the king is concerned.

**ADVOWSON** (in Law). A right of presentation to a vacant church or benefice. He who possesses this right is called the patron of the living.

**ÆDILE.** A Roman magistrate who had the charge of all public buildings, particularly temples and theatres, also of all streets, highways, &c.

**ÆGIS.** A shield, particularly Jupiter's shield.

**ÆNEID.** The title of Virgil's poem, in which he celebrates the adventures of Æneas.

**ÆOLIAN HARP.** A number of strings so disposed as to produce a set of musical tones by the action of the wind upon them.

**ÆOLIC DIALECT.** One of the five dialects of the Greek tongue.

**ÆOLIPILE.** A hollow metal ball with a slender pipe, used to show the convertibility of water into steam.

**ÆRA, or ERA.** Any date, period, or event from which a calculation of years is made to commence. The principal æras are the vulgar, or Christian æra, dated from the birth of our Saviour; the æra of the creation, dated by Usher and most chronologists 4004 years before the vulgar æra; the æra of the Olympiads, dated about 776 years before the vulgar æra; the æra of the building of Rome, according to Varro, is 753 years before Christ; the æra of Nabonassar, so dated from Nabonassar the first king of Babylon, 747 years before Christ; the æra of the Hegira, or the Mahometan æra, dated from the hegira or flight of Mahomet from Mecca, dated about 622 years after Christ, or the vulgar æra.

**ÆROLITES.** Air stones, or meteoric stones falling from the atmosphere. These

are semimetallic substances, the descent of which, though mentioned several times in history, has not been authenticated until these few years. The fact is, however, by recent and frequent observations now put beyond all doubt. Two showers of stones are recorded by Livy and Julius Obsequens to have happened at Rome in the reign of Tullus Hostilius, and during the consulate of C. Martius and M. Torquatus; a shower of iron, in Lucania, mentioned by Pliny, and a shower of mercury by Dion. Among the moderns, Carden speaks of about 12,000 stones, one of 120 lbs. another of 60 lbs. that fell at Padua in Italy, in 1510; Gassendi, of a stone of 59 lbs. on Mount Vaïser in Provence; Muschenbrock of two large stones in Ireland; St. Amand de Baudin and others of a great shower of stones in the environs of Agen, in 1790; the earl of Bristol of twelve stones at Sienna in Tuscany, in 1794; captain Topham of a stone of 56 lbs. at Wold Cottage in Yorkshire, in 1795; Dr. Southey of a stone of 10 lbs. in Portugal, in 1796; Philosophical Magazine, of a mass of iron 70 cubic feet, in America, in 1800; and M. Fourcroy of several stones from 10 lbs. to 17 lbs. that fell near L'Aigle in Normandy, besides other instances equally well attested. The larger sort of these stones have been seen as luminous bodies to move with great velocity, descending in an oblique direction, and frequently with a loud hissing noise, resembling that of a mortar shell when projected from a piece of ordnance. Though different from every other known terrestrial substance, yet these stones perfectly resemble each other, having the same appearance of semimetallic matter, coated on the outside with a thin black incrustation, and being in their chymical composition very similar. The stone which fell at L'Aigle in France, in 1803, was found to contain of silica 54 parts, oxyde of iron 36, magnesia 9, oxyde of nickel 3, sulphur 2, lime 1; their specific gravity is also nearly the same, being about 3 and a half that of common water.

**AERONAUT.** One who sails or floats in the air in a balloon.

**AEROSTATION.** The modern art of raising bodies into and navigating the air, by means of rarefied air collected within an envelope, commonly called a balloon (see BALLOON).

**AEROSTATION, HISTORY OF.** This art is founded on the principle that any body which is specifically lighter than the atmospheric air will be buoyed up by it and ascend; a principle which had doubt-

less long been known, although the application of it to any practical purpose is altogether a modern invention. It is true that we read of the attempt which was made by Dædalus and his son Icarus to pass through the air by means of artificial wings, in which the former is said to have succeeded, but this is commonly reckoned among the fables of the ancients. Dr. Black, in his lectures in 1767 and 1768, was the first who, after Mr. Cavendish's discovery of the specific gravity of inflammable air, threw out the suggestion that if a bladder, sufficiently light and thin, were filled with air, it would form a mass lighter than the same bulk of atmospheric air, and rise in it. But want of leisure prevented him from trying the experiment, the honour of which belonged to Mr. Cavallo, who communicated the result to the Royal Society, on the 20th of June in that year. After having made several unsuccessful experiments with bladders and skins, he succeeded at length in making soap balls, which being inflated with inflammable air, by dipping the end of a small glass tube, connected with a bladder containing the air, into a thick solution of soap, and gently compressing the bladder, ascended rapidly. These were the first sort of inflammable air balloons that were made. But while philosophers in Britain were thus engaged in experiments on this subject, two brothers, in France, Stephen and John Montgolfier, paper manufacturers of Annonay, had made rapid advances towards carrying the project into execution. Their idea was to form an artificial cloud by enclosing smoke in a fine silk bag; and having applied burning paper to an aperture at the bottom, the air thus became rarefied, and the bag ascended to the height of 70 feet. This experiment was made at Avignon, about the middle of the year 1782, and was followed by other experiments, all tending to prove the practicability of the scheme. An immense bag of linen, lined with paper, and containing upwards of 23,000 cubic feet, was found to have a power of lifting about 500 pounds, including its own weight. Burning chopped straw and wool under the aperture of the machine caused it to swell and ascend in the space of ten minutes to the height of 6000 feet: when exhausted, it fell to the ground at the distance of some thousand feet from the place where it ascended. In an experiment tried before the Academy of Sciences, a large balloon was made to lift eight persons from the ground, who would have been carried away had the machine not been kept down with force.

On the repetition of the experiment before the king at Versailles, with a balloon near 60 feet high and 43 in diameter, a sheep, a cock, and a duck, the first animals that ever ascended in a balloon, were carried up about 1440 feet, and after remaining in the air about eight minutes, came to the ground in perfect safety, at the distance of 10,200 feet from the place of ascent. Emboldened by this experiment, M. Pilatre de Rozier offered himself to be the first aerial adventurer. A new machine was accordingly prepared, with a gallery and grate, &c. to enable the person ascending to supply the fire with fuel, and thus keep up the machine as long as he pleased. On the 15th of October, 1783, M. Pilatre took his seat in the gallery, and, the machine being inflated, he rose to the height of 84 feet, and, after keeping it afloat about four minutes and a half, he gently descended: he then rose again to the height of 210 feet, and the third time 262. In the descent, a gust of wind having blown the machine over some large trees, M. Pilatre extricated himself by throwing straw and wool on the fire, which raised him at once to a sufficient height, and in this manner he found himself able to ascend or descend to a certain height at pleasure. Some time after, he ascended with M. Girond de Vilette to the height of 330 feet, hovering over Paris at least nine minutes, in sight of all the inhabitants, and the machine keeping all the while a steady position. In 1783, he undertook a third aerial voyage with the Marquis d'Arlandes, and in the space of twenty-five minutes went about five miles. In this voyage they met with several different currents of air, the effect of which was to give a very sensible shock to the machine. They were also in danger of having the machine burnt altogether, if the fire had not been quickly extinguished by means of a sponge. After this period aerostatic machines were elevated by inflammable air enclosed, instead of fire, with which Messrs. Roberts and Charles made the first experiment. In this case the bag was composed of lutestring, varnished over with a solution of elastic gum, called caoutchouc, and was about 13 English feet in diameter. After being filled with considerable difficulty, it was found to be 35 pounds lighter than an equal bulk of common air. With this they ascended, and in three quarters of an hour traversed fifteen miles. Their sudden descent was occasioned by a rupture which happened to the machine when it was at its greatest height. On a subsequent day the same gentlemen made an

ascent in a balloon filled with inflammable air. This machine was formed of gores of silk, covered with a varnish of caoutchouc, of a spherical figure, and measuring 27 feet 6 inches in diameter. A net was spread over the upper hemisphere, and fastened to a hoop which passed round the middle of the balloon. To this a sort of car was suspended, a few feet below the lower part of the balloon; and in order to prevent the bursting of the machine, a valve was placed in it, by opening of which some of the inflammable air might be allowed to escape. In the car, which was of basket-work, and covered with linen, the two adventurers took their seats in the afternoon of the 1st of December, 1783. At the time the balloon rose the barometer was at  $30^{\circ} 18'$ , and it continued rising until the barometer fell to  $27^{\circ}$ , from which they calculated that they had ascended 600 yards. By throwing out ballast occasionally they found it practicable to keep nearly the same distance from the earth during the rest of their voyage, the mercury fluctuating between  $27^{\circ}$  and  $27^{\circ} 65'$ , and the thermometer between  $53^{\circ}$  and  $57^{\circ}$  the whole time. They continued in the air an hour and three quarters, and alighted at the distance of 27 miles from Paris, having suffered no inconvenience, nor experienced any of the contrary currents described by the marquis d'Arlandes. M. Roberts having alighted, and much of the inflammable gas still remaining, M. Charles determined on taking another voyage. No sooner therefore was the balloon thus lightened of 130 pounds of its weight, than it arose with immense velocity, and in 20 minutes was 9000 feet above the earth, and out of sight of all terrestrial objects. The globe, which had become flaccid, now began to swell, and when M. Charles drew the valve, to prevent the balloon from bursting, the inflammable gas, which was much warmer than the external air, for a time diffused a warmth around, but afterwards, a considerable change was observable in the temperature. His fingers were benumbed with cold, which also occasioned a pain in his right ear and jaw, but the beauty of the prospect compensated for these inconveniences. The sun, which had been set on his ascent, became again visible for a short time, in consequence of the height which he had reached. He saw for a few seconds vapours rising from the valleys and rivers. The clouds seemed to rise from the earth, and collect one upon the other; only their colour was gray and obscure from the dimness of the light. By the light of the moon he

perceived that the machine was turning round with him, and that there were contrary currents which brought him back again: he also observed with surprise, that the wind caused his banners to point upwards, although he was neither rising nor descending, but moving horizontally. On alighting in a field about three miles distant from the place where he set out, he calculated that he had ascended, at this time not less than 10,500 feet. Hitherto all experiments of this kind had been unattended with any evil consequences, but an attempt which was made to put a small aerostatic machine with rarefied air under an inflammable air balloon, proved fatal to the adventurers, M. Pilatre de Rozier and M. Romaine. Their inflammable air balloon was about 37 feet in diameter, and the power of the rarefied air one was equivalent to about 60 pounds. They were not long in the air when the inflammable air balloon was seen to swell considerably, and the aeronauts were observed, by means of telescopes, to be very anxious to descend, and busied in pulling the valve and giving every possible facility of escape to the inflammable air, but, in spite of all their endeavours, the balloon took fire without any explosion, and the unfortunate gentlemen were precipitated to the earth at the height of about three quarters of a mile. M. Pilatre seemed to have been dead before he came to the ground; but M. Romaine was found to be alive, although he expired immediately after. The ill success of this experiment, which had been made for the purpose of diminishing the expense of inflating the machine with gas, did not interrupt the progress of aerostation. Aerial voyages continued to be made on the old scheme. The first trial in England was made by Vincent Lunardi, an Italian, on the 15th of September, 1784. His balloon, the diameter of which was 33 feet, was made of oiled silk, painted in alternate stripes of blue and red. From a net, which went over about two thirds of the balloon, descended 45 cords to a hoop hanging below it, and to which the gallery was attached. Instead of a valve, the aperture at the neck of the balloon, which was in the shape of a pear, served for admitting or letting out the inflammable air. The air for filling the balloon was produced from zinc, by means of diluted vitriolic acid. M. Lunardi ascended from the Artillery Ground, at two o'clock, having with him a dog, a cat, and a pigeon. He was obliged to throw out some of his ballast, in order to clear the houses, when he rose to a considerable

height, proceeding first N. W. by W. and then nearly N. About half after three he descended very near the earth, and landed the cat, which was half dead with the cold; he then reascended by throwing out some more of his ballast, and ten minutes past four he alighted in a meadow near Ware, in Hertfordshire. His thermometer stood in the course of his voyage as low as 29°. and he observed that the drops of water collected round the balloon were frozen. The second aerial voyage in England was performed by Mr. Blanchard, on the 16th of October in the same year, in which he was accompanied by Mr. Sheldon, professor of anatomy at the Royal Academy, the first Englishman that adventured in such an excursion. They ascended a few minutes past 12 o'clock, and after proceeding about 14 miles beyond Chelsea, Mr. Blanchard landed Mr. Sheldon, reascended alone, and finally landed near Rumsey, in Hampshire, about 75 miles from London, which was at the rate of about 20 miles an hour. Mr. Blanchard ascended so high, that he felt a difficulty in breathing; and a pigeon, which flew from the boat, laboured for some time to sustain itself, but was at length compelled to return and rest on the boat.

Aerial voyages now became frequent in England and elsewhere, and afforded nothing worthy of notice before the ascent of M. Garnerin, in 1802, who undertook the singular and desperate experiment of descending by means of a parachute. (See PARACHUTE.) In this descent it was observed that the parachute, with the appendage of cords and the basket in which M. Garnerin had seated himself, vibrated like the pendulum of a clock, and at times the vibrations were so violent, that more than once the parachute and the basket seemed to be on the same level, or quite horizontal, which presented a terrific spectacle of danger to the spectator. They diminished, however, as M. Garnerin approached the earth, and he was landed in safety, though strongly affected with the violent shocks that his frame had experienced. Various excursions have since been made by Mr. Sadler, Mr. Green, and others.

**AETITES**, or **EAGLE-STONE**. A stone so called, because it was originally found in eagles' nests. It is a sort of ore of a kidney shape, imbedded in iron-shot clay.

**AFFECTUOSO**. In an affecting style; a term in music books at the beginning of a movement.

**AFFIDAVIT**. An oath in writing, taken before some person who is legally authorized to administer the same.

**AFFINITY** (in Civil Law). The relationship in which each of the parties married stand to the kindred of the other.

**AFFINITY** (in Chymistry). The attractive power observable in the different parts of bodies, by which they combine; as the affinity of sulphuric acid for potash and lime.

**AFFIRMATION** (in Law). The confirming the sentence of an inferior court; as when the decree of the Lord Chancellor is affirmed by the House of Lords: also the simple declaration of a Quaker to the truth of a matter, which is taken in the place of an oath.

**AFFRAY**. A skirmish or fighting between two or more.

**AGARIC**. An excrescence, or sort of mushroom, which grows on trees.

**AGATE**. A precious stone, first found in Sicily; it is a mineral composed of various substances, as chalcedony, cornelian, jasper, &c.; also a stone of the agate kind engraven by art, which constitutes among antiquarians a species of gems.

**AGE**. A certain period or limit of time, marked for the convenience of chronology and history by some remarkable events. Chronologers commonly reckon seven such ages, namely, 1. From the creation to the deluge. 2. From the deluge to the birth of Abraham. 3. From the birth of Abraham to the departure of the Israelites out of Egypt. 4. From the departure of the Israelites to the building of the temple by Solomon. 5. From the laying the foundation of the temple to the reign of Cyrus in Babylon. 6. From the reign of Cyrus to the coming of Christ. 7. Since the birth of our Saviour. Chronologers are generally agreed as to the dividing the time from the creation into seven ages, but they differ materially as to the time contained in these periods. The poets distinguished the period of the world into four ages; namely, into the golden age, or the age of simplicity and happiness; the silver age, which was inferior to the golden age in enjoyments; in this age man began to till the ground for their sustenance. In the brazen age strifes and contentions began, which, in the iron, were carried to the utmost extent, and accompanied with every evil that afflicts mankind. It is most probable that this notion of the four ages was taken from the history of the golden image, seen by Nebuchadnezzar in a dream, mentioned in Daniel, by which the first monarchy was denoted the golden one, the second silver, the third brazen, and the fourth iron. The Greeks, who derived their mythology from

the Egyptians, doubtless gathered this idea from the same source, and wrought it into a fable by the ingenuity of their poets.

**AGE.** A term in law for those special times which enable men and women to do that which they could not do before; thus a man may take the oath of allegiance at twelve years of age, is at the age of discretion at fourteen to choose his guardian and contract a marriage, and is at full age at twenty-one. A woman at the age of nine is dowable, at twelve may confirm her consent to marriage, at fourteen may receive her land into her own hands, and at twenty-one may alienate her lands and tenements.

**AGENT (in Law).** A person empowered to act for another.

**AGENT (in Physics).** Any thing having the power to act on another object, as cold or heat.

**AGGREGATE.** An order of plants in the Linnæan system, having compound flowers with separate anthers.

**AGGREGATION (in Chymistry).** The adhesion of parts of the same kind; as pieces of sulphur united by fusion form an aggregate.

**AGIO.** A term used chiefly in Holland and Venice, to denote the difference between the bank money and the current money, or cash; as when a merchant stipulates to receive for his goods 100 livres bank money or 105 cash, or current money, the agio is said to be 5 per cent.

**AGRICULTURE.** The art of tilling the land according to certain rules of experience and science.

**AGRICULTURE, HISTORY OF.** As the ground was, by divine appointment, to furnish subsistence for man, and after his fall he was doomed to procure it by labour, husbandry, or the practical part of agriculture, was of necessity the first and most important occupation of the descendants of Adam; wherefore we learn from Scripture, that his two sons, Abel and Cain, were both employed in this manner, the former being a keeper of sheep, and the latter a tiller of the ground. With what implements this work of tillage was carried on, and what degree of art was employed in producing the fruits of the earth, is left to conjecture; but writers on those early periods are generally agreed that the antediluvians were in possession of many arts and inventions which were in process of time lost, or at least but imperfectly retained among the different nations that were scattered abroad after the confusion of tongues. Agriculture was one of the arts which Noah and his pos-

terity retained; for we find that he cultivated the vine. Those of the line of Shem appear to have followed the breeding and feeding of cattle: but those of the line of Ham, who took possession of Egypt, applied themselves to the tilling of the ground, and with so much ingenuity, industry, and success, that, owing to the inundations of the Nile, and the consequent fertility of the soil, Egypt was enabled in the time of Abraham, and still more so in the time of Joseph, to supply its neighbours with corn during a period of famine. Nor were the inhabitants backward in assisting the liberality of nature: they busied themselves in embanking, irrigation, and draining, in order to derive all the benefits which the benignant river was capable of affording them. These works are said to have been carried on with particular spirit under the auspices of Sesostris, 1800 years before the Christian æra. So sensible were the Egyptians of the blessings which agriculture afforded, that, in the blindness of their zeal, they ascribed the invention of the art to their god Osiris, and the culture of barley and wheat to their goddess Isis.

The Pelasgi, or aboriginal inhabitants of Greece, were among the number of those who lost all the primeval arts, and fed upon acorns and wild fruits, until they were led by the Egyptians, with whom they had an early communication, to the cultivation of the ground. Like them, too, they placed their benefactress Ceres, to whom they ascribed the introduction of corn, among the number of their deities; a goddess whom authors agree was no other than the Egyptian Isis. In the time of Homer, agriculture was in such esteem that King Laertes laid aside his royal dignity, that he might cultivate a few fields. Hesiod, the contemporary of this author, has devoted a whole poem to the labours of the field in the different seasons of the year. Of other writings, among the Greeks, on agriculture little remains, except a treatise by Xenophon on rural affairs, and scattered notices on the subject in the works of Aristotle and Theophrastus; but we learn from Varro, that there were in his time not less than fifty Greek authors to be consulted on agricultural matter.

The Jews, as Scripture informs us, applied themselves, when they came into the land of Canaan, to the cultivation of the soil, having each their territory allotted to them. We may also infer, from the frequent allusions to this subject in different parts of the Old Testament, that husbandry formed

their principal occupation. The laws of Moses have, many of them, for their object the regulation of their flocks, their herds, and their fields. David cultivated his own land, having officers to take charge of his flocks, his herds, his camels, his asses, and his warehouses of wine and oil, &c. Elisha was in the field with twelve yoke of oxen when Elijah found him. Besides the frequent mention of husbandry business in different parts of the sacred writings, as the digging of wells, the planting of vineyards, the leasing, gathering in, threshing, sifting, and winnowing of corn, with a number of other things of the like kind.

That the Carthaginians did not neglect agriculture is evident from this, that they had writers on the subject, of whom a famous general, Mago, was one, who is quoted by Varro. He wrote no less than twenty-eight books. It is probable that, under the auspices of these people, agriculture flourished in Sicily, which was afterwards the granary of Rome.

No subject engaged the attention of the Romans more than agriculture, theoretically as well as practically. They divided their time between war and husbandry; their greatest men, in the early ages of the republic, being employed alternately in the one and the other. Cincinnatus was taken from the plough to fill the office of dictator; and Regulus besought the senate that he might return to his little farm for a short time, to prevent it from being ruined. Pliny observes, that the Romans ploughed their fields with the same diligence that they pitched their tents, and sowed their corn with as much care as they raised their armies. When riches had introduced luxury, and artificial manners and habits, the labours of the field were performed by their slaves; but there remained many among them of the higher orders who directed their personal attention to the subject. The writings of Cato the Censor, Varro, Pliny, Columella, and Palladius, as well as those of the poet Virgil, abound with practical and useful observations on the whole round of farming business. At the same time they all agree in lamenting that agriculture was not pursued with the same zeal as formerly. The great among the Romans had town houses as well as villas, and living more in the former than in the latter, the management of their farms was left to their bailiffs or servants. The ox, which was the principal beast of burden among the Egyptians, the Jews, and Grecians, was also highly esteemed among the Romans. Many direc-

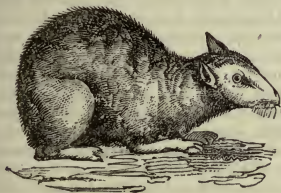
tions for the breeding, breaking, feeding, and working this animal are to be found in the writers abovementioned; as also in regard to the management of bees, which were highly prized. As to the implements of husbandry used among the Romans, the description of them not being illustrated by any representation, it is not easy to speak precisely of them; but it is clear that they used the plough with and without wheels, with and without boards, with and without coulters, also with shares of different constructions. A reaping machine is likewise spoken of both by Pliny and Palladius, which was driven by an ox; but for the most part they cut their corn with the hand, either with the hook close to the ground, or only the ears with a curved stick and a saw attached to it, or otherwise they cut the stalks in the middle, leaving the stubble to be afterwards mowed. They threshed either with a machine composed of rollers, or with rods or flails, or they trod it out with their feet. Haymaking was performed among the Romans much in the same manner as at present. Harrowing the corn was particularly recommended by the Roman writers; who also speak of hoeing, weeding, watering, draining, and fallowing the ground, which was universal among them.

Agriculture shared the fate of all the other arts on the decline of the empire: from the time of Pliny to the fifteenth century, there is no work extant on the subject, except the *Geoponics*, which was published by Constantine Pogonatus, and probably collected by the emperor himself. Crescenzio, a writer of Bologna, was the first who called the attention of his countrymen to this subject after this long interval. His little work, which was collected from the Roman writers, was followed by some other Italian productions: but probably nothing contributed more to give an importance to agricultural pursuits than the introduction of the feudal system, which gave to every man a rank and distinction according to the quantity of land he either possessed or occupied; for not only the great lord, who was the owner of the soil, or reaped the fruits of it, but also his tenants, who cultivated it, were invested with political privileges that were enjoyed by no other members of the community; and although the feudal burdens and restraints have ceased, yet the privileges and advantages attached to the possession of landed property still give it a paramount advantage. Hence it is, that since the revival of the arts, the science of agriculture has been zealously cultivated

by the higher orders. The writers likewise on this subject have within the last century been more numerous than at any former period; and every effort has been made by experiments, inventions, and improvements to render the land productive. Nor have these efforts been without effect, for, notwithstanding the immense increase in the population, there has been no such scarcity as we read of in former times.

**AGUE.** An intermitting fever, with hot and cold fits alternately.

**AGUTI.** An American animal, like a guineapig, having the characters of the rat kind, and the hair and voice of the hog. When provoked, it raises all the hair of its back upright, and strikes the earth with its hinder feet.



**AID-DE-CAMP.** An officer that always attends on each of the generals in his camp, to receive and carry orders.

**AILANTHUS.** A Chinese tree, called the tree of heaven, on account of its lofty growth; it rises with a straight trunk forty or fifty feet high.

**AIR.** A subtle, invisible, elastic fluid, surrounding the globe of the earth: it was formerly supposed to be an element, or a simple principle, but it is now known to be a compound of two gases, namely, oxygen and azote.

**AIR (in Music).** Any melody that comes within the reach of vocal expression.

**AIR-BALLOON.** Vide **BALLOON**.

**AIR-GUN.** A gun constructed so as to propel bullets solely by means of condensed air; which is effected without causing any explosion.

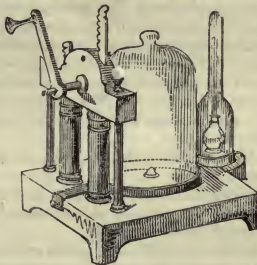


**AIR-JACKET.** A jacket made of leather, in which are several bags or bladders of the same material, communicating with each other, and fitted to receive air by

means of a brass tube. This jacket is used by persons who cannot swim, to support them in the water.

**AIR-PLANT.** A singular plant, which grows suspended from the ceiling of a room, and derives its nutriment from the air. The first plant of this kind which has blown in this country is to be seen at Claremont the seat of Prince Leopold.

**AIR-PUMP.** A machine for exhausting the air out of vessels, in the same manner as water is drawn up by a pump. This celebrated machine was invented by Otto de Guericke, consul of Magdeburgh, who exhibited his first public experiments with this instrument before the Emperor and States of Germany, at the breaking up of the Imperia' Diet at Ratisbon, in the year 1654; but his description of the machine was first published in 1672, at Amsterdam, under the title of *Experimenta nova Magdeburgica de Vacuo Spatio*. Before this publication, it appears that Mr. Boyle, who had particularly directed his attention to the study of pneumatics, also conceived a similar idea, which led Mr. Hooke to ascribe the invention to him; but Mr. Boyle himself, in a letter to his nephew, Lord Duncarvon, expresses his acknowledgment for the discovery of this useful machine from what he had heard reported of it, although, as he adds, he had not, at that time, perused the account of it. On his becoming acquainted with the machine, he made many improvements upon it; as did afterwards Mr. Hooke and many others.



**AIR-SHAFTS (in Mining).** Holes or shafts let down from the open air to discharge the foul vapours.

**AIR-VESSELS.** Spiral ducts or canals in the leaves and other parts of plants, which are supposed to supply them with air, after the manner of lungs in animals.

**ALABASTER.** A soft kind of marble, which is of a granular texture, and of a

white colour, and has a certain degree of transparency. It is found in Germany, France, and Italy, and is used by sculptors for statues.

**ALBATROSS, or MAN OF WAR BIRD.** A water fowl, which inhabits most seas between the tropics.

**ALBINOS.** The white Moors, so called by the Portuguese; they have flaxen hair, blue rolling eyes, and a pale livid whiteness.

**ALBUMEN.** The white of an egg, and any viscous fluid without taste or smell that is like it, as the serous part of the blood.

**ALBURNUM.** The soft white substance in trees next to the liber, or inner bark.

**ALCHEMY.** That obsolete branch of chymistry which had for its object the transmutation of metals into gold; the finding the panacea, or universal remedy; and some other things equally ridiculous.

**ALCOHOL.** Commonly called spirit of wine, but obtained by distillation in a state more ardent and purified than that liquor. It is chiefly employed in preparing varnishes, and dissolving gums, resins, &c. Its antiseptic power makes it useful in preserving anatomical preparations.

**ALCOR.** A small star, adjoining the bright one in the middle of the tail of *Ursa Major*.

**ALCORAN.** See **KORAN**.

**ALDEBARAN, or THE BULL'S EYE.** A star of the first magnitude in the constellation *Taurus*.

**ALDER.** A tree which thrives particularly in moist places. The principal sorts of alder are the round leaved, or common alder, the long-leaved, and the dwarf alder.

**ALDERMAN.** A superior judge, who sat with the bishop in the county courts in the time of the Saxons. The alderman is now a magistrate next to the mayor in a city or borough.

**A-LEE.** A sea term, signifying to the leeward.

**ALEMBIC.** A vessel formerly used for distilling; in the place of which retorts are now mostly in use.

**ALEXANDRINE.** A verse in modern poetry consisting of ten, twelve, or thirteen syllables.

**ALGÆ.** A natural order of plants in the Linnæan system, containing flags, seaweeds, and other marine plants, whose root, leaf, and stem are one.

**ALGEBRA.** The science of computing abstract quantities by means of symbols or signs. It is called *Specious Arithmetic* by *Vieta*, and *Universal Arithmetic* by *New-*

*ton*. The first letters of the alphabet, *a, b, c, d, &c.* are made to represent known quantities; and the last letters *x, y, z,* to represent those that are unknown. The operations with these letters are performed by means of the characters (+) for addition, (−) for subtraction, (×) for multiplication, (÷) for division, (=) for equality.

**ALGEBRA, HISTORY OF.** The term algebra is of Arabic original, and is derived by some from *algebar* *almoqabalah*, signifying restitution and comparison, or resolution, which properly expresses the nature of the thing; others have derived it from *Geber*, a celebrated mathematician. This science is not of very ancient date, although it is not possible to fix the exact period of its commencement. The earliest treatise on this subject now extant is that of *Diophantus*, a Greek author of *Alexandria*, who flourished about the year 350, and wrote thirteen books of *Arithmeticonum*, of which six only are preserved. These books do not contain the elementary parts of algebra, only some difficult problems respecting square and cube numbers, and the properties of numbers in general, to which the writings of the more ancient authors, as *Euclid*, *Archimedes*, and *Apollonius* might naturally be supposed to have given birth. Whether the Arabians took their hints from this and similar works among the Greeks, and drew out the science of algebra for themselves, or whether they more immediately derived it, as they did their notation, from the *Hindoos*, is a matter of doubt. It is certain, however, that the science was first transmitted by the Arabians or Saracens to Europe, about the year 1100; and that after its introduction the Italians took the lead in its cultivation. *Lucas Pacioli*, or *Lucas de Burgo*, was one of the first who wrote on the subject, and has left several treatises, published between the years 1470 and 1509. In his principal work, entitled *Summa Arithmetice et Geometriæ Proportionumque Proportionalitatum*, published first in 1494, he mentions several writers, and particularly *Leonardus Pisanus*, otherwise called *Bonacci*, an Italian merchant, who, in the thirteenth century, used to trade to the seaports, and thence introduced the science of algebra into Italy. After *Lucas de Burgo*, many other Italian writers took up the subject, and treated it more at large, as *Scipio Ferreus*, who found out a rule for resolving one case of a compound cubic equation; but more especially *Hieronymus Cardan*, who, in ten books published in



1539-45, has given the whole doctrine of cubic equations; for part of which, however, he was indebted to Nicholas Tartalea, or Tartalea, of Brescia, a contemporary of Cardan's, who published a book on cubic equations, entitled *Quesite Invenzioni diverse*, which appeared in 1596. Cardan often used the literal notation of  $a, b, c, d$ , &c., but Tartalea made no alteration in the forms of expression used by Lucas de Burgo, calling the first power of the unknown quantity in his language *cosa*, the second *censa*, the third *cubo*, &c. writing the names of all the operations in words at length, without using any contractions, except the initial  $R$ , for root, or radicality. About this time the science of algebra also attracted the attention of the Germans, among whom we find the writers Stifelius and Scheubelius. Stifelius, in his *Arithmetica Integra*, published at Nuremberg in 1544, introduced the characters  $+$ ,  $-$ , and  $\sqrt{\quad}$ , for plus, minus, and radix, or root, as he called it; also the initials  $\mathcal{R}$ ,  $\mathcal{S}$ ,  $\mathcal{V}$ , for the power 1, 2, 3, &c., and the numeral exponents 0, 1, 2, 3, &c. which he called by the name of *exponens* exponent. He likewise uses the literal notation,  $A, B, C, D$ , &c. for the unknown or general quantities. John Scheubelius, who wrote about the same time as Cardan and Stifelius, treats largely on surds, and gives a general rule for extracting the root of any binomial or residual,  $a \pm b$ , where one or both parts are surds. These writers were succeeded by Robert Recorde, a mathematician and physician of Wales, who in his works, in 1552 and 1557, on Arithmetic, showed that the science of algebra had not been overlooked in England. He first gave rules for the extracting of the roots of compound algebraic quantities, and made use of the terms binomial and residual, and introduced the sign of equality, or  $=$ . Peletarius, a French algebraist, in his work, which appeared at Paris in 1558, made many improvements on those parts of algebra which had already been treated of. He was followed by Peter Ramus, who published his *Arithmetic and Algebra* in 1560; Raphael Bombelli, whose *Algebra* appeared at Bologna in 1579; and Simon Stevin, of Bruges, who published his *Arithmetic* in 1585, and his *Algebra* a little after. This latter invented a new character for the unknown quantity, namely, a small circle  $(O)$ , within which he placed the numeral exponent of the power; and also denoted roots, as well as powers, by numeral exponents. The algebraical works of Vieta, the next most distinguished algebraist,

appeared about the year 1600, and contain many improvements in the methods of working algebraical questions. He uses the vowels  $A, E, I, O, Y$ , for the unknown quantities, and the consonants,  $B, C, D$ , &c. for the known quantities; and introduced many terms which are in present use, as coefficient, affirmative and negative, pure and adfected, &c.: also the line, or vinculum, over compound quantities  $(\overline{A+B})$ . Albert Girard, an ingenious Flemish mathematician, was the first person who, in his *Invention Nouvelle en l'Algèbre*, &c. printed in 1629, explained the general doctrine of the formation of the coefficients of the powers from the sums of their roots, and their products. He also first understood the use of negative roots, in the solution of geometrical problems, and first spoke of imaginary roots, &c. The celebrated Thomas Harriot, whose work on this subject appeared in 1631, introduced the uniform use of the letters  $a, b, c$ , &c.; that is the vowels  $a, e$ , and  $o$  for the unknown quantities, and the consonants,  $b, c, d$ , &c. for the known quantities; these he joins together like the letters of a word, to represent the multiplication or product of any number of these literal quantities, and prefixing the numeral coefficient, as is usual at present, except being separated by a point, thus  $5.bbc$ . For a root he sets the index of the root after the mark  $\sqrt{\quad}$ , as  $\sqrt{3}$  for the cube root, and introduces the characters  $>$  and  $<$ , for greater and less; and in the reduction of equations he arranged the operations in separate steps or lines, setting the explanations in the margin, on the left hand, for each line. In this manner he brought algebra nearly to the form which it now bears, and added also much information on the subject of equations. Oughtred, in his *Clavis*, which was first published in 1631, set down the decimals without their denominator, separating them thus  $21(56)$ . In algebraic multiplications he either joins the letters which represent the factors, or connects them with the sign of multiplication  $+$ , which is the first introduction of this character. He also seems to have first used points to denote proportion, as  $7.9::28.36$ ; and for continued proportion has the mark  $\div\div$ . In his work we likewise meet with the first instance of applying algebra to geometry, so as to investigate new geometrical properties: which latter subject is treated at large by Descartes, in his work on *Geometry*, published in 1637, and also by several other subsequent wri-

ters. Wallis, in his *Arithmetica Infinitorum*, first led the way to infinite series, particularly to the expression of the quadrature of the circle by an infinite series. He also substituted the fractional exponents in the place of radical signs, which in many instances facilitate the operations. Huygens, Barrow, and other mathematicians, employed the algebraical calculus in resolving many problems which had hitherto baffled mathematicians. Sir Isaac Newton, in his *Arithmetica Universalis*, made many improvements in analytics, which subject, as well as the theory of infinite series, was further developed by Halley, Bernoulli, Taylor, Maclaurin, Nicole, Stirling, De Moivre, Clairaut, Lambert, Waring, Euler, &c.

**ALGOL.** A fixed star of the second magnitude in the constellation of Perseus, or Medusa's Head.

**ALGORITHM.** An Arabic word, frequently used to denote the practical rules of algebra.

**ALIAS (in Law).** A word signifying, literally, otherwise; and employed in describing the defendant, who has assumed other names besides his real one.

**ALIBI (in Law).** A term signifying, literally, elsewhere; and used by the defendant in a criminal prosecution, when he wishes to prove his innocence, by showing that he was in another place, or elsewhere, when the act was committed.

**ALICONDA.** An Ethiopian tree, from the bark of which flax is spun.

**ALIEN (in Law).** One born in a foreign country, out of the allegiance of the king. An alien is incapable of inheriting lands until he is naturalized by an act of parliament. He has likewise no right to vote at elections, or to enjoy any office, nor to be returned on any jury, unless where an alien is to be tried.

**ALIMONY (in the Civil Law).** The allowance made to a married woman upon her separation from her husband.

**ALIQUNT PARTS.** Such numbers in arithmetic as will not divide or measure a whole number exactly, as 7, which is the aliquant part of 16.

**ALIQUNT PARTS.** Such part of a number as will divide or measure a whole number exactly, as 2 the aliquot part of 4, 3 of 9, and 4 of 16.

**ALKALI or ALCALI.** A perfectly pure salt, which combines with acids so as to neutralize or impair their activity, and produces salts. Besides, alkalies change the purple colour of many vegetables to a green, the reds to a purple, and the yellows

to a brown. Some alkalies are called fixed, because they remain fixed in the fire, as potash and soda; others are volatile, as ammonia.

**ALLAH.** The Arabian name of God.

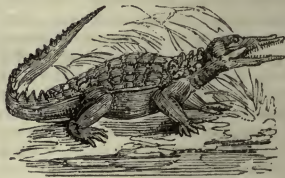
**ALLEGIANCE (in Law).** The faithful obedience which every subject owes to his prince; the oath of allegiance is that which every person is required to take before he enters on any office.

**ALLEGORY.** A series or chain of metaphors continued through a whole discourse; thus the prophets represent the Jews under the allegory of a vine, planted, cultivated, and watered by the hand of God.

**ALLEGRO.** An Italian word used in music, to denote that the part is to be played in a brisk and sprightly manner.

**ALLIGATION.** A rule in arithmetic, teaching how to compound several ingredients for any design proposed. It is either medial or alternate. Alligation medial is the method of finding the rate or quality of the composition from having the rates or qualities of the several ingredients, as to find the value of brandy per gallon, which is composed of 10 gallons at 24s. per gallon, 12 at 30s. per gallon, &c. Alligation alternate is the method of finding the quantities of ingredients necessary to form a compound of a given rate, as to find how gold of various degrees of fineness, that is of 19, 21, and 23 carats fine, &c. may be mixed together so that the mixture may be 20 carats fine. Questions of this kind are better solved by algebra.

**ALLIGATOR.** An amphibious animal so nearly resembling the crocodile of the Nile as to be considered a mere variety. It abounds in the torrid zone, and will sometimes grow to the length of 18 or 20 feet.



**ALLITERATION.** A repeating or playing upon the same letter in a succession of words.

**ALLODIAL.** An epithet for lands held without any acknowledgment to a lord or superior, in opposition to fensual lands. Allodial lands are exempt from rent or services.

**ALLOY**, or **ALLAY**. A proportion of any baser metal mixed with one that is finer, thus the gold coin has an alloy of silver and copper, as silver has of copper alone: the proportion in the former case for standard gold is 2 carats of alloy in a pound weight, or 22 carats fine; in the latter case, for the silver, there are 18 dwts. of alloy in 11 oz. 2 dwts. fine.

**ALL SAINTS**. A festival observed in the Christian church on the first day of November, in commemoration of all the saints.

**ALLSPICE**, or the **PIMENTO TREE**. A beautiful tree of Mexico and the West Indies, the fruit of which is highly aromatic. The tree is about 30 feet in height, and 2 in circumference.



**ALLUVION**. A gradual increase of land washed to the shore by inundations. Alluvial formations are also to be found in valleys and plains, by the deposit of gravel, loam, clay, or other earths washed down from the mountains.

**ALMAGEST**. The name of a celebrated book on astronomy, composed by Ptolemy.

**ALMA MATER**. The name given to the universities of Oxford and Cambridge by their several members who have passed their degrees in each of these universities.

**ALMANAC**. A calendar or table containing a list of the months and days, with an account of the rising and setting of the sun and moon, and other incidental matters. The *Nautical Almanac*, or *Astronomical Ephemeris*, is a kind of national almanac, begun in 1767, under the direction and by the advice of the astronomer royal, the late Rev. Dr. Maskelyne. Besides most things essential to general use, which are found in other almanacs, it contains many new

and important matters, particularly the distance of the moon from the sun and fixed stars, computed to the meridian of Greenwich, for every three hours of time, for the purpose of computing the longitude at sea. This almanac is generally computed a few years forward, for the convenience of ships going out upon long voyages.

**ALMOND**. The fruit of the almond tree, which is a nut, and is either sweet or bitter.

**ALMOND TREE**. A tall tree, resembling the peach tree, which flourishes in the eastern countries and the southern parts of Europe. It is one of the first trees that bloom.

**ALMONER**. An ecclesiastical officer of the king, appointed to distribute the king's alms to the poor every day.

**ALOE**. A tree which originally came from India, is remarkable for a bitter juice, called aloes, which is extracted from its leaves, and is very useful in medicine. The aloe socotrina is a European species much cultivated in Spain.

**ALPHA**. The first letter in the Greek alphabet, which with the second letter, beta, forms the word alphabet.

**ALPHABET**. A series of the several letters in a language, which vary in number in different languages. The Hebrew contains 22 letters, as also the Chaldee, Samaritan, Syriac, Persian, Æthiopic, Saracen, &c.; but the Irish, which is the same as the Pelasgian, or Scythian, still retains only 17; the Greek alphabet, which was brought by Cadmus into Greece from Phœnicia, and was also Pelasgian in its original, consisted of 16 or 17, to which were afterwards added 7 or 8 more, to make up 24. The ancient Arabic alphabet consisted of 24, to which 4 more letters have since been added; the Coptic alphabet consists of 32, the Turkish of 33, the Georgian of 36, the Russian of 39, the Spanish of 27, the Italian of 20, the Latin of 22, the French of 23, and the English of 26. See more on this subject under the head of **WRITING**. The Chinese have no proper alphabet, unless we reckon as such their keys to classes of words, distinguished by the number of strokes combined in each, of which they have 214 in number. As to the written characters of these alphabets, see **WRITING**.

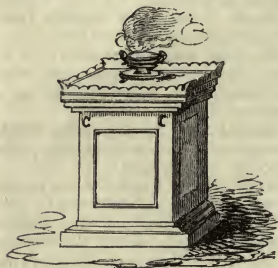
**ALT**. That part of the great scale of sounds lying between F above the treble cliff note, and G in altissimo.

**ALTAR**. A table or raised place on which any offering was made to the Almighty. The first altar mentioned is that built by

Noah after the flood. The two principal altars of the Jews were the altar of burnt



offerings and the altar of incense.



**ALTERNATION.** A rule in arithmetic showing the different ways in which any number of quantities may be changed or combined.

**ALTIMETRY.** The art of measuring altitudes or heights.

**ALTITUDE.** The height of an object, or its elevation above that plane to which the base is referred; thus in mathematics the altitude of a figure is the perpendicular or nearest distance of its vertex from the base. The altitude of an object is the elevation of an object above the plane of the horizon, or a perpendicular let fall to that plane, as a perpendicular let fall from a tower.

Altitudes are either accessible or inaccessible. An accessible altitude of an object is that whose base we can have access to, so as to measure the distance between it and the station from which the measure is to be taken.

Inaccessible altitude is when the base of the object cannot be approached. Inaccessible altitudes may be measured either by geometry, trigonometry, optical reflection,

or by the barometer. The altitudes of mountains may be determined best by the barometer, for as the weight of the atmosphere diminishes as we rise, the fall of the barometer determines the elevation of any place. The altitude of the pyramids in Egypt was measured in the time of Thales, by means of their shadow and a pole set upright beside them, making the altitudes of the pole and pyramid to be proportional to the length of their shadows. The instruments now commonly used in measuring altitudes are the geometrical square, the quadrant, and theodolite.

**ALTITUDE (in Optics).** The height of an object above a line drawn parallel to the horizon from the eye of the observer.

**ALTITUDE OF THE EYE (in Perspective).** The perpendicular height of the eye above the geometrical plane.

**ALTITUDE OF A STAR, &c. (in Astronomy).** The height of any star, &c. above the horizon, or an arc of a verticle circle, intercepted between the star and the horizon. This altitude is either true or apparent, according as it is reckoned from the rational or sensible horizon, and the difference between these two is termed by astronomers the parallax of altitude.

**ALTO (in Music books).** Italian for the upper or counter tenor, and is common in music of several parts.

**ALUM.** A mineral salt, composed of sulphuric acid, potash, alumina, and water. It is of a white colour, and of an astringent acid taste; natural alum, which was well known to the ancients, is a kind of whitish friable stone, formerly found in the island of Melos, Macedonia, Egypt, &c. Factitious alum is commonly made of a stone, of seaweed, and of urine. It is known by the names of rock or English alum, which is colourless; and Roman alum, which is of a reddish colour.

**ALUM EARTH.** The earth from which alum is extracted.

**ALUMINA, or ALUMINE.** The earth of alum, an argillaceous, soft, and insipid sort of earth, which is the base of alum, being the principal part of clay.

**ALUM WATER.** A preparation used by painters in water colour, prepared by dissolving alum in water.

**A. M.** An abbreviation for Anno Mundi, the year of the world, and Magister Artium, master of arts.

**AMALGAM, or AMALGAMA.** The mixture of mercury with some other metal. Amalgams are used either to render a metal fit to be spread on some works, as in gilding,

or else to reduce the metal to a subtle powder. An amalgam of tin and mercury is used for looking glasses.

**AMALGAMATION.** The operation of mixing quicksilver with some other metal, by fusing the metal, and in that state adding a portion of mercury to it. Gold of all metals unites best with mercury, next to that silver, then lead, tin, and every other metal, except iron and copper, the last of which admits scarcely any of such amalgamation.

**AMANUENSIS.** A slave among the Romans, who used to be employed in writing for his master; also any one among the moderns who is employed to transcribe for another.

**AMARANTH.** A plant which flourishes in the Indies and South America, remarkable for the lasting beauty of its flowers.

**AMATEUR.** One who follows a particular art or profession not for gain but for pleasure.

**AMBASSADOR.** One appointed by a sovereign power to represent him, and superintend his affairs at a foreign court.

**AMBER.** A hard, brittle, tasteless substance, mostly semitransparent, or opaque, and of a glossy surface. It is highly electric, and if a piece be kindled it burns to the end with pungent white vapours, without melting.

**AMBERGRIS.** A solid sebaceous or fat substance, found floating in the sea, near the coasts of various tropical countries. It is supposed to be the excrement of the spermatic whale, having frequently been met with in the intestines of that fish.

**AMBER TREE.** A shrub, the beauty of which lies in its small evergreen leaves; these grow as close as heath, and when rubbed emit a fragrant odour.

**AMBIDEXTER.** A person who can use both hands with equal facility.

**AMBUSCADE.** A place where soldiers lie concealed, in order to surprise an enemy.

**AMENDE.** A pecuniary punishment imposed, according to the customs of France, by a judge, for any false prosecution or groundless appeal.

**AMENDE HONORABLE.** An infamous kind of punishment formerly inflicted in France on traitors, parricides, or sacrilegious persons, who were to go naked to the shirt, with a torch in their hand, and a rope about their neck, into a church or a court, to beg pardon of God, the court, and the injured party.

**AMENTACEÆ.** A natural order of plants, bearing catkins, as the poplar, hazel, beech, &c.

**AMERCEMENT.** A pecuniary punishment imposed on offenders at the mercy of the court; it is contracted from the Latin words a misericordia, which signify literally *from* or *at the mercy*. Amercements differ from fines, in as much as the latter are defined, and the former are proportioned to the fault, or more properly at the discretion of the court.

**AMETHYST.** A gem of great hardness and brilliancy, and of various colours, but mostly purple or violet. It comes from India, and is used in medicine as an astringent.

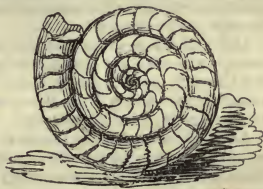
**AMIANTHUS.** An incombustible mineral flax, which may be drawn into threads and wove into cloth. It is mostly found among rocks.

**AMMON.** The title under which Jupiter was worshiped in Libya, where a temple was erected to him, from which oracles were delivered for many ages.

**AMMONIA.** A volatile alkali, which, when in its purest state, exists only in the form of a gas. It forms a liquid when cooled, and is known by the name of hartshorn, because it is obtained from distilling the horn of the hart. It may also be obtained from urine and camel's dung by distillation.

**AMMONIAC, or GUM AMMONIAC.** A resinous substance brought from the East Indies in drops or granules. The best kind is of a yellowish colour without and white within.

**AMMONITÆ SNAKE STONE.** A sort of fossil shells, made up of small circles, like those of a snake rolled up.



**AMMUNITION.** A general term for all warlike stores, but more especially powder, balls, guns, &c.

**AMNESTY.** An act of pardon granted by a prince to his subjects for former offences, as the amnesty granted by Charles II. at the Restoration.

**AMPHIBIA.** A class of animals which live equally well in air or water, such as the phocæ, or seal tribe, frogs, lizards, crocodiles, eels, water serpents, snakes. They are remarkable for their tenacity of

life; some will continue to move even when the head is cut off.

**AMPHISCIL.** A name applied by geographers to the inhabitants of the torrid zone.

**AMPHITHEATRE.** A circular building among the ancients, having seats entirely around, and an area in the middle, where spectacles were exhibited. Some of these, as the Coliseum in Rome, could contain from 50,000 to 80,000 persons.

**AMPLIFICATION** (with Rhetoricians). An amplifying or enlarging upon an argument, either by aggravating or extenuating a crime, heightening an eulogium, or enlarging a narration, by an enumeration of circumstances, so as to excite proper emotions in the audience.

**AMPLITUDE.** An arch of the horizon, intercepted between the east or west points and the centre of the sun or stars at their rising and setting. It is called *ortive*, or eastern amplitude, when the star is rising; and *occiduous*, or western, when the star is setting.

**AMPLITUDE MAGNETICAL.** Is an arc of the horizon, contained between the sun or a star at its rising and setting, and the magnetical east or west point of the horizon, indicated by the magnetical compass, or the amplitude or azimuth.

**AMPUTATION** (in Surgery). The cutting off a limb or other part of the body with an instrument.

**AMULET.** A supposed charm or preservative against witchcraft, mischief, or diseases. Amulets consist of stone, metal, simples, or whatever else the fancy suggested; sometimes words or sentences might be employed in this manner.

**AMZEL.** A bird of the blackbird kind, belonging to the same genus, *merula*, in the Linnæan system. The ring-amzel is remarkable for having a fine broad white ring at the lower part of its throat.

**ANA.** A name given to amusing miscellanies, consisting of anecdotes, traits of character, and incidents relating to any person or subject.

**ANABASIS.** The title of Xenophon's description of the younger Cyrus's expedition against his brother, in which the writer bore a principal part.

**ANACHRONISM.** An error in chronology, as when an event is related to have happened in the reign of a certain prince, which happened either before or after.

**ANACLASTICS.** Another name for dioptrics, or that branch of optics which relates to refracted light.

**ANACREONTIC VERSE.** A sort of

verse so called from the Greek poet Anacreon, by whom it was first used. It consists of three feet, generally spondees and iambic. It is adapted to soft and tender subjects.

**ANAGRAM.** The transposition of the letters of one word so as to form another, as amor changed into Roma.

**ANALEMMA.** A projection of the sphere on the plane of the meridian, orthographically made by straight lines and ellipses, the eye being supposed at an infinite distance, in an equinoctial point.

**ANALEMMA.** Is also an instrument, a kind of astrolabe, made either of brass or wood, with an horizon fitted to it; it is used for finding the time of the sun's rising or setting, the length of the longest day, &c. The most ancient treatise on this instrument was written by Ptolemy, and published in 1562, with a Commentary by Commandine. Other authors, as Aquilonius, Jaquet, Deschales, &c. have since written on the same instrument.

**ANALOGY.** The relation which things bear, or are supposed to bear, to each other, from their resemblance or proportion to one another; as the analogy between animals and plants, from which a similar treatment of them in many cases may be inferred. Analogy is one of the principal grounds of reasoning in matters of experience.

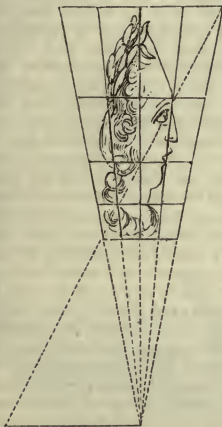
**ANALYSIS** (in Logic). The resolution or unfolding of any thing, so as to discover its component parts as opposed to synthesis. Analysis is the method of finding out truth, and synthesis is the method of explaining that truth to others. Among mathematicians it is the art of discovering the truth or falsehood of a proposition, by supposing the question to be solved, and then examining the consequences, till some truth is discovered, or the absurdity and impossibility of the proposition is discovered. The analysis of finite quantities is properly called specious arithmetic, or algebra; the analysis of infinite quantities is the method of fluxions or differential calculus.

**ANALYSIS** (in Chymistry). Is the decomposition of bodies, as vegetables and minerals, to discover their component parts.

**ANALYTICS.** A name given to algebra, being nothing else but a general analysis of pure mathematics; or else because it teaches how to solve questions, and demonstrate theorems, by searching into the fundamental nature and frame of the thing, which is, as it were, resolved into parts, or taken to pieces, and then put together again.

**ANAMORPHOSIS** (in Perspective and

Painting). A monstrous projection, or representation of an image on a plane or curve surface, which beheld at a certain distance shall appear regular and in proportion.



**ANAPÆST.** A metrical foot, having the two first short and the last long ( ~ ~ ~ ), as *pÿētās*.

**ANARCHY.** A society without a government, or where there is no supreme governor.

**ANATHEMA.** In the general sense, a religious curse; in the particular sense, ecclesiastical excommunication.

**ANATOMY.** The act of dissecting bodies for the purpose of examining their structure, and the nature, uses, and functions of their several parts; also the knowledge of the human body derived from such dissections and examinations; when applied to animals it is termed Comparative Anatomy. In the science of anatomy, the body is divided into the head, trunk, and extremities, and is composed of solids and fluids. The solids are the integuments, bones, cartilages, ligaments, membranes, vessels,

muscles, nerves, and glands. The principal fluids are the blood, the chyle, the lymph, and the bile. Anatomy, from the names of the parts treated of, is divided into osteogeny, or the doctrine of the growth of the bones; osteology, the doctrine of the bones in the adult subject; chondrology, the doctrine of the cartilages; syndesmology, the doctrine of the ligaments; myology, the doctrine of the muscles; bursaology, the doctrine of the *bursæ mucosæ*; splanchnology, the doctrine of the viscera; angiology, the doctrine of the vessels; adenology, the doctrine of the glands; neurology, the doctrine of the nerves, &c. Anatomy, taken absolutely, applies only to the dissection of human subjects; the dissection and examination of brutes is called Comparative Anatomy.

**ANATOMY, HISTORY OF.** The science of anatomy was doubtless coeval with that of medicine, for the connexion between the two studies would naturally suggest to the inquirer into the diseases of the human body the necessity of becoming acquainted with its component parts. In Egypt, the practice of embalming rendering it necessary to open the body, led them first to make observations on the structure of the human frame, which was afterwards encouraged by their kings, who ordered dead bodies to be regularly dissected for the perfection of the art; but, judging from some specimens which have been preserved of their anatomical observations, the science did not make any considerable progress among them. There is, however, no doubt, but they laid the foundation, and the Greeks, who derived their earliest information from them, enlarged the boundaries of the science by their researches. Hippocrates, who lived about 400 years before Christ, is the first who expressly wrote on this subject; and the first anatomical dissection recorded was made by his friend Democritus, of Abdera. In Aristotle's works there are many minute particulars on this subject, which show that he had made the animal body his particular study. From the Greeks this science, after an interval of several centuries, passed again into Egypt, where, by the fostering care of the Ptolemies, it was revived and made great advances. Erastratus, the pupil and friend of Theophrastus and Herophilus, laid the foundation of the famous school of anatomy at Alexandria, which was for many centuries in such high repute that no one was supposed qualified for the medical art, who had not studied at Alexandria. Herophilus is said to have dissected not less than

700 bodies, and among the rest some living subjects, but probably, as such a monstrous piece of cruelty must have defeated its own purpose, this latter part of the story is only an exaggeration. The Romans learnt from the Greeks the science of anatomy, as they did most other arts and sciences; for the first rudiments were taught to them by Archagathus, a Greek physician, who first established himself at Rome, and afterwards by Asclepiades, who flourished in the time of Pompey, and gained such repute that he was looked upon as a second Hippocrates. He was succeeded by Cassius, who was supposed to be the disciple of Asclepiades, Celsus, Rufus, Pliny, Cælius Aurelianus, and Aratæus, whose works abound with anatomical observations, and prove that, although their researches were not deep, their attention was drawn towards the subject. This is also still more evident from the works of Galen, who, in point of accuracy and minuteness of detail, surpassed all that went before him, and also all that followed him until within the last three centuries. The Arabians and Saracens, on the decline of the empire, took the place of the Greeks and Romans in the cultivation of the sciences, but as by the tenets of their religion they were prohibited from touching dead bodies, and consequently could not practise dissection, they were obliged to content themselves with commenting upon Galen. To effect this object, we find that Abdollatiph, a teacher of anatomy in the thirteenth century, examined and demonstrated the structure of the bones by going to the burying grounds; and by that means he detected some errors in Galen. Although the Europeans were not under the same restrictions, yet during the middle ages it is certain that the science of anatomy made no advances. The best treatise then extant, which gained the author great repute, and was the standard book in the schools, was that of Mundinus, which appeared in 1315, yet this was nothing but an abstract of Galen. On the expulsion of the Moors, the prejudice against dissection abated, and copies of the Greek authors having found their way into Europe after the sacking of Constantinople, the study of anatomy revived considerably in the fifteenth century. Among the Italians, Achilinus Benedictus, Berengarius, and Massa added to the stock of anatomical knowledge by discoveries of their own from dissections. But the most distinguished names among the anatomists of that period are those who flourished in the following century, namely, Vesalius, a native of Brussels, Sylvius in

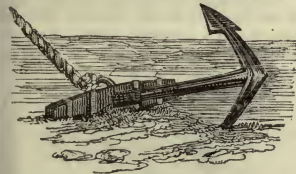
France, Columbus, Fallopius, and Eustachius in Italy, who, contrary to the practice of Galen, drew their observations from the human body, rather than from that of the brutes. Vesalius gave the names to the muscles, most of which are retained to this day. Gabriel Fallopius, in his treatise entitled *Observationes Anatomicæ*, published in 1561, improved upon the descriptions of Vesalius. The *Opuscula Anatomica* of Bartholomæus Eustachius, published in 1563, have ever been admired for the correctness and exactness of their descriptions. His plates, which were intended for a large and complete work on the subject, were not published until 150 years after, when, being found in an old cabinet, they were edited by Lancisi, the pope's physician, who added a short explanatory text, because that of Eustachius could not be found. The next in the list of distinguished anatomists must be reckoned our Harvey, who, after having studied in Italy under Fabricius ab Aquapendente, was led by the writings of his master to consider the manner in which the blood was circulated over the whole body, and the offices of the several vessels. Fabricius published an account of the valves which he discovered in the veins. This discovery affected the established doctrine of all ages, that the veins carried the blood from the liver to all parts of the body for nourishment; and Harvey was led by this to consider more narrowly the functions of the heart and the vascular system. The result of his investigation was, that the heart is the grand reservoir of the blood, that the arteries, which had hitherto been considered as air vessels, were the channels by which it was conveyed to all parts of the body, and the veins were the channels by which it was carried back to the heart. His doctrine at first met with considerable opposition, but farther researches put it at length beyond all question, and led to other discoveries of considerable importance. The lacteals, or vessels which carry the chyle to the intestines, were discovered by Ascelius, an Italian; the thoracic duct by Pecquet, in 1651; the lymphatics by Thomas Bartholine, a Danish anatomist; besides numerous other discoveries which were made by the help of magnifying glasses. These were first brought into use by Malpighi, after by Laurentius Bellinus, a distinguished anatomist of Italy, Swammerdam, Van Horn, De Graaf, and other Dutch anatomists, particularly Antonius Liewenhoeck, of Delft, who improved on Malpighi's use of microscopes, and succeeded in discovering globules in the blood,



animalculæ in the semen, and many other particulars which had hitherto escaped notice. From this time the science of anatomy made prodigious advances towards accuracy, so that each particular part has furnished matter for the labours of celebrated anatomists. The figures of the bones have been given in four large folio volumes, by Albinus, Cheselden, Trews, &c.; those of the muscles are given in two large folios, by Cowper and Albinus, the latter of which are particularly admired for their correctness. Haller has published a folio on the blood vessels, Dr. Munro, junior, on the nerves, Albinus, Roederer, and Hunter on the gravid uterus, Weibrecht and others on the joints and fresh bones, Soemmering on the brain, Zinn on the eye, Cotunnus Mickel, junior, and others on the ear, Walter on the nerves of the thorax and abdomen, Munro on the bursæ mucosæ, besides the several systems of anatomy from the pens of Albinus, Keil, Cheselden, Hunter, Munro, Douglas, Fife, Winslow, &c.

**ANCESTRY.** The line of ancestors or forefathers from which any person is descended.

**ANCHOR.** An instrument for holding a ship in the place where she should ride.



**ANCHORAGE.** The ground that is fit for holding the anchor; also the duty taken of ships for the use of the haven where they cast anchor.

**ANCHORET.** A hermit, or one who retired from the world, and lived in perfect solitude.

**ANCHOVY.** A small sea-fish much used in sauce; it is so like the common sprat, that the latter is often pickled and sold under its name.

**ANDANTE** (in Music). Italian for exact and just time in playing, so as to keep the notes distinct from each other.

**ANDROIDES** (in Mechanics). A term used to denote an automaton in the figure of a man, which, by means of certain springs and other mechanical contrivances, is enabled to walk, and perform other actions of a man. The most celebrated of

these automatons which have been exhibited in modern times are the flute-player of M. Vancanson, exhibited at Paris, the chess-player of M. de Kempfen of Presburg, and the chess-player who lately performed wonders in that game in London. The construction of these automatons is at present a secret.

**ANDROMEDA.** A small northern constellation consisting of sixty-three stars.

**ANEMOMETER.** An instrument used for measuring the force and velocity of the wind.

**ANEMONE.** A beautiful flower originally brought from the east, but now much cultivated in our gardens. The word signifies properly wind-flower, because it was supposed that it opened only when the wind blew.

**ANEMOSCOPE.** A machine showing from what point of the compass the wind blows.

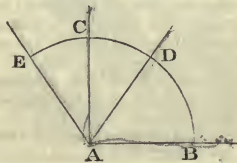
**ANEURISM.** A diseased swelling of an artery, attended with a continued pulsation.

**ANGEL.** Literally, a messenger; particularly, the heavenly messengers sent by God as ministers to execute his commands.

**ANGEL.** A gold coin, in value ten shillings, having the figure of an angel stamped upon it, in commemoration of the saying of Pope Gregory, that the English were so beautiful that they would be Angeli, not Angli, if they were Christians.

**ANGIOSPERMIA.** A term in the Linnæan system for such plants of the class Didymia as have their seeds enclosed in a capsule or seed-vessel.

**ANGLE.** The inclination of two lines meeting one another in a point, which lines are called the legs; when the lines meet perpendicularly it is a right angle, as A, B, C; when they meet so as to make



the angle less than a right angle, it is called acute, as A, B, D; and when they make the angle greater, it is called an obtuse angle, as A, B, E.

**ANGLER.** A singular fish, also known at present by the name of the fishing frog, from the resemblance which it bears to that animal in the state of a tadpole.

**ANGLICAN CHURCH.** That form of doctrine and discipline which is established in England, and serves for the government of the whole Christian church in this country. Its doctrines are comprehended within thirty-nine articles, and its government, which is episcopal, consists of two archbishops and twenty-four bishops, together with the different orders of inferior clergy.

**ANGLICISM.** An idiom or manner of speech peculiar to the English.

**ANGLING.** The art of fishing with a rod, to which are attached a line, hook, and bait. Anglers look for breams in the deepest water, for eels under banks, for chub in deep shaded holes, for perch and roach in ponds, and for trout in quick streams. The best months for angling are from April to October; the time of the day early in the morning, or in the evening of hot days. Fish bite freely in cloudy warm weather, but not at all when it is cold and stormy. Fish ought to be fed on corn boiled soft, garbage, worms chopped to pieces, or grains steeped in blood. If you fish in a stream, it is best to cast in the grains above the hook.

**ANIMAL.** A living body endowed with sensation and spontaneous motion; in its limited sense, any irrational creature, as distinguished from man.

**ANIMALCULÆ.** Animals so minute as not to be the immediate object of our senses. They are seen only by the help of the microscope.

**ANIMAL KINGDOM.** One of the three principal divisions into which all organized bodies are divided by Linnæus. It comprehends six classes of animals; namely, Mammalia, or such as suckle their young, mostly quadrupeds; Aves, birds, which are oviparous; Amphibia, amphibious animals; Pisces, fishes, such as live only in water, and are covered with scales; Insecta, insects, which have few or no organs of sense, and a bony coat of mail; Vermes, worms, which have mostly no feet.

**ANIME, or GUM ANIME.** A resinous substance imported from New Spain and the Brazils.

**ANNALS.** A species of history, in which events are related in the exact order of chronology.

**ANNEALING.** The process of heating steel and other metal bodies, and then suffering them to cool again gradually.

**ANNOTTO.** A kind of red dye brought from the West Indies. It is procured from the pulp of the seed capsules.

**ANNUAL.** An epithet for whatever happens every year, or lasts a year. An

annual, in Botany, is a plant which dies within the year.

**ANNUITY.** The periodical payment of money, either yearly, half yearly, or quarterly; for a determinate period, as ten, fifty, or a hundred years; or for an indeterminate period, dependant on a certain contingency, as the death of a person; or for an indefinite term, in which latter case they are called perpetual annuities.

**ANNULET.** A small square member in the Doric capital.

**ANNUNCIATION.** The delivery of a message, particularly the angel's message to the Virgin Mary, concerning the birth of our Saviour. The festival in commemoration of that event is called Lady Day.

**ANODYNES.** Medicines so called because they ease pain and procure sleep, such as the medicinal preparations of the poppy.

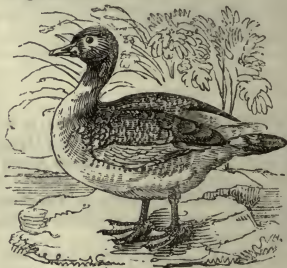
**ANOMALISTICAL YEAR** (in Astronomy). The time that the earth takes to pass through her orbit.

**ANOMALOUS VERBS** (in Grammar). Verbs which are not conjugated regularly.

**ANOMALY.** In a general sense, irregularity; in Astronomy, the irregularity in the motion of a planet.

**ANSER.** A star of the fifth magnitude in the milky way.

**ANSERES.** The third order of birds in the Linnæan system, including such as have the bill somewhat obtuse, covered with a skin, and gibbons at the base, as the goose, duck, swan, &c.



**ANT.** A gregarious and proverbially industrious tribe of insects, which are divided into males, females, and neutrals. Their houses are curiously constructed, and divided into chambers, magazines, &c.

**ANTARCTIC** (in Astronomy). The name of a circle of the sphere, which is opposite to the arctic or northern pole. It is nearly 23 and a half degrees distant from the south pole, which is also called the antarctic pole.

**ANTECEDENT.** The word in grammar to which the relative refers; as God, whom we adore, the word God is the antecedent.

**ANTEDATE.** A date that precedes the real one; as the antedate of a bill, that which is earlier than the time when it is drawn.

**ANTEDILUVIANS.** Persons living before the deluge.

**ANTELOPE.** A beautiful kind of quadruped, of an elegant make. Antelopes are singularly swift in their motion, and in general natives of hot climates, particularly in Africa and Asia. Europe has but two species, and America none. The African antelope is here given.



**ANTENNÆ.** The horns or feelers of insects which project from their heads, and serve them in the sense of feeling and seeing.

**ANTHEM.** A sacred composition used as a part of Christian worship.

**ANTHER.** A part of the stamen of a flower which is at the top of the filament. It contains the pollen or farina, which it emits or explodes when ripe.

**ANTHOLOGY.** A collection of choice poems, particularly a collection of Greek epigrams so called.

**ANTHROPOPHAGI.** Another name for cannibals, or men eaters.

**ANTIDOTE.** A counterpoison, or any medicine generally that counteracts the effects of what has been swallowed.

**ANTIMONY.** A metallic, solid, heavy, brittle substance, which is very seldom found pure, but mostly mixed with other metals. In its pure state it is called the regulus of antimony. Crude antimony, in commerce, is a metallic ore, consisting of the metal called antimony combined with sulphur.

**ANTINOMIANS.** An ancient sect, who maintained that faith, without good works,

was sufficient for salvation. This sect has been revived since the Reformation.

**ANTIPODES.** Persons so named in geography, who live diametrically opposite to one another, as it were feet to feet. They have equal latitudes, the one north, and the other south; but opposite longitudes, consequently when it is day to the one it is night to the other, and when summer to the one winter to the other.

**ANTIQUARY.** One who searches after the remains of antiquity. The monks who were employed in making new copies of old books were formerly called antiquarii.

**ANTISCII** (in Geography). People who live on different sides of the equator, and have their shadows at noon fall directly opposite ways.

**ANTISEPTICS.** Substances which resist putrefaction.

**ANTITHESIS.** A figure of speech, in which contraries are put in contrast with each other, as, He gained by losing, and by falling rose.

**ANTOECI** (in Geography). People who live under the same meridian, east or west, but under opposite parallels of latitude; they have their noon or midnight at the same hour, but their seasons contrary.

**ANVIL.** An iron instrument, on which smiths hammer their work. It is usually mounted on a wooden block.



**AORTA,** otherwise called **MAGNA ARTERIA.** The great artery proceeding from the left ventricle of the heart, from which all the other arteries proceed mediately or immediately. It is distinguished into the descending or ascending, according to the manner in which it runs.

**APATITE.** Phosphate of lime; a mine-

ral which occurs in tin veins, and is found in Cornwall and Germany.

**APE.** The name of a tribe of animals which are without tails, imitative, chattering, full of gesticulations, thievish, and mischievous.



**APERIENTS.** Opening medicines.

**APETALOUS** (in Botany). A term for plants whose flowers have no flower leaves or corolla; as the hippuris, or fox tail grass.

**APEX.** A little woollen tuft on the cap of the flamen, or high priest, among the ancients.

**APEX** (in Mathematics). The angular point of a cone or conic section.

**A. P. G.** An abbreviation for Professor of Astronomy in Gresham College.

**APHÆRESIS** (in Grammar). The taking away a letter or syllable from a word.

**APHELION.** That point at which the earth, or any planet, is at the greatest distance from the sun.

**APHIS.** The plant louse; an extensive genus of the hemiptera order.

**APHORISM.** A brief sentence in science, comprehending some experimental truth, as the Aphorisms of Hippocrates, &c.

**APIARY.** A place where bees are kept, which should be selected with great care, observing that it face the south, be defended from high winds, and not within the sphere of offensive smells, or liable to the attacks of hornets, or any other hostile vermin.

**APIS.** The bee; a genus of insects of the order hymenoptera.

**APIS.** An Egyptian deity, worshiped under the form of an ox.

**APOCOPE** (in Grammar). The cutting off the last letter or syllable of a word.

**APODAL.** The first order of fishes in the Linnæan system, having no ventral

fins, as the eel, the wolf fish, the sword fish, the lance, &c.



**APOGEE.** That point of the orbit at which the sun, moon, or any planet is most distant from the earth. This term, as well as the perigee, was most in use among the ancients; modern astronomers, making the sun the centre of the universe, mostly use the terms aphelion and perihelion.

**APOLLO.** The god of medicine, music, poetry, and the fine arts. He was the son of Jupiter and Latona, born in the island of Delos, and is commonly represented naked, with his lyre or bow.



**APOLOGUE.** An instructive fable, or a feigned relation, intended to teach some moral truth; as the Fables of Esop.

**APOPHTHEGM.** A brief and pithy saying, particularly of some distinguished person.

**APOPLEXY.** A disorder which suddenly surprises the brain, and takes away all sense and motion.

**APOSTATE.** One who has forsaken his religion; particularly one who has deserted the Christian profession.

**A POSTERIORI.** A term employed in demonstrating a truth; as when a cause is proved from an effect.

**APOSTLES.** Properly messengers or ambassadors, a term applied now particularly to the twelve disciples commis-

sioned by our Saviour to preach the gospel to all nations.

**APOSTROPHE.** A figure of speech, by which the orator turns from his subject to address a person either absent or dead, as if he were present.

**APOSTROPHE** (in Grammar). A mark of contraction in a word; thus, lov'd for loved.

**APOTHECARY.** Properly the keeper of a medicine shop; but more generally one who practises the art of pharmacy, or of compounding medicines. In London, apothecaries are one of the city companies, and are exempted, by stat. 9 Geo. I. from serving upon juries or in parish offices. They are obliged to make up their medicines according to the formulas prescribed in the college dispensatory, and are liable to have their shops visited by the censors of the college, who are empowered to destroy such medicines as they do not think good.

**APOTHEOSIS.** Deification, or the ceremony of placing among the gods, which was frequent among the ancients. This honour was conferred on several of the Roman emperors at their decease.

**APPANNAGE, or APPENNAGE.** Lands set apart as a portion for the king's younger children in France.

**APPARATUS.** A set of instruments or utensils necessary for practising any art, as a surgeon's apparatus, a chymist's apparatus.

**APPARENT** (among Mathematicians). A term applied to things as they appear to us, in distinction from what they are in reality; as the apparent distance, magnitude, place, figure, &c. of any heavenly body, as distinguished from the real or true distance, &c.

**APPARITION** (in Astronomy). The becoming visible. The circle of apparition is an imaginary line, within which the stars are always visible in any given latitude.

**APPEAL** (in Law). The removal of a cause from an inferior to a superior court, particularly applied to the act of bringing a decision of the courts of Scotland or Ireland under a review of the House of Lords, which is done by presenting a petition of appeal. Appeal, in a criminal prosecution, denotes an accusation by a private subject against another for some heinous crime, as treason, felony, death, &c. Appeals were formerly in common use, but are now done away with by statute.

**APPEARANCE** (in Law). The defendants filing common or special bail, when

he is served with copy of or arrested on any process out of the courts of Westminster. There are four ways for defendants to appear to actions, in person, or by attorney, for persons of full age; by guardians, or next friends, for infants.

**APPEARANCE** (in Perspective). The projection of a figure or body on the perspective plane; in Astronomy, the same as phenomenon, or phasis.

**APPELLANT, or APPELLOR.** One who makes or brings an appeal; it was formerly much used for one who brought an appeal in a criminal prosecution.

**APPELLATIVE** (in Grammar). A noun or name applicable to a whole species or kind, as, a man, a horse.

**APPENDANT** (in Law). Any thing inheritable that belongs to a more worthy inheritance, as an advowson, or common, which may be appendant to a manor; or land to an office: but land cannot be appendant to land, both being corporeal, and one thing corporeal may not be appendant to another.

**APPLE.** A well known fruit, from which cider is made.

**APPLICATION.** The bringing one thing nearer to another for the purpose of measuring it; thus a longer space is measured by the application of a less, as a yard by a foot or an inch.

**APPOSITION** (in Grammar). The placing two or more substantives together, without any copulative between them, as, Cicero the orator.

**APPRAISING.** The valuing or setting a price on goods. An appraiser is one sworn to value goods fairly.

**APPREHENSION.** The first power of the mind, by which it simply contemplates things, without pronouncing any thing upon them.

**APPRENTICE.** A young person bound by indentures or articles of agreement to a tradesman, or artificer, to learn his trade or mystery. By the stat. 5 Eliz. no person can exercise any trade in any part of England, without having served a regular apprenticeship of at least seven years. No trades, however, are held to be within the statute but such as were in being at the making of the same in the reign of Elizabeth.

**APPROACHES** (in Fortification). The works thrown up by the besiegers, in order to get nearer a fortress without being exposed to the enemy's cannon.

**APPROPRIATION.** The annexing a benefice to the proper and perpetual use of a religious house, bishopric, college, &c.

so that the body or house are both patron and person, and some one of the number was appointed to officiate. At the dissolution of the monasteries, the appropriations, being more than one third of all the parishes in England, were given to laymen, whence sprung most of the lay impropriations existing at present; for what is called an appropriation in the hands of religious persons, is usually called an impropriation in the hands of laity. It is computed that there are in England three thousand eight hundred and forty-five impropriations.

**APPROVER** (in Law). One who, being indicted of treason or felony, confesses himself guilty, and accuses others to save himself; this is vulgarly called turning king's evidence.

**APPROXIMATION**. In general a getting near to an object; in mathematics, a continual approach to a root or quantity sought, but not expected to be found.

**APPULSE** (in Astronomy). The approach of a planet towards a conjunction with the sun or any of the fixed stars.

**APPURTENANCES** (in Law). Things corporeal and incorporeal that appertain to another thing as principal; as hamlets to a chief manor. Outhouses, yards, orchards, gardens, &c. are appurtenant to a message.

**APRICOT**. A fine sort of wall fruit, which requires much sun to ripen it.

**APRIL**. The second month of Romulus' year, and the fourth of Numa's year, which began as it does now, in January.

**A PRIORI**. A mode of reasoning by proving the effect from the cause.

**APROPOS**. Just in time.

**APSIDES**. The two points in the orbit of a planet, at the greatest and least distance from the sun.

**APTERA**. The seventh order of insects, having no wings, including spiders, fleas, earwigs, &c.; also lobsters, crabs, prawns, and shrimps.



**AQUAFORTIS**. A weak and impure nitric acid, commonly used in the arts. It is made of a mixture of purified nitre, or saltpetre, vitriol, and potter's earth, in equal parts, and is distinguished into single and

double, the former of which is only half the strength of the latter.

**AQUA REGIA**. Nitro-muriatic acid; composed of a mixture of the nitric and muriatic acids, which dissolves gold.

**AQUARIUS**. The water-bearer, a constellation, and the eleventh sign in the zodiac, commonly marked thus (♒).

**AQUATICS**. Trees or plants which grow on the banks of rivers and marshes and watery places.

**AQUA-TINTE**. A method of etching, which is made to resemble a fine drawing in water colours.

**AQUEDUCT**. A conduit for water by pipes. In the time of the emperor Nerva there were nine, which emptied themselves through 13,594 pipes of an inch diameter. That constructed by Louis XIV. for carrying the Bucq to Versailles, is 7000 fathoms long, with 2560 fathoms of elevation, and contains 242 arcades.

**AQUEOUS HUMOUR**. The watery humour of the eye, the first and outermost, which is less dense than the crystalline.

**ARABIC**, or **GUM ARABIC**. A transparent kind of gum brought from Arabia, which distils from a plant of the acacia species. It is used for painting in water colours, and also by calico printers and other manufacturers, but it is difficult to procure it genuine. That which is in small pieces, and of a perfectly white colour, is reckoned the best.

**ARABIC FIGURES**, or **CHARACTERS**. The numeral characters now used in our arithmetic, which were introduced into England about the eleventh century.

**ARBITER** (in Civil Law). A judge appointed by the magistrate, or chosen by the parties to decide any point of difference. An arbiter must judge according to the usages of law; but an arbitrator, who is a private extraordinary judge, chosen by the mutual consent of parties, is allowed a certain discretionary power.

**ARBITRATION**. A mode of deciding controversies by means of arbiters or arbitrators. (See **ARBITER**.)

**ARBOR VITÆ**. An evergreen shrub.

**ARBUTUS**. The strawberry-tree. A beautiful shrub, bearing a red roundish berry.

**ARC**. Any part of a curve line, as of a circle, ellipse, &c.

**ARC**, or **ARCH DIURNAL** (in Astronomy). That part of a circle described by a heavenly body, between its rising and setting. The nocturnal arch is that which is described between its setting and rising.

**ARCH** (in Architecture). That part of a building which derives its name from its

curved form. Some arches are semicircular, which are called Saxon arches; others pointed, which are called Gothic.

**ARCH OF EQUILIBRIUM** (in Bridge building). That which is in equilibrium in all its parts, and therefore equally strong throughout, having no tendency to break in one part more than another.

**ARCHBISHOP.** The chief prelate, having authority over other bishops. There are two archbishops in England; namely, that of Canterbury, who has twenty-one bishops under him; and that of York, who has four.

**ARCHDEACON.** An officer in the church of England, who acts for the bishop, having a superintendant power over the clergy within his district.

**ARCHDUKE.** One having a preeminence over other dukes.

**ARCHERY.** The art of shooting with a bow; formerly a favourite diversion among the English, who were also much skilled in it as a military exercise. The practice of archery was much encouraged by our kings. It was followed both as a recreation and a service, and Edward III. prohibited all useless games that interfered with the practice of it on holidays and other intervals of leisure. By an act of Edward IV. every man was to have a bow of his own height, to be made of yew, hazel, or ash, &c.; and mounds of earth were to be made in every township, for the use of the inhabitants. There were two kinds of bows in use among the English; namely, the longbow and the crossbow, those who used the longbow were called archers, in distinction from the crossbowmen. The English archers were the most skilful in Europe, and were employed in the army long after firearms were introduced. The artillery company of London is an ancient fraternity of archers and bowmen, besides which there are several companies of archers in England, as the woodmen of Arden.

**ARCHITECT.** One who is skilled in architecture. The architect forms plans and designs for edifices, conducts the work, and directs the artificers employed in it.

**ARCHITECTURE.** The art of building, or the science which teaches the method of constructing any edifice for use or ornament. It is divided into civil, military, and naval architecture, according as the erections are for civil, military, or naval purposes. The two last kinds are otherwise called Fortification, and Naval Architecture or Shipbuilding. (See FORTIFICATION and NAVAL ARCHITECTURE.)

**ARCHITECTURE, HISTORY OF.** The

origin of civil architecture, or architecture properly so called, is commonly derived from the building of huts in a conical form, spreading wide at the bottom, and joining in a point at the top, the whole being covered with reeds, leaves, &c. But whatever may have been the form of the first buildings, there is no doubt that the making of regular habitations was one of the first things which necessity suggested to the reason of man; for we find that Cain, the son of Adam, built a city. Tents, or temporary residences, which were only suited to such as lead a wandering life, were not invented before the time of Jubal, the son of Tubal Cain; since that time the Tartars have followed the practice, and the original inhabitants of America did the same. Every nation, in proportion to the degree of civilization which it has attained, has shown a disposition to exercise their ingenuity in the construction of their residences. Among the Egyptians this art was carried to an extraordinary degree of perfection. Their pyramids, labyrinths, and some ruins of their palaces and other edifices are still to be seen and admired as stupendous monuments of their industry, perseverance, and skill. Near Andera, in Upper Egypt, are the ruins of a palace of gray granite, the ceilings of which are supported by columns of such thickness, that four men can scarcely span them. The grand hall is 112 feet long, 60 high, and 58 broad. The roof of the whole edifice is a terrace, on which once stood an Arabian village. The Babylonians and Persians vied with the Egyptians, both in the grandeur and splendour of their buildings, as may be judged from the ruins still remaining. A staircase was to be seen some time ago, having 95 steps of white marble still standing, so broad and flat, that 12 horses might conveniently go abreast.

As these vast structures were not fitted for the general convenience of mankind, we must look to the Greeks for the art of architecture as it has since been exercised. From the simple construction of wooden huts, Vitruvius supposes the orders of architecture took their rise. When buildings of wood were superseded by solid and stately edifices of stone, they imitated the parts which necessity had introduced into the primitive huts; so that the upright trees, with the stones at each extremity of them, were the origin of columns, bases, and capitals; and the beams, joists, rafters, and the materials which formed the covering, gave birth to architraves, frizes, triglyphs, cornices, with the corona, mutules, modillions, and dentiles. To bring all these

several parts to the state of perfection at which they arrived was the work of long experience and much reasoning, aided by the invention of many tools. The Greeks improved upon the works of the Egyptians, so as to render them, if not so durable, at least more ornamental, and perhaps more really serviceable. The construction of arches was unknown to the ancient Assyrians and Babylonians. The roofs of their halls were flat, and covered with prodigiously large stones, some of them large enough to cover the whole room. They had columns, but they were ill proportioned, and the capitals were badly executed. The art of proportioning the various parts of a building belongs, in a peculiar manner, to the Greeks, from whom we derive the three principal orders: at the same time it must not be denied, that the Jewish nation had earlier examples of such proportion; and that, in all probability, the Greeks took their idea of a regular order in architecture from the temple of Solomon.

In the Doric Order, which is so called from Dorus, the son of Helenus, and grandson of Deucalion, the column approaches very nearly to the proportions of those to be found in Solomon's temple. This order was first employed by Dorus in the building of a temple at Argos, in honour of Juno, and was formed according to the proportions between the foot of a man and the rest of his body, reckoning the foot to be the sixth part of a man's height: they gave to a Doric column, taking in its chapter, six of its diameters; that is to say, they made it six times as high as it was thick, but they afterwards added a seventh diameter.

The Ionic Order, which takes its name from the Ionians, in Upper Asia, was formed according to the proportions of a woman; making the height of the column to be eight times greater than the diameter. They also made channeling in the trunk, to imitate the folds in the dress of a woman, and by the volutes in the chapter they represented that part of the hair which hung in curls on each side of the face; besides the Ionians added a base to their column, which the Dorians originally had not.

The Corinthian Order, which was posterior to the other two, took its rise from an accident related by Vitruvius. A basket, with a tile over it, had been placed on the tomb of a young Corinthian maid, near which grew the herb acanthus, or bear's breech. The leaves of this plant rising up to the tile, then curled themselves down into a sort of volute, which being observed by

Callimachus, the sculptor, he took the idea of representing such a circle of leaves in the capital of a column, that has since been characteristic of the Corinthian order. Scamozzi calls this the virginal order, because it bears all the delicacy in its dress peculiar to young virgins.

The Tuscan, or Etruscan Order, derives its name from the Etruscans, or Pelasgians, who first inhabited Etruria, in Italy; this is therefore looked upon as a Roman order. It has the proportions of the Doric order; but as it is one of the plainest and simplest orders, it is in all probability one of the most ancient. Vitruvius speaks of the proportions of this order, but there are no certain remains of it, unless we except the Trajan and Antonine pillars at Rome.

The Composite or Roman Order, is so called because it combines the proportions and decorations of the Corinthian order with the angular volute and dentils of the Ionic, thus forming a new order, which was adopted by the Romans.

Both the Greeks and Romans were in the practice of using the figures of men and women instead of regular columns, whence arose the Persian or Persic Order, in which the statues of men, and the Caryatic Order, in which the statues of women, served to support the entablatures, in the place of columns. The Romans had also their Termini for the support of entablatures, the upper part of which represented the head and breast of a human body, and the lower the inverted frustrum of a square pyramid. Persian figures are generally charged with a Doric entablature; the Caryatides with an Ionic or Corinthian architrave and cornice; and the Termini with an entablature of any of the three Grecian orders.

In their private buildings the Roman architects followed the Greeks; but in their public edifices they far surpassed them in grandeur. Architecture was carried to its highest pitch of perfection in the reign of Augustus. The Pantheon, one of the finest monuments of antiquity, was built by Agrippa, the son in law of Augustus. Some of his successors, particularly Trajan and Antoninus, were no less favourable to the exercise of this art; but on the decline of the empire, architecture shared the fate of other arts, and declined also, but did not altogether drop. New modes of building were introduced, which acquired the name of styles; as the Gothic, Saxon, and Norman styles.

The Gothic style was so called because it was first used by the Visigoths. The Saxon and Norman styles were so called



because they were respectively used by the Saxons before the Conquest, and by the Normans after, in the building of churches. The Saxon style was distinguished by the semicircular arch, which they seem to have taken partly from the Romans, and partly from their ancestors on the continent.

The Norman style was distinguished by the following particulars: the walls were very thick, generally without buttresses; the arches, both within and without, semicircular, and supported by very plain and solid columns; of which examples are to be seen in the chancel at Orford, in Suffolk, and at Christ Church, Canterbury. Sometimes, however, the columns were decorated with carvings of foliage or animals, and sometimes with spirals, lozenge, or network.

These two styles continued to be the prevailing modes of building in England until the reign of Henry II., when a new mode was introduced, which was called modern Gothic. Whether this was purely a deviation from the other two modes, or whether it was derived from any foreign source, is not known. It is, however, supposed to be of Saracenic extraction, and to have been introduced by the crusaders. This supposition is strengthened by the fact, that the mosques and palaces of Fez, and also some of the cathedrals in Spain built by the Moors, are in this style; which ought therefore to be called Arabic, Saracenic, or Moresque. This style is distinguished by its numerous buttresses, lofty spires, and pinnacles, large and ramified windows, with a profusion of ornaments throughout. It came into general use in the reign of Henry III.; when the circular gave way to the pointed arch, and the massive column to the slender pillar, of which the present cathedral church of Salisbury, begun at that period, affords the best specimen. From that time to the reign of Henry VIII. the pillars in churches were of Purbeck marble, very slender and round, encompassed with marble shafts a little detached, having each a capital adorned with foliage, which joining formed one elegant capital for the whole pillar. The windows were long and narrow, with pointed arches and painted glass; and the lofty steeples were furnished with spires and pinnacles. In the reign of Henry VIII. a new kind of low pointed arch was introduced, which was described from four centres, was very round at the haunches, and the angle at the top was very obtuse, as may be seen in Cardinal Wolsey's buildings. In the fifteenth and sixteenth cen-

tures the taste for Greek and Roman architecture revived, and brought the five orders again into use, although for sacred edifices the Saxon and Gothic styles still maintain the preeminence. The Italians were for a long time reckoned the greatest architects, but England may also boast of an Inigo Jones and a Sir Christopher Wren, who hold a very high rank in the art. Inigo Jones has left the banqueting house at Whitehall, Queen Catherine's Chapel at St. James's, the Piazza at Covent Garden, and other buildings, as proofs of his skill and taste. The works of Sir Christopher Wren even surpass those of his predecessor, both in number and magnitude. Among these stand foremost the Cathedral of St. Paul's, Greenwich Hospital, the Monument, Chelsea Hospital, the Theatre at Oxford, Trinity College Library, and Emmanuel College, Cambridge; besides upwards of fifty-two churches and innumerable other public buildings.

**ARCHITECTURE** (in Perspective). A sort of building, the members of which are of different measures and modules, and diminish in proportion to their distance, to make the building appear longer and larger to the view than it really is.

**ARCHITRAVE**. That part of a column or series of columns that is above or lies immediately upon the capital. It is the lowest member of the frieze, and is supposed to represent the principal beam in timber buildings. It is sometimes called the reason piece, as in porticoes, cloisters, &c.; and the masterpiece in chinneys.

**ARCHIVALT**. The inner contour of an arch, or a frame set off with mouldings, running over the faces of the arch stones, and bearing upon the imposts.

**ARCHIVES**. The place where the records, &c. belonging to the crown and kingdom are kept.

**ARCTIC**. An epithet for what lies to the north, as the Arctic Circle, the Arctic Pole.

**AREA**. The site or space of ground on which any building is erected.

**AREA** (in Geometry). The superficial contents of any figure, as a triangle, quadrangle, &c.

**ARENA**. That part of an amphitheatre where the gladiators contended, so called from the sand with which it was strewed.

**ARGENT** (in Heraldry). The white colour in the coats of arms of baronets, knights, and gentlemen.

**ARGO NAVIS**. A constellation called after the ship of Jason and his companions.

**ARGUMENT**. Whatever is offered or



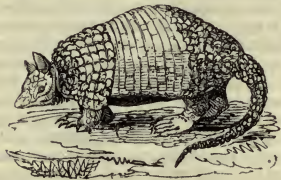
Diophantus and Pappus made  $M\nu$  to represent 10,000, and then by the addition of the letters, as  $\beta M\nu$ , for 20,000, &c. Apollonius divided numbers into periods of four characters, to which he gave a local value very similar to the modern mode of notation. The Greeks, however, were enabled, by means of their letters, to perform the common rules of addition, subtraction, multiplication, and division, from which, no doubt, the idea was taken of working with letters in our Algebra; for it is worthy of observation that in their multiplication they proceeded from left to right, as in the multiplication of algebra at present. The Greeks had likewise another kind of notation by means of capitals, more properly initials of the names of numbers, and were used in inscriptions, as  $I$  for  $\iota\alpha$  or  $\mu\iota\alpha$ , 1,  $\Pi$  for  $\pi\acute{\epsilon}\nu\tau\epsilon$ , 5,  $\Delta$  for  $\delta\acute{\epsilon}\kappa\alpha$ , 10, &c. The Roman notation, which is still used in marking dates, and numbering chapters, &c. consists of five of their capital letters, namely,  $I$  one,  $V$  five,  $X$  ten,  $L$  fifty,  $C$  one hundred, which are increased in this manner: the repetition of the  $I$ 's increases numbers by units, as  $II$  for two,  $III$  for three, &c.; that of  $X$ 's increases numbers by tens, as  $XX$  for twenty,  $XXX$  for thirty, &c.; and that of  $C$ 's increases numbers by hundreds, as  $CC$  for two hundred,  $CCC$  for three hundred, &c.; also a less character before a greater diminishes the value of the number, as  $I$  before  $V$ , thus,  $IV$ , makes it four,  $I$  before  $X$ , thus,  $IX$ , makes it nine: on the other hand, a less character after a greater increases the value of the number, as  $I$  after  $V$ , thus,  $VI$ , makes it six, and  $I$  after  $X$ , thus,  $XI$ , makes it eleven. In what manner the Romans performed their arithmetical operations is not known; but it is most probable that, as they were not a commercial nation, they followed the simplest forms of calculation: we must therefore look for further information on this subject to the period when the Arabs or Saracens introduced into Europe their mode of notation, which is not only distinguished from the others by the peculiarity of the characters, but also by their value and disposition. Although this notation consists of only nine digits, with the cipher 0, yet, by giving a local power to these figures, namely, that of units, tens, hundreds, thousands, &c. they may be made to express numbers to an indefinite extent. Besides, this mode also presents many advantages by the additional facility with which all arithmetical operations are thus performed. By what nation this improvement was first made is not known. The

Greeks, as before observed, were making advances towards it by giving a local value to certain periods of four numbers each, but it does not appear that they proceeded any further. The Arabs introduced it into Europe about eight hundred years back, whence it soon circulated among the different European nations; but although the first use of this scale is commonly ascribed to them, yet they acknowledge themselves indebted to the Indians for it; and as this latter people were in many respects very ingenious, it is not at all improbable that they were the authors of the invention. The cultivation of arithmetic in Europe may be dated from the thirteenth century, when Jordanus of Namur, the first writer on the subject that we know of, flourished. His arithmetic was published with illustrations, by Joannes Faber Stapulensis, in the fifteenth century, but was less perfect than the treatises of Lucas de Burgo and Nicholas de Tartaglia in that and the subsequent centuries. In France, the subject of arithmetic was handled about the same time by Clavius and Ramus; in Germany, by Sturm, Stifelius, and Henischius; and in England by Recorde, Diggs, and Buckley. After that period the writers on arithmetic became too numerous to be particularly specified, but the names of Briggs, Emerson, Napier, Maclaurin, Hutton, and Bonycastle, are entitled to notice for having systematized, enlarged, and in many particulars simplified the science.

**ARK.** The floating vessel in which Noah and his family were saved from the flood. It was 500 feet long, 90 broad, and 50 high.

**ARK OF THE COVENANT, or MOSES' ARK.** The chest in which the stone tables of the ten commandments, written by the hand of God, were laid up.

**ARMADILLA.** A quadruped, a native of Brazil and the West Indies, with the snout of a pig, the tail of a lizard, and the feet of a hedgehog. He is armed with a coat of impenetrable scales, under which he retires like a tortoise.



**ARMILLARY SPHERE** (in Astronomy). An artificial sphere, composed of

a number of circles, of metal, wood, or paper, representing the several circles of the sphere of the world put together in their natural order. The armillary sphere revolves upon an axis within a silvered horizon, which is divided into degrees, and moveable every way upon a brass supporter. In Pembroke Hall, Cambridge, there is an armillary sphere constructed by Dr. Long, which is eighteen feet in diameter, and will contain more than thirty persons sitting within it, to view, as from a centre, the representation of the celestial spheres. That part of the sphere which is not visible in England is cut off; and the whole is so contrived, that, by being turned round, it exhibits all the phenomena of the heavenly bodies.



**ARMORY.** A branch of the science of heraldry, consisting in the knowledge of armorial bearings or coats of arms, which serve to distinguish the quality of the bearer.

**ARMOUR.** All such habiliments as serve to defend the body from wounds inflicted by darts, swords, lances, &c.

**ARMY.** A body of soldiers consisting of horse and foot, under the command of a general and subordinate officers, and completely equipped and disciplined for service. An army is generally divided into a certain number of corps, each consisting of brigades, regiments, battalions, and squadrons; when in the field, it is formed into lines; the first line is called the vanguard, the second the main body, the third the rearguard, or body of reserve. The middle of each line is occupied by the foot, the cavalry forms the right and left wing of each line, and sometimes squadrons of horse are placed in the intervals between the battalions.

**AROMA.** A general name for all sweet

spices, but particularly myrrh; also the odoriferous principle which produces the fragrance peculiar to some plants.

**ARRAC.** A spirituous liquor distilled in India from the cocoa tree, rice, or sugar. It is very strong, and intoxicates more than rum or brandy.

**ARRAIGNMENT (in Law).** The bringing a prisoner forth, reading the indictment to him, and putting the question of guilty or not guilty.

**ARRAY.** The drawing up of soldiers in order of battle.

**ARREARS.** Money unpaid at the due time, as rent, moneys in hand, &c.

**ARREST (in Law).** The apprehending and restraining a man's person in order to compel him to be obedient to the law. This, in all cases except treason, felony, or breach of the peace, must be done by the lawful warrant of some court of record or officer of justice. Arrest of judgment is the staying of judgment, or not proceeding to judgment.

**ARROW.** A missile weapon, which is commonly discharged from a bow. When this weapon is borne in coats of arms, it is said to be barbed and feathered.

**ARROW-ROOT.** An Indian root, of which starch is made. It is also used medicinally.

**ARSENAL.** A public storehouse for arms and all sorts of ammunition.

**ARSENIATE.** A sort of salts formed by the combination of arsenic acid with different bases, as the arseniate of ammonia, &c.

**ARSENIC.** A ponderous mineral body. It is yellow, white, and red. Yellow arsenic is the native arsenic dug out of the mines, otherwise called Arsenic Ore. White arsenic is drawn from the yellow by sublimating; and is reduced to powder by the mixture of oxygen, or exposure to the air. This is sometimes used in medicine in small quantities, but is otherwise a deadly poison. Red arsenic is the yellow arsenic rubified by fire, when it is called realgal.

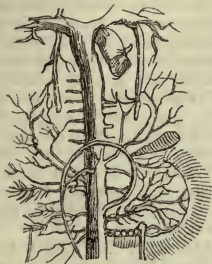
**ARSENITE.** A sort of salts formed by the combination of arsenious acid with different bases.

**ARSIS (in Grammar).** The elevation of the voice, in distinction from thesis or the depression of the voice. Arsis and thesis, in Ancient Music, is applied to the raising and falling of the hand in beating of time.

**ART.** The contrivance and use of things by the help of thought and experience, and according to prescribed rules, so as to make them serve the purposes for which they were designed. Liberal or fine arts

are those which are noble and worthy to be cultivated without regard to lucre, as painting, poetry, music, &c. Mechanic arts are those wherein the hand and body are more concerned than the mind. Terms of art are such words as are used in regard to any particular art, profession, or science.

**ARTERY.** A hollow, fistulous, conical canal, which serves to receive the blood from the ventricles of the heart, and to distribute it to all parts of the body.



**ARTICHOKE.** A plant very like the thistle, with scaly heads similar to the cone of the pine tree. At the bottom of each scale, as also at the bottom of each floret, is the well known fleshy edible substance. The Jerusalem Artichoke is a plant, the root of which resembles a potatoe, having the taste of the artichoke.

**ARTICLE (in Law).** The clause or condition in a covenant.

**ARTICLE (in Grammar).** A particle, which in most languages serves to denote the gender and case of nouns; and in languages which have not different terminations it serves to particularize the object referred to.

**ARTICULATION (in Anatomy).** The junction of two bones intended for motion. There are two kinds; the diarthrosis, which has a manifest motion, and synarthrosis, which has only an obscure motion.

**ARTICULATION.** The articulate or distinct utterance of every letter, syllable, or word, so as to make oneself intelligible.

**ARTIFICERS.** Persons employed in the performance of mechanical arts.

**ARTILLERY.** A collective name denoting all engines of war, but particularly cannon, mortars, and other large pieces, for the discharge of shot and shells. It is also employed to denote the science which teaches all things relating to the artillery, as the construction of all engines of war, the arrangement, movement, and manage-

ment of cannon and all sorts of ordnance, used either in the field, or the camp, or at sieges, &c.

**ARTILLERY, PARK OF.** A place set apart in a camp for the artillery and large firearms.

**ARTILLERY, TRAIN OF.** A set or number of pieces of ordnance mounted on carriages.

**ARTILLERY, FLYING.** A sort of artillery, so called from the celerity with which it can be moved. Seats are contrived for the men who work it, and a sufficient force of horses is applied to enable them to proceed at a gallop; each horse being rode by a separate driver. This kind of artillery was introduced by the French during the late war, and has been adopted by other nations.

**ARTIST.** A proficient in the fine arts.

**ARUNDELIAN MARBLES.** Ancient marbles illustrative of the history and mythology of the ancients, so called from the Earl of Arundel, by whom they were transported from the island of Paros into England. They contain a chronicle of the city of Athens, supposed to have been inscribed thereon 264 years before Christ.

**ASA-FŒTIDA.** A gum resin of a very fetid smell, obtained from the ferula asa fœtida, a perennial plant, which is a native of Persia. It comes into this country in small grains of different colours, hard and brittle.

**ASBESTOS.** A mineral substance, of which Amianthus is one of its principal species. This consists of elastic fibres, somewhat unctuous to the touch, and slightly translucent. The ancients manufactured cloth from the fibres of the asbestos for the purpose, as is said, of wrapping up the bodies of the dead when exposed on the funeral pile; it being incombustible in its nature. It is found in many places in Asia and Europe.

**ASCARIDES.** Worms that infest the intestinum rectum, and cause a violent itching; also a kind of worms which infest the intestines of all animals.

**ASCENSION (in Astronomy).** That degree of the equator reckoned from the first of Aries eastward, which rises with the sun or a star. This is either right or oblique, according as it rises in a right or an oblique sphere.

**ASCENSIONAL DIFFERENCE.** The difference between the right and the oblique ascension in any point of the heavens.

**ASCENT.** The rising of fluids in a glass tube or any vessel above the surface of their own level.

**ASH.** A well known tree, the timber of which is next to the oak in value, being used in every sort of handicraft.

**ASHES.** The earthy substances remaining after combustion, which contain an alkaline salt; also the skimmings of metal among the letter-founders.

**ASH-WEDNESDAY.** The first day in Lent, so called from the custom of fasting in sackcloth and ashes.

**ASP.** A very small kind of serpent, peculiar to Egypt and Libya, the bite of which is deadly. Its poison is so quick in its operations, that it kills without a possibility of applying any remedy. Those that are bitten by it are said to die within three hours, by means of sleep and lethargy, without any pain; wherefore Cleopatra chose it as the easiest way of dispatching herself.

**ASPARAGUS.** A valuable esculent plant, which requires three years at least to bring it to maturity from the time of sowing the seed, and will not yield vigorously without a continual supply of manure.

**ASPEN-TREE.** A kind of white poplar, the leaves of which are small, and always trembling.

**ASPHALTUM, or JEWS' PITCH.** A solid, brittle, ponderous substance, which breaks with a polish, and melts easily. It is found in a soft or liquid state on the surface of the Dead Sea, a lake in Judea, and by time grows dry and hard. The Egyptians used asphaltum in embalming, which they called *mumia mineralis*.

**ASS.** A well known useful quadruped, remarkable for its patience, hardiness, and long life. The milk of the female is highly esteemed for its light and nutritious quality, and for that reason recommended for consumptive persons.



**ASSASSINATION (in Law).** The murdering a person for hire.

**ASSAULT (in Law).** The offering or attempting, with force and violence, to do a corporal hurt to another, as by striking at him with or without a weapon, as distinguished from a battery, which is any injury actually done to a person.

**ASSAY.** A mode of trying metals, or separating them from all foreign bodies: thus gold and silver are assayed by the refiner, to obtain them in their purest state. This was formerly called the Touch, and those who had the charge of assaying were called Officers of the Touch. There are two kinds of assaying, namely, one before metals are melted, the other after they are struck. In the first case the assayers usually take 14 or 15 grains of gold, and half a dram of silver, if it be for money, and 18 grains of the one, and a dram of the other, if for other uses; in the second case, they take one of the pieces of money of each sort. The Assay of Weights and Measures was an examination of them by the questmen in the city, &c.

**ASSAYER OF THE KING.** An officer of the king's mint, for the trial of silver.

**ASSAYING.** The particular mode of trying ores or mixed metals by means of proper fluxes, in order to discover the proportion of metal, as also of the other ingredients, as alum, sulphur, vitriol, and the like, which are contained in them. Gold is obtained pure by dissolving it in nitromuriatic acid, when the metal may be precipitated by dropping in a diluted solution of sulphate of iron; the precipitate which is in the form of a powder is pure gold. Silver is obtained pure by dissolving it in nitric acid, and precipitating it with a diluted solution of sulphate of iron.

**ASSAY-MASTER.** The master of the mint, who weighs the bullion, and takes care that it be according to the standard.

**ASSETS (in Law).** Goods and chattels sufficient for an heir or executor to discharge the debts and legacies of the testator or ancestor.

**ASSIGN (in Law).** One to whom any thing is assigned or made over, as an executor, &c.; also an assignee or assign to a bankrupt's estate.

**ASSIGNMENT.** A transfer or making over to another the right one has in any estate, usually applied to an estate for life or years. It differs from a lease in this, that by an assignment one parts with the whole interest one has in the thing, but by a lease he reserves himself a reversion.

**ASSIMILATION (in Physics).** The process in the animal economy by which the food is converted into nourishment for the body.

**ASSIZE** (in Law). An assembly of knights and other substantial men, who, with the justices, met at a certain time and in a certain place for the due administration of justice. In the modern application it signifies a sitting of the judges by virtue of a commission, to hear and determine causes. The assizes are general when the justices go their circuits, with commission to take all assizes, that is, to hear all causes; they are special when special commissions are granted to hear particular causes.

**ASSOCIATION.** The connexion of ideas in the human mind which for the most part immediately follow one another, whether there is any natural relation between them or not.

**ASSUMPSIT** (in Law). A voluntary promise by which a man binds himself to pay any thing to another, or to do any work.

**ASSURANCE, or INSURANCE.** An engagement by which a person becomes bound for a specified sum, and for a limited period, to indemnify another for any losses which his property may sustain from fire or shipwreck, &c.

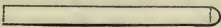
**ASTERISK.** A star (\*) used in printing as a mark of reference.

**ASTERN.** Behind a ship.

**ASTERIODS.** The new planets, Ceres, Juno, Pallas, and Vesta, lately discovered.

**ASTHMA.** A painful, difficult, and laborious respiration, with a sense of stricture across the breast, that sometimes approaches to suffocation.

**ASTRAGAL** (in Anatomy). The ancle bone; in Architecture, a small round moulding serving as an ornament to the tops and bottoms of columns.



**ASTRAGAL** (in Gunnery). A small moulding encompassing a cannon.

**ASTROLABE.** An instrument for taking the altitude of the sun or stars at sea.

**ASTROLOGY.** An art formerly much cultivated, but now exploded, of judging or predicting human events from the situation and different aspects of the heavenly bodies.

**ASTRONOMY.** The science which treats of the sun, moon, earth, planets, and other heavenly bodies, showing their magnitudes, order, and distances from each other, measuring and marking their risings, settings, motions, appearances, the times and quantities of their eclipses, &c. It comprehends what was anciently called the doctrine of

the sphere, and is a mixed mathematical science.

**ASTRONOMY, HISTORY OF.** Of all the sciences which have engaged the attention of mankind, none appears to have been cultivated so early as that of astronomy, which treats of the noblest and most interesting objects of contemplation. Josephus informs us that Seth, the son of Adam, is said to have laid the foundations of this science, and that his posterity, understanding from a prediction of Adam that there would be a general destruction of all things, once by the rage of fire and once by the violence and multitude of waters, made two pillars, one of brick and the other of stone, and engraved their inventions on each, that if the pillar of brick happened to be overthrown by the flood, that of stone might remain; which latter pillar, Josephus adds, was to be seen in his day. He also ascribes to the antediluvians a knowledge of the astronomical cycle of 600 years, but upon what authority we are not informed.

The account is, however, not improbable; for historians generally agree in assigning the origin of astronomy to the Chaldeans soon after the deluge, when, for the purpose of making their astrological predictions, to which they were much addicted, as also for that of advancing the science of astronomy, they devoted themselves to the study of the heavenly bodies. The Chaldeans were in fact a tribe of Babylonians, who constituted the priests, philosophers, astronomers, astrologers, and soothsayers of this people, whence a Chaldean and a soothsayer became synonymous terms. These Chaldeans discovered the motions of the heavenly bodies; and, from their supposed influences on human affairs, pretended to predict what was to come. The planets they called their interpreters, ascribing to Saturn the highest rank; the next in eminence was Sol, the sun; then Mars, Venus, Mercury, and Jupiter. By the motions and aspects of all these they foretold storms of wind and of rain, or excessive droughts, as also the appearance of comets, eclipses of the sun and moon, and other phenomena. They also marked out thirty-six constellations, twelve of which they placed in the zodiac, assigning to each a month in the year, and thus dividing the zodiac into twelve signs, through which they taught that the several planets performed their revolutions. They appear not to have had much idea of the immense distance of some of the planets from the sun, but accounted for the time they took in performing their revolutions by the slowness of their motions.

They, however, held that the moon completed her course the soonest of any, not because of her extraordinary velocity, but because her orbit, as it would now be called, was less than that of any of the heavenly bodies. They taught that she shone with a light not her own, and that when eclipsed she was immersed in the shadow of the earth. Of the eclipses of the sun they appear to have had no just idea, nor could they fix the time when they should happen. Their ideas of the earth as a celestial body were also crude and imperfect.

Astronomy was cultivated in Egypt nearly about the same time as among the Chaldeans; and, according to the opinions of some, the honour of the invention is due to them: but the most probable conclusion is, that as these two nations were coeval, and both addicted to the arts and sciences, they cultivated astronomy at the same time. The Egyptians had at a very early period their college of priests, who were all accurate observers of the stars, and kept, as Diodorus observes, registers of their observations for an incredible number of years. It is said, that in the monument of Osymandyas there was a golden circle of 365 cubits in circumference and one cubit thick, divided into 365 parts, answering to the days of the year, &c. The Egyptians discovered that the stars had an annual motion of  $50''$ ,  $9'''$ ,  $45''''$  in the year; and Macrobius asserts that they made the planets revolve about the sun in the same order as we do. From Chaldea and Egypt astronomy passed into Phœnicia, where it was applied by that trading people to the purposes of navigation. The Arabians also, one of the most ancient nations in the world, cultivated astronomy as far as was needful to answer the ends of their pastoral life, by observing the stars, their position, and influence on the weather. In travelling through the desert, we are informed that, at a very early period, they used to direct their course by the Great and Little Bear, as is done at sea to this day. They also gave names to the stars, mostly in allusion to their flocks and herds; and they were so nice in this matter that no language abounds with so many names of stars and asterisms as the Arabic.

As to the Indians and Chinese there is no doubt but that they cultivated astronomy at a very early period, and that the Brahmins of the former people, being altogether devoted to speculative sciences, made advances in that of astronomy equal to any of the nations of antiquity. M. Bailly informs us, in his history, that he examined and compared four different sets of astro-

nomical tables of the Indian philosophers, namely, that of the Siamese explained by M. Cassini in 1689; that brought from India by M. le Gentil, of the Academy of Sciences, and two other manuscript tables, found among the papers of the late M. de Lisle; all of which he found to accord with one another, referring to the meridian of Benares. It appears that the Indians date their astronomy from a remarkable conjunction of the sun and moon which took place at the distance of 302 years before Christ; and M. Bouilly concludes that, from our most accurate astronomical tables, such a conjunction did take place. The Indians calculate eclipses by the mean motions of the sun and moon, commencing at a period five thousand years distant; but, without giving them credit for an antiquity which is at variance with all historical documents, sacred and profane, it suffices here to observe that they have adopted the cycle of nineteen years, and that their astronomy agrees with modern discoveries in many particulars, as to the obliquity of the ecliptic, and an acceleration of the motion of the equinoctial points. They also assign inequalities to the motions of the planets, answering very well to the annual parallax, and the equation of the centre.

The Greeks, without doubt, derived their astronomical knowledge from the Egyptians and Phœnicians by means of several of their countrymen, particularly Thales the Milesian, who, about 640 years before Christ, travelled into Egypt, and brought from thence the chief principles of the science. He was the first among the Greeks who observed the stars, the solstices, the eclipses of the sun and moon, and proceeded so far as to predict an eclipse of the sun. It appears, however, that, before his time, many of the constellations were known, for we find mention of them in Hesiod and Homer, two of their earliest writers. After Thales, Anaximander, Anaximenes, Anaxagoras, but above all, Pythagoras, distinguished themselves among the number of those who cultivated astronomy. The latter, after having resided a long time in Egypt and other foreign parts, established a sect of philosophers in his own country, known by the name of Pythagoreans. He taught, among other things, that the sun was in the centre of the universe and immoveable; that the earth was round, and the inhabitants were antipodes to each other; that the moon reflected the rays of the sun, and was inhabited like the earth; that comets were wandering stars; that the milky way was an assemblage of stars, which derived its



white colour from the brightness of their light; besides a number of other particulars, some of which are admitted in the present day. Philolaus, a Pythagorean, maintained the doctrine of the earth's motion round the sun, 450 years before Christ, and Hicetus, a Syracusan, taught, a hundred years after, the diurnal motion of the earth on its own axis; also Meton, the inventor of the Metonic cycle, and Euctemon, observed the summer solstice 432 years before Christ, besides the risings and settings of the stars, and what seasons they answered to. The same subject was treated of at large by Aratus in his poem entitled *Phænomena*. Eratosthenes, a Cyrenian, who was born in 271 B. C. measured the circumference of the earth; and, being invited to the court of Ptolemy Evergetes at Alexandria, he was made keeper of the royal library, and set up there the armillary spheres which Hipparchus and Ptolemy afterwards used so effectually. He also determined the distance between the tropics to be 11-83 of the whole meridian circle, which makes the obliquity of the ecliptic in his time to be 23 degrees, 51 minutes and one-third. Archimedes is said to have constructed a planetarium to represent the phenomena and motions of the heavenly bodies; and many others added to the stock of astronomical knowledge, but none so much as Hipparchus, who flourished about 140 years B. C. and surpassed all that had gone before him in the extent of his researches. He showed that the orbits of the planets were eccentric, and that the moon moved slower in her apogee than in her perigee. He constructed tables of the motions of the sun and moon; collected accounts of eclipses that had been computed by the Chaldeans and Egyptians; and calculated such as would happen for six hundred years to come; besides correcting the errors of Eratosthenes in his measurement of the earth's circumference, and computing the sun's distance more accurately. He is, however, most distinguished by his catalogue of the fixed stars to the number of a thousand and twenty-two, with their latitudes and longitudes, and apparent magnitudes. These and most other of his observations are preserved by his illustrious successor Ptolemy.

From the time of Hipparchus to that of Ptolemy, an interval of upwards of two centuries, few or no advances were made in astronomy. Claudius Ptolemy, who was born at Pelusium in Egypt, in the first century of the Christian era, is well known as the author of a great work on astronomy, entitled his *Almagest*, which contains a com-

plete system of astronomy drawn from the observations of all preceding astronomers in union with his own. He maintained the generally received opinion of the sun's motion, which continued to be universally held until the time of Copernicus. The work of Ptolemy being preserved from the grievous conflagration that consumed the Alexandrian library during the ravages of the Saracens, was translated out of the Greek into the Arabic, A. D. 827; and, by the help of this translation, the Arabians, who now addicted themselves to the study of astronomy, cultivated it with great advantage under the patronage of the caliphs, particularly Al Mamon, who was himself an astronomer, and made many accurate observations by the help of instruments, which he himself constructed. He determined the obliquity of the ecliptic in his time to be 23 degrees, 35 minutes. Among the Arabian authors of this period was Alfragan, who wrote his *Elements of Astronomy*, and Albetegnius, who flourished about 880. This latter compared his own observations with those of Ptolemy, and computed the motion of the sun's apogee from Ptolemy's time to his own. He also composed tables for the meridian of Arabia, which were much esteemed by his countrymen. After this, Ebn Younis, astronomer to the caliph of Egypt, observed some eclipses, by means of which the quantity of the moon's acceleration since that time has been determined; also Arzechel, a Moor of Spain, observed the obliquity of the ecliptic; and Alhazen his contemporary, wrote on the twilight, the height of the clouds, and the phenomena of the horizontal moon. He likewise first employed the optical science in astronomical observations, and showed the importance of the theory of refraction in astronomy.

In the thirteenth century, astronomy, as well as other arts and sciences, began to revive in Europe, particularly under the auspices of the emperor Frederick II.; who, besides restoring some decayed universities, founded a new one, and in 1230 caused the works of Aristotle, and the *Almagest* of Ptolemy to be translated into Latin. Two years after this, John de Sacro Bosco, or John of Halifax, published his work *De Sphæra*, a compendium of astronomy drawn from the works of Ptolemy, Alfragan, Albetegnius, and others. This was held in high estimation for some centuries, and was honoured with a commentary from the pen of Clavius and other learned men. In 1240, Alphonsus king of Castile, a great astronomer himself, and an encourager of

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nican system found a strenuous though un  
 successful opponent in Tycho Brahe, a  
 Danish nobleman, who, to obviate the ob  
 jections against the Ptolemaic system, ad  
 vanced an hypothesis of his own, which  
 added less to his reputation than the accu  
 rate observations which he made by the  
 help of improved instruments in a new  
 observatory built for him by order of the  
 king of Denmark. His friend Kepler, who  
 enjoyed the title of mathematician to the

emperor, was the first  
 to show that the  
 planets were  
 not fixed to  
 the firmament,  
 but revolved  
 round the sun,  
 and that the  
 sun was the  
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way and the nebulae consisted of innumerable small stars. Harriot made similar discoveries in England at the same time, if not earlier. Hevelius, by means of his observations, formed a catalogue of fixed stars much more complete than that of Tycho's. Huygens and Cassini discovered the satellites of Saturn, and Sir Isaac Newton demonstrated, from physical considerations, the laws which regulated the motions of the heavenly bodies, and set bounds to the

planetary orbs, determining their excursions from the sun, and their nearest approaches to him; he also explained the principle which occasioned that constant and regular proportion, observed both by the primary and secondary planets in their revolutions round their central bodies, and their distances compared with their periods. His theory of the moon, grounded on the laws of gravity and mechanics, has also been found to account for all her irregularities. Mr. Flamsteed filled the office of Astronomer Royal at Greenwich from 1675 until his death in 1729, during which time he was constantly employed in making observations on the phenomena of the heavens. As the result of his labours he published a catalogue of three thousand stars, with their places to the year 1689; also new solar tables, and a theory of the moon according to Horrox. On his tables was constructed Newton's theory of the moon, as also the tables of Dr. Halley, who succeeded him in his office in 1729. Besides composing tables of the sun, moon, and planets, Dr. Halley added to the list of astronomical discoveries, being the first who discovered the acceleration of the moon's mean motion. He also contrived a method for finding her parallax by three observed places of a solar eclipse, and showed the use that might be made of the approaching transit of Venus in 1761, in determining the distance of the sun from the earth, and recommended the method of determining the longitude by the moon's distance from the sun and certain fixed stars, which was afterwards successfully adopted by Dr. Maskelyne, Astronomer Royal.

It was about this period that the question respecting the figure of the earth appears to have been satisfactorily decided, and in favour of Newton's theory. M. Cassini concluded, from the measurement of M. Picard, that it was an oblong spheroid, but Sir Isaac Newton, from a consideration of the laws of gravity, and the diurnal motion of the earth, had determined its figure to be that of an oblate spheroid flattened at the poles, and protuberant at the equator. To determine this point Louis XV. ordered two degrees of the meridian to be measured, one under or near the equator, the other as near as possible to the poles; the expedition to the north being intrusted to Messrs. Maupertuis and Clairaut, that to the south to Messrs. Condamine, Bouguer, and Don Ulloa. Among the many observations made by those who went on this expedition, it was found by those who went to the south that the attraction of the mountain of Peru had a sensible effect on

the plumb lines of their large instruments, which is supposed to afford an experimental proof of the Newtonian doctrine of gravitation. A similar observation has since been made by Dr. Maskelyne on the mountain Schehallien in Scotland.

The eighteenth century was marked by the discoveries of Dr. Bradley, the successor to Dr. Halley as Astronomer Royal, and Dr. Herschel, who also filled the same post so honourably to himself. Dr. Bradley discovered the aberration of light, and the nutation of the earth's axis, besides having formed new and accurate tables of the motions of Jupiter's satellites, and the most correct table of refractions that is extant: also with a large transit instrument, and a new mural quadrant of eight feet radius, he made observations for determining the places of all the stars in the British catalogue, and likewise nearly a hundred and fifty places of the moon. Dr. Herschel, by augmenting the powers of the telescope beyond any thing existing before, or even thought of, succeeded in discovering a new planet, which he named the *Georgium Sidus*; he also discovered two additional satellites to Saturn, besides those of his own planet. Among those who cultivated the higher branches of the science, and distinguished themselves by their researches, Dr. Maskelyne, the predecessor of Dr. Herschel, ranks the foremost, having been the originator of the *Nautical Almanack*, and brought into use the lunar method of determining the longitude, &c. besides making the requisite tables. The theoretical part of the science was indebted to Clairaut, Euler, Simpson, de la Caille, Kiel, Gregory, Leadbetter, for many correct observations and elucidations. The practical part acquired a systematic form and many improvements from the pens of Lalande, Ferguson, Emerson, Bonnycastle, Vince, &c. The historians of the science are Weilder, in his *History of Astronomy*; Baillie, in his *History of Ancient and Modern Astronomy*; Montuccla, in his *Histoire des Mathématiques*; and Lalande, in the first volume of his *Astronomy*.

The nineteenth century was commenced with the discovery of several new planets, namely one in 1801 by M. Piazzi of Palermo, named Ceres, between Mars and Jupiter; another, named Pallas, discovered March 28, 1802, by Dr. Olbers, of Bremen; a third, named Juno, by Mr. Harding, at the observatory at Lilienthal, near Bremen, Sept. 1, 1804; and a fourth, named Vesta, by Dr. Olbers, March 29, 1807. These three last have also been observed to revolve between Mars and Jupiter.

**ASYMPTOTE** (in Conic Sections). A line which approaches nearer to another continually, and never meets it. It is properly applied to straight lines approaching a curve.

**ASYNDETON**. A figure in grammar, when conjunctions are omitted in a sentence.

**ATCIEVEMENT** (in Heraldry; vulgarly called **HATCHMENT**). The arms of any family, with the ornaments appendant thereto, painted on canvass, and fixed to the dwelling house of a person deceased, to denote his death.

**ATE**. A termination of chymical words. See **CHYMISTRY**.

**ATEMPO** (in Music). Italian for 'in time,' employed when the regular measure has been interrupted.

**ATHANASIAN CREED**. A formula of faith ascribed to St. Athanasius, which has been adopted into the liturgy of the church of England.

**ATHEIST**. One who denies the existence of God or a providence.

**ATHWART**. A sea term, signifying across the line of a ship's course.

**ATLAS** (in Geography). A collection of maps; also the name of a chain of high mountains in Africa, extending from the coast of the Atlantic to the border of Egypt.

**ATLAS** (in Mythology). One of the Titans, who is fabled to have borne heaven on his shoulders, and afterwards to have been metamorphosed into the mountain in Africa which bears his name. The origin of this fable is ascribed to Atlas, a king of Africa, who is supposed to have been addicted to the study of astronomy. He is frequently represented bearing a globe on his shoulders.



**ATLAS** (in Commerce). A satin manufactured in the East Indies.

**ATMOSPHERE**. That region of the air next to the earth, which receives the vapours and exhalations, and is terminated by the refraction of the sun's light; sometimes it signifies the whole ambient air.

The pressure of the atmosphere on the whole surface of the earth is said to be equivalent to that of a globe of lead of sixty miles in diameter. Admitting therefore the surface of a man's body to be about 15 square feet, and the pressure about 15 lb. on a square inch, it is computed that a man must sustain 32,400 lb., or nearly 14 tons and a half weight; but the difference in the weight sustained in different states of the atmosphere may be as much as a ton and a half. The density of the atmosphere is not the same in all parts; for it decreases in proportion to the height, and, as is supposed, in this proportion: that the density decreases in geometrical progression as the heights increase; whence the comparative density of the air at the several corresponding heights has been calculated as follows:

Height in Miles.	No. of times rarer.
0 . . . . .	1
3 and a half . . . . .	2
7 . . . . .	4
14 . . . . .	16
21 . . . . .	64
28 . . . . .	256
35 . . . . .	1024

and pursuing this calculation, it has been computed that a cubic inch of the air we breathe would be so much rarefied at the height of 500 miles, that it would fill a sphere equal in diameter to the orbit of Saturn. The temperature of the atmosphere likewise diminishes as the distance from the earth increases, though, as it should seem, in a less ratio. M. de Saussure found that, by ascending from Geneva to Chamouni, a height of 347 toises, Reaumur's thermometer fell 4 degrees, 2 minutes, and that on ascending from thence to the top of Mount Blanc, 1941 toises, it fell 20 degrees, 7 minutes.

**ATMOSPHERE** (in Electricity). That sphere which surrounds the surface of electrified bodies, and is formed by the effluvia issuing from them.

**ATMOSPHERIC STONES**. The same as Aerolites, which see.

**ATMOSPHERIC TIDES**. Certain periodical changes in the atmosphere, similar to those of the ocean, and produced from nearly the same causes; of this description are the equinoctial winds.

**ATOM**. A part or particle of matter, so small as not to admit of farther subdivision. The Epicureans professed to account for the

origin and formation of all things by supposing that these atoms were endued with gravity and motion, and thus came together into the different organized bodies we now see. This was called the atomical philosophy, which was adopted by the sceptics and infidels of those times.

**ATOMIC THEORY.** A species of philosophy recently introduced into chymistry, and grounded on the axiom that 'chymical union consists in the combination of the atoms of bodies with each other;' so that when two bodies chymically unite and form a third body, the two substances united are dispersed every where through the new compound. Thus, for instance, saltpetre is a compound of nitric acid and potash; and if we examine even so small a portion of this salt as the hundredth part of a grain, it will be found to be compounded of these two substances, nitric acid and potash; and if any part of it wanted these constituents, it could not be saltpetre.

**ATROPA, or DEADLY NIGHTSHADE.** A genus of plants, one species of which, namely the *Atropa Belladonna*, is remarkable for bearing berries of a fine black colour, which are highly poisonons. It grows wild in England, and has caused the death of many children who have eaten incautiously of its berries. The root is perennial.

**ATROPHY.** A disease, a kind of consumption, where the body is not nourished by food, but decays and wastes away insensibly.

**ATROPOS.** One of the three destinies, who, as the poets feign, cuts the thread of life.

**ATTACHMENT (in Law).** A laying on of hands, or taking by virtue of a precept; it differs from an arrest, inasmuch as it lays hold of the goods, as well as the person; and also from a distress, which seizes on lands, tenements, and goods; but an attachment on the goods and body.

**ATTACK.** A military term; a general assault or onset, made to gain a port or any particular point.

**ATTAINDER (in Law).** The corruption of blood, which follows from being convicted of treason or felony. A Bill of Attainder is a bill brought into parliament for attainting persons convicted of high treason. Such bills have been passed occasionally from the reign of Charles II.

**ATTIC (in Architecture).** A sort of building, in which there is no roof or covering to be seen, as was usual in the houses of the Athenians. The attic, or attic story, is the upper story of a house.

**ATTITUDE (in Painting).** The gesture

of a figure, serving to express the action and sentiments of the person represented.

**ATTORNEY.** One who is appointed by another to do a thing in his absence. A public attorney is one who acts in the courts of law, and is a lawyer by profession: a private attorney acts upon particular occasions, and is authorized by a letter of attorney, which gives one full power to act for another.

**ATTORNEY-GENERAL.** A great law officer, appointed by the king to manage all affairs of the crown, either in criminal prosecutions or otherwise.

**ATTRACTION.** In a general sense, the power or principle by which bodies mutually tend towards each other, which varies according to the nature of the bodies attracted, and the circumstances under which this attraction takes place; whence attraction is distinguished into the Attraction of Cohesion, Attraction of Gravitation, Attraction of Electricity, Attraction of Magnetism, and Chymical Attraction.

The **ATTRACTION OF COHESION** is that by which the minute particles of bodies are held together.

**ATTRACTION OF GRAVITATION** is the principle by which bodies at a distance tend to each other; on this principle it is that two leaden balls, having each a smooth surface, if compressed strongly together, will cohere almost as strongly as if united by fusion; and even two plates of glass, if the surfaces are dry and even, will cohere so as to require a certain force to separate them; which is supposed to be a universal principle in nature. By gravitation a stone and all heavy bodies, if let fall from a height, are supposed to drop to the earth. All celestial bodies are supposed to have not only an attraction or gravitation towards their proper centres, but that they mutually attract each other within their sphere. The planets tend towards the sun and towards each other, as the sun does towards them. The satellites of Jupiter tend towards Jupiter, as Jupiter does towards his satellites; and the same with the satellites of Saturn and of Uranus. The earth and moon tend likewise reciprocally towards each. By this same principle of gravity heavenly bodies are kept in their orbits, and terrestrial bodies tend, as is supposed, towards the centre of the earth. From this attraction all the motion, and consequently all the changes in the universe, are supposed to arise, the rains fall, rivers glide, ocean swells, projectiles are directed, and the air presses upon different bodies.

**ATTRACTION OF MAGNETISM** is the parti-

cular tendency of certain bodies to each other, as that of the magnet, which attracts iron to itself. This is only a sort of attraction of gravitation, acting on particular substances.

**ATTRACTION OF ELECTRICITY** is the principle by which bodies, when excited by friction, tend towards each other. This species of attraction agrees with that of gravitation in the property of acting upon bodies at a distance; but it differs from it inasmuch as these bodies require to be in a particular state in order to be acted upon.

**CHEMICAL ATTRACTION** is that disposition which some bodies in solution indicate to unite with some substances in preference to others. This is otherwise called affinity, and is considered as a sort of attraction of cohesion, acting in an unresisting medium, as it applies peculiarly to such bodies as, in solution, indicate a disposition to unite with some substances in preference to others.

**ATTRIBUTES.** Those properties or perfections which are attributed to the Divine Being only, as his self-existence, immutability, eternity, &c.

**ATTRIBUTES (in Logic).** The predicates of any subject, or that which may be affirmed or denied of a thing, as 'man is an animal,' 'man is not a brute.'

**ATTRIBUTES (in Painting and Sculpture).** Symbols added to certain figures, to denote their office or character, as the eagle added to the figure of Jupiter, to denote his power; a club to Hercules, to denote his prowess, &c.

**AVALANCHES.** A name given in Savoy and Switzerland to the masses of snow, which break off from the mountains with a noise like thunder, and sometimes overwhelm whole villages.

**AVAST.** A term of command at sea, signifying, hold, stop, stay.

**AUCTION.** A public sale of goods by persons called auctioneers, who are licensed to dispose of goods to the highest bidder on certain conditions, called the conditions of sale. A mock auction is that which is conducted by unlicensed persons for fraudulent purposes.

**AUDIENCE.** The ceremony of admitting ambassadors and public ministers to a hearing at court.

**AUDIENCE COURT (in Law).** An ecclesiastical court appertaining to the archbishop of Canterbury.

**AUDIT.** A regular examination of accounts by persons duly appointed.

**AUDITOR.** An officer of the king, or of any public body, appointed annually to examine accounts.

**AVE-MARIA.** A prayer used by the Romish church, which was so called because it consists of the first words addressed by the angel Gabriel in his salutation to the Virgin Mary.

**AVENUE.** A walk planted on each side with trees before a house, or as a passage to any place.

**AVERAGE (in Commerce).** The damage which a vessel, with the goods or loading, sustains from the time of its departure to its return; also the charges or contribution towards defraying such damages, and the quota or proportion which each merchant or proprietor is adjudged, upon a reasonable estimate, to contribute to a common average.

**AVES.** Birds; the second class of animals in the Linnæan system. This class of animals is distinguished from all others by several peculiarities in their form, having feathers for their covering, two feet, and two wings formed for flight. They have, for the most part, the mandible protracted and naked, but are without external ears, lips, teeth, scrotum, womb, urinary vessel, or bladder, epiglottis, corpus callosum, or its fornx and diaphragm. They are divided in the Linnæan system into six orders: namely, Accipitres, or the falcon and eagle kind; Picæ, the pies; Anseres, the goose and duck kind; Grallæ, the crane kind; Gallinæ, the poultry or domestic fowl; and Passeres, the sparrow and finch kind, with all the smaller birds.

**AUGER.** A wimble, or tool for boring.

**AUGMENT (in Grammar).** A letter or syllable added or changed in Greek verbs.

**AUGMENTATION (in Heraldry).** A particular mark of honour borne in an escutcheon, as the hand in the arms of baronets.

**AUGURY.** The practice of divining by the flight of birds or from inspecting their entrails. The augurs were a principal order of priests among the Romans.

**AUGUST.** The eighth month of the year, called after the emperor Augustus Cæsar, who entered his second consulship in that month, after the Actian victory.

**AUGUSTAN CONFESSION.** A confession or declaration of Christian faith made by the Protestants at Augusta or Augsburg in Germany, A. D. 1550.

**AUGUSTINES, or AUSTIN FRIARS.** A religious order, so called from St. Augustin their founder. They were very numerous in England before the Reformation.

**AVIARY.** A place set apart for feeding and propagating birds.

**AUK.** A bird, otherwise called Penguin

or Razorbill, an inhabitant of the arctic or northern seas.



**AVOIRDUPOIS.** A sort of weight used in England, of which the pound consists of 16 ounces. The proportion of a pound avoirdupois to a pound troy is as 17 to 14.

**AURICLE.** That part of the ear which is prominent from the head. The auricles of the heart are appendages at the base of the heart, which are distinguished into right and left, the former of which is placed in the anterior, the latter in the hinder part. These are muscular bags, which move regularly with the heart, but in an inverted order.

**AURICULAR CONFESSION.** A mode of confession among Roman Catholics, by whispering in the ears of their fathers, confessors, or priests.

**AURORA BOREALIS,** i. e. the **NORTHERN TWILIGHT.** An extraordinary meteor or luminous appearance visible in the night time in the northern parts of the heavens. The aurora borealis appears frequently in the form of an arch, chiefly in the spring and autumn, after a dry year. This kind of meteor is more rarely to be seen, the nearer we approach the equator, but in the polar regions it is very constant and brilliant. In the Shetland Isles these lights are called 'the merry dancers.'

**AURUM MUSICUM,** or **MOZAICUM.** A combination of tin and sulphur, used by statuaries and painters, for giving a gold colour to their figures.

**AUSPICES.** A kind of soothsaying among the Romans, by the flight or singing of birds.

**AUTO DA FE,** or **AN ACT OF FAITH.** The solemn act of punishing heretics, formerly in use among the Spaniards. Upon a Sunday or festival, the offender being brought from prison to church, dressed in a frightful manner, attended divine service, after which he was delivered over to the civil power to be burnt.

**AUTOGRAPH.** An epithet applied to whatever is written in a person's own hand writing, as an autograph letter, a letter of one's own writing.

**AUTOMATON.** A self-moving engine, more particularly the figure of any animal having the principle of motion within itself by means of wheels, springs, and weights; those in the figure of a man are called androides, as the mechanical chess-player, &c. (see **ANDROIDES**); those of animals are properly called automata. It is said that Archytas of Tarentum, 400 years before Christ, made a wooden pigeon that could fly; and that Archimedes made similar automata. Regiomontanus made a wooden eagle, that flew forth from the city, met the emperor, saluted him, and returned; also an iron fly, which flew out of his hand at a feast, and returned again, after flying about the room. Dr. Hooke made the model of a flying chariot, capable of supporting itself in the air. M. Vaucanson made a figure that played on the flute; also a duck capable of eating, drinking, and imitating exactly the voice of a natural one; and, what is still more surprising, the food it swallowed was evacuated in a digested state; also the wings, viscera, and bones were formed so as strongly to resemble those of a living duck. M. le Droz, of la Chaux de Fonds, presented a clock to the king of Spain, which had, among other curiosities, a sheep that made a bleating noise, and a dog watching a basket, that snarled and barked when any one offered to take it away.

**AUTUMN.** The third season in the year, which begins, in the northern hemisphere, on the day when the sun enters Libra, that is, on the 22d of September. It terminates about the same day in December, when the winter commences.

**AUTUMNAL SIGNS.** The three signs, Libra, Scorpio, and Sagittarius, through which the sun passes during the autumn season.

**AUXILIARY VERBS** (in Grammar). Such verbs as help to form or conjugate others, as, in English, the verbs 'to have,' and 'to be.'

**AWL.** A shoemaker's tool, with which holes are bored in the leather, for the admission of the thread in stitching and sewing. The blade of the awl is mostly a little flattened and bent.



**AWNING.** A piece of tarpaulin or sail, &c. hung about the decks or any other part

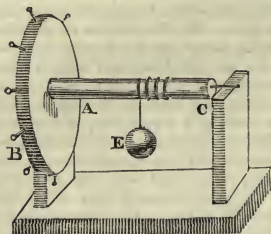
of a vessel, to screen persons from the sun and rain.

**AXIOM.** A self-evident proposition, or one requiring no proof, as that 'the whole is greater than the part.'

**AXIS (in Geometry).** A right line conceived to be drawn from the vertex of a figure to the middle of the base. It is so called because the figure, by revolving round this line, is conceived to generate a solid. The axis of a circle is the same as the diameter.

**AXIS (in Mechanics).** A certain line, about which a body may move, as the axis of a balance, &c.

**AXIS IN PERITROCHIO, or, WHEEL AND AXLE.** One of the five mechanical powers or simple machines, which is principally used in the raising of water.



**AXIS (in Astronomy), or AXIS OF THE SPHERE.** An imaginary right line conceived to pass through the centre of the earth from one pole to the other. The sun and all the planets are each conceived to revolve about their respective axes. That of the earth during its revolution round the sun remains parallel to itself, inclined to the plane of the ecliptic in an angle of 66 degrees and a half.

**AXLE, or AXLE-TREE.** The piece of wood which passes through the middle of any wheel, and on which it turns.

**AZIMUTH.** An arch of the horizon, intercepted between the meridian of the place

and the azimuth or vertical circle passing through the centre of the object.

**AZIMUTH CIRCLES, or VERTICAL CIRCLES.** Imaginary great circles passing through the zenith and nadir, and cutting the horizon at right angles.

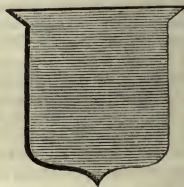
**AZIMUTH COMPASS.** An instrument for finding in a more accurate manner than by the common sea compass, the magnetical amplitude or azimuth of the sun or stars.

**AZIMUTH, MAGNETICAL.** An arc of the horizon, intercepted between the vertical circle passing through the centre of any heavenly body and the magnetical meridian.

**AZOTE, or NITROGEN (in Chymistry).** A simple substance, which, though not perceptible to the senses, is known to exist, by observing its passage from one combination to another, and tracing the laws of chymical attraction to which it is subject. It is the radical principle of atmospheric air, which contains nearly four-fifths of it in bulk, and three-fourths in weight; it also forms a part of nitric acid, ammoniac, and other substances. Its most remarkable combination is that which it enters into with light and caloric, so as to form the compound well known by the name of nitrogen gas or azotic gas.

**AZURE (among Painters).** The beautiful blue colour, with a greenish cast, prepared from the Lapis Lazuli, generally called Ultramarine.

**AZURE (in Heraldry).** The blue colour in the coats of arms of all persons under the degree of barons. In engraving, the azure is represented by horizontal lines across the shield from side to side.





## B.

**B**, the second letter of the alphabet, is often used as an abbreviation for Bachelor, as **B. A.** Bachelor of Arts, **B. D.** Bachelor of Divinity, &c. **B** as a numeral among the Romans stood for 300, and with a dash over it thus, **Ī**, for 3000. **B**, in chronology, stands for one of the Dominical letters, and in music for the seventh note in the gamut.

**BAAL**. A god of the Phœnicians and Canaanites, which is supposed to represent the sun, and to be the same as the **Bel** or **Belus** of the Greeks.

**BABOON**. A large kind of ape with a short tail, which forms one division of the genus *Simia* in the Linnæan system.



**BACCHANALIANS**. Those who performed the rites at the Bacchanals in honour of Bacchus.

**BACCHANALS**. A festival at Rome in honour of Bacchus, which, for their licentiousness, were suppressed by a solemn decree of the senate.

**BACCHUS**. The god of wine in the heathen mythology, was the son of Jupiter and Semele. He was the Osiris of the Egyptians, from whom the fables respecting him were taken by the Greeks.

**BACCIFERÆ**. Berry-bearing plants.

**BACHELOR**. One of the first degrees in the liberal arts conferred at the universities of Oxford and Cambridge.

**BACKGAMMON**. A particular game played by two persons with the help of dice, on a board or table divided into parts, whereon are twenty-four black and white spaces called points.

**BACKPAINTING**. The method of painting mezzotinto prints pasted on glass, with oil colours.

**BACKSTAFF**. An instrument formerly used in taking the sun's altitude. It was so called because the back of the observer is turned towards the sun when he makes

the observation. This quadrant is now superseded by more accurate instruments.

**BADGE**. An exterior ornament of a coat of arms, originally worn by the retainers or attendants of the nobility. It fell into disuse in the reign of Queen Elizabeth.

**BADGER**. An animal ranked by Linnæus under the Bear tribe, which lives in holes by the sides of rivers, or in the clefts of rocks. It feeds on insects or berries, burrows during winter, hunts by night, and lies concealed by day.



**BAG** (in Commerce). A determinate quantity of goods contained in a bag, varying in size, according to the article or the place, from three to four hundred weight.

**BAGNIO**. Italian for a bathing house, with conveniences for bathing, sweating, and otherwise cleansing the body.

**BAGPIPE**. A favourite wind instrument among the Highlanders. It consists of two parts; namely, a leathern bag, and pipes for admitting and ejecting the air. One of the pipes called the drone, with which the base part is played, never varies its tone. The third pipe is played on by compressing the bag under the arm.

**BAIL** (in Law). Sureties given for the appearance, when required, of a person in custody. Common Bail is in common concernment, where any sureties may be taken; but Special Bail is in matters of greater importance, where special surety of two or more persons must be taken according to the value of the cause.

**BAILEE** (in Law). The person to whom the goods of the one that is bailed are delivered.

**BAILIFF**. A subordinate magistrate or officer appointed within a particular province or district, as bailiffs of hundreds, liberties, courts baron, &c. Sheriffs' bailiffs are officers appointed by the sheriff to execute writs. These, being bound in bond to the sheriff for the due execution of their

office, are called bound bailiffs, vulgarly bum-bailiffs.

**BAILIWICK.** The hundred or any other district wherein a bailiff has a jurisdiction.

**BAILMENT.** The delivery of goods in trust upon a contract expressed or implied.

**BALÆNA.** The whale; a genus of the class Mammalia, and of the order Ceti.

**BALANCE.** One of the simple powers in mechanics, which serves to find out the equality or difference of weight in heavy bodies. It is a peculiar application of the lever to this particular purpose. The common balance consists of a lever with equal arms, at the extremity of each of which is attached a scale. Before loading it with any weights, the whole ought to preserve a perfect equilibrium; and this equilibrium must arise from an exact distribution of the weight of each arm and scale of the balance, as well as from the equal length of the former; for on this depends the correctness of its action. The Assay-Balance is a very delicate kind of balance, used for determining the exact weight of minute bodies. It is so called because it is particularly used in the different processes of assaying; it is also frequently used in chymical analysis. Balances also vary in their form, as the Bent-Lever Balance, the Compound Balance, consisting of a combination of balances used in weighing very heavy bodies; also the Danish Balance, a kind of steel-yard.

**BALANCE OF TRADE.** A term in commerce, denoting the equality between the value of the commodities bought of foreigners, and the value of the native productions transported into other countries. Balance in a merchant's account is when the debtor and creditor account are made even.

**BALE** (in Commerce). A quantity of merchandise packed up in cloth. A bale of cotton yarn is from three to four hundred weight; of raw silk, from one to four hundred.

**BALISTER, or FILE-FISH.** A fish so called from the resemblance of its backbone to a file. It is remarkable for the brilliancy of its colours.

**BALL AND SOCKET.** An instrument of brass with a perpetual screw, constructed to move in any direction. It is used in the management of surveying, and astronomical instruments.

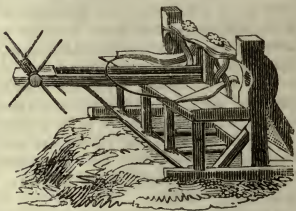
**BALLAST.** Gravel, sand, or any weighty matter, put into a ship's hold, to poise her and bring her sufficiently low in the water.

**BALLET.** A theatrical representation, consisting of music and dancing.

**BALLET-MASTER.** The artist who re-

gulates the performance and representation of the ballet.

**BALLISTA.** A warlike engine used by the ancients in besieging cities, to throw large stones, darts, and javelins.



**BALLOON.** A globe commonly made of lutestring, and covered with an elastic varnish, to render the substance impervious by the gas. When filled with hydrogen gas, from ten to thirteen times lighter than atmospheric air, the balloon will ascend, and convey heavy bodies suspended to it. The weight which the balloon is capable of raising will be in proportion to the diameter of the sphere. From experiments it has been found that a cubic foot of hydrogen gas will raise about one ounce avoirdupois.



**BALLOT.** A little ball; also the manner of giving votes at an election by putting little balls, black or white, into a box.

**BALLUSTRADE.** A series or row of ballusters or small pillars, serving as a guard or fence to balconies or staircases.

**BALM, or BALSAM.** A liquid resin of a whitish or yellow colour, a fragrant smell, and a penetrating aromatic taste. It flows from the balsam tree, and is much used by the females in Turkey as a cosmetic.

**BALM**, or **BALM MINT**. A perennial, so called from the fragrance of its smell, which resembles that of balsam.

**BALSAM TREE**. A tree growing in Arabia and Egypt, the bark of which yields the balm or balsam abovementioned.

**BALSAMICS**. Softening, healing, and cleansing medicines.

**BAMBOO**, or **BAMBU**. An Indian reed with larger knots than the common reed. The poorer inhabitants of India make their dwellings of this reed: paper is also made of the same material, by bruising it and steeping it in water until it be reduced to a paste.

**BANANA**. See **PLANTAIN TREE**.

**BAND** (in Architecture). Any flat, low member or moulding, which is broad but not deep.

**BANDANA HANDKERCHIEFS**. A kind of silk handkerchiefs manufactured, in India, of silk and cotton.

**BANDEROLL**. A sea term for a little flag in form of a gridiron, that used to be hung on the masts of vessels.

**BAND OF PENSIONERS**. A particular company of gentlemen bearing halberds, and attending upon the person of the king upon solemn occasions.

**BANDITTI**. A band of outlawed robbers, most frequent in Italy.

**BANDOLEER**, or **BANDOLIER**. A large leathern belt, formerly worn over the right shoulder, and hanging under the left arm, to carry some warlike weapon.

**BANDROL**. A little flag or streamer.

**BANDS**. Two pieces of iron nailed upon the bows of the saddle, to hold them tight.

**BANERET**. A knight made in the field, whose standard was converted into a banner which he could display in the king's army as the barons did.

**BANIAN TREE**. See **INDIAN FIG**.

**BANISHMENT**. A quitting the realm, either voluntarily, as by abjuration; or compulsorily, as by transportation.

**BANK** (in Commerce). An establishment for the receiving of moneys and letting them out on interest. Banks are generally formed by a number of monied persons, who, for carrying on the business of negotiating bills of exchange, and dealing in bullion, &c. advance a considerable sum as a joint capital. The first bank was established at Venice about 1157, and the name of Banco was given to it in Italian, from the bench which the money-changers or bankers used to sit upon in their courses or exchanges. The bank of Genoa was established in 1345; that of Amsterdam, in 1609; that of Hamburg, in 1619; that of

Rotterdam, in 1635. The Bank of England, one of the last, but at present the greatest of its kind, was established by charter in the reign of William and Mary, into a corporate body, by the title of the Governor and Company of the Bank of England. Its notes form the currency of the kingdom to a certain extent, and amount to between twenty and thirty millions. The Bank of England is also the Government Bank, and pays the interest of the national debt.

**BANKER**. A person who traffics in money, by receiving the current cash of individuals free of interest, and negotiating with it, either in the discount of bills or the advance of money on sufficient securities.

**BANKING-HOUSE**. Any mercantile house which carries on the business of a private banker, as distinguished from the Bank, by which is understood the Bank of England.

**BANKRUPT**. A trader who fails or breaks, so as to be unable to carry on his business or pay his debts. In Law, a bankrupt is one who has committed an act of bankruptcy, so as to bring him under the protection of the bankrupt laws, which is allowed to none but actual traders, or such as buy and sell, and gain a livelihood by so doing. It is derived from *bancum*, a bench, and *rumpere*, to break, because the bench of the Italian banker or money-changer is said to have been broken by way of infamy when he failed.

**BANNER**. A flag or standard at the end of a lance.

**BANNIANS**. A religious sect among the Hindoos, who believe in the transmigration of souls, and therefore abstain from eating the flesh of animals, which they carefully preserve. They are so cautious of having communication with any but their own caste, that if any of another nation or tribe has drunk out of or touched their cup, they break it.

**BANNOCK**. A sort of oaten cake in the north of England, baked in the embers or on a hot stone.

**BANNS OF MATRIMONY**. The publishing of marriage contracts in the church before the performance of the marriage ceremony. By the ordinances of the church, when persons are to be married, the bans of matrimony shall be published in the church where they dwell three several Sundays or holidays in the time of Divine Service; and if, at the day appointed for their marriage, any man do allege any impediment or precontract, consanguinity or affinity, want of parent's consent, infancy,

&c. why they should not be married (and become bound with sureties to prove this allegation), then the solemnization must be deferred until the truth is tried.

**BANTAM.** The name of a domestic fowl of the hen tribe, having short legs, and the shanks well feathered.



**BAPTISM.** A sacrament of the Christian church, administered either by immersion, that is, dipping in water, or by sprinkling with water, as is practised in the church of England.

**BAPTISTS.** A denomination of professing Christians, who practise adult baptism instead of that of children, and by immersion rather than by sprinkling.

**BAR** (in Courts of Law). The place parted off by a bar or railing, within which sergeants and counsellors stand to plead; also the profession of a barrister or pleader.

**BAR.** A sea term for a rock lying before the harbour in such a manner that ships cannot sail over except upon the flood.

**BAR** (in Music). A line which divides the notes into equal portions in respect to their duration.

**BAR** (in Heraldry). One of the honourable ordinaries, consisting of two horizontal lines drawn across the escutcheon.



**BARALIPTON.** An arbitrary name among logicians for an indirect mode of the first figure of syllogisms.

**BARATRY** (in Commerce). A term used when the master of a vessel or the mariners

cheat the owners by embezzling their goods, or running away with the ship.

**BARB.** The points that stand back in the head of an arrow or fishing-hook, to prevent them from being drawn out easily; also the name of a horse of the Barbary breed, remarkable for its swiftness.

**BARBARA.** An arbitrary name among logicians for the first mode of the first figure of syllogisms, consisting of three universal propositions: as, 'all animals are endued with sense; all men are animals; ergo, all men are endued with sense.'

**BARBARISM.** A rude kind of language used only by the savage or unlettered person.

**BARBEL.** A fish of the carp kind, which lies in holes near the banks, and feeds on testaceous animals, worms, &c. It has its name from the beards or wattles under its nose.



**BARBER.** One who follows the trade of shaving and dressing hair, and anciently also that of bleeding, whence barbers were called Barber-Chirurgeons, and used a pole as a sign to represent the staff which persons used to hold when they were bled. The barbers were separated from the surgeons by a statute in the reign of George the Second.

**BARBERRY.** A tart berry, the fruit of the barberry tree; a prickly shrub.

**BARBICAN.** An outer defence or fortification to a city or castle, used as a fence, and also as a watchtower, to descry the approach of an enemy.

**BARD.** A sort of poets among the Gauls, who used to set forth the deeds of heroes and great men.

**BARGAIN AND SALE** (in Law). An instrument whereby the property of lands and tenements is, for valuable consideration, transferred from one person to another. It is called a real contract upon a valuable consideration for passing of lands, tenements, and hereditaments, by deed indented and enrolled.

**BARGE.** A very large boat used on rivers either for pleasure and state, as the royal barge; or for trade, as the coal barge, &c.

**BARILLA.** A kind of Spanish alkaline salt used in the glass trade.

**BARITONO.** A low pitch of the voice between bass and tenor.

**BARIUM.** A metal so called by Sir H. Davy the discoverer, which is obtained by the chymical decomposition of barytes.

**BARK.** The skin or covering of a ligneous plant. Bark-binding is a disease in trees cured by slitting the bark.

**BARK (in Commerce).** A stuff manufactured in India of the bark of trees; also the Peruvian or Jesuit's bark, which is procured from the Cinchona tree growing in Quito.

**BARK.** A sea term for a small vessel, particularly one carrying three masts.

**BARKING.** The process of peeling the bark off the trees, which must be done in the month of May.

**BARLEY.** A sort of corn or grain which is sown in March, April, or May, and succeeds best in light dry soils. From barley, when converted into malt, beer is made.

**BARLEY, or PEARL-BARLEY.** Barley stripped of its first coat, and used in making a diet drink.

**BARLEYCORN.** The least of our long measures, being the third of an inch.

**BARLEY-MOW.** The place where reaped barley is laid up.

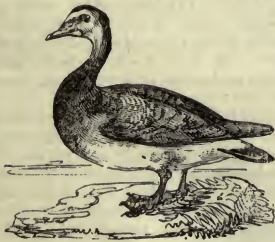
**BARLEY WATER.** A decoction of pearl-barley.

**BARM, or YEAST.** The head or working out of beer, which is used as a ferment to lighten bread.

**BARN.** A storehouse for grain, in which it is deposited and threshed.

**BARNACLE.** A species of shell-fish which sticks to the bottom of ships, rocks, &c.

**BARNACLE-GOOSE.** A large water-fowl, with a broad flat bill.



**BAROLITE.** A stone of the ponderous order, called also the carbonite of barytes.

**BAROMETER.** An instrument for measuring the weight of the atmosphere, invented by Torricelli. The common barometer is a

glass tube hermetically sealed at one end, and filled with mercury, so as to have no air over. Then the maker, putting his finger on the open end, immerses it in a bason of quicksilver or water; and on his removing his finger, the quicksilver in the tube endeavours, by its own weight, to descend into the bason, but by the pressure of the external air on the surface of the fluid in the bason, and no air being in the tube at the top, the quicksilver will rise from 28 to 31 inches in mercury, and from 30 to 33 inches in water. In dry weather, the air, being free from vapours, is consequently heavy, and presses up the quicksilver; but in moist rainy weather, the atmosphere being charged with clouds and fogs, the air is lighter, and presses with less force on the quicksilver. In high winds the atmosphere is light, and the quicksilver low; it also rises higher in cold weather than in warm.



**BARON.** A degree of nobility next to a viscount. All barons are lords of parliament and peers of the realm. Barons were originally so by tenure, that is, by virtue of the barony annexed to their lands or office.

**BARON AND FEME.** A term in Law for husband and wife, who are deemed but one person.

**BARON'S CORONET.** On a gold circle six pearls, which were assigned to barons by King Charles II. after the Restoration.



**BARONET.** The lowest degree of hereditary honour created by letters patent. It was founded by James I. in 1604.

**BARONS OF THE EXCHEQUER.** The four judges who officiate in the court of exchequer at Westminster.

**BARONY.** The honour and territory which gave title to a baron, including the fees and lands of lords, both temporal and spiritual.

**BARRACKS.** Places erected for the accommodation of both men and horses in the English army.

**BARRAS.** A substance consisting of resin and oil, which exudes from the wounds of fir trees in winter.

**BARRATOR (in Law).** A common mover of suits and quarrels, either in courts or elsewhere.

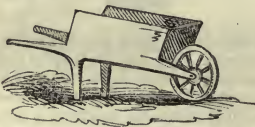
**BARREL.** A cask or vessel for holding liquor, that is, thirty-one and a half gallons of wine, &c. and thirty-two gallons of beer.

**BARREL.** The cylinder of a watch, about which the spring is wrapped.

**BARRIER.** A kind of fence, composed of great stakes, and serving to defend the entrance of a passage.

**BARRISTER.** A counsellor admitted to plead at the bar. An inner Barrister is one who is a serjeant, or king's counsel, and is admitted to plead within the bar; but an outer barrister is one who pleads without the bar.

**BARROW (in Husbandry).** An implement of conveyance with a single wheel, and driven with the hand. It is made of different forms, according to the purpose for which it is intended; the common barrow, called the wheelbarrow, is represented underneath.



**BARROW.** A large hillock or mound, of which many are to be met with in different parts of England, and are supposed to be the tumuli or tombs of the Romans.

**BARTER.** The exchanging one commodity for another; also the rule in Arithmetic by which the proportionate value of commodities is found.

**BARYTES.** A sort of ponderous earth, very brittle, and perfectly soluble in boiling sulphuric acid. It is compounded of oxygen and barium.

**BASALT.** A sort of argillaceous earth,

consisting of silica, with a certain portion of alumina and oxyde of iron, lime, and magnesia. It is always found near volcanoes.

**BASE (in Architecture).** The foot of a pillar, by which it is sustained; in Geometry, the base of a figure is the lowest plain side, or that on which it stands.

**BASE (in Chymistry).** The inert substance which combines with and is acted upon by the more volatile and active menstrua, as the alkalis, earths, and metallic oxydes, which are the principal ingredients in the formation of salts.

**BASE LINE (in Perspective).** The common section of a picture, and the geometrical plane.

**BASEMENT.** A continued base extended along any building, as the basement or lower story of a house.

**BASE TENURE, or BASE ESTATE (in Law).** A holding by villenage, or other customary service.

**BASHAW, or PACHA.** The title given to the grand officers of the court at Constantinople; as the capudan bashaw, the admiral or commander at sea; bostangi bashaw, the chief officer of the garden, &c. Their degrees of dignity were marked by their bearing one, two, or three horses tails.

**BASIL.** The sloping edge of a chisel, or of the iron of a plane.

**BASIL.** A plant which has an aromatic smell.

**BASILICON.** An ointment, consisting of resin, pitch, oil, wax, &c.

**BASILISK.** A serpent of the lizard tribe, with remarkably piercing eyes, and a white spot on its head, resembling a diamond. It was formerly called a cockatrice, and fabled to be produced from the eggs of a cock.

**BASIN.** Any hollow place capable of holding liquids. Basin of a dock, a place where the water is confined by double flood-gates. The basin of a haven is that part which opens from a narrow passage into a spacious receptacle.

**BASKET.** A vessel made either of rushes, splinters, willows, osiers, or any other flexible material that can be interwoven. To render osiers fit for use, they must be soaked for some time. Those that are intended for the finer kind of work, as washing-baskets or market baskets, and the like, must be peeled while they are green, and then steeped. Hampers, and the coarser kind of work, do not require that preparation: basket making was one of the arts that was carried to a considerable degree of perfection among the ancient Britons.

**BASKING SHARK.** A species of the shark, which lies much on the surface of the water, basking in the sun. It grows to a prodigious size, but is not very fierce.

**BAS-RELIEF.** See **BASSO RELIEVO.**

**BASS.** A sort of cushion made of rushes or straw.

**BASS** (in Music). The lowest or deepest part of any composition. This note is played on the largest pipes or strings of instruments of the common size, as the organ, lute, &c., or on the largest kind of instruments. The bass is the principal part of a musical composition, and the foundation of harmony, whence it is called the fundamental bass. Thorough bass is that which includes the fundamental rules of composition. Ground bass is that which commences with some subject of its own, that is continually repeated throughout the movement, whilst the upper parts pursue a separate air.

**BASS CLIFF,** or **F CLIFF.** The character marked thus,



and placed at the beginning of a stave in which the bass or lower notes are placed.

**BASSO RELIEVO.** In English, bass-relief, a sort of sculpture in which the figures are represented as projecting not far above the plane on which they are formed. Figures cut are said to be done in relief, and when the work is low or flat it is called bas-relief, or basso relievo, in distinction from alto relievo and mezzo relievo.

**BASSOON.** A musical wind instrument blown with a reed, and has eleven holes. It serves to play the bass part in concerts.

**BASS VIOL.** A stringed musical instrument of the same shape as a violin, but much larger.

**BASS VOICE.** The gravest and deepest of the male voices.

**BASTARD** (in Law). One born out of wedlock, who cannot inherit.

**BASTILE.** A fortress in Paris, which was used as a prison, and destroyed during the French revolution.

**BASTINADO.** A mode of punishment usual among the Turks, of beating the offender on the soles of the feet.

**BASTION.** A large mass of earth, standing out from a rampart, of which it forms the principal part.

**BAT.** An animal resembling both a bird and a mouse. It has wings not of feathers but of a skin distended, and flies only at

night. It lays no eggs, but brings forth its young alive, and suckles them.



**BATABLE GROUND.** Land formerly so called, which lay between England and Scotland, and was the subject of debate to whom it belonged.

**BATEMENT** (in Carpentry). The wasting of stuff in cutting it for the purpose designed.

**BAT-FOWLING.** A mode of catching birds at night, when they are at roost.

**BATH.** Any receptacle for water which is convenient for bathing; also any artificial contrivance which is to supply the place of a bath, as a shower bath, or an apparatus for applying water to the body in the form of a shower; a vapour bath, or a mode of conveying moisture to the body by means of steam; a medicinal bath is that in which certain chymical preparations are mingled.

**BATH** (in Chymistry). A contrivance by which heat is conveyed to any substance; also in the refining of metals the fusion of the metallic matter is called a bath.

**BATH, KNIGHTS OF THE.** A military order of knighthood, restored, if not instituted, by Henry IV. These knights wear a red ribbon, and their motto is, *Tria juncta in uno*, alluding to the three cardinal virtues, faith, hope, and charity, which every knight ought to possess.

**BATON.** The staff or truncheon given as a symbol of authority to generals in the French army.

**BATTA.** Allowances made to troops in India. Dry batta is money given in lieu of rations; wet batta, what is given in kind.

**BATTALION.** A body of foot soldiers of from 600 to 800 men.

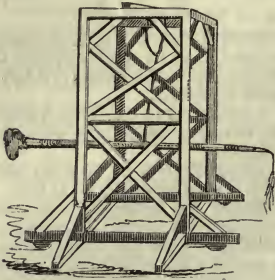
**BATTEL.** An ancient mode of trial by single combat, which has lately been abolished in England.

**BATTEN.** A scantling or piece of wooden stuff from two to four inches broad, and one inch thick.

**BATTERING.** A cannonade of heavy ordnance against any fortress or works.

**BATTERING-RAM.** A military machine, with which the ancients effected breaches in fortifications. These engines were variously constructed, and of different sizes. Plutarch informs us that Marc Antony, in the Parthian war, used a ram of

80 feet long; and, according to Vitruvius, they were sometimes 106, and even 120 feet long, and weighed 100,000 lbs. This engine was frequently used in the fourteenth century, and occasionally for other purposes besides that of war in later periods. Sir Christopher Wren is said to have employed it in demolishing the walls of the old church of St. Paul, previously to his rebuilding it.

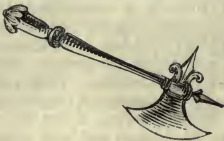


**BATTERY (in Law).** The striking, beating, or offering any violence to the person of another, as by spitting in his face, or any way touching him in anger, or violently jostling against him. It is distinguished from an assault, inasmuch as the latter does not necessarily imply a hitting or blow. There may be an assault without battery, but there cannot be a battery without an assault.

**BATTERY (in Military Affairs).** Any raised place on which cannon are placed. Batteries are of different kinds, as open batteries, which are exposed to view; masked batteries, which are hidden by a breastwork; cross batteries, two batteries firing athwart each other on the same object, &c. A floating battery is a battery erected on simple rafts, or the hulls of ships.

**BATTERY (in Electricity).** A combination of coated surfaces of glass jars so connected that they may be charged at once, and discharged by a common conductor. A battery or pile is also an apparatus employed for accumulating the electricity of galvanism.

**BATTLE AXE.** An ancient sort of weapon, having an axe and a point at the end, for cutting or thrusting.



**BATTLEDORE.** An instrument used either with a shuttlecock or a tennis ball.

**BATTLEMENTS.** Notches or indentures in the top of a wall or building, like embrasures, to look through.

**BATTON.** A staff or truncheon used in coats of arms, to denote illegitimacy.



**BAWLING.** The noise of dogs in sporting, who are too busy before they find the scent.

**BAY.** Any inlet of the sea between two capes, or promontories, where ships may ride; it is defined in geography, an arm of the sea stretching inland.

**BAY, or BAY TREE.** The female laurel tree, an evergreen, which grows wild in Italy and France.

**BAY.** A colour in horses resembling the dried bay leaf.

**BAYONET.** A short triangular dagger made to fix on the muzzle of a firelock or musket.

**BAY-SALT.** A salt which is made from seawater in France, by letting the water into pits or basins, where, by the heat of the sun, it is evaporated, and the residue is converted into crystals of salt.

**BAZAAR.** A place mostly covered and fitted up with shops in Eastern countries; also a similar collection of shops lately introduced into England.

**BDELLIUM.** The gum of an Arabian tree about the size of an olive tree. The gum resembles wax, and consists of resin, gum, cerasin, and volatile oil.

**BEACH.** The seashore, or margin of the sea, which is washed by the tides.

**BEACON.** A signal by fire, placed on some eminence, to prevent shipwrecks, or give some alarm.

**BEAD (in Architecture).** A round moulding, carved in short embossments, like the bead of a necklace.

**BEADLE, or BEDEL.** An officer of a court, of the university, or of any corporate body, who acts as a messenger and attends to keep order.

**BEAD PROOF.** A method of determining the strength of spirituous liquors from the continuance of the bubbles or beads on the surface.

**BEAD TREE.** A shrub, the fruit of which is a nut, that is bored through and



strung as beads by the Roman Catholics in Spain and Portugal.

**BEAGLE.** A sort of hunting dog.

**BEAK, or BEAK-HEAD OF A SHIP.** That part of it which is without before the fore-castle, and serves by way of ornament. Among the ancients it was a piece of brass, like a bird's beak.

**BEAM.** The largest piece of wood in a building, which is its main support; in Naval Architecture, beams are the large main timbers that stretch across a ship to support a deck.

**BEAM-COMPASS.** An instrument consisting of a square wooden or brass beam, having sliding sockets, used for describing large circles.

**BEAM-TREE.** A tree which grows to the height of thirty or forty feet, so called because it is particularly fitted for making axletrees and the like.

**BEAN.** An edible pulse, of which there are several sorts, as the kidney or French bean, the broad Windsor bean, the horse bean, &c.

**BEAR.** A wild beast, covered with shaggy hair, and having hooked claws for climbing trees. It feeds on honey, insects, and carcasses, and lies torpid during the winter. The black bear is a native of the north of Europe and Asia; but the polar bear, which is white, lives within the arctic pole.



**BEAR'S-BREECH.** An herb, from the smooth leaved sort of which is extracted a mucilage.

**BEARD (with Botanists).** The under lip of a labiated flower, and in corn and grass that hair or bristle which serves to defend the ear, as in barley, rye, wheat, and oats.

**BEARD OF A COMET (in Astronomy).** The rays which a comet emits towards that part of the heavens to which its course seems to direct it.

**BEARD OF A HORSE (in Farriery).** The chuck, or that part under the lower jaw, on the outside, and above the chin, which bears the curb of the bridle.

**BEAR-GARDEN.** A place formerly set apart for the baiting of bears.

**BEARER OF A BILL (in Commerce).**

The person in whose hands the bill is, and in favour of whom the last indorsement was made.

**BEARERS.** Posts or brick walls, which are trimmed up between two ends of a piece of timber, to shorten its bearing, or to prevent its bearing with the whole weight at the ends only.

**BEARING (in Architecture).** The distance between the bearer, or support, and each end of the timber.

**BEARING.** A sea term, to denote the situation of any distant object with regard to the ship's position, whether ahead, astern, or abreast, &c.

**BEARING (in Heraldry).** Whatever is borne in or fills the escutcheon.

**BEAT.** The walk or round which a watchman has to take at stated intervals.

**BEATING TIME.** That motion of the hand or foot by which some person marks and regulates the movements of the performers.

**BEATS (in a Clock or Watch).** The strokes made by the pallets or fangs of the spindle.

**BEAVER.** An amphibious four footed animal, that lives on the banks of rivers and unfrequented lakes, and is remarkable for its ingenuity in building its habitation. It walks slowly, swims dexterously, eats sitting on its haunches, and conveys its food to its mouth with its fore paws. This animal is valued both for its fur and for the oil which it yields, called castor oil.



**BEAVER.** That part of the helmet which defends the sight, and opens in front.

**BEAU MONDE.** The gay fashionable world.

**BED (in Gunnery).** A thick plank which lies under a piece of ordnance, on the carriage.

**BED (in Masonry).** A range or course of stones.

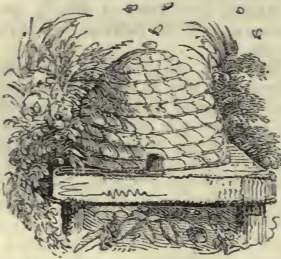
**BED (in Mineralogy).** A stratum or layer of any earth or stone.

**BED OF A RIVER.** The bottom of a channel in which the stream or current usually flows.

**BEE.** An insect which carries on the operation of making honey and wax. Bees begin to swarm, that is to form new colonies, in May or June, according to the state of the weather. The swarm consists of a female, called the queen, who is distinguished by her size; the drones, who are supposed to be males, that do not work; and the mules, or common bees, who are of neither sex, and do the work of the hive.



**BEEHIVE.** A particular kind of basket in which bees are kept.



**BEER.** A drink made of malt and hops by the process of brewing; it is of three kinds, namely, strong beer, ale, and table beer, or small beer.

**BEESTINGS.** A term in Husbandry for the first milk taken from a cow after she calves.

**BEEF.** A garden herb and root, which is thick and fleshy. The leaves are used as potherbs, and the root is boiled as parsnips.

**BETTER.** The scarabæus of Linnæus, a well known insect, produced from the larvæ or grubs that live under ground. It has six feet, is hairy at one end, and lives in dry decayed wood, &c.



**BETTER.** A large wooden hammer for driving palisadoes.

**BELFRY.** That part of a church steeple in which the bells are hung.

**BELL.** The well known metallic machine, which is ranked among musical instruments; it consists of three parts, the body, or barrel, the clapper, and the ear, or cannon. The use of bells in churches was introduced into England in the eighth century. They were commonly baptized before they were hung.



**BELLES LETTRES.** A French term for polite literature.

**BELLIGERENT.** An epithet applied to states that are at war.

**BELL METAL.** A metal employed in the manufacture of bells, which usually consists of three parts of copper and one of tin.

**BELLONA.** The goddess of war, and sister of Mars.

**BELLOWS.** A machine for blowing the fire. This machine is so contrived as to expire and respire the air alternately, by enlarging and contracting its capacity. The air which enters the bellows is compressed when they are closed, and flows out of the pipe with a velocity proportioned to the force by which it is compressed. The bellows of smiths and founders are worked by a rocker.

**BELLOWS OF AN ORGAN.** The pneumatic part of the machine, by which it is supplied with wind. The bellows of a large organ are worked by a man called the blower; those of smaller organs by the foot of the player.

**BELLUÆ.** The sixth order of animals in the Linnean system, having their feet hoofed, as the equus, or horse; sus, the swine; the hippopotamus, and the tapir.

**BELT.** A girdle for hanging a sword or any other weapon in.

**BELT (in Heraldry).** A badge of the knightly order, given to a person when he was raised to the knighthood.

**BELT (in Surgery).** A bandage applied round the body.

**BELT** (in Masonry). A range or course of bricks projecting from the rest.

**BELTEIN**. An ancient festival in Ireland, celebrated on the 21st of June, the summer solstice, when fires were made on the tops of the hills.

**BELTS, or FASCIÆ**. Two zones or girdles round the planet Jupiter, more lucid than the other parts of his body, and terminated by parallel straight lines, sometimes broader and sometimes narrower, varying both in magnitude and position. These belts were first observed at Naples, by Zuppi and Bartoli, two Jesuits.

**BENCH**. A seat of justice, as the King's Bench, at Westminster; also the persons sitting on a bench, as a bench of magistrates.

**BENCHER**. A lawyer of the oldest standing in the inns of court.

**BEND** (in Heraldry). One of the ten honourable ordinaries, drawn from the dexter, or right corner, at the top of the escutcheon, to the sinister base, or left corner, at the bottom. It is supposed to represent a shoulder belt, or scarf, and to show the wearer to be valiant in war. It is sometimes called a bend dexter, to distinguish it from the bend sinister, which is drawn from the left side of the shield to the right.



**BEND**. A sea term for the knot by which one rope is fastened to another or to an anchor.

**BENDING**. A sea term, for the tying two cables or ropes together, or to any thing else.

**BENDING** (in Physiology). The reducing a body to a curved or crooked form. The bending of boards, planks, &c. is effected by means of heat, whether by boiling or otherwise, by which the fibres become relaxed and flexible.

**BENDS IN A SHIP**. The outermost timbers of the side, to set the foot on in climbing up the side. They are reckoned from the water, first, second, and third bend, and are of great service in strengthening the ship, as into them the beams, knees, and foothooks are bolted.

**BENEFICE**. Any ecclesiastical living, but particularly rectories and vicarages.

**BENEFIT OF CLERGY**. A privilege in law, at first peculiar to the clergy, but in after times made common to the laity. When any one was convicted of certain crimes, he had a book given him to read, and if the ordinary or his deputy pronounced these words, 'Legit ut clericus, he reads like a clergyman, or scholar,' he was only burnt in the hand and set free for the first offence, otherwise he was to suffer death.

**BENZOIN**. A dry solid resin, of a fragrant smell, produced by incision from the styrax, an Indian tree. It is brought to us from the East Indies, particularly Siam and the islands of Java and Sumatra, in masses of various sizes, composed of small granules of a whitish or yellowish colour, with a purple cast on the surface. It is very inflammable, and diffuses a fragrant smell while burning, and so in like manner when rubbed in the hand. When the benzoin tree is six years old, the natives cut it in several places in an oblique direction, and the benzoin flows from the wounds. Benzoin is used by perfumers in making sweet bags, &c. and was formerly very much esteemed as an expectorant. The tree was brought from Virginia into England.

**BEQUEST**. A legacy; what is bequeathed or left by will.

**BERENICE'S HAIR**. A constellation in the northern hemisphere.

**BERGAMOT**. A fine sort of pear, which is of two sorts, namely, the summer bergamot and the autumn bergamot.

**BERGAMOT** (in Chymistry). A fragrant essence, extracted from a fruit which is produced by ingrafting a branch of a lemon tree upon the stock of a bergamot pear. This essence is got by cutting the external rind of the fruit into small pieces, and squeezing them into a glass vessel, in the same manner as the juice of a lemon is squeezed out, by which means an ætherial oil is procured of a very fragrant smell.

**BERRY**. A round fruit, for the most part soft, and covered with a thin skin, containing seeds in a pulpy substance.

**BERYL**. A precious stone, which, in its purity, is of a perfectly seagreen colour, and on that account called aqua marina. Beryl is also (in Painting) the seagreen colour, in imitation of this stone.

**BETA**. The second letter in the Greek alphabet.

**BETAL**. A sort of pepper plant, the leaf of which is universally chewed by the southern Asiatics, to sweeten the breath and strengthen the stomach. It is a slender-stemmed climbing plant.

**BEVEL**. An instrument with a move-

able tongue, to strike angles of a greater or less magnitude.



**BEVELLING** (in Carpentry). Hewing timber with a proper or regular curve.

**BEY.** An officer of high rank among the Turks, inferior to none but the pacha.

**BEZANTS.** Round flat pieces of bullion without any impression, which are supposed to have been the current coin of Byzantium. This coin was probably introduced into coat armour by those who went to the wars.



**BEZOAR.** A medicinal stone, brought from the East and West Indies, which was formerly reckoned a sovereign antidote against poisons. It is found to be a morbid concretion in the intestines of some animals.

**BIBLE.** The collection of the books of the Old and New Testament. The Old Testament was first translated by the 72 interpreters, and thence called the Septuagint; of the Latin versions, that of St. Jerome was confirmed by the council of Trent for vulgar use, and thence got the name of the Vulgate. The Bible was translated into the Saxon tongue about the year 940; and into the English, by William Tindal, in the twenty-first year of the reign of Henry the Eighth, when it was printed. The present authorized version of the Holy Scriptures was completed in the reign of James the First, about the year 1603.

**BIBLIOGRAPHER.** A person conversant with books.

**BIBLIOGRAPHY.** The knowledge of books as to their several editions, time, and form of being printed, type, and other particulars connected with their publication.

**BIBLIOMANIA.** A rage for scarce and old editions of books.

**BICE** (in Painting). A blue colour prepared from the lapis armenus; it bears the best body of all bright blues used in common work.

**BIENNIALS.** Plants that flourish for two years, and seldom more.

**BIGAMY.** Double marriage, or the marrying of two wives or two husbands while the first is alive, which is felony by statute. Bigamy, in the Civil Law, is the marrying a plurality of wives or husbands.

**BIGHT.** The double part of a rope where it is folded, in distinction from the end.

**BILBOES.** A term at sea, for the long bars of iron with which the feet of offenders are confined, the irons being more or less heavy according to the nature of the offence.

**BILE.** A bitter fluid secreted in the glandular substance of the liver, and passing through the gall bladder and the porus biliaris, is discharged into the duodenum, where it converts the chyme into chyle and excrement. The constituent parts of bile are water, soda in a caustic state, phosphate of lime, and a resinous albuminous principle.

**BILGE.** A sea term, for the bottom of the floor of a ship, the compass or breadth of its bottom. A vessel is said to bilge when she has struck off some of her timber against a rock.

**BILL.** An edged tool, or hatchet, with a hooked point, for lopping of trees and making hedges; if it have a short handle it is a handbill; if a long handle, a hedging-bill.

**BILL** (in Law). A declaration in writing expressing any grievance or wrong which one person has suffered from another; also an instrument drawn up by any member and presented to parliament for its approbation or rejection.

**BILL OF EXCHANGE** (in Commerce). A note containing an order for the payment of a sum of money to a person called the drawer, who when he has signed it with his name, and written the word accepted, he is called the acceptor. The person in whose favour it is drawn, or to whom it is ordered to be paid, is called the drawee, or payee, who, when he has indorsed it, is called the indorser. He who is in possession of the bill is the holder.

**BILL OF FARE.** An account of such provisions as are in season, or are to be supplied for the table.

**BILL OF LADING, or INVOICE.** A deed signed by the master of a ship, by which he acknowledges the receipt of the merchant's goods, and obliges himself to deliver them at the place to which they are consigned.

**BILL OF PARCELS.** A tradesman's account of goods sold and delivered.

**BILLET.** A ticket for quartering sol-

diars: also a small paper, or note, folded up as a billet doux, a love letter.

**BILLET.** A small log of wood; also in Heraldry, a bearing in the form of a square, supposed to represent cloth of gold and silver.

**BILLETING** (in Military Affairs). Ordering soldiers to be quartered in particular houses by a billet or small ticket.

**BILLIARDS.** A game played on an oblong table, exactly level, and covered with cloth, by the means of ivory balls, which are struck or driven with sticks, made bending, so as to drive the antagonist's ball into holes, called hazards or pockets, at the corners or by the sides of the table. The art of the game lies in pocketing your antagonist's ball without putting in your own.

**BILLION.** The sum of a million millions.

**BILLS OF MORTALITY.** Annual registers of the deaths and burials which take place in the different parishes in and near London.

**BINDING OF BOOKS.** The art of doing up books in leather or vellum, as distinguished from those done up in boards or only sewed.

**BINNACLE.** A wooden case, containing the compasses, log glasses, watch glasses, &c.

**BINOMIAL.** A term in algebra for any quantity consisting of two names, or terms, connected together by the sign +, or —, as  $a + b$ .

**BIPED.** An animal with only two legs, as men and birds.

**BIQUADRATIC.** The square squared, or the fourth power of any quantity.

**BIRCH TREE.** A tree with leaves like the poplar, the fruit of which is a squamose cone. The timber is used for hop-poles.

**BIRD-BOLT.** A small arrow with three heads, which was discharged at birds from a cross-bow. The bird-bolt is still used as a bearing in coat armour.

**BIRDCALL.** A whistle or pipe to decoy birds.

**BIRDCATCHING.** The art of taking birds or wild fowl by birdlime, nets, and decoys, which, as respects the more artful modes of catching birds, is called fowling. In the western islands of Scotland, where the birds live in rocks, a dangerous mode of bird catching is in use.

**BIRDLIME.** A glutinous substance, made of the bark of holly, which is spread on the twigs of trees to catch birds.

**BIRTH.** A sea term for the station in which a ship rides at anchoring ground, as a good birth, for a good anchoring ground.

**BIRTHRIGHT** (in Law). Honour or estate belonging to a person by right of his birth.

**BIRTHWORT.** A herb having a perennial root.

**BISCUIT** (from *biscoctus*, twice baked). A sort of bread much dried in baking; sea biscuit is dried harder than any other, that it may be better preserved.

**BISECTION.** The cutting any quantity, as a line or angle, into two equal parts.

**BISHOP.** A dignity in the Christian church, who presides over the clergy within a certain district, called his diocese. Bishops are suffragans, or assistants, to the archbishop, who is the chief of the clergy in his province. The bishop is said to be installed, the archbishop to be enthroned.

**BISHOPRIC.** The diocese, or district, over which a bishop presides.

**BISMUTH.** A metal of a yellowish or reddish white colour. It is rather harder than lead, and scarcely if at all malleable, being very brittle; it melts easily, and is soluble in acids.

**BISON.** A variety of the ox, which has its horns bent forwards, back gibbons, and mane long.



**BISSEXTILE, or LEAP YEAR.** A year consisting of 366 days, by the addition of a day in the month of February, when that year consists of 29 instead of 28 days. This happens every fourth year. The day thus added is also called Bissextile, and on this account, that Cæsar appointed it to be introduced by reckoning the twenty fourth of February twice, and as that day was the same as the sixth of the calends of March, a day celebrated among the Romans on account of the expulsion of the Tarquins, it was called *bis sextus calendarum Martii*, and afterwards Bissextile. By the stat. 21 Hen. III. De Anno Bissextile, to prevent misunderstandings, the intercalary day and that next before it, are to be accounted as one day.

**BISTER.** A colour made of chimney soot boiled and diluted.

**BISTOURY.** A small surgical knife of various forms, according to the purpose for which it is intended.

**BIT** (in Carpentry). A boring instrument so constructed as to be taken out of the handle.

**BIT, or BITT OF A BRIDLE.** The iron attached to the bridle, which is put into the horse's mouth.

**BITT.** A sea term for the two pieces of timber to which the anchor cables are attached.

**BITTER.** A sea term for the turn of the cable round the bits.

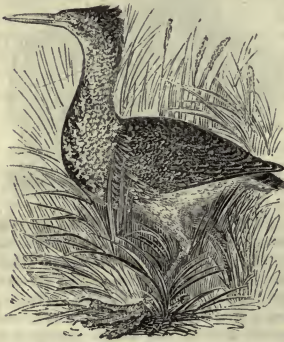
**BITTER ALMOND.** A sort of almond tree, the fruit of which is bitter.

**BITTER-APPLE.** See **COLOQUINTIDA.**

**BITTER PRINCIPLE.** The bitter parts of vegetable substances, which may be extracted by a chymical process. Artificial bitter is any bitter formed by the action of nitric acid on vegetable and other substances.

**BITTER-SWEET.** A sort of solanum, a perennial.

**BITTERN, or BITTOUR.** A bird of the heron kind, of retired habits, that conceals itself in the reeds and marshes. It sends forth a croaking note when it is disturbed.



**BITUMEN.** A sort of mineral substance easily combustible with flame, greasy to the touch, and when ignited emits a strong odour. Naphtha is a fluid bitumen, asphalt a hard species, and petroleum a viscid species of the bitumen.

**BIVALVES.** One of the three general classes of shellfish, the shells of which are composed of two pieces, joined together by a hinge.

**BLACK.** A colour which is supposed to be produced by the peculiar texture of bodies, which deaden as it were the light

falling upon them, and reflect none, or very little of it, outwards towards the eye.

**BLACK.** A colour or dye, as lamp black, the smoke of resin, prepared by melting it in iron vessels; ivory black, made of burnt ivory, and used in miniatures; Spanish black, made of burnt cork, and first used by the Spaniards.

**BLACKBERRY.** The fruit of the bramble, or blackberry bush.

**BLACKBIRD.** A well known bird of a beautiful black colour and an exquisite note. It sings in the spring, and makes its nest of moss and grass.



**BLACK BOOK.** A book kept in the Exchequer, which contains the orders of that court.

**BLACKCAP.** A little bird with a fine black crown on its head.

**BLACK HOLE.** A place of confinement for soldiers.

**BLACK LEAD.** A mineral, the plumbago or graphites of Linnæus. It is found in lead mines, and is fusible only by a violent heat. Lead pencils are made of it.

**BLACK LETTER.** A sort of old English alphabet.

**BLADDER.** A thin membranous substance, which serves as the receptacle of some fluid, as the urinary bladder and the gall bladder.

**BLADDER-NUT.** A tree, the fruit of which is contained in a membrane inflated like a bladder.

**BLADDER SENNA.** A shrub which yields a papilionaceous flower, that is succeeded by pods resembling the inflated bladder of fishes.

**BLADE.** The flat part of a sword or knife, resembling the blade or leaf of grass in shape.

**BLADEBONE.** The shoulder bone.

**BLAIN** (in Farriery). A distemper incident to animals, being a bladder at the root of the tongue, which stops the breath.

**BLANCH FARM** (in Law). A term for a farm where the rent is paid in silver, not in black cattle.

**BLANCHING.** The art of making any thing white, as (in horticulture) the method of whitening salads. Blanching money is

the annealing, boiling, and cleansing it when it is coined. Blanching copper is done in various ways, so as to make it resemble silver. Blanching is also the operation of covering iron plates with a thin coat or crust of tin. Blanching almonds is the skinning them by means of hot water.

**BLANK.** A void space in any writing or printing.

**BLANK VERSE.** That which has no rhymes.

**BLANKETS** (in Printing). Woollen cloths to lay between the tympan of a printing press, in order to produce a fair impression.

**BLANKETS.** A sea term, for combustibles made of coarse brown paper steeped in nitre, dried, and then steeped again in tallow, resin, and sulphur; they are used in fireships.

**BLAST.** A disease in grain and trees; called also a blight.

**BLASTING** (among Miners). The tearing up rocks by the force of gunpowder.

**BLASTING - BELLOWS.** Bellows which are used to produce a more than ordinary degree of heat in furnaces.

**BLAZONRY, or BLAZONING.** That branch of the art of heraldry which consists in expressing in proper terms all that belongs to coats of arms. The word comes from the German blasen, to blow; because a trumpet used to be blown at justs, &c. previously to the herald's recording the achievements of the knights.

**BLEACHING.** The process of whitening linen by exposure to the sun and air; or, as is now more commonly in use, by the application of chymical preparations.

**BLEMISH** (in Farriery). Any imperfection in a horse which impedes a sound warrant, as broken knees, cracked heels, &c.

**BLLENDE.** The ore of zinc.

**BLIGHT.** A disease incident to plants, which consists in a sort of fungus, that converts the affected part into a sooty mass.

**BLINDS.** A contrivance to prevent any one seeing through a window; in Military Affairs, bundles of osiers used at the heads of trenches, to protect the men.

**BLINDWORM, or SLOWWORM.** A worm so called from the smallness of its eyes and the slowness of its motion.

**BLISTER.** A pustule in the skin, filled with serum; in general, any swelling caused by the separation of the outer integument of any substance from that which is underneath.

**BLISTER** (in Medicine). The plaster or application that raises a blister, mostly made of the cantharides, or Spanish flies.

**BLOCK.** A sea term for a pulley, or series of pulleys, mounted in a frame, or shell, which serves to facilitate the passage of the ropes. Blocks are single, double, treble, &c. according to the number of shivers in them through which the running ropes run.

SINGLE BLOCK.



DOUBLE BLOCK.



TREBLE BLOCK.



**BLOCKADE.** The blocking up the roads and avenues to a place, by means of soldiers, so as to prevent any ingress or egress.

**BLOOD.** A warm red fluid, of a saltish taste and urinous smell, circulating through every part of the body by means of arteries and veins. The blood is found to contain an insipid water, which soon becomes putrid, an empyreumatic oil, an ammoniacal spirit, and the remainder carbon.

**BLOOD** (in Law). Is regarded in descent of lands, for a person must be next and most worthy of blood in order to inherit his ancestor's estate.

**BLOOD-HORSE.** A breed of horses originally from the Arabian stock, the excellence of which consists in the compactness of his fibre, that adds to his strength without increasing his bulk.

**BLOODHOUND.** A hunting dog, of such exquisite scent, that he will follow the track of men as well as of animals.

**BLOOD-RED-HOT.** The last degree of heat given by smiths to their iron in the forge.

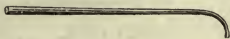
**BLOODSHOT.** A distemper in the eyes, when the vessels are so distended as to make them appear red.

**BLOOD-STONE.** A stone which serves to stop bleeding.

**BLOODSUCKER.** A leach which sucks the blood of any animal to which it is applied.

**BLOWING GLASS.** The process in glass houses of forming glass into various shapes, by means of blowing through a blow-pipe dipped into the melted glass.

**BLOW-PIPE.** A wind instrument, which consists of a hollow tube, ending in a cavity as fine as a wire, through which air may be directed with considerable force against a flame, so as to heat substances with great rapidity. It is used by chymists, enamellers, glassmakers, &c.



**BLUBBER.** The fat of the whale before it is boiled. Sea blubber, the vulgar name of a shellfish.

**BLUE.** One of the seven primitive colours into which they are divided when refracted through a glass prism. Blue, as a colour in painting, is distinguished into ultramarine, from the azure stone; blue ashes, used in limning, fresco, and miniature; blue verditer, a blue somewhat inclining to a green; Prussian blue, a colour next to ultramarine for beauty.

**BLUEBOTTLE.** An annual, having a bell-shaped flower. The flower is borne in coats of arms.

**BLUEBOTTLE.** A large kind of fly with a blue body.

**BLUEING.** The process of heating iron and other metals in the fire, until they assume a blue colour, which is the practice of gilders before they apply the gold and silver leaf to them.

**BLUFF.** A sea term for a high land projecting almost perpendicularly into the sea.

**BLUNDERBUSS.** A short brass gun with a large bore.

**BOA CONSTRICTOR.** A serpent of immense size and strength, a native of Africa and India, measuring sometimes twelve yards in length. It will twist itself round the bodies of oxen and other animals, and, breaking their bones, swallow them whole.



**BOAR.** The male of the swine. The boar's head is often borne in coats of arms.

**BOARD.** A sea term, for the space a ship runs over between tack and tack, as to make short boards, that is, to tack frequently; also the ship itself, as to go aboard, that is, into the ship; so board and board is said of two ships coming so near to each other as to touch by the board over the ship's side.

**BOARD** (in Carpentry). Any piece of timber sawed to a less thickness than nine inches; all above this thickness are planks.

**BOARD,** or **PASTEBOARD.** Layers of paper so pasted together as to make a substance as hard as a board.

**BOARDING.** The fixing of boards for any purpose, as a floor; (in Naval Tactics) the entering a ship in a forcible manner.

**BOARDS,** or by way of contraction, **BDS.** The manner of doing books up in pasteboard covers, without leather.

**BOARD WAGES.** Money given to servants in lieu of diet.

**BOAT.** A small open vessel worked on rivers or small waters by rowing or sailing.



**BOATBILL.** A bird of South America, having a bill that resembles a boat in shape. It lives upon fish, and darts down upon them as they are swimming.

**BOATFLY.** An insect with an inflected snout, that lives in stagnant waters.

**BOATSWAIN.** A sea term, for the officer who has the boats, anchors, &c. in his charge.

**BOB.** The metallic weight attached to a pendulum.

**BOBBIN.** A sort of tape.

**BOBBINS.** Little pins of wood with a notch, on which thread, &c. is wound.

**BODKIN.** A long sort of pin, on which women used to roll their hair.

**BODY** (in Geometry). Any solid having three dimensions, length, breadth, and thickness. Regular bodies, which have all their angles and sides similar and equal, are of five kinds, namely, tetraedron, a body contained under four equilateral triangles; hexaedron, a body containing six squares; octaedron, a body having eight triangles; dodecaedron, a body containing twelve pentagons; icosaedron, a body containing twenty triangles. Irregular bodies are solids



which are not bounded by equal and like surfaces.

**BODY** (in Physics). An extended solid substance, consisting of hard, impenetrable, moveable particles. It is a hard body when its parts do not easily yield to any stroke or percussion; a soft body when it yields to every stroke, and thereby undergoes a change; an elastic body, that changes its form with every stroke, but recovers it again when the impelling force is removed.

**BODY**. In the phrase 'to bear a body,' a term applied by painters to any colour which is of a nature to be ground so freely, and to mix with oil so entirely, as to seem one thick oil of the same colour.

**BODY**. Of a chymical vessel, that which holds the matter in distillation. Body of a pump, the thickest part of the barrel or pipe. Body, in an army, any number of forces united under one commander.

**BOHEA TEA**. One of the superior kinds of tea that comes from China.

**BOILING POINT**. The fixed point or degree of heat required to produce the ebullition or boiling of a fluid. Every liquid has a fixed point at which boiling commences, and this is called the boiling point. Thus water begins to boil at the temperature of 212°. After a liquid has begun to boil, it will not become hotter, for although a stronger heat makes all liquids boil more rapidly, yet it does not increase their temperature.

**BOLE**. A friable earth of the argillaceous kind, which unites with water so as to form a paste. The Armenian bole, or bole armeniac, is a bright red coloured earth, so called from Armenia, the country from which it is procured.

**BOLL**. A measure of two bushels.

**BOLGNA STONE**. A phosphoric stone, first found at Bologna in Italy. It is a gray soft sulphureous stone, about the size of a large walnut, which shines in the dark after calcination. This stone is the native sulphate of carytes.

**BOLSTER**. A soft pillow for a broken limb; in Farriery, it is the name of those parts of a saddle which are raised upon the bows to receive the rider's thighs.

**BOLSTER**. A sea term, for a piece of timber cut and placed for the easement of the cable.

**BOLT**. An iron pin used for strengthening timber.

**BOLUS**. An internal medicine, of a consistency thicker than honey.

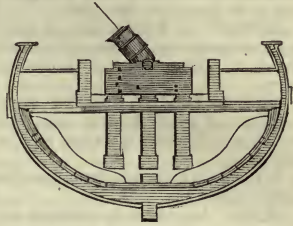
**BOMB**. A hollow ball of cast iron, filled with combustibles, and discharged

from a mortar into towns, when, by bursting, it causes much mischief.

**BOMBARDMENT**. The discharging of bombs into a besieged place.

**BOMBIC ACID**. An acid liquor contained in a reservoir near the anus of the silkworm.

**BOMBKETCH**. A small vessel built and strengthened with large beams, for the use of mortars at sea.



**BOMPERNICKEL**. A name given in derision to the German rye-bread, signifying, good for nothing.

**BONA FIDE**. With good faith; without fraud or subterfuge.

**BOND** (in Law). An obligation or covenant in writing to pay any sum, or perform any contract.

**BOND** (in Carpentry). The binding of any two pieces together by tenancing, morticing, &c. In Masonry, it is the disposition of stones or bricks in a building, so that they most aptly fit together; stones having their length placed in the thickness of the wall are called headers, and those whose length extends along the face or exterior of the wall are called stretchers.

**BOND-TIMBERS**. The horizontal timbers bedded in stone or brick walls for strengthening the masonry.

**BONDSMAN**. One bound or giving security for another.

**BONE**. A hard, dry, insensible part of the body, composed of a spongy reticular substance, and an oily matter called marrow. There is also a considerable portion of phosphate of lime that enters into their composition. The bones of the human body are in number about 250.

**BONE**. A sea term, in the phrase 'To carry a bone in her mouth,' applied to a ship when she makes the water foam before her in sailing.

**BONE-LACE**. Lace made of bobbins that are formed from bones.

**BONES**. A sort of bobbins made of trotter-bones, for weaving bone lace.

**BONES.** A name in Mathematics given to Lord Napier's rods for facilitating arithmetical calculations.

**BONING.** A term among surveyors, to denote the laying poles upon the ground in such a manner that all may lie in a straight line.

**BONNET** (in Heraldry). A cap of velvet worn without a coronet.

**BONNET.** A sea term, for the addition of a small sail made to fasten with latches to the foot of the other sails.

**BONNET** (in Fortification). A small work composed of two faces, usually raised before the salient angle of the counter-scarp.

**BONZE.** An Indian priest, who wears a chaplet of beads about his neck, and carries a staff, having a wooden bird at one end.

**BOOBY.** A South American bird of the pelican tribe.

**BOOK.** Any folded leaves which are or may be written upon; also a general name for any literary composition, but more particularly any composition large enough to be formed into a volume. Before the use of books or volumes things were committed to writing on stone, wood, bark, &c. The Decalogue was written on tables of stone; so likewise, as we learn from Josephus, the children of Seth wrote their inventions and astronomical observations on two columns, one of brick and the other of stone, the latter of which was standing in his day. Hesiod's works were originally written upon tables of lead; Solon's laws upon wooden planks, &c.; and the Parian Chronicle, or a chronicle of the affairs of Athens, on marbles, which are now known by the name of the Arundelian. The Scythians, Celts, and their several descendants, the Goths, Teutones, &c. also used to write on trees whatever they thought worthy to preserve in writing. Tables of wood, box, and ivory were also common among the ancients; but we find that the Romans were accustomed to write upon tables of wax, by means of a style or bodkin, so contrived that they could also erase what they pleased. The finest and thinnest parts of the bark of trees, as of the lime, the ash, the maple, and the elm, were also employed, whence the Latin name *liber* signifies both book and bark. The English word *book* is derived immediately from the Saxon *boec*, Low German *bok*, High German *buch*; and is either from *buch*, which signifies a beech, because the bark of this kind of tree was used; or from *biegen*, to bend, because

the leaves were folded or bent into the form of a book. When books were rolled up, they were on that account called *volumen*, a volume, a name afterwards given to paper and parchment folded together. Sometimes the roll consisted of several sheets of bark fastened together and rolled upon a stick, called an *umbilicus*. Before the introduction of printing, books were become so scarce in the middle ages, that, in Spain, one and the same copy of the Bible, St. Jerome's Epistles, and some few volumes of ecclesiastical offices served several different monasteries. Since that period the increase of books has been prodigious; and in consequence of the different editions, modes of printing, size, type, and other particulars connected either with the external form or internal contents, the knowledge of books has become a particular study and pursuit, under the name of *bibliography*.

**BOOKBINDING.** The process of binding books, or putting the sheets together into the form of books. The bookbinder receives the sheets which compose a book immediately from the printer, and after having folded them in the order of the signatures, or letters at the bottom of the page, they are first beaten with a hammer on a stone, to make them lie close and smooth; after which they are put into a press, and sewed with bands, or strips of leather fastened at certain distances, which, being all glued together very firmly, form the back of the book, to which the pasteboards are attached by means of the bands, so as to form the sides. In all this process of fixing on the sides, much art and nicety is required in rounding the back, and keeping the whole firmly fixed in the press. After this the book is put into the cutting-press between two boards, one lying even with the press for the knife to run upon, the other above for the knife to run against. In this manner the leaves and boards are cut to form an even edge. The next operation is the sprinkling of the leaves, which is done by means of a brush dipped in vermilion and sap green. The covers of leather, &c. being first moistened, are cut to the size of the book, smeared with paste, and then stretched successively over the back and the two sides, after having taken off the four angles, and indented and platted the cover at the head band. When thus far finished, the book is covered and bound between two bands and set to dry. It is afterwards washed with paste and water, and then sprinkled with a brush, unless it is to be marbled, which is done by making

spots with vitriol. The book is then glazed with the white of an egg, and, lastly, polished with a hot iron. The letters and ornaments are made with gilding tools, or brass cylinders, rolled along by a handle: to apply the gold, the leather is glazed with a liquor made of the white of eggs, diluted with water, and when nearly dry the gold is laid on. Such is the process when a book is fully bound; but books may sometimes be only sewed and have a paper cover, when they are said to be sewed: sometimes the boards are covered with paper only, when they are said to be in boards; and sometimes they have a leather covering on the back, extending a small way over each side, when they are said to be half bound.

**BOOK-KEEPING.** The art of keeping accounts, or recording the mercantile transactions of a man, so that he may thoroughly know the whole state of his affairs, or any part of them, with ease and dispatch. Accounts may be kept either by single or double entry; the former of which may answer the purpose where the dealings are on a small scale, but merchants, whose concerns are extensive, keep their books according to the double entry, or Italian method. In single entry two books only are wanted, namely, a journal, or day book, in which the transactions of the day, as they occur in the course of business, are entered; and the ledger, or post book, in which all the accounts drawn out of the journal are placed under the proper name, either on the debtor or creditor side. Those who keep their accounts by double entry, have occasion for several books, the three principal of which are, the waste book, the journal, and the ledger. The waste book is a book containing an inventory of a merchant's effects and debts, with a distinct record of all his dealings. The act of placing any transaction under a given account is called the entry; if placed on the Dr. or debtor's side, it is debiting the account; if placed on the Cr. or creditor's side, it is crediting. The waste book opens with the inventory, which consists of two parts; namely, in the first place, of a man's effects, and what is due to him; and in the next place, what is due by him. After the inventory follow the daily transactions as they occur in business. The accounts of persons are debited under their respective names when they become indebted to the merchant, and credited when the merchant becomes indebted to them. Accounts of property are debited when they come into his possession, and credited when they go

out of it. In the same manner the accounts of profit and loss are kept, which are debited on account of a loss, and credited on account of a gain. Those marked Dr. are placed on the left side, and those marked Cr. on the opposite side, marked Contra Cr. This book should contain the names of persons with whom the merchant deals, the conditions of bargains, the terms of payment, the quantity, quality, and prices of goods, with every other particular needful to be recorded. The journal, or day book, is intermediate between the waste book and the ledger, wherein the transactions recorded in the waste book are prepared to be carried to the ledger, by having the proper debtors and creditors ascertained and placed in order. In the journal, persons and things are debtors to other persons and things as creditors, and in this it agrees with the ledger, but in other respects it agrees with the waste book. Every case or transaction entered into the journal is called a journal post, or entrance. The ledger is the principal book, in which all the several articles of each particular account that lie scattered in other books, according to their several dates, are collected and placed together in such manner that the opposite parts of every account are directly set fronting one another, on opposite sides of the same folio; that is to say, the debtor, or debtor part, is entered on the left or debtor side of its own account, where it is charged debtor to the creditor part; and the creditor, or creditor part, is posted to the right or creditor side of its account, and made creditor by the debtor part. Hence it is that the Italian method of book-keeping is said to be by double entry, because every single case of the waste book requires to be entered twice in the ledger, that is, once for the debtor and once for the creditor. In addition to the above three books, most merchants have several other books, as the cash book, which contains in debtor and creditor all the cash that comes in and goes out; the debt book, in which are entered all sums that become due, either to be received or paid, by bills of exchange, notes of hand, &c.; besides this, some merchants require a book of invoices, a book of commissions, a book of orders or advices, &c. according to the nature of their transactions.

**BOOKSELLER.** One who deals or trades in books, particularly one who sells the books printed by others, as distinguished from the publisher, who sells the books, that are printed on his own account. The bookselling business has always held a

higher rank than any other common trade; and on the continent, as at Tubingen, Salisburg, and Paris, booksellers class with the members of the learned professions, and have the privileges of students at the university. On the introduction of printing, the bookseller, printer, and scholar were one and the same person.

**BOOKWORM.** A little insect which breeds and eats holes in books, especially when damp.

**BOOM.** A sea term, for a long pole to extend the bottoms of particular sails, as the jib boom, studding sail boom. The boom of a harbour, a strong iron chain thrown across a harbour, to prevent the entrance of an enemy.

**BOOR.** Properly, a peasant; particularly applied to the rude peasantry of Russia.

**BOOT OF A COACH.** The space underneath between the coachman and the body of the coach.

**BOOTES.** A northern constellation, consisting of fifty-four stars, according to Mr. Flamstead.

**BORACIC ACID.** An acid drawn from borax by combustion.

**BORAX.** A substance dug out of wells in Thibet, and imported into England from India. It is sometimes in the form of solid grains, sometimes in large crystals, enclosed in a fatty matter.

**BORDER, or BORDURE.** An ordinary in Heraldry, so called because it borders round and as it were hems in the field. Borders are charged with things natural and artificial, in the same manner as the field.



**BORDERERS.** Those who lived on the borders of England and Scotland, and were formerly engaged in perpetual hostilities.

**BORE.** The hollow of a piece of ordnance.

**BORE-COLE, or CURLED COLEWORT.** A hardy sort of kale, which is improved by the frost.

**BORER.** A piercer, or instrument to bore holes with.

**BORING.** The method of piercing the earth in search of minerals.

**BOROUGH.** From the German burg;

it formerly signified a fenced town, but is now taken for any corporate town that is not a city, and that sends members to parliament: in Scotland there are still royal burghs, or boroughs, that are held of the king.

**BOROUGH-ENGLISH.** A customary descent of land in some places to the younger sons.

**BOS.** The generic name in the Linnæan system for all animals of the ox tribe, as the bison, buffaloe, common ox, musk ox, &c.

**BOTANY.** The science which teaches the knowledge of plants, as to their discriminating characters, structure, growth, culture, diseases, and the like. Plants are distinguished into natural orders, as trees, the stems of which send forth branches from the middle and top: shrubs, the stems of which send forth branches from the bottom: undershrubs, when the stems of the shrubs perish: herbs, which bear flowers and seeds, and then die; if they die at the end of one year they are called annuals, if at the end of two years biennials, if they last three or more years they are perennials: fungi are fleshy, coriaceous, or woody: algæ, or seaweeds, have neither stems nor leaves: mosses, which have only leaves and fruit: ferns, that never send forth more than one leaf on a footstalk: grasses, which are distinguished by their stem, which is a culm or straw: lilies, which have a tuberous or bulbous root: palms, which have an arboreous stem, from which the leaves grow, and not the branches.

The parts of plants are distinguished generally into the root, the stem, the bud, the leaf, the inflorescence, and the fructification. The root is the part through which the plant derives nourishment from the earth; a plant is either annual, biennial, or perennial, according to the time that the root lasts. Roots are sometimes called *fleshy*, when they consist of a fleshy prolongation; *fibrous*, when they consist of many fibrous prolongations; *tuberous*, when they consist of a thick fleshy substance, as the potatoe; *bulbous*, when they consist of a bulb or fleshy body, provided with several coats, as the onion or the lily; *granulated*, when they have a cluster of little bulbs, as in the saxifrage; *creeping*, when they have a horizontal prolongation of the root growing under the earth, and sending forth new plants of its kind, as couchgrass.

The stem is the prolongation of the plant above the soil, proceeding from the root. The woody stem of trees is the trunk; that

which is herbaceous is the stalk, and belongs only to herbaceous plants; but the stalk of grasses, rushes, and similar plants, is called the culm; and when the stalk bears flowers and fruits immediately from the root, and not leaves, it is a scape, as in the primrose and cowslip; the stalk which springs from the stem or branches, bearing the flower and fruit, is the peduncle or flower stalk; that which bears the leaf only is the petiole, or footstalk.

The bud is that part of the plant which contains the embryo of the leaves, flowers, &c., and serves as their hybernaculum, or winter receptacle. The bud is guarded by scales, and furnished with gum, or wool, as an additional defence. The moss bud is a roundish longish body, proceeding from the mother plant, and becoming itself a new one; the gongylus is a knob belonging to the seaweed, which falls off on the death of the mother plant, and becomes a new one.

The leaf is the herbaceous production from the ascending stem; when the stalk and leaf are so intimately connected that they cannot be distinguished, this is called a frond, as in the palms and the algæ. To the leaf belong several appendages, which serve either for ornament or some specific use, as the bractææ, or floral leaf, that stands near or between the flowers, forming a tuft, as in the pineapple; the stipula, a small leaf that appears on the stem, in the place of a footstalk; the sheath, a prolongation of the leaf that rolls itself round the stem, as in grasses; the ascidium, or bottle, a foliaceous cylindrical hollow body, which is generally furnished with a cover, and contains water; the ampulla, or bladder, a round hollow body at the roots of water plants; the gland, a round body situated on the leaves, which serves as an organ of respiration; the spine, or thorn, that rises in the interior of the plant, as in the sloe; the aculeus, or prickle, that issues from the bark; the cirous clasper, or tendril, a filiform body which serves to support weak plants, as in the vine, &c.; the arista, or awn, a pointed beard in grasses; the pili, hairs, fine slender bodies, which include all kinds of pubescence, as bristles, wool, &c. some of which discharge a poison, as in the nettle.

The inflorescence is the mode of flowering, which differs very much in different plants, and is distinguished into verticillus, the whorl, which consists of several flowers, standing at intervals, surrounding the stem, as in the mint; the racemus, the raceme, a peduncle with short lateral branches, as

in the currant and the vine, &c.; the corymbus, or corymb, an erect raceme, the lower peduncles of which are so lengthened as to be of equal height with the upper; when the peduncles take their rise from the same centre, but the subdivisions are irregular, it is a cyme; when the peduncles rise from the same centre, but the whole is disposed in regular order, it is an umbel; the capitulum has many flowers, standing thick, so as to form a head, as in the globe-amaranth; the fasciculus, fascicle or bundle, a number of simple peduncles rising at the foot of the stem from several points, as in the sweetwilliam; the spica, or ear, as in wheat and barley; the panicula, or panicle, in which the flowers or fruits are scattered on branches unequally divided, as in the oat grass; the spadix, so called from the spadix vagina, or sheath, which contains the flower stalks; the amentum, or catkin, a long stem thickly covered with scales, under which are the flowers or essential parts, as in the willow and hazel; the sorus, or mass, an inflorescence peculiar to the ferns, which have masses of seed capsules in their fronds.

The fructification consists of the flower and the fruit. The principal parts of the flower are, 1. The calyx, or flowercap, or envelope of green leaves, which, when it immediately encloses the flower, is a perianth; when it contains many flowers in one is an anthodium; when it consists of many leaves surrounding the flower, as in umbelliferous plants, is an involuere. The calyx of grasses is called the glume; when it rolls itself round the stem, as in some grasses, it is called the vagina, or sheath; and in some aquatic plants the spathe, or spathe. 2. The corolla, or blossom, the envelope of small leaves of various colours which constitute the flower properly so called; the divisions of the corolla are called the petals; the parts of the corolla are the tubus, the tube, the hollow underpart of a corolla that has but one petal; limbus, the border or opening of the corolla; labia, the lips; barba, the beard; rictus, the gape between the extremities of the lips; faux, the throat or the opening of the tube; nectarium, the nectary, which commonly serves to secrete a sweet juice; this is sometimes in the shape of a hood, and is called the cucullus, or hood, as in the aconite or monkshood; sometimes in the shape of a spur, called calcar, as in the violet; also in that of an arch, a crown, &c. 3. The stamen is an essential part of the flower, which consists of the filament or thread that supports the anther; anthera,

the anther, a hollow cellular body; and pollen, the powder or fine dust contained in the anther. 4. The pistil, the second essential part of a flower, stands in the centre of the circle formed by the stamen, and consists of the germen, the rudiments of the future fruit or seed; the stylus, style or shaft, a small stalk seated on the germen; and the stigma, the top of the style.

The fruit proceeds from the germen, and consists of, 1, the pericarpium, pericarp, or seed vessel, a hard hollow body, that is of different kinds, as capsula, a capsule, or thin coat, divided into cells; a siliqua, or pod, a dry elongated pericarp, consisting of halves or valves, as in the mustard; the legumen, the legume, as in the pea kind; nux, the nut, a pericarp covered with a hard shell; drupa, or drupe, a nut covered with a fleshy coat, as in the plum; bacca, the berry, a succulent fruit containing many seeds, as the gooseberry, the currant, &c. 2. The semen, or seed, that part of the plant destined for propagation, consists of different parts, as the cotyledones, cotyledons or seed leaves; corculum, the circle or little heart, the germ of the new plant; hylum, the eye, the deep scar in the seed which has been occupied by the circle; plumula, the plumule, or that part of the circle which ascends to form the leaves; rostellum, the other part of the circle, which descends to form the root. Besides the seed is furnished with different appendages, as arillus, the aril, a soft membrane extended over the seed; pappus, the down; cauda, the tail; rostrum, the beak; and various spines, or hooks, &c. which serve to attach the seeds to different bodies, and promote their dispersion. 3. The basis, or base, is the receptacle or body on which the flower stands, the principal part of which is the thalamus, or fruit bed; when this is round or oblong it is called pelta, a target; when plateshaped, scutella, a shield; when convex, tuberculum, &c.

Besides the science of botany comprehends also a knowledge of plants as to their vegetation, anatomy, chymical composition, and diseases, which are all included under the physiology of plants. The vegetation of plants may be distinguished into germination, when the seed begins to burst; vernalion, when the buds begin to burst; virginity, when the flowers or buds are not yet unfolded; defoliation, when the leaves in autumn begin to fall off; sleep, when during the night the leaves hang down; æstivation, when the flower is in perfection; fructification, when the anthers communicate the fructifying dust to the neighbouring parts.

The anatomical structure of plants comprehends the cuticle, the cortex or outer bark; the liber, or inner bark; the liburnum, or soft wood; lignum, the wood; medulla, the pith; the air vessels, which are the conductors of the air; the adducent or spiral vessels, which proceed with or are entwined round the air vessels; the reducent vessels, which are supposed to serve the purpose of transpiration; the lymphatics, which are reticularly united; the cellular texture, a delicate membrane surrounding all the vessels, and containing a resinous juice, as in the fir tribe, and a gummy juice in fruit trees; the glands, which serve as secretory vessels.

The principal chymical constituents of plants are carbon, hydrogen, and oxygen, but chiefly the former, besides which azote, sulphur, and other simple substances, may be found in small quantities. The principal compound substances which form the sensible ingredients of plants are, the acids, mucilage, sugar, starch, albumen, gluten, fixed and volatile oil, wax, resin, camphor, &c.

The principal diseases to which plants are incident are, fissures, or a separation of the solids into long clefts, arising from an extreme fulness of juice; premature defoliation, when the leaves fall off before the usual period; albigow mildew, a whitish mucilaginous coating of the leaves of plants, which causes their decay; rubigo, rust which appears on the leaves and stems of many plants; lepra, leprosy, which affects the trunk; gallæ, galls, occasioned by flying insects; verrucæ, warts; besides hæmorrhage, canker, exulceration, &c.

**BOTANY, HISTORY OF.** As the practice of cultivating plants both for pleasure and utility was coeval with the first formation of man, it is natural to suppose that the science of botany was one of the earliest studies which engaged the attention of inquirers. Aristotle, in his history of animals, has many remarks on plants, drawing a comparison between their mode of growth and that of animals, and pointing out in what animal and vegetable life agree and in what they differ. His disciple, Theophrastus, has devoted a whole work to his favourite subject, and has not only marked the distinctions between trees, shrubs, herbs, and flowers, but treated of the different parts of plants, as the root, stem, leaf, and fruit; showing their diversity in form, habit, colour, mode of growth, and other interesting particulars, which he has illustrated by giving the names of not less than five hundred different plants, by way of

example. Except the descriptions or allusions of the poets to favourite plants, there is nothing further to be found on the subject of botany until the time of the Romans. Virgil, in his *Georgics*, speaks of the uses and culture of several plants connected with husbandry. Pliny, in his *Natural History*, describes not less than one thousand species of plants, but without any other order than in connexion with the places where they were indigenous. Antonius Musa describes the virtues of the plant betony. Columella treats of plants in an agricultural point of view. Dioscorides, Galen, Onbasiris, Paulus Ægeneta, and Aetius have described the medicinal virtues of plants much at large. After these writers the subject of botany appears to have been almost forgotten, otherwise than it was pursued by the Arabians in conjunction with the science of medicine. In Europe, at least, we find that it was altogether neglected until the sixteenth century, when a number of botanists sprung up in Germany, England, Holland, Italy, and France, who, as their works testify, prosecuted the subject with great zeal. Prosper Alpinus wrote several books on the plants of Egypt and other exotics. Clusius, a French botanist, wrote on the rarer kind of plants. Many other botanists in this and the following centuries wrote general histories of the plants which came within their observation, particularly Cæsalpinus in his work *De Plantis, libri xvi.*; Delechamp, in his *Historia Generalis Plantarum*; J. Bauhin, in his *Historia Plantarum*; C. Bauhin, in his *Phytopinax*; Gerarde, in his *Herbal*; Parkinson, in his *Theatrum Botanicum*; Ray, in his *Historia Plantarum*; Commelinus, in his *Hortus Malabaricus*; Tournefort, in his *Institutiones Rei Herbariæ*; Boerhaave, in his *Index alter Plantarum Horti Academiei Lugduni*; Vaillant, in his *Botanicon Parisiense*; besides Fuchsius, Matthioli, Dodonæus, Camerarius, Bregnius, Rheedi, Brunfels, Plukenet, Plumier, &c.

Cæsalpinus, in the sixteenth century, was the first who properly systematized botany. He formed fifteen classes from the fruit and the situation of the corculum. Since his time many systems have been formed from different parts of the plants. Ray chose the flower, fruit, and external appearance of the plants for the foundation of his system. Camellus framed a system from the valves of the capsule, calling his classes *pericarpia fora, unifora, bifora, &c.* Rivinus selected the corolla, dividing the plants into *flores regulares, compositæ, and irre-*

*gulares*, and these again into *monopetali, dipetali, &c.* Haller formed a natural system from the cotyledons, the calyx, the corolla, the stamina, and the sexes of the plants; but the system most generally adopted before the time of Linnæus was that of Tournefort. He divided plants into *herbæ et suffrutices, arbores et frutices*, and these again into *herbæ floribus monopetalis, campaniformibus, infundebilibus, &c.*

Linnæus, the most eminent naturalist of all who went before him or followed after him, was born the beginning of the eighteenth century, and having devoted his attention to the vegetable as well as the animal and mineral kingdoms, framed a system for the whole, called after him the Linnæan system, which has been universally adopted by scientific men in all parts of the world. His system is composed of classes, orders, genera, species, and varieties. The class is the largest of all the divisions, having under it the orders as subdivisions; the genera are contained in the order, the species in the genera, and the variety in the species. This system, as respects plants, is also called the sexual system, because it embraces the sexes of plants in the scheme. The classes, twenty-four in number, are distinguished either according to the number or situation of the stamens, filaments, anthers, or male and female flowers, in each plant, as *monandria*, for those having one stamen; *diandria*, for those having two stamens; *triandria*, for those having three stamens; so *tetrandria*, *pentandria*, *hexandria*, *heptandria*, *octandria*, *enneandria*, and *decandria* for those having from four to ten stamens. Those having from eleven to seventeen stamens were included under the class *dodecandria*; those having many stamens inserted in the calyx under the class *icosandria*; those having twenty stamens and upwards under *polyandria*; those having four stamens in one flower, two longer than the others, *didynamia*; those having six stamens, two shorter than the rest, *tetradynamia*; those having their filaments connected into the form of a cylinder or tube, *monodelphia*; those having two such cylinders, *diadelphina*; those having the anthers formed into a tube, *syngenesia*; those having the stamens standing in the style, *gynandria*; those having stamens and pistils in separate flowers, but in one plant, *monoecia*; those having the stamens and pistils in separate plants, *dioecia*; those having stamens and pistils separate in some flowers and united in others, *polygamia*; those having these

parts of fructification either not well ascertained, or not to be numbered with certainty, cryptogamia.

The orders, or subdivisions of the classes, from the first to the thirteenth class inclusive, are marked by the number of pistils in each plant, as monogynia for those having one pistil, so digynia, trigynia, tetragynia, pentagynia, hexagynia, and polygynia, for those having two, three, four, five, six, seven, or more pistils. The two orders gymnospermia, for those having the seed naked, and angiospermia, for those whose seeds are contained in a pericarp, belong to class didynamia; the two orders siliculosa and siliquosa, for those whose seeds are contained in a siliqua of different sizes, belong to class tetradynamia. In most of the other classes the orders are marked by the number of stamens in each plant, except syngenesia, in which the orders polygamia æqualis, polygamia superflua, polygamia frustanea, polygamia necessaria, and polygamia segregata mark the connexion of the flower. Under the last class, cryptogamia, are contained four orders, filices, the ferns; musci, the mosses; algæ, the seaweeds; and fungi, the funguses, or mushrooms.

**BOTTOM.** The ground, or lowest part of any thing; as the bottom of a vessel, or the bottom of the sea, or a harbour; whence the phrases, 'to go in foreign bottoms,' speaking of ships; 'sandy gravelly bottoms,' speaking of harbours, &c.

**BOTTOMRY** (in Commerce). Borrowing money on the bottom of a ship; that is, when the master of a ship engages that if the money so borrowed be not paid by the time appointed, the ship itself shall be forfeited; also the lending money to a merchant on any adventure, the interest to be paid on the return of the ship, but to be lost if she is lost.

**BOITS.** Worms that breed in the intestines of horses.

**BOULDER WALLS.** Walls built of round flints or pebbles.

**BOUND.** A sea term, for a ship confined to a particular spot or direction; as wind bound, ice bound, homeward bound.

**BOUNTY.** A sum of money given by government to men who enlist as soldiers.

**BOUTS-RIMES.** Certain rhimes disposed in order, and given to a poet, together with a subject, to be filled up with verses ending in the same word and in the same order.

**BOW.** An instrument for shooting arrows. The long bow, the favourite of the English army in former times, is

simply a bow with a string fixed at each end, to which the arrow was applied.



**BOW.** A sea term, for an instrument fixed on a staff, with vanes, for taking the sun's altitude at sea; also the rounding parts of the ship's side, distinguished by the starboard and leeboard into the weather and lee bow.

**BOW.** The name of several things so called from their curved figure, as the bow of a key, the arched part to receive the finger; the bow of a saddle, the piece of wood on each side, laid archwise to receive the upper part of a horse's back; bow of a violin, the round stick furnished with hair, with which the performer plays.

**BOWSPRIT.** A mast projecting over the stem or head to carry the sail forward.

**BOWYER.** A bowmaker; the bowyers are one of the city companies.

**BOX.** Any case of wood, iron, or leather, which serves for conveying or keeping things.

**BOX.** A plant, which is of two kinds; namely, the dwarf box that is used for borders in gardens, and the box tree, which is a shrub or tree. The wood of this is yellow and hard.

**B. R.** An abbreviation for Bancus Regis, the Court of King's Bench.

**BRACE.** What holds a thing tight, as the braces of a drum; in Carpentry, a piece of timber which serves to keep the frame work tight; in Printing, a crooked line marked thus } which serves to enclose words that are to be together.

**BRACELET.** An ornament for the arm or wrist; also a piece of defensive armour for the arm.

**BRACHMANS, or BRAMINS.** The



priests or philosophers among the Hindoos; so called from their god Brahma, to whose worship they devote themselves.

**BRACKET.** A kind of stay in the form of a knee, or shoulders on which shelves are made to rest; also in Shipbuilding, a kind of knee for the support of the gratings.

**BRADS** (among Artificers). A kind of nails used in building, which have no heads like other nails, as joiners' brads, flooring brads, batten brads.

**BRAIN.** The soft contents of the cranium or skull, consisting of the cerebrum, cerebellum, and medulla oblongata, which are surrounded by three membranes, called meninges, or mats, as the dura mater, pia mater, and arachnoides. The substance of the brain is distinguished into outer and inner; the former is called corticalis, cerebra, or glandulosa; the latter, medullaris, alba, or nervea. It is generally supposed to be the seat of the soul, or that part where all the senses terminate.

**BRAN.** The husk of ground wheat.

**BRANCH.** A shoot from the main bough of a tree; also several things similar in figure, as the antlers or shoots of a stag's horn; the branches of veins, branches of a river, branches of a bridle, that is, the two pieces of bended iron that bear the bit-mouth, the chains, and the curb.

**BRANCHIÆ.** Gills in the anatomy of fishes, organs of respiration answering to the lungs in other animals, with which all fishes are provided, except the cetaceous tribe and the lamprey. They are eight in number, and serve the fish to take in and throw out water with the air.

**BRANCHIOSTEGIOUS.** An order of fishes in the Linnæan system, including such as have gills without bony rays, as the pipe fish, sucker, frog fish, &c.

**BRANDY.** A spirituous and inflammable liquor, made from the lees of wine by distillation. Its constituent parts are water, alcohol, and a little oil or resin. Brandy is said to have been first manufactured in Languedoc.

**BRANT-FOX.** A sort of black and red fox.

**BRASIL WOOD.** A sort of wood so denominated because, as is supposed, it was first brought from Brasil. It is red and heavy, so as to sink in water, takes a good polish, and yields beautiful orange and red colours, which are used by dyers. When chewed it has a sweetish taste.

**BRASS.** A factitious compound metal, of a yellow colour, consisting of copper and about one third of its weight of zinc.

**BRAWN.** The muscular or fleshy part of the body, particularly that of the boar.

**BREACH.** A gap made in the works of a town by the besiegers.

**BREACH** (in Law). The violation of a contract; breach of pound, is the breaking any place where cattle are distrained; breach of prison, an escape by breaking out of prison.

**BREAD.** A light, porous, spongy substance, prepared by fermentation and baking, from the flour of wheat, rye, or barley. Wheaten bread is distinguished into white bread, which is made of the finest flour, and brown bread, of flour having some of the bran in it.

**BREAD-FRUIT-TREE.** The autocarpus of Linnæus, a tree growing in Otaheite, so called because the fruit, which is milky and pulpy, supplies the place of bread to the inhabitants. This tree grows to the height of forty feet.



**BREAK.** A sea term, for that part of a deck where the descent to the next deck below it commences; in Printing, the short line which ends a paragraph.

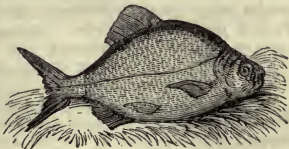
**BREAKERS.** Billows that break violently over rocks that lie under the surface of the sea.

**BREAKING GROUND.** A military term, for opening the trenches and beginning the works for a siege.

**BREAKING IN.** The discipline of first training a colt to be useful.

**BREAKWATER.** The hull of a vessel or any erection of wood or stone placed at the entrance of a harbour to break the force of the water, such as the Breakwater lately erected in Plymouth Sound.

**BREAM.** A fish of the carp kind, that grows fast and has a broad body. The



Sea Bream, otherwise called the Red Gilt Head, is a fish of a red colour, with the iris silvery.

**BREAST.** The anterior part of the thorax.

**BREASTFAST.** A sea term, for the large rope employed to confine a ship sideways to a wharf or quay.

**BREASTPLATE.** A piece of defensive armour worn on the breast; in Horsemanship, a leathern strap running from one side of the saddle, across the horse's breast, to the other, to keep it in its place.

**BREAST PLOUGH.** A sort of plough which is driven forward by the breast, and is used in paring off turf from the land.

**BREASTWORK.** A military term, for works thrown up as high as the breast of the besieged; a sea term, for the balustrade of the quarter deck.

**BRECCIA, or PUDDING-STONE.** A sort of aggregate earth, consisting of fragments of stones conglutinated.

**BREECH.** The hinder part of a gun, from the cascabel to the bore; also a sea term, for the angle of knee timber in a ship.

**BREEDING.** That part of husbandry which consists in the rearing of cattle or live stock of different kinds, particularly by crossing or mingling one species or variety with another, so as to improve the breed.

**BRESSUMMER.** A binding interstice or girder to different parts of a house.

**BREVET.** A military term, for promotion in the army without additional pay.

**BREVIARY.** A book containing the daily service of the Romish church.

**BREWING.** The art of making malt liquor, such as ale, beer, porter, &c. which much resembles the process of making tea. The proper ingredients used in brewing are malt, hops, and water, in certain proportions, according to the required strength of the liquor. Eighteen gallons of good ale and nine gallons of table beer may be drawn from a bushel and a half of malt; but to make strong beer only six gallons are reckoned to one bushel of malt. Among the pernicious and unlawful ingredients used by brewers are an extract of the coculus indicus, hartshorn shavings, ginger, Spanish juice, orange powder, liquorice, caraway seeds, and sulphuric acid.

**BRIBERY.** The receiving of any reward or gift for corrupt purposes.

**BRICK.** An artificial kind of stone, composed of clay, coal ashes, and sand, duly mingled together, dried by the sun and

hardened by the fire. Bricks are distinguished, according to their quality, into marls and stocks, which latter are either gray or red, according to the colour of the earth.

**BRICKLAYER.** One whose trade is to build with bricks.

**BRIDGE.** A structure raised over rivers &c. and consisting of one or more arches. The principal parts of a bridge are the piers, or walls, built for the support of the arches; the parapet, or breastwall, made to protect the passengers, the banquet, pavement, or raised footpath, and the abutments or extremities of the bridge, which rest on the banks. The principal arches employed in bridge building are those of the semicircular or elliptical form, the catenarian arch, and the arch of equilibrium, which last is esteemed to be the best, because it is equally strong in every part.



**BRIDGE.** A military term, for any contrivance by which soldiers can cross a river, as a bridge of boats, formed by boats joined sideways, and covered with planks; or a bridge of rushes, formed of bundles of rushes bound fast together and covered with planks. Such temporary bridges are called flying bridges.

**BRIDGE.** The name of several things similar in figure to a bridge; as the bridge of the nose, the gristle which parts the nostrils; the bridge in a violin, &c. the perpendicular arch which supports the strings; the bridge, among Gunners, is the name for the two pieces of timber which go between the transoms of a gun carriage on which the bed rests.

**BRIDLE.** A part of the furniture of a horse's head, which serves to guide the animal. The principal parts are the bit, or snaffle, which goes into the horse's mouth; the curb, or chain of iron, that runs over the beard of the horse; the headstall, or leather that goes round the head; the fillet, that lies over the forehead; the throatband, that goes under the throat; and the reins, which serve for the rider.

**BRIEF (in Law).** An abridgment of a client's case, made out for the instruction

of counsel on a trial at law; also a license to make collections for repairing churches, losses by fire, &c. This last sort of brief is now abolished by statute.

**BRIEF** (in Music). A measure of quantity, which contains two strokes down in beating time, and as many up.

**BRIG**. A small merchant's vessel with two masts.

**BRIGADE**. A military term, for a party or division of soldiers, whether horse or foot, under the command of a brigadier.

**BRIGANTINE**. A small light vessel, which can both row and sail well, being adapted either for fighting or for chase.



**BRIMSTONE**. The vulgar name for sulphur.

**BRINE**. Water impregnated with salt.

**BRISKET**. That part of the breast of an animal that lies nearest the ribs.

**BRISTLE**. The hair of swine, which is much used by brushmakers, particularly that imported from Russia.

**BRISTOL HOT WATER**. Mineral waters of the lowest temperature of any in England, the constituent parts of which are carbonic acid, gas, lime, and magnesia, besides the muriatic and vitriolic acids.

**BRITANNIA**. The name given by the Romans to the island of Britain, which is represented on their medals under the figure of a female resting her left arm on a shield.

**BROADSIDE**. A sea term, for a discharge of all the guns on one side of a ship.

**BROADSWORD**. A sword with a broad blade, chiefly designed for cutting.

**BROCADE**. A kind of stuff or cloth of gold.

**BROCOLI**. An Italian plant of the cauliflower kind.

**BROGUE**. A defective pronunciation of a language, particularly applied to the Irish manner of speaking English.

**BROKEN LETTER**. A term in Printing for the breaking the orderly succession in which the letters stood in a line or page and mingling them together.

**BROKER**. One who concludes bargains or contracts for merchants, as exchange brokers, ship brokers, &c.

**BROKERAGE**. What is paid to a broker for his trouble.

**BROME GRASS**. A sort of grass much resembling the oat; whence it has also been called oat grass.

**BRONZE**. A mixed metal, composed principally of copper, with a small portion of tin and other metals.

**BRONZING**. The art of varnishing wood, plaster, and ivory, so as to give them the colour of bronze.

**BROOCH**. A collar of gold formerly worn about the necks of ladies.

**BROOM**. A flowering shrub, having a papilionaceous flower, which becomes a short roundish swelling pod, containing a kidney shaped seed in each.

**BROOM**. A besom, which is frequently made of the broom, and serves for sweeping a house.

**BRUTA**. The second order of animals of the class mammalia in the Linnæan system, comprehending those animals which have no fore teeth in either jaw, as bradypus, the sloth; mynycophaga, the ant-eater; rhinoceros, the rhinoceros; elephas, the elephant, &c.

**BRUTE-WEIGHT**. A term employed when merchandises are weighed with the cases, &c. in distinction from the net weight.

**BUBBLE**. A bladder in water, or a vesicle filled with air; also a cheating project, such as the South Sea bubble in 1720, and numerous projects of a similar character which have been set afloat within the last few years, to the ruin of many.

**BUCCANEERS**. A general name for the pirates who used to make war on the Spaniards in their West India possessions.

**BUCK**. A male deer of the fallow kind; also a male rabbit.

**BUCKET**. A kind of pail made of leather.

**BUCKLE**. A fastening for a shoe, or the harness of a horse, by means of an iron tongue within a hoop.

**BUCKLER**. An ancient piece of defen-

sive armour, made of wicker work, and worn on the arm.

**BUCKRAM.** A sort of stiffened cloth.

**BUCKWHEAT,** otherwise called **BRANK.** A sort of grain that is used as food for swine. The flowers grow in a spike, or branched from the wings of the leaves.

**BUCOLICS.** Pastoral poems, so called from the *Bucolica* of Virgil.

**BUD.** That part of a plant which contains the embryo of the leaves, flowers, &c.

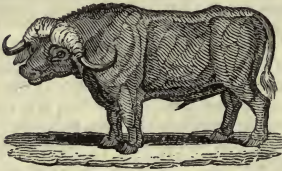
**BUDDHA.** The name of the deity among the Hindoos.

**BUDDLE.** A frame to receive the mineral ore after it is separated from the coarser parts.

**BUDGET.** Properly, a bag or knapsack that may be easily carried; also the annual statement of the finances made by the Chancellor of the Exchequer in the House of Commons.

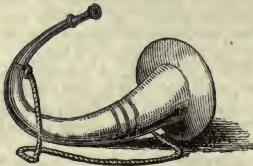
**BUFF.** A sort of thick leather prepared from the skin of the buffalo.

**BUFFALO.** A wild ox, a native of Africa, but very abundant also in America. It has horns resupinated and flat on the fore side, a tough skin, black hair, small head, and no dewlap.



**BUFFET.** A sort of cupboard for plate, glasses, &c.

**BUGLEHORN.** A horn formerly used much in hunting, and now in the British army.



**BUILDING.** The art of raising buildings according to given designs, which is properly practical architecture; also the structure so raised.

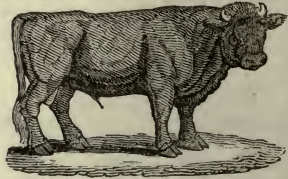
**BULBOUS PLANTS.** The name of such plants as have a fleshy, scaly root, called a bulb, as the leek, onion, &c.



**BULGED.** A sea term, for a ship when she has struck off some of her timbers upon a rock or anchor.

**BULK.** The whole contents of a ship in her hold.

**BULL.** The male of black cattle, the female of which is called the cow; when the male is cut he is called an ox.



**BULL.** A brief or mandate issued by the Pope, and sealed with the bulla, a leaden or gold seal.

**BULL-DOG.** A dog of true English breed, so called from his property of attacking the bull, whence he was formerly used in the cruel sport of bullbaiting.

**BULLET.** A name for the leaden balls with which small fire arms are loaded.

**BULLETIN.** An official account of public transactions or matters of general interest, as the state of the king's health, &c.

**BULLFIGHT.** A cruel sport in Spain and Portugal, where wild bulls are encountered by men on horseback.

**BULLFINCH.** A small bird of a cinereous colour, having its head and wings black, and coverts of the tail white. It is easily tamed, and may be taught to speak.



**BULL-FROG.** A remarkable species of the frog in North America, so called because its voice resembles the distant lowing of an ox.



**BULL-HEAD.** A sort of fish, having its head much broader than its body.

**BULLION.** Gold or silver in the mass, before it is wrought into coin.

**BULL'S EYE.** A mark in the shape of a bull's eye at which archers shoot by way of exercise.

**BULL-TROUT.** A sort of salmon about two feet in length.

**BUM-BOAT.** A sort of wherry used about harbours, to carry provisions, &c. for sale to ships lying at a distance.

**BUNT** (a Sea Term). The middle part of a sail formed into a sort of bag, or hollow, that the sail may gather more wind.

**BUNTLINES.** Small lines which serve to force up the bunt of the sail for the better furling it up.

**BUOY.** A short piece of wood or close hooped barrel fastened by a rope to the anchor, to point out its situation. It is also a piece of wood or cork fastened by a chain, serving to point out dangerous places.



**BUPHAGA, or BEEFEATER.** A sort of bird of the order picæ, found in Africa. It is so called because it alights on the backs of cattle, and picks holes in them to get at the larvæ of the gad-fly, on which it lives.

**BUPRESTIS.** An insect of the coleopterous order, remarkable for the brilliancy of its colours, which emulate the polish of the finest metals.

**BURDEN** (a Sea Term). Whatever can be stowed in a hold, or the number of tons which it can carry. Beasts of burden, in Husbandry, are those which are fitted for bearing burdens or drawing weights.

**BURGAGE** (in Law). A kind of tenure by which the inhabitants of cities or boroughs held their lands or tenements of the king.

**BURGESS.** An inhabitant of a borough, or one who possesses a tenement therein; it is now more commonly taken for the representative of a borough town.

**BURGLARY** (in Law). The breaking and entering the dwelling of another in the night, with the intent to commit some felony, whether the felonious intent be put in execution or not.

**BURGUNDY PITCH.** The juice of the fir tree boiled in water, and strained through a linen cloth.

**BURNING-GLASS.** A concave or convex glass, commonly spherical, which collects the rays of the sun towards a common point, called the focus. Those burning glasses which consist of refracting convex lenses appear to have been but little known to the ancients, but the burning mirrors which consist of concave reflecting surfaces must have been brought to great perfection, if what is related by some historians be true, for we are informed that Archimedes set fire to the fleet of Marcellus when he was besieging Syracuse; and that Proclus in the same way destroyed the navy of Vitellius at the siege of Byzantium. Among the moderns, Lord Napier was one of the first who conceived the idea of making such burning glasses, which have since been constructed of a prodigious size. The burning glass of M. de Villette was three feet eleven inches in diameter, and it burnt at the distance of three feet two inches; by it were melted a silver sixpence in seven minutes and a half; a King George's halfpenny in sixteen minutes, which ran in thirty-four minutes; a diamond weighing four grains lost seven-eighths of its weight. That of Buffon was a polyhedron, six feet broad, and as many high, consisting of one hundred and sixty-eight small mirrors, or flat pieces of looking-glass, each six inches square, by means of which, with the faint rays of the sun in the month of March, he set on fire boards of beech wood at one hundred and fifty feet distance.

**BURNING OF WOMEN.** A superstitious practice in India for the widows to burn themselves on the funeral piles of their husbands.

**BURNISHER.** A round polished piece of steel, serving to smooth and give a lustre to metals.

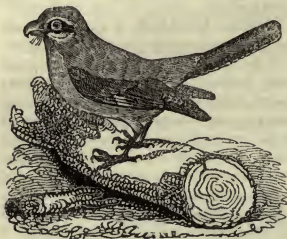
**BUSHEL.** An English dry measure, containing four pecks, or eight gallons.

**BUSH-HARROW.** An implement of husbandry for harrowing grass lands, and covering grass or clover seeds. It consists of a frame with three or more bars, in which bushes are interwoven.

**BUSKIN.** A kind of high shoe, anciently worn by tragedians; also a sort of leather stocking serving the purpose of a boot.

**BUST.** The figure or portrait of a person in relievo, showing only the upper parts of the body.

**BUTCHER BIRD.** A sort of shrike remarkable for its ferocity towards the little birds, which it kills, and tearing them to pieces, sticks them on thorns.



**BUTT.** A measure of wine, containing 126 gallons.

**BUTTEND.** The largest end of a piece of timber nearest to the root.

**BUTTER.** A fat unctuous substance, procured from the cream of milk by churning; a term in Chymistry for substances of similar consistency, as butter of antimony, butter of bismuth, butter of wax, &c.

**BUTTERBUR.** A plant with a floscular flower, consisting of many florets.

**BUTTERFLOWER.** A yellow flower, which abounds in the meadows in May.

**BUTTERFLY.** A beautiful insect, so called because it first appears at the beginning of the season for butter. That which seems to be powder upon the wings of this insect is an innumerable quantity of feathers, which are only to be discerned through a microscope. The butterfly first appears in the state of the caterpillar, which is called the larva, and afterwards in that of the pupa, or chrysalis, from which it comes forth in its perfect state.



The larva.

The chrysalis.

**BUTTOCK.** The breech or haunch of an animal, next to the tail; also a sea term, for that part of a ship which forms her breadth, right astern from the tuck upwards.

**BUTTON.** Any thing in a round form which serves to fasten, particularly what is used in garments; also a part of the cascabel in a gun or howitzer, which is in the form of a button.

**BUTTRESS.** A kind of butment, built archwise, serving to support a building or wall.

**BUZZARD.** A very sluggish bird of the hawk kind.

**BY-LAW.** A private law made within some particular place or jurisdiction.

### C.

**C**, the third letter and second consonant of the alphabet; as a numeral, **C** stands for 100, and **CC** for 200, &c.; in Music, it is the highest part in the thorough bass; as an Abbreviation it stands for Christ, as **A. C.** Anno Christi, or ante Christum; also for Companion, as **C. B.** Companion of the Bath.

**CAABA.** An Arabic term for the house of God in Mecca.

**CABALA.** A traditional or mysterious doctrine among the ancient Jews, which

they say was delivered by word of mouth to Moses, and by him to the fathers. Among Christians, the cabala is an abuse of certain passages of Scripture for magical purposes.

**CABBAGE TREE.** A tree of the Cape of Good Hope, so called from the resemblance which its leaves bear to those of the cabbage plant.

**CABIN.** The apartment in a vessel for the officers and superior passengers.

**CABINET.** The closet or private room in the king's palace, where councils are

held; also the ministers of the king, who are summoned to attend such councils.

**CABLE.** A sea term for a strong rope, which serves to keep a ship at anchor.

**CABLE'S LENGTH.** The measure of 120 fathoms.

**CACOETHES.** An ill habit or propensity; as the cacoethes scribendi, an itch for authorship.

**CACOPHONY.** A bad tone of the voice, proceeding from the ill disposition of the organs.

**CADENCE** (in Grammar). The fall of the voice; also the flow of verses or periods; in Music, it is a pause or suspension at the end of an air, resembling points or virgules in prose; in Dancing, cadence is used when the steps follow the notes and measures of the music; in the Manege the cadence is the measure or proportion observed by a horse in all his motions when he is thoroughly managed.

**CADET.** One who is trained up for the army by a course of military discipline; such as the cadets at the military college of Woolwich, &c.

**CADETSHIP.** The commission given to a cadet to enter the East India Company's service.

**CADI.** A magistrate, or sort of justice of the peace, among the Arabs and Turks.

**CADRIA.** A sort of mineral among the ancients, now called cobalt.

**CADUCEUS.** A name for Mercury's rod or sceptre, which on medals is an emblem of peace. It was carried by the Roman heralds when they went to proclaim peace.



**CÆSAR.** A title or name given to the twelve emperors of Rome who succeeded Julius Cæsar.

**CAGMAG.** Old geese are so called, which are sent up to the London market for sale.

**CAIRNS.** Heaps of stones in a conical form, which are frequently to be met with in Scotland and Wales.

**CAISSON.** A wooden chest filled with bombs or powder, and buried under some work to blow it up; also the frame used in laying the foundations of a bridge.

**CALAMANCO.** A kind of woollen stuff

manufactured in England and Brabant. It has a fine gloss, and is chequered in the warp.

**CALAMARIÆ.** The third natural order of plants in the Linnæan system, containing the reeds resembling grasses.

**CALAMINARIS,** or **LAPIS CALAMINARIS.** The calamine stone, or oxyde of zinc among the chymists; a kind of bituminous fossile earth, which, when mixed with copper, produces brass.

**CALCAREOUS.** The third order of the class earths in the system of Gmelin, consisting of chalk, limestone, spar, gypsum, marble, marl.

**CALCINATION.** The solution of a mixed body by the means of heat or any corroding substance, as mercury, aquafortis, &c., whereby it is reduced to powder. The body so reduced was named a calx, in common language a cinder, and in chymistry an oxide.

**CALCULATION.** The act of computing several sums by means of addition, subtraction, multiplication, division, &c.

**CALCULUS,** or **STONE.** A name generally given to all hard concretions, not bony, which are formed in the bodies of animals.

**CALENDAR.** A distribution of time into months, weeks, and days throughout the year, together with an account of the festivals and other such matters as serve for the daily purposes of life. Calendars vary according to the different forms of the year and the divisions of time in different countries, as the Roman and Julian Calendars used by the Romans, the Gregorian and Reformed Calendars among the moderns.

**CALENDAR MONTH.** The name given to the months as they stand in the almanack.

**CALIBER.** The thickness or diameter of any thing, particularly of the bore of a cannon.

**CALIBER COMPASSES.** A particular instrument used by gunners for measuring the diameters of shot, shells, &c. They resemble other compasses, except in their legs, which are arched, in order that the points may touch the extremities of the arch.



**CALICO.** A kind of linen made of cotton, principally in the East Indies. It is so called from Calicut, a town on the coast of Malabar, where it was first manufactured.

**CALICO PRINTING.** The art of dyeing cotton, linen, and other cloths topically; that is by printing figures here and there in different colours, and leaving some parts of the cloth without any figures.

**CALIPH,** in the Arabic **KHALIFA**, which signifies successor. A title assumed by the successors of Mahomet, who reigned in Bagdad.

**CALKERS.** Persons employed in calking vessels; that is, driving oakum and other things into the seams of vessels to keep out the water.

**CALL.** An artificial pipe made to catch quails; also a sea term for a whistle or pipe used in calling the sailors to their duty.

**CALL OF THE HOUSE.** A parliamentary term for an imperative call or summons sent to every member to attend on a particular occasion.

**CALOMEL.** Mercury well pounded with sulphur; it is also called a muriate of mercury.

**CALORIC.** A modern term for fire, or that principle which produces the sensation of heat, which is supposed to be something independent of the body in which it is found.

**CALVARY.** The name of a cross in Heraldry, as it is borne in coats of arms. It is so called because it resembles the cross on which our Saviour suffered.

**CALVINISM.** The doctrines of Calvin, the Geneva reformer, and his adherents, on predestination, reprobation, &c.

**CALUMET.** An Indian pipe, which was otherwise called the Pipe of Peace, because it served the bearer as a pass or safe conduct among the neighbouring tribes of Indians. It was very similar to the caduceus, or Mercury's wand, of the ancients.

**CALX.** A fine powder remaining after the calcination of metals and other mineral substances; also another name for lime.

**CALYCIFLORÆ.** The sixteenth natural order of plants in the Linnæan system, comprehending those plants which have only a calyx, in which the stamina are inserted.

**CALYPTRA.** The tender skin in mosses that loosely covers the top of the theca, like a cup.

**CALYX.** A general name for the cup of a flower, or that part of a plant which

surrounds and supports the other parts of a flower.

**CAMBERED.** A sea term, applied to a deck, the flooring of which is highest in the middle.

**CAMBRIC.** A sort of very fine white linen, made of flax.

**CAMEL.** A well known quadruped of Arabia, remarkable for its swiftness and its power of subsisting for many days without water. It is mild and gentle, unless particularly provoked, patient of hunger, and capable of carrying great burdens. The flesh and milk of this animal constitute the principal food of the inhabitants of Arabia and the countries of which it is a native. The Arabian camel, which is otherwise called a dromedary, has but one hump, the Bactrian camel has two. This animal is borne in coats of arms.



**CAMELOPARD.** A quadruped of Abyssinia, taller than an elephant, having a neck and head like a camel, and a spotted body like a panther.



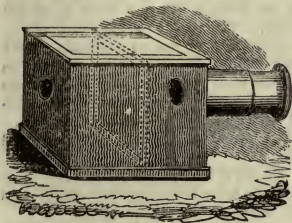
**CAMEO.** A sort of onyx stone, having various figures upon it; in Natural History, a sort of pellucid gem.

**CAMERA LUCIDA.** An optical instru-



ment invented by Dr. Hock, for the purpose of making the image of any object appear on the wall in a light room, either by day or night. This name has since been applied to an instrument invented by Dr. Wollaston, for drawing objects in true perspective.

**CAMERA OBSCURA.** An optical machine or apparatus, representing an artificial eye, by which the images of external objects, received through a double convex glass, are shown distinctly, and in their native colours.



**CAMLET.** A sort of stuff originally made of camel's hair and silk mixed, but now of wool and silk.

**CAMP.** The spot of ground where an army rests and intrenches itself.

**CAMPAIGN.** The space of time during which an army is kept in the field.

**CAMPANACEÆ.** One of Linnæus's natural order of flowers, including those that are bell-shaped, as the campanula, convolvulus, &c.

**CAMPANULA, or BELL FLOWER.** A sort of plants, mostly perennials, and bearing a bell-shaped flower. Several sorts of the campanula are natives of Britain.

**CAMPHOR.** A white concrete crystalline substance, of an acrid bitter taste, and a penetrating smell. It was formerly supposed to be a resin which was procured from a tree, much like a walnut tree, growing in Borneo, and thence called the camphor tree; but modern chymists consider it to be a peculiar substance not to be classed either with the oils or the resins. It is procured from the volatile oil of several plants, as rosemary, sage, lavender, &c.

**CAN.** A drinking vessel; particularly that used by sailors.

**CANAL.** An artificial river, provided with locks and sluices, and sustained by banks and mounds.

**CANARY BIRD.** A singing bird of a green colour, formerly bred in the Canaries, and no where else.

**CANCELLATION (in Law).** Expung-

ing the contents of a deed or instrument by striking two lines through it.

**CANCER, the CRAB (in Astronomy).** A constellation, and the fourth sign in the zodiac, marked thus ♋, which the sun enters on the twenty-first of June, thence called the summer solstice.

**CANCER, TROPIC OF.** A small circle of the sphere, parallel to the equator, and passing through the beginning of Cancer.

**CANCER (in Medicine).** A hard ulcerous and exceedingly painful swelling, and generally seated in the glandulous part of the body.

**CANDLE.** A long roll or cylinder made of tallow, wax, or spermaceti, in which is included a wick of cotton or rush, for the purpose of burning. Good tallow is made of the fat of sheep and bullocks in equal portions. The wick, which is made of several threads of cotton twisted together, must be fine, sufficiently dry, and properly twisted, or otherwise the candle will yield an unsteady light. The tallow is prepared by chopping the fat and boiling it in a copper, the scum which is taken from it in the boiling is called greaves, which is made into cakes that are sold for fattening poultry. Candles are made either by dipping or in moulds, the former of which are the common candles. When candles are to be dipped, the workman holds three of the broaches, with the cottons properly spread, between his fingers, and dips them into the tallow vat, then hangs them to cool, and when cooled dips them again and again until they are of the required size. The mould in which mould-candles are made is mostly of pewter, made to the diameter and length of the candle wanted; at the extremity of it is the neck, which is pierced to receive the cotton, one end of which comes out at the neck, and the remainder is placed in the mould in such manner in a perpendicular direction, as that it should be in the middle of the candle; after this the mould is filled with boiling tallow, and left to cool. Wax candles are made by pouring with a ladle melted wax on the tops of a number of wicks, tied by the neck at equal distances round an iron circle suspended directly over a large bason of copper tinned.

**CANDLEMAS DAY.** The festival observed on the second of February, in commemoration of the purification of the Virgin Mary.

**CANDY.** A preparation of sugar made by melting and crystallizing it several times.

**CANDYTUFT.** An annual that is cultivated in gardens, bearing a white or purple flower.

**CANE.** A kind of strong Indian reed, used for walking sticks; also the plant which yields the sugar, and grows freely in the East and West Indies. The skin of the sugar cane is soft, and the spongy matter or pith it contains, very juicy.



**CANE** (in Commerce). A long measure of different dimensions in different countries, from two to five yards.

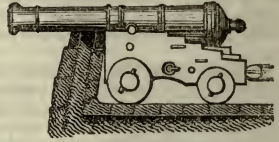
**CANIS** (in Astronomy). The name of two constellations in the southern hemisphere; namely, Canis Major and Canis Minor.

**CANKER.** A cancerous affection which occurs frequently in fruit trees; also a fungous excrescence in the feet of horses.

**CANNIBAL.** A man eater.

**CANNON.** A piece of ordnance, or a great gun for a battery, which is mounted on a carriage: the principal parts of a cannon are the muzzle, or mouth, the entrance of the bore or the hollow part which receives the charge; the chase, or the whole space from the muzzle to the trunnions; the trunnions, or two solid cylindrical pieces of metal, which project from the piece, and by which it is supported on the carriage; the vent, which in small firearms is called the touchhole, a small hole pierced at the end of the bore or chamber, for the purpose of priming the piece with powder, or to introduce the tube in order, when lighted, to set fire to the charge; the chamber, that part of the bore or hollow of the piece where the powder is lodged which forms the charge; the breech, the solid piece behind, the hindermost part of which is called the cascabel. That part next to the breech is called the reinforce, which is made stronger to resist the force of the powder. The ornaments of a cannon are the muzzle, astragal, and fillets, the chase astragal and fillets, the reinforce ring, and

the breech mouldings. The first cannon was used in 1304, on the coast of Denmark.



**CANOE.** A little vessel or boat used by the Indians, which is made all of one piece, of the trunk of a tree hollowed.

**CANON.** A law or ordinance of the church. The Canon Law consists of rules drawn from Scripture, from the writings of the ancient fathers, from the ordinances of councils, and the decrees of the pope.

**CANON.** A dignity in a cathedral church.

**CANON OF SCRIPTURE.** That body of books of the Holy Scripture which serves for a rule of faith and practice.

**CANONIZATION.** The act of enrolling any one among the number of the saints, which is the practice of the Romish church, and performed by the pope.

**CANOPUS** (in Astronomy). A bright star of the first magnitude, in the rudder of the ship Argo.

**CANTATA.** A piece of music for one, two, or more voices, chiefly intended for a single voice with a thorough bass.

**CANTEEN.** A sutling house for both officers and men; also a small vessel of tin plate or wood, in which soldiers on their march carry their liquor.

**CANTERBURY-BELL.** A fine flower much cultivated in gardens. The plant is biennial, and the flower is white or blue, and of an oblong figure.

**CANTHARIDES, or SPANISH FLIES.** A species of shining beetle, powdered and used for raising blisters.

**CANTON.** A division or small parcel of a country, such as the cantons of the country.

**CANTON** (in Heraldry). An ordinary so called because it occupies but a cantel or corner of the escutcheon.

**CANVAS, or CANVASS.** The cloth on which painters usually draw their pictures; and also that of which the sails of vessels are made.

**CAP.** In general, any covering for the head; sometimes of a particular make, as a cardinal's cap.

**CAP.** The name of several things similar in figure or use, as the cap of a great gun, a piece of lead laid over the touchhole;

the cap in a ship, the square piece of timber placed over the head of a mast.

**CAP** (in Architecture). The uppermost part of any member, as the capital of a column, the cornice of a door, &c.

**CAP OF MAINTENANCE** (in Heraldry). One of the regalia or ornaments of state, carried before the king of Great Britain at the coronation and other great solemnities.

**CAPE** (in Geography). A promontory or headland projecting into the sea farther than the rest of the coast, as the Cape of Good Hope, Cape St. Vincent, &c.

**CAPELLA**. A star of the first magnitude in Auriga.

**CAPER-BUSH**. A shrub or tree, the bud or flower of which is converted into a pickle called caper.

**CAPILLARY**. An epithet for what is as fine as a hair. Capillary tubes are pipes of the fineness of a hair, by which various phenomena in physics and hydrostatics are displayed. Capillary vessels, in Anatomy, the smallest and extreme parts of the minutest ramifications of the veins and arteries.

**CAPITAL**. The chief or head of a thing.

**CAPITAL** (in Geography). The chief town.

**CAPITAL** (in Architecture). The uppermost part of a column, serving as the head.

**CAPITAL** (in Printing). The large letters, which serve as initials, or in titles.

**CAPITAL** (in Commerce). The stock or fund of a trading company.

**CAPITULATION**. A treaty between the besieged and the besiegers of any place, whereby the former surrender it and themselves on certain conditions.

**CAPIVI**. A tree of Brazil, the flower of which resembles a rose. It grows to the height of sixty feet.

**CAPRICORN**. A southern constellation, and one of the twelve signs of the zodiac, which the sun enters on the 21st of December. It is marked thus, ♄.

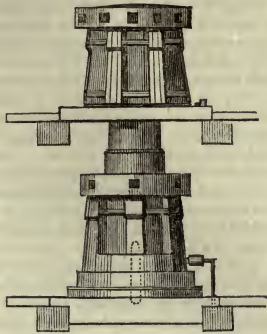
**CAPRICORN, TROPIC OF**. A small circle of the sphere, parallel to the equinoctial, passing through the beginning of Capricorn or the winter solstice, which is the sun's greatest southern declination, namely, 23 degrees and a half.

**CAPRIOLE**. A caper or leap in dancing, like a goat's leap.

**CAPSICUM**. A plant, native of South America, the fruit of which is a pod, and the strongest kind of pepper, known by the name of Cayenne Pepper.

**CAPSTAN**. A large piece of timber resembling a windlass, placed behind the

mainmast. It is a cylinder with levers, used to weigh anchors, to hoist up or strike down topmasts, &c.



**CAPTAIN**. A commander of a company of foot or a troop of horse; and in the naval or merchant service, the commander of a vessel: also in grammar schools, the head boy of his class.

**CAPTION** (in Law). The act of taking any person by any judicial process.

**CAPUCHIN**. An order of Franciscan monks in the Romish church, so called from their capuch or hood sewed to their habits.

**CAPUT MORTUUM**. The inert residuum of any body, remaining after all the volatile and humid parts have been extracted.

**CAR**. A small carriage of burden, drawn by one or two horses.

**CARABINE, or CARBINE**. A sort of short gun, between a musket and a pistol, having its barrel two feet and a half long.

**CARACT, or CARAT**. The weight of 24 grains; or one scruple 24 carats make one ounce. This is the standard weight by which the fineness of gold is distinguished. If the gold be so fine that, in purifying, it loses nothing, or but very little, it is said to be gold of 24 carats; if it lose one carat, it is said to be gold of 23 carats.

**CARAT** (in weighing of Diamonds, &c.) A weight of four grains.

**CARAVAN**. A company of merchants or pilgrims in the East, who go in an organized body through the deserts.

**CARAVANSERA**. A large building in the East, or an inn for the reception of travellers and the caravans. The building commonly forms a square, in the middle of which is a spacious court, and under the arches or piazzas that surround it, there runs a bank, raised some feet above

the ground, where the merchants and travellers take up their lodgings, the beasts of burden being tied to the foot of the bank.

**CARBON.** The pure inflammable part of charcoal, free from all the hydrogen and earthy or metallic particles which charcoal usually contains. By its union with oxygen, it produces two gaseous substances, the first of which was formerly called fixed air, now carbonic acid; and the second, containing less oxygen, the oxide of carbon.

**CARBONATES.** Salts formed by the combination of carbonic acid with different bases, as carbonate of copper, &c.

**CARBUNCLE.** A precious stone, of the colour of a burning coal.

**CARBURET.** A substance formed by the combination of carbon with metals.

**CARCASS** (in Building). The shell or timber work of a house before it is lathed and plastered, or the floors laid; in Gunnery, an iron case, filled with combustible materials, and discharged from a mortar after the manner of a bomb.

**CARD.** An instrument like a comb, which is used in combing or disentangling wool.

**CARD OF A COMPASS.** The circular paper on which the points of a compass are marked.

**CARD.** See **CARDS.**

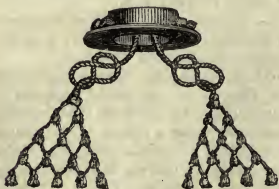
**CARDIACS.** Medicines that tend to strengthen the heart.

**CARDINAL.** A dignitary in the Romish Church, and one of its chief governors, of which there are seventy in number. They constitute a college, by and from whom the pope is chosen.

**CARDINAL POINTS.** The four points or divisions of the horizon, namely, the north, south, east, and west.

**CARDINAL'S CAP, or CARDINAL FLOWER.** A plant so called because its flower, by the intense redness of its colour, seems to emulate the scarlet cap of a cardinal.

**CARDINAL'S CAP, or HAT.** A cap or hat of a peculiar form, which is worn by cardinals.



**CARDINAL VIRTUES.** The four virtues of prudence, temperance, justice, and fortitude.

**CARDS.** Pieces of pasteboard of an oblong figure, and different sizes, made into packs of 52 in number, and used by way of amusement in different games. They are painted with various figures, namely, hearts, spades, diamonds, clubs, and kings and queens. They are said to have been introduced in the fourteenth century, to divert Charles VI. king of France, who had fallen into a state of melancholy. By the hearts, cœurs, were meant the gens de coeur, choirmen or ecclesiastics, instead of which the Spaniards use chalices. The spades, in Spanish espadas, swords, were intended to represent the nobility, who wore swords or pikes. The diamonds, or carreaux, designated the order of citizens or merchants. The trefle, trefoil leaf or clover grass, was an emblem of the husbandman; this is called clubs with us, because the Spaniards have bastos, clubs, on their cards. The knaves represent the servants of the knights. The four kings were intended for David, Alexander, Caesar, and Charlemagne, who established the four great monarchies of the Jews, Greeks, Romans, and Franks. The four queens were supposed to represent Argine, i. e. regina, the queen by descent, Esther, Judith, and Pallas. The moulds or blocks used for making cards were exactly like those which were shortly afterwards used in the making of books.

**CAREENING.** The heaving a ship on one side for the purpose of clearing or calking the other side.

**CARGO** (in Commerce). The merchandise and effects that are laden on board a ship.

**CARICATURE** (From the Italian Caricatura). A distorted way of representing objects so as to make them appear ridiculous.

**CARIES.** A disease of the bones; a kind of rottenness.

**CARINA.** A keel; the name given by Linnæus to the lower concave petal of a papilionaceous or butterfly-shaped flower, as the pea, which resembles the keel of a ship in its shape.

**CARLINE THISTLE.** A plant of the thistle kind, which is sometimes used medicinally.

**CARLINGS.** Short pieces of timber which serve to support and strengthen the larger beams in a ship.

**CARMAN.** One who is employed in carrying goods from the wharfs to the merchant's warehouses.

**CARMELITES.** An order of monks who were first founded on Mount Carmel.

**CARMINATIVES.** Medicines which promote perspiration.

**CARMINE.** A dross or powder of a deep red colour, procured from cochineal, and used for painting in miniature.

**CARNATION.** A beautiful sort of clove pink, having its bright colours equally marked all over the flowers.

**CARNATION** (in Painting). The flesh colour.

**CARNIVAL, or CARNAVAL.** A season of mirth and festivity particularly observed by the Italians, from Twelfth Day until Lent.

**CARNIVOROUS.** An epithet applied to animals that feed on flesh.

**CAROTIDS.** Two arteries in the neck, which convey the blood from the aorta to the brain.

**CARP.** A fresh-water fish fitted for stocking ponds, as it spawns three times a year.

**CARPENTER'S RULE.** A tool generally used in taking dimensions, and casting up the contents of timber and the artificer's work.

**CARPENTRY.** The art of cutting, framing, and joining large pieces of wood, for the uses of building; it is subservient to architecture, and is divided into House Carpentry and Ship Carpentry. Carpentry differs from joining only inasmuch as the work is coarser, larger, and not so curious.

**CARPET.** A sort of stuff wrought either with the needle or the loom, and used as a covering for the floor. Persian and Turkish carpets are most in esteem.

**CARRIAGE.** In general, a vehicle for carrying goods and persons; in Gunnery, the machine upon which the gun is mounted; in Carpentry, the frame of timber-work which supports the steps of wooden stairs.

**CARRIERS.** All persons carrying goods for hire; also a sort of pigeons that are used in conveying letters to a distance.

**CARROT.** A fleshy root, cultivated as a garden vegetable.

**CART.** A small carriage with two wheels, used in husbandry.

**CART-HORSE.** An inferior kind of horse, used in husbandry.

**CARTE BLANCHE.** A blank paper, delivered to a person to be filled up as he pleases; applied generally in the sense of unlimited terms granted to a person.

**CARTEL.** An agreement between two

states at war for the exchange of prisoners.

**CARTILAGE.** A part of the animal body, harder and drier than a ligament, and softer than a bone; its use is to render the articulation of the bones more easy.

**CARTILAGINOUS FISHES.** Those having cartilaginous instead of bony skeletons.

**CARTOON.** A design made on strong paper, to be afterwards calked through, and transferred to the fresh plaster of a wall to be painted in fresco, such as the famous cartoons of Raffaele.

**CARTOUCH.** A case of wood holding about four hundred musket balls, besides iron balls, from six to ten, to be fired out of a howitzer.

**CARTOUCHES.** Blocks or modillions used in the cornices of wainscoted apartments; also ornaments representing a scroll of paper.

**CARTRIDGE.** A case of paper or parchment filled with gunpowder, and used in the charging of guns.

**CARVEL.** A small ship or fly-boat.

**CARVING.** The art of cutting wood into various forms and figures.

**CARYATIDES.** A sort of columns or pillars shaped like the bodies of women, and in the dress of the Carian people. They were intended to represent the Carian women who were taken captives by the Athenians.

**CARYOPHYLLÆ.** A natural order of plants, consisting of such as have pink-like flowers.

**CASE.** Any outside covering which serves to enclose a thing entirely, as packing cases or knife cases; in Carpentry, the case of a door is the wooden frame, in which it is hung; in Printing, it is a frame of wood, with numerous small partitions for the letters.

**CASE** (in Grammar). An accident of nouns which have different inflexions or terminations.

**CASE-HARDENING.** A method of preparing iron, so as to render its outer surface hard, and capable of resisting any edged tool.

**CASE-KNIFE.** A large kitchen-knife.

**CASEMENT.** A window that opens on hinges.

**CASE-SHOT.** Musket balls, stones, old iron, &c. put into cases and shot out of great guns.

**CASH.** Ready money, distinguished from bills.

**CASHEW-NUT.** The fruit of the cashew,

that abounds in Jamaica and Barbadoes. From this nut is expressed a juice that is made into a pleasant wine.



**CASHIER.** The keeper of the cash or money, which it is his business to receive and pay.

**CASHIERS OF THE BANK.** Officers of the Bank who sign the notes that are issued out, and examine and mark them when they are returned.

**CASHIERING.** A dishonourable dismissal of an officer or soldier from the king's service.

**CASHMERE.** A light kind of cloth made of the very fine wool procured from a sort of goat that abounds in Cashmere, a country of Thibet.

**CASSAVI.** An American tree, bearing a bell-shaped flower. Its root, when dried and ground to flour, was converted into bread by the original inhabitants.

**CASSIA FISTULA, or PUDDING PIPE TREE.** A very large tree, a native of Alexandria and the West Indies, which bears a long cylindrical taper or flat pod, divided into many cells, in each of which is a hard seed lodged in a clammy black substance, which is purgative, and is known in medicine by the name of the Purging Cassia, or, simply, Cassia.

**CASSIOPEIA.** A northern constellation.

**CASSIQUE, or CACIQUE.** A sovereign lord among the ancient Americans.

**CASSOCK.** A vestment worn by clergymen under their gowns.

**CASSOWARY.** A large bird of prey.

**CAST.** The name of figures or small statues in bronze.

**CASTE.** The name of different tribes

in Hindostan, of which the Brahmins is the most noble.

**CASTING** (Among Sculptors). The taking of casts or impressions of figures, busts, &c.; in a foundery, the running of metals into any mould prepared for this purpose.

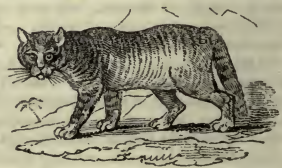
**CAST IRON.** The iron as it is extracted from the ores by means of casting.

**CASTLE.** A fortress or place rendered defensible by nature and art. Castles, being an emblem of grandeur, are frequently borne in coats of arms.



**CASTOR.** A soft, grayish yellow substance found in the bags of the beaver, near its groin. In a warm air, the castor grows by degrees hard, brittle, and of a dark colour.

**CAT.** A well known animal nearly allied to the tiger, is either domestic or wild. The wild or mountain cat is borne in coats of arms as an emblem of liberty, vigilance, and forecast.



**CAT.** A sea term for a ship usually employed in the coal trade; also a sort of strong tackle for drawing up the anchor; also a military term for a kind of shed under which soldiers conceal themselves while filling up a ditch or mining a wall.

**CATACOMBS.** Grottoes or subterraneous places for the burial of the dead, frequently found in Egypt and in Italy.

**CATALOGUE.** A list of books or any other matters, arranged in order, for purposes of sale or reference.

**CATAMARAN.** A sort of floating raft originally used in China as a fishing boat.

**CATARACT.** A high, steep place or precipice in the channel of a river, caused by rocks or other obstacles stopping the course of the stream; also a disease in the eye, arising from a little film or speck, which swimming in the aqueous humour, and getting before the pupil, causes a dimness of sight or blindness.

**CATARRH.** A defluxion from the head, occasioned by cold.

**CAT-CALL.** A harsh sort of pipe, imitating the noise of a cat.

**CATCH** (in Music). A short and humorous song; also a sea term for a swift-sailing vessel.

**CATCH-FLY.** A plant much cultivated in gardens, having grass-like leaves, and a long stalk terminated by a cluster of crimson flowers.

**CATECHISM.** A short system of instruction in religion, conveyed in question and answers.

**CATECHU.** A juice of a very astringent quality, pressed from out of several Indian fruits.

**CATECHUMENS.** A name formerly given in the Christian church, to such as were prepared to receive the ordinance of baptism.

**CATEGORY** (in Logic). A name for the predicates or attributes contained under any genus, of which Aristotle reckons ten, namely, substance, quantity, quality, relation, acting, suffering, time, place, situation, and habit.

**CATENARY.** A curve on a crooked line formed by a rope when hanging.

**CATERER.** A provider of victuals and other necessaries in the king's household, or elsewhere.

**CATERPILLAR.** The larva produced from the egg, which is transformed first into the chrysalis or nymph, and afterwards into the butterfly.

**CATGUT.** A name for the strings made of the intestines of sheep or lambs, and used in musical instruments, &c.

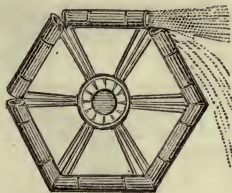
**CATHEADS.** Two strong beams of timber in a vessel which serve to suspend the anchor clear of the bow.

**CATHEDRAL.** The episcopal church, or a church where is a bishop's seat or see.

**CATHERINE-WHEEL** (in Architecture). A large circular ornament in Gothic windows.

**CATHERINE-WHEEL.** A sort of fireworks constructed in the form of a wheel,

which is made to turn round when it is let off.



**CATHOLIC.** An epithet properly signifying universal; which the Romish church assumes to itself as its title; whence the name of Roman Catholics has been applied, since the Reformation, to the followers of the Romish doctrine and discipline.

**CATHOLIC KING.** The title of the king of Spain.

**CATHOLIC PRIEST.** A clergyman or priest ordained to say mass and administer the sacraments, &c. according to the rites of the Romish Church.

**CATKIN, or AMENT** (in Botany). A long stem thickly covered with scales, under which are the flowers and the essential parts of the fruit, which is so called from its resemblance to a cat's tail. Catkins are to be found on the hazel, willow, &c.

**CAT'S EYE** (in Mineralogy). A stone of a glistening grey, with a tinge of green, yellow, or white.

**CAT'S HEAD.** A very large kind of apple.

**CAT'S-TAIL GRASS.** A kind of reed, bearing a spike, like the tail of a cat.

**CATTLE.** Horned beasts, that feed in pasture, or generally all four-footed beasts that serve for domestic purposes, which are either black cattle, as horses and cows; horned cattle, as oxen, sheep, &c.; and draught cattle, as horses, oxen, &c.

**CAVALCADE.** A pompous procession of horses and carriages, &c.

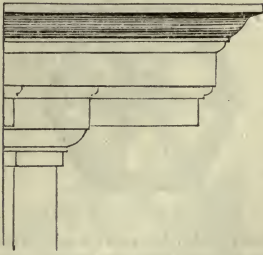
**CAVALIER.** A horseman; a person mounted on a horse, or expert in horsemanship; in Fortification, a work raised within the body of a place, above the other works.

**CAVEAR, or CAVIAR.** The spawn or hard roes of sturgeon, made into cakes, salted and dried in the sun, much used in Russia and other parts of the continent.

**CAVERN.** A natural cave or hollow place in a rock or mountain.

**CAVETTO** (in Architecture). A concave moulding, the curvature of whose

section does not exceed the quadrant of a circle.



**CAUL.** A membrane in the abdomen which serves to cover the intestines.

**CAULIFLOWER.** The finest sort of cabbage, with a seeded head.

**CAUSEWAY, or CAUSEY.** A path raised above the level of the ground, and paved with stones or gravel.

**CAUSTIC CURVE.** A curve formed by the concurrence or coincidence of the rays of light reflected or refracted from any other curve.

**CAUSTICS.** Medicines which, when applied to any part of the body, burn it to a hard crust.

**CAUTERY.** Any burning application.

**CAYENNE PEPPER.** A powder prepared from the pods of several species of the capsicum, which originally came from Cayenne, but is now brought from both the Indies.

**CAYMAN.** The American alligator.

**C. B.** Companion of the Bath.

**C. C. Caius College: C. C. C. Corpus Christi College.**

**CEDAR.** A well known evergreen, very like the juniper in appearance, which delights in cold mountainous places. The leaves are much narrower than those of the pine tree, and the seeds are produced in large cones.

**CEILING.** The inside of the roof or top of an apartment, in distinction from the surface of a floor.

**CELERY.** A sort of parsley much used in winter salads.

**CELESTIAL GLOBE.** An artificial representation of the heavens.

**CELL.** The apartment or chamber of a monk or nun; also a small close apartment in a prison.

**CELLAR.** A place, commonly under ground, which serves as a store-room.

**CELLS (in Anatomy).** Bags or bladders where fluids are lodged; in Botany, the

partitions in the husks or pods of plants where the seeds are lodged.

**CELLULAR MEMBRANE.** One of the largest membranes in the human body, of a vascular texture, fitted for holding the fat.

**CEMENT.** A compound of pitch, brick-dust, plaster of Paris, &c. used by chasers and other artificers for making their work firm.

**CEMETERY.** A repository for the dead.

**CENSOR.** A magistrate among the Romans, who valued and taxed men's estates, and also punished any acts of immorality.

**CENSORS.** In modern times, persons of learning appointed to examine all books before they go to press, and to see that they contain nothing contrary to good morals.

**CENT.** An abbreviation, in Commerce, for centum, a hundred, as five per cent.; that is, five pounds interest, discount, or profit, upon every hundred.

**CENTAURUS.** One of the forty-eight old constellations in the southern hemisphere.

**CENTRE.** The middle point of any thing, especially of a circle or sphere.

**CENTRE-BIT.** A carpenter's stool, which makes a cylindrical excavation by turning on an axis or centre.



**CENTRE OF GRAVITY.** That point about which all the parts of a body in any situation balance each other.

**CENTRIFUGAL.** An epithet for that force which causes a body revolving about a centre or about another body, to recede from it.

**CENTRIPETAL.** An epithet for that force which causes all bodies to tend towards some point as a centre.

**CENTURION.** A military officer among the Romans, who had the command of a hundred men.

**CENTURY.** The space of a hundred years.

**CERECLOTH.** Cloth smeared over with glutinous matter.

**CERES.** One of the newly discovered planets.

**CERES (in the Heathen Mythology).**



The daughter of Saturn and Vesta, and goddess of corn and fruits. She first taught men the art of cultivating the ground.



**CERIUM.** A new metal obtained from Sweden, of a flesh-red colour, semitransparent, becomes friable from heat, but does not melt.

**CERTIFICATE.** A testimony given in writing to declare or certify the truth of any thing.

**CERUMEN.** The viscid yellow liquid which flows from the ear, and hardens on exposure to the air.

**CERUSS,** or **WHITE LEAD.** A sort of calx of lead, made by exposing plates of that metal to the vapour of vinegar.

**CETE.** An order of animals in the Linnæan system, including such as have breathing apertures on the head, tail horizontal, and pectoral fins instead of feet; as the dolphin, porpoise, and grampus, &c. Cetaceous fish suckle their young like land animals.

**CHAFF.** The husks of corn when threshed and separated from the grain.

**CHAFFINCH.** A bird so called because it delights in eating chaff. It sings very prettily.

**CHAFINGDISH.** A utensil for warming meat.

**CHAGREEN.** A rough kind of leather.

**CHAIN** (in Surveying). A measure of length, made of a certain number of links of iron wire, serving to measure a certain quantity of ground. Gunter's Chain consists of a hundred such links, each measuring 7.92 inches, and consequently equal to 66 feet or 4 poles. 1 square chain = 10,000 links = 16 poles. 10 square chains = 100,000 links = 160 poles = 1 acre.

**CHAIN.** A series of rings or links fitted into one another. Chains are made of

various metals, sizes, and forms, suited to different purposes. The gold chain is one of the badges of dignity worn by the Lord Mayor of London.



**CHAIN-BOAT.** A sea term for a large boat fitted for getting up mooring chains, anchors, &c.

**CHAIN-SHOT.** Two bullets with a chain between them. They are used at sea for cutting the shrouds and rigging of a ship.



**CHALCEDONY.** A sort of agate or onyx stone.

**CHALDRON.** A dry measure, consisting of 36 bushels.

**CHALICE.** The communion cup used at the sacrament of the eucharist.

**CHALK.** A kind of white fossil, of which lime is made. It contains a little siliceous earth, and sometimes a small portion of iron. Black chalk, or drawing slate, is a gray or bluish-black mineral, that is massive; the fracture glimmering and slaty.

**CHALLENGE.** In general, a summons to fight, whether in a duel or in a pugilistic contest; in Law, an exception against jurors made by the party put on his trial.

**CHALYBEATE.** An epithet for waters in which iron forms the principal ingredient, as the waters of Tunbridge Wells, the Spa, &c.

**CHAM.** The title of the emperor or sovereign of Tartary.

**CHAMÆLEON,** or **CHAMELEON.** A quadruped of the lizard tribe, that was



originally supposed to live on air, but is now known to live on flies, which it catches with its tongue. Its most remarkable characteristic is, that it assumes the colour of the thing to which it is applied, but its natural colour in the shade, and at rest, is said to be a bluish gray.

**CHAMBER** (in Gunnery). That part of a mortar or great gun, as far as the powder and shot reach when it is loaded.

**CHAMBER** (in Law). A court, as the Star Chamber; in Commerce, a room set apart for mercantile business; also for keeping treasures and stores, as the Chamber of London, &c.

**CHAMBER OF A MINE.** The place where the powder is confined, that is to be used for blowing up the works.

**CHAMBERLAIN.** An officer who has the care of any particular chamber or place, at the Lord Great Chamberlain of England, a great officer of state, to whom belongs the government of the palace at Westminster; the Chamberlain of London, who receives the rents of the city, and deposits them in the chamber or treasury of London.

**CHAMBERS.** Rooms or apartments belonging to the inns of court; in Anatomy, two spaces between the crystalline lens and the cornea of the eye, divided off by the iris.

**CHAMELEON.** See CHAMÆLEON.

**CHAMOIS,** or, The WILD GOAT, which inhabits the Alpine mountains, having horns erect, round, and smooth.



**CHAMOMILE.** An odoriferous plant, which has a very bitter taste, but many medicinal virtues.

**CHAMPAGNE.** A fine French wine, so called from Champagne, a former province of France.

**CHAMPION** (in Law). The combatant who undertook to fight in the trial by battle, formerly in use.

**CHANCE-MEDLEY** (in Law). The accidental killing of a man, not without

the fault of the killer, but without any evil intent.

**CHANCEL.** That part of a church between the altar and communion table and the rails or balustrade by which it is enclosed.

**CHANCELLOR.** An officer of state, known by the title of the Lord High Chancellor of England, and the chief person next to the sovereign in the administration of justice; the Chancellor of the Exchequer is an officer who has the principal management of the king's revenue.

**CHANCERY, THE COURT OF.** The highest court of judicature in the realm next to the Parliament. The Lord Chancellor presides in this court; and is assisted by the Vice-chancellor, the Master of the Rolls, the Masters in Chancery, &c.

**CHANCES, DOCTRINE OF.** A branch of modern mathematics, which treats of the probabilities of certain events taking place.

**CHANNEL.** The middle or deepest part of any sea; also a strait or narrow sea between two lands, as St. George's Channel between Great Britain and Ireland, and the British or English Channel, properly called the Channel, between England and France.

**CHANTRY.** A chapel anciently joined to some cathedral or parish, where mass used to be said daily for the souls of the founders.

**CHAOS.** A dark and rude mass of matter out of which the heathen philosophers supposed the world was formed.

**CHAPEL.** A smaller kind of church, which, being built for the convenience of the parish church, is denominated a chapel of ease.

**CHAPERON.** A hood or cap, particularly that worn by the knights of the garter.

**CHAPLAIN.** Originally signified one who performed divine service in a chapel, but now more commonly one who attends upon the king, or other person of quality, for the performance of his clerical duties in the family.

**CHAPLET.** A wreath or garland worn about the head. Chaplets are borne in coats of arms, as trophies or ensigns of military prowess.

**CHAPTER** (in Law). A body of the clergy belonging to a cathedral, collegiate, or conventual church; also the place of their meeting.

**CHARACTER.** Any mark which serves as a sign to denote some particular object, as the astronomical characters, mathematical characters, &c.

**CHARADE.** A sort of riddle, the sub-

ject of which is a word of one or two syllables.

**CHARCOAL.** The substance from wood half burnt, which is much used in the manufacture of gunpowder.

**CHARDS OF ARTICHOKE.** The leaves of artichoke plants bound in straw till they lose part of their bitterness, and become white.

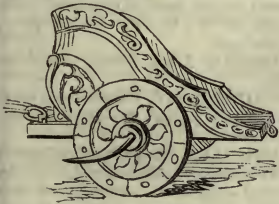
**CHAREWOMAN, or CHARWOMAN.** A woman who goes out by the day to job.

**CHARGE (in Law).** The instructions given by the judge to the grand jury; in Ecclesiastical Law, the instructions given by a bishop to the clergy of his diocese.

**CHARGE (in Gunnery).** The quantity of powder and ball, or shot, with which a gun is loaded; in Electricity, the accumulation of electric matter on one surface of an electric machine; in Heraldry, whatever is borne on coats of arms; in Painting, an exaggerated representation of a person.

**CHARGE OF LEAD.** A weight consisting of 36 pigs, each pig containing 6 stone all but 2 lbs.

**CHARIOT.** An ancient car, in which armed men used to ride to battle. They were furnished with scythes, hooks, and other offensive weapons.



**CHARMS.** Incantations or verses used by magicians and sorcerers.

**CHARR.** A small fish of the salmon kind.

**CHARTER (in Law).** A writing or letter patent, whereby the king grants privileges to towns, corporations, &c. whence the name of Magna Charta, or the Great Charter of Liberties granted to the people of the whole realm.

**CHARTS.** Draughts or descriptions of coasts; or, in general, projections of some parts of the sea in plans for the use of sailors.

**CHARYBDIS.** A vortex or gulf at the entrance of the Sicilian straits, which is much celebrated by the ancient writers; but its exact situation is not known in the present day.

**CHASSEURS.** A select body of light infantry in the French army.

**CHASTE-TREE.** A tree growing to the height of eight or ten feet, having the leaves fingered like those of hemp.

**CHATEAU.** Formerly a castle or baronial seat in France, now simply a country seat.

**CHATELS (in Law).** Personal goods.

**CHECKY (in Heraldry).** A term for the shield, or any part of it, when it is divided into cheques or squares.

**CHEEKS.** A general name among mechanics for pieces of timber in any machine, which are two of a kind.

**CHEESE.** The curd of milk separated from the whey, then pressed and hardened, and afterwards left to dry.

**CHEESECAKES.** A sort of cakes made of curds, sugar, butter, &c.

**CHEESE-PRESS.** A press in which the curds are pressed for making cheese.

**CHEESE-VAT.** The case in which curds are pressed into the form of a cheese.

**CHEF-D'ŒUVRE.** A masterpiece or superior performance of any artist.

**CHEMISTRY.** See **CHYMISTRY.**

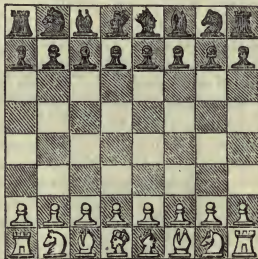
**CHERRY.** The well known fruit of a tree which was introduced into Britain at the time of the invasion of this island by the Romans.

**CHERUBIM.** An order of angels composed of various animals, as a man, an ox, an eagle, and a lion.

**CHERVIL.** An umbelliferous plant, whose leaves are divided into many segments.

**CHESS.** A very difficult game, performed with little round pieces of wood, on a board divided into sixty-four squares. Each side has eight men, consisting of a king, queen, two knights, two bishops, and two rooks or castles, besides eight pawns or foot soldiers; which are all moved according to certain rules.

**CHESS-BOARD.** The board on which the game of chess is played.



**CHESS-ROOK.** Another name for the

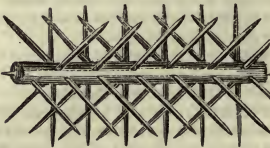
castles which stand at the outer corners of the chess-board.

**CHEST** (in Anatomy). The breast, thorax, or that part of the human body which contains the heart and lungs.

**CHESTNUT**. A tree bearing a very rough-coated fruit of the same name. The wood was formerly much valued as timber, and is now used in the finer kinds of joinery work.

**CHEVALIER**. Literally a knight or horseman, answering to the English cavalier.

**CHEVAUX DE FRISE** (in Fortification). A sort of turnpikes or tournequots, consisting of spars of wood set into a piece of timber, and armed with a short spike, so as to point all ways. They serve to stop up breaches.



**CHEVRON** (in Heraldry). One of the honourable ordinaries, representing two rafters of a house joined together in chief, such as carpenters set on the highest part of a house to support the roof.



**CHIARO OBSCURO**. See **CLARO OBSCURO**.

**CHICKWEED**. An annual.

**CHIEF** (in Heraldry). One of the honourable ordinaries, which occupies the head or upper part of the escutcheon. As the head is the chief part of a man, so is the chief the principal part of the escutcheon, and contains a third part of the field.



**CHILTERN HUNDREDS**. A hilly district of Buckinghamshire, which has belonged to the crown from time immemorial, having the office of Steward of the Chiltern Hundreds attached to it. By the acceptance of this office, any member of parliament is enabled to vacate his seat; for as no member can retain his seat after accepting an office, so likewise every member wishing to vacate his seat is obliged to do it in this manner; that is, in the usual phrase, 'accept the Chiltern Hundreds.'

**CHIMÆRA** (in the Heathen Mythology). A monster feigned to be like a lion in the fore part, a dragon behind, and a goat in the middle.

**CHIMES OF A CLOCK**. A particular apparatus by which the clock at certain times is enabled to play certain tunes.

**CHIMNEY**. That part of a house which, by the means of a funnel, serves to carry off the smoke. Various devices have been tried to prevent the smoking of chimnies, as the carrying them up zigzag, or narrower at the top than at the bottom, and the like, which have all been found ineffectual. It is now supposed that chimneys should be built as nearly perpendicular as possible, should be free from all roughness in the inside, and be a little wider at the top than at the base.

**CHINTZ**. A fine Indian painted calico.

**CHIROMANCY**. The pretended art of foretelling a person's fortune by the lines in his hands.

**CHIVALRY**. The name anciently given to knighthood, a military dignity; also the martial exploits and qualifications of a knight. Chivalry, as a military dignity, is supposed by some to have taken its rise from the crusades, because these expeditions gave rise to many chivalrous exploits and feats of arms; but it is evident that its origin may be traced much higher, to the northern nations who settled in Europe on the decline of the Roman empire, whose martial habits and temper led them to make valour and prowess the only sources of honour and distinction.

**CHIVES**. A sort of small onions.

**CHLORINE**. A gaseous body of a green yellow colour.

**CHLORITES**. A kind of green jasper, almost as pellucid as the coarse emerald.

**CHOCOLATE** (in Commerce). A kind of paste, prepared chiefly from the cocoa nut, with a mixture of other ingredients.

**CHOCOLATE TREE**. A species of the

cocoa tree, from the fruit of which the chocolate is prepared.

**CHOIR.** That part of a cathedral where the service is performed.

**CHOKEDAMP** (in Mining). The noxious air occasionally found at the bottom of mines.

**CHOKEPEAR.** A very rough tasted pear.

**CHOLERA MORBUS.** A disease consisting of a violent perturbation in the belly, accompanied with a discharge of bile upwards and downwards.

**CHORD** (in Geometry). A right line drawn from one part of an arc of a circle to another.

**CHORDS** (in Music). Strings, by the vibration of which the sensation of sound is excited.

**CHOROGRAPHY.** A part of geography which treats of the description of particular countries.

**CHORUS.** A company of persons all singing in concert.

**CHRISM.** An unction or anointing of children, which was formerly practised as soon as they were born.

**CHRIST.** Which properly signifies anointed; is the name of the ever blessed Redeemer of the world.

**CHRISTENDOM.** The whole Christian world.

**CHRISTENING.** The ceremony of admitting a person into the communion of the Christian church by means of baptism, or sprinkling with water. It is a term particularly applied to infant baptism.

**CHRISTIAN.** One who professes the Christian religion.

**CHRISTMAS.** A festival observed in the Christian church on the twenty-fifth of December, in commemoration of our Saviour's nativity.

**CHROMA.** A soft kind of music.

**CHROMATICS.** That part of optics which explains the several properties of light and colour.

**CHRONICAL.** An epithet for diseases of long duration.

**CHRONOLOGY.** The science which teaches the measures and divisions of time. The divisions of time are either natural or artificial; the natural divisions of time are the year, month, week, day, and hour, deduced from the motions of the heavenly bodies, and suited to the purposes of civil life; the artificial divisions of time are the cycle or period, the epoch, and the æra or epocha, which have been framed for the purposes of history.

**CHRONOLOGY, HISTORY OF.** Chronology, as regards the natural divisions of time, was doubtless coeval with the creation, for we learn from the sacred historian that the work of creation was performed within the period of a week, or seven days, whence this division was observed by the Hebrews, and from them transmitted to the Egyptians and other nations. But the Persians are said to have been ignorant of such a division. The Greeks had weeks of ten days, and the Romans weeks of eight days. It is evident from the names of the days of the week among most European nations, that we derive this division from the ancient Celts or Scythians, who, in all probability, at the dispersion of mankind after the deluge, borrowed this patriarchal mode of measuring time. The year is that division of time which was regulated by the motions of the sun, being that period of time in which the sun passes through the signs of the zodiac. This division was doubtless formed at the time that astronomical observations were first made; but the Egyptians are the first people on record who formed this division, which they made to consist of 360 days, and subdivided into 12 months of 30 days each; to these Trismegistus is said to have added five more days. The ancient Jewish year was the same as the Egyptian; but on their departure from Egypt they adopted the lunar year, consisting of 30 days and 29 days alternately, and in order to make it agree with the solar year, they sometimes added 11 or 12 days at the end of the year, and sometimes a whole month after a certain number of years. The Greeks also reckoned by the same kind of year. The ancient Roman year was also lunar, and at first consisted of 10 months of 30 and 31 days; two months were afterwards added by Numa Pompilius, which consisted of 29 and 31 days, making in the whole 355 days. Julius Cæsar first reformed the calendar, and adopted the solar year of 365 days in the common year, with the addition of a day in every fourth year, called Bissextile, or Leap Year; in order to adjust the computation to the true solar year, it was then reckoned 365 days 6 hours, but as the true solar year was found to be 365 days, 5 hours, 48 minutes, 48 seconds, a farther reformation of this calendar has been made on the assumption that the solar year consists of 365 days, 5 hours, and 49 minutes. According to this computation, which was made by Pope Gregory XIII. in 1582, and thence called the Gregorian style, an intercalation of one

day in February should be made every fourth year, and that the sixteen hundredth year of the Christian æra, and every fourth century hereafter, should be a bissextile or leap year. One day consequently is to be intercalated in the years 2000, 2400, 2800, &c.; but in the intervening centuries 1700, 1800, 1900, 2100, &c. it is to be suppressed, and they are to be reckoned common. Moreover as the equinoxes had fallen back ten days and the full moons four days, since the Nicene council, A. D. 325, he ordained that ten days should be cut off after the fourth of October, so that the fifth should be the fifteenth. This mode of reckoning, which is now introduced in most countries of Europe, is called the New Style, to distinguish it from the Old Style, or the former reckoning. This is however still not perfectly correct, for as the excess of the Julian year, within the space four centuries, is three days, one hour, and twenty minutes, that of the Gregorian is one hour and twenty minutes within the same period, or about a day in 7200 years.

Besides these alterations in the form and length of the year, attempts had been made by the Greeks at an early period to adjust in their reckonings the lunar year to the solar year, for which purpose they hit on the device of framing cycles or series of years, which being numbered in an orderly manner from first to last, should return to the same point of reckoning from which they commenced. The first of these cycles was framed by Cleostratus, about 532 years before Christ. It consisted of eight years, or 2922 days, during the course of which 96 lunations would elapse of 29 and 30 days alternately, together with three intercalary months. By this cycle he proposed to adjust the lunar to the solar year, so that at the conclusion of each cycle the moon should be renewed, but he failed in his object, for at the end of 16 years there was found to be an error of three days, which in the space of 160 years would amount to more than a whole month. The Metonic Cycle, formed by Meton at the commencement of the Peloponnesian war, for the purpose of correcting the former, consisted of 19 years, at the end of which the sun and moon would be in the same quarter. This cycle, which was so much esteemed by the Greeks as to be called the Golden Number, nevertheless failed to the amount of eight or ten hours at the end of one period, and of three days in 133 years. The cycle of Eudoxus was an improvement on that of Cleostratus, by subtracting a month of 30 days from a period

of 160 years, which was supposed to be equal to the difference that would subsist at the expiration of that period between the solar and the lunar motions. The Calippic Period, contrived by Calippus at the new moon of the summer B. C. 331, was intended as an improvement upon that of Melin, which it multiplied by four, so as to make a period of 76 years, or 27,759 days. As 940 lunations are equal to 97,758 days, 9 hours, 5 minutes, and 9 seconds, which is only 40' 29" 57''' less than 76 solar tropical years, it follows that the lunar motion, according to this calculation, did not vary more than 14 hours, 13 minutes, and 22 seconds, wherefore this period has been chosen to form the basis to the modern cycle of the moon, which is said to have commenced one year before the Christian æra. There is also a solar cycle, consisting of a series of 28 years, at the completion of which the same order of bissextile and dominical letters return, a cycle which came into use in the early ages of Christianity; besides the cycle of indiction, or a series of 15 years, introduced in the reign of Constantine; the Epacts, or excesses of any solar revolutions above the lunar, which were introduced for the purpose of ascertaining the time when Easter ought to be celebrated; the Dionysian Period, or series of 532 years, formed by Dionysius Exiguus, a Roman abbot, by multiplying the solar cycle 28 into the lunar 19, for the purpose of restoring the new and full moons to the same day; and lastly, the Julian Period, invented by Scaliger, and so called because it is adapted to the Julian year; this is a series of years formed by the multiplication of the solar and lunar cycles and the cycle of indiction into one another, making the sum of 7980 Julian years.

The application of chronology to history is of comparatively modern date. In Homer and other ancient writers there appears to have been no idea of recording events in any exact order of time. The succession of Juno's priestesses at Argos served Hellanicus for the regulation of his history, but the principal Greek historians followed no other order than what was furnished by the series of events which they narrated. The Roman historian Livy defines the periods of the events described in his history by the appointment of consuls, and afterwards the succession of emperors and kings served a similar purpose in forming the histories of other European nations until a more exact computation of time began to be observed.

**CHRONOMETER.** An instrument for the exact measurement of time.

**CHRYSALIS.** The second state of an insect, which it passes into from the caterpillar or reptile form, previous to its becoming a butterfly or a moth, &c.



**CHUB.** A river fish of the carp kind, so called on account of its great head.

**CHURCH.** Properly signifies the Lord's house; and is generally applied to those buildings which are consecrated to the honour of God and set apart for his worship. The building is much in the form of a ship, and consists of a nave or body, aisles, chancel, choir, &c. The term church is also taken for the body of professing Christians.

**CHURCH SERVICE.** The common prayer, collects, and other parts of public worship performed in the church according to the forms of the English church.

**CHURCHWARDENS.** Officers annually chosen by the ministers and vestry, to take care of the church, churchyards, &c.

**CHURN.** A utensil in husbandry, which is used in making butter, by a long and violent agitation of the cream.

**CHYLE.** A white juice in the stomach, consisting of the finer and more nutritious parts of the food, which is received into the lacteal vessels, and serves to form the blood.

**CHYLIFICATION.** The process of digestion, by which the aliment is converted into chyle.

**CHYME.** The name of that humour which is immediately drawn from the aliment, and afterwards by a farther process is converted into chyle.

**CHYMISTRY.** The science which teaches the composition and properties of material substances, together with the changes they undergo. Chymists now distinguish bodies generally into simple and compound substances.

Simple substances comprehend such as have hitherto not been decomposed. Of these some are denominated combustibles, because they can undergo combustion, or, in other words, can burn, as hydrogen, carbon, phosphorous, and borax, besides the alkalis, earths, and metals. Some are

supporters of combustion, which, though not of themselves capable of undergoing combustion, are necessary to produce this effect in other bodies, of which there are three, namely, the three gaseous bodies, oxygen, chlorine, and iodine. There is one body, namely, azote or nitrogen gas, which is properly an incombustible, because it neither undergoes combustion in itself or supports it in other bodies. To this list of simple substances must be added four others, which are considered as such by modern chymists, namely, light and heat, which were formerly looked upon as properties of matter, and electricity and galvanism. Light, heat, and electricity are powerful chymical agents, which produce the most important phenomena.

Compound substances are formed by the union of simple substances with each other, or by that of compound substances with others. That which forms the basis as it were of the combination in this case, is denominated the base or radical; this may either be an acidifiable base or a salifiable base, thus phosphorus is the acidifiable base in phosphoric acid, and potash is the salifiable base in the sulphate of potash. Acids hold the first rank among the compounds. These are formed by the combination of oxygen with some acidifiable base, and are distinguished according to the proportion of the oxygen which enters into the acid by the terminations *ic* and *ous*, as nitric acid and nitrous acid, sulphuric acid and sulphurous acid, &c., the former of which, namely, the nitric and sulphuric acid, denote the large dose or portion of the oxygen; the latter, namely, nitrous acid, the smaller portion. There are also metallic bases, which are distinguished by the termination *um*, as potassium, the base of potash; sodium, the base of soda. When the compounds possess no sensible properties of an acid, the combinations with oxygen, chlorine, and iodine form a class of compounds distinguished by the termination *ide* if they are supporters of combustion, and *et* if they are combustibles, as the oxide, chloride, or iodide of arsenic, potash, soda, &c., the sulphuret of potassium, phosphoret of carbon, &c.

Acids for the most part combine with alkalis, earths, and metallic oxides, and form another important class of compounds called salts; these are distinguished by the termination of *ate* when the acid contains the larger portion of oxygen, and that of *ite* when the acid contains the smaller portion; thus the combination of sulphuric

acid and potash is a sulphate of potash, and that of sulphurous acid with potash is a sulphite of potash. Salts are denominated *neutral* when the separate qualities of the component principles are not apparent, but when the acid predominates the prefix *super* is added, and when the base predominates it is denoted by the prefix *sub*; thus the sulphate of potash denotes the salt in its perfect state, without any excess of the sulphuric acid or the potash; the supersulphate of potash is the same salt with an excess of acid; the subsulphate of potash is the same salt with an excess of base. When an acid combines with two bases this class of compounds is distinguished by the name of *triple salts*, as the tartrate of potash and soda, that is the combination of tartaric acid with potash and soda.

The combinations of metals with each other are called alloys, except those which mercury forms with any other metal, which are called amalgams.

To this list of compound substances must be added several compound combustibles, as alcohol, ether, resins, bitumens, oils, and also soaps formed by the combination of fixed oils with alkalies, earth, and metallic oxide. Besides, water and atmospheric air, which had heretofore been looked upon as simple substances, are now ranked among the compounds.

Chymical action consists of two parts, namely, decomposition and combination. When the constituent parts of bodies are separated from each other, the bodies are said to be decomposed, and the act of separating them is called decomposition: on the other hand, when bodies are so intimately united as to form new and distinct substances, this chymical union is distinguished by the name of combination. The chymical investigation of bodies therefore proceeds in two ways, namely, by analysis, that is, the separation of bodies by a series of decompositions and combinations, to come at the knowledge of the constituent parts; and synthesis, by a series of processes to form new compounds, and these two forms of investigation may accompany and assist each other; thus, Epsom salts may be analyzed and shown to consist of sulphuric acid and magnesia, or it may be synthetically compounded by combining magnesia with sulphuric acid, when Epsom salts, in the form of crystals, will be the result.

Chymical investigations proceed on the principle of attraction, in its different forms of affinity, cohesion, &c., and also on that

of repulsion. The different processes required in this investigation are solution, neutralization, precipitation, volatilization, evaporation, crystallization, fusion, digestion, calcination, distillation, sublimation, lexiviation, reduction, adulcoration, detonation, fulmination, &c., each of which terms may be found explained in its proper place.

CHYMISTRY, HISTORY OF. Chymistry as a practical art connected with metallurgy, or the extraction of metals from their ores, was of high antiquity, for we learn from Scripture that Tubal Cain, the eighth from Adam, was an expert artificer in brass and iron. Various branches of the chymical art, such as the preservation of vinous liquors, dyeing, tanning, making glass, and various preparations in pharmacy and cooking were in use at a very early period: besides the famous Egyptian philosopher, called by the Greeks Hermes, and the Romans Mercury, is reputed to have been versed in many chymical arts, and to have been the founder of the chymical science, at least in that nation. From the Egyptians, Democritus, a Greek, learned the art of softening ivory, of vitrifying plants, and imitating precious stones, which he communicated to his countrymen. After his time we read of many metallic preparations, as ceruse, verdigris, letharge, &c. Dioscorides describes the distillation of mercury from cinnabar; but their process of distillation consisted in the separation of the air, or the more subtle parts of water, from the rest of the matter, which was done by putting the matter to be distilled into a vessel, the mouth of which was covered with a wet cloth, and by this means the steams of the ascending vapour were condensed, which were afterwards procured by wringing out the cloth. Such is the distillation spoken of by Galen, Oribasius and Paulus Ægineta. After the conquests of the Saracens in the seventh and eighth centuries, chymical researches began to be more enlarged. Geber, Avicenna, and other Arabian physicians introduced into the materia medica many preparations both vegetable and mineral; but the knowledge of those chymical agents, the acids and the alkalis, was at that time exceedingly imperfect, for, except the acetous acid and soda, there is no mention of these matters until many years after. Roger Bacon does not appear to have been acquainted with them in the twelfth century, and Raymond Lully only hints at the existence of the marine acid.

There was one circumstance at this period

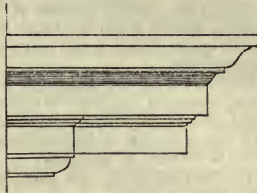


which contributed more than any other to the improvement of chymistry, that was the then growing attachment to the study of alchymy, and the search after the philosopher's stone, which, though false in principle, yet led in its results to a more extensive acquaintance with the composition of mineral bodies. After the introduction of this art, which, as its name denotes, was of Arabian origin, we read of alcohol and the newly discovered menstrua, which were powerfully applied to the transmutation of metals into gold. Although the futility of such pursuits served to bring the science of chymistry for some time into disrepute, yet the knowledge which was acquired of metals and minerals by such repeated operations upon them, was turned to the useful purposes of medicine. To the alchymists we are indebted for the methods of preparing spirits of wine, aquafortis, volatile alkali, vitriolic acid, gunpowder, &c. In the improvement of medicine by means of chymistry, Basil Valentine stood foremost. In his *Currus Triumphalis Antimonii*, he communicated to the public a number of valuable antimonial medicines. Paracelsus, another chymical professor, was so sanguine in the application of his favourite science, that he opposed himself to the practice of Galen, and endeavoured to cure all disorders by chymical preparations. He was followed by Van Helmont, Glauber, and Lemery, who all applied their knowledge of chymistry to the service of medicine. The science of metallurgy at the same time made corresponding advances. Agricola, who was a contemporary with Paracelsus, laid the foundation for a correct knowledge of metals. J.azarus Ecker, Schulten, and many other Germans, described the processes of assaying metals. Anthony Neri, Dr. Merret, and Kunkel, the discoverer of the phosphate of urine, have explained the processes of making glass, enamels, &c. but their writings were not entirely free from the alchymical illusions of the day. Kircher and Conryngius, who followed them, succeeded in purifying the science of chymistry from these errors. Since that time chymistry has assumed a new and systematic form, to which the writings and discoveries of many distinguished men in the course of the last two centuries have materially contributed, as Lord Bacon, Mr. Boyle, and Sir Isaac Newton in our country, Boerhaave in Holland, Geoffroy, Reaumur, Lavoisier, &c. in France, and Stahl, Hoffman, and Bergman in Germany. To this list might be added the works of

Nicholson, Henry, Thomson, Brande, Ure, and others in our own time, who have digested the improvements and corrected or enlarged them by farther experiments. Chymical investigations are also now materially assisted by an improved apparatus, the most material parts of which are the furnace, retorts, receivers, alembics, cucurbits, matrasses, crucibles, cupels, airpumps, pneumatic trough, stills, blowpipes, gasometer, &c.

**CIDER.** A fermented liquor, made in great quantities in England, from the expressed juice of apples.

**CIMA.** A moulding, something like an S, otherwise called an O G, ogee, being a wavelike ornament.



**CINNABAR.** An ore of mercury combined with sulphur.

**CINNAMON.** A spice, the fragrant bark of a low tree growing on the island of Ceylon. Its leaves resemble those of the olive, and the fruit resembles the acorn or olive, having neither the smell or taste of the bark; both yield an oil.

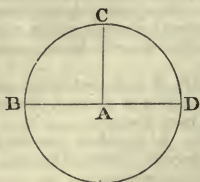
**CINQUEFOIL, or FIVE LEAVED GRASS.** A perennial. This plant is sometimes borne in coats of arms.

**CINQUE PORTS.** The five ancient ports on the east coast of England, opposite to France, namely, Dover, Hastings, Hithe, Romney, and Sandwich, to which are added as appendages Rye and Winchelsea. They have particular privileges, and are within the jurisdiction of the Constable of Dover Castle, who, by his office, is called Warden of the Cinque Ports.

**CIPHER.** An arithmetical character, by which some number is noted; particularly the character marked thus 0, which by itself signifies nothing, but set after other figures it increases their value by tens.

**CIRCLE.** A plain figure bounded by one line only, called the circumference, as B C D, to which all the lines drawn to it from a point in the middle, called the centre, as A B, A C, and A D are equal

to each other. The line which divides it into two equal parts is called the diameter, as B D. Every circle is supposed to be divided into 360 parts or degrees, wherefore angles are measured by the arc of a circle, thus B A C, which is a right angle, is equal to the arc B C, or 90 degrees.

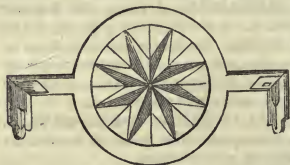


**CIRCUITS.** Certain divisions of the kingdom, through which the judges pass once a year, or oftener, to hold courts and administer justice.

**CIRCULATION** (in Anatomy). The natural motion of the blood in a living animal, whereby it proceeds from the heart to all parts of the body by the arteries, and returns to the heart by the veins.

**CIRCUMFERENCE.** The curve line which bounds a circle.

**CIRCUMFERENTOR.** An instrument used by surveyors for taking angles.



**CIRCUMFLEX.** An accent in Grammar, marked in Greek thus ( $\sim$ ), in Latin thus ( $^{\circ}$ ), to regulate the pronunciation.

**CIRCUMLOCUTION.** The describing a thing by many words, which might be explained by a few.

**CIRCUMSTANTIAL.** An epithet in law for evidence drawn indirectly from circumstances, as distinguished from positive proofs.

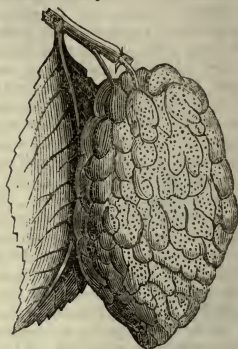
**CIRCUMVALLATION, or A LINE OF CIRCUMVALLATION.** A trench thrown up quite round a besieger's camp.

**CIRCUS.** A circular building at Rome, where games were exhibited; in Architecture, an assemblage of houses built so as to form a circle.

**CITRIC ACID.** The acid of limes.

**CITRON.** A species of the lemon, which

is much cultivated in Persia and the warm climates of Europe.



**CITY.** A corporate town having a bishop's see, and a cathedral town. This distinction is not always observed in common discourse, for we say the town of Ely, which is a bishop's see, and the city of Westminster, which at present has no see.

**CIVET CAT.** An animal like a wolf or a dog more than a cat: it is a native of the Indies and South America, and is remarkable for a bag under its tail that contains a fat substance, having the smell of musk, and used as a perfume.



**CIVIC CROWN.** A garland composed of oak leaves, which was given to a Roman soldier who had saved the life of a citizen.



**CIVILIAN.** A doctor or professor of the civil law.

**CIVIL LAW, otherwise called IMPERIAL LAW.** The law of the Roman empire;

digested from the laws of the republic and those of the emperors, and adopted by most of the nations of Europe. This law is used under certain restrictions in our ecclesiastical courts, as also in the university courts and court of the admiralty.

**CIVIL YEAR.** That form of the year which each nation has adopted for computing their time by. The civil year in England and other countries of Europe consists of 365 days for the common year, and 366 days for leap year, which happens every fourth year.

**CLARIFICATION.** The making any liquid, by a chymical process, clear from impurities.

**CLARINET.** A wind instrument of the reed kind.

**CLARO, or CHIARO OSCURO** (in Painting). The art of distributing to advantage the lights and shadows of a piece.

**CLASS.** A term applied to the general divisions of any subject, as in the Linnæan system, animals, plants, and minerals are divided into classes.

**CLASSICAL.** A term applied to authors of standard authority, particularly the writers among the Greeks and the Romans, whose works are comprehended under the name of the Classics.

**CLAVICLES.** The two channel bones which fasten the shoulder bones and the breast bone.

**CLAY.** A sort of fat clammy earth, stiff, viscid, and ductile to a great degree. The clays are opaque and noncrystallized bodies, and of dull fracture. They form with water a plastic paste, possessing considerable tenacity, which may be hardened with heat so as to strike fire with steel. The principal clays are porcelain clay, consisting of silica and alumina; marl clay, containing some carbonate of lime; pipe clay, requiring a high temperature for fusion; and potter's clay, which is used for coarse pottery.

**CLEMATIS.** A climbing shrub, otherwise called the Virgin's Bower, or Wild Climbers. The common sort, bearing a bluish flower, is a native of the south of Europe.

**CLERGY.** A general name for all persons in holy orders.

**CLERK** (in Law). A clergyman; in Commerce, one who keeps a merchant's accounts.

**CLIENT.** One who retains a lawyer to manage or plead his cause.

**CLIFF or CLEF** (in Music). A mark set at the beginning of a song, to show the key in which the piece is to be performed.

**CLIMATES.** Spaces upon the surface of the terrestrial globe contained between two parallels of latitudes, so far distant from each other that the longest day on one parallel differs half an hour from the longest day on the other.

**CLOAK.** An upper loose garment, worn over the clothes in cold or rainy weather.

**CLOCK.** A machine for measuring time, which tells the hour by a stroke upon a bell. In order that the clock may be an equable measure of the solar day, which is unequal, it is usual for clocks and watches to go a few minutes faster or slower than the sun.

**CLOISTERS.** Covered passages, such as were formerly attached to cloisters or other religious houses.

**CLOTH.** Any kind of stuff that is woven or manufactured in the loom, whether it be made of wool, hemp, or flax.

**CLOTHIER, or CLOTHWORKER.** A manufacturer of cloth.

**CLOUD.** A mass of vapour, more or less opaque, drawn or sent out of the earth into the atmosphere. When condensed into water, they fall in rain.

**CLOVE.** An Indian spice, the fruit of the clove tree, which grows in the Dutch spice islands.



**CLOVE GILLIFLOWER, or CLOVE PINK.** A finer kind of pink cultivated in gardens.

**CLOVER.** A kind of three leaved grass or trefoil; it is much used as a food for cattle.

**CLYSTER.** An instrument for the injection of any fluid into the body.

**CO.** An abbreviation of company.

**COACH.** A carriage of pleasure, state, or business, having seats to front each other.

**COADJUTOR.** One who assists another in any office.

**COAGULATION.** The rendering of a fluid body of a thicker consistence, by drawing out some part of it in vapours by means of fire, or by the addition of something by which it is decomposed.

**COAK.** See **COKE.**

**COAKING.** A sea term, for the operation of uniting two or more pieces of timber together in the centre, by means of tabular projections.

**COAL.** A solid inflammable substance, of a bituminous nature, dug out of the earth and used as fuel. Coal is distinguished into pit coal, in respect to the place where it was dug from, and seacoal, in respect to the manner in which it is conveyed, namely, by sea; in regard to its properties it is called black coal, which is composed of bitumen, charcoal, and an earthy matter; bovey coal, having likewise a resinous substance; slate coal, which contains a quantity of argillaceous earth; glance coal, which contains only charcoal and earth.

**COALMETER.** An officer in London, whose duty it is to inspect the measuring of coals that go from the wharf.

**COAL MINE.** An excavation regularly formed under the earth, from which coals are dug. There are many coal mines in the north of England.

**COAST.** The edge of the land next to the sea.

**COASTER.** A vessel employed in going from port to another along the coast.

**COAT.** A garment worn commonly uppermost; a thin covering laid or done over any thing, as a coat of paint, &c.; in Anatomy, the membranous cover of any part of the body, as the coats of the eye, the stomach, &c.

**COAT ARMOUR, or COATS OF ARMS.** Armorial ensigns or bearings, which were originally painted on the coats of arms.

**COAT OF MAIL.** A piece of armour made in the form of a shirt, and wrought over with many iron rings.

**COBALT.** A mineral of a gray colour, consisting of silver and arsenic, which latter is obtained from it in great quantities. It has never been found pure in nature, but mostly in the state of an oxide, or alloyed with other metals.

**COCOA.** See **COCOA.**

**COCCULUS INDICUS.** An Indian tree producing a poisonous berry, which is one of the deleterious ingredients unlawfully used in the making of beer.

**COCHINEAL.** An insect which infests different plants, but particularly the opuntia. This insect, when dried, is used in dyeing a rich scarlet. There is a red berry which

grows on an American tree, called the *Coccus Americanus* or *Ficus Indianus*, which also yields a beautiful scarlet dye.

**COCHLEA** (in Anatomy). The internal cavity of the ear, so called from its resemblance to the spiral shape of the cochlea, or snail's shell.

**COCHLEA** (in Mechanics). One of the five mechanical powers, otherwise called a screw.

**COCK.** The male of most birds, particularly of the well known domestic fowl in a farmyard.

**COCK.** The name of a part of several instruments, as that part of the lock of a musket which sustains the jaws, or pieces of iron that receive the flint; also the wrought piece that covers the balance in a clock or watch; and the spout which is put into beer or water barrels, &c.

**COCKATOO.** A species of parrot, having a short tail.

**COCKBOAT.** A small boat belonging to a ship, that is used in rivers.

**COCKCHAFFER, or TREE BEETLE.** A mischievous insect, which devours the leaves of trees, &c. The grub, which is soft and gray, with testaceous head and legs, remains in the earth three or more years before it is transformed into the perfect insect.



**COCKET.** The office at the Customhouse where the goods to be exported are entered; also the Customhouse seal, or the parchment sealed and delivered by officers of the customs to merchants, as a warrant that their goods are customed.

**COCK FIGHTING.** A cruel sport, which consists in pitting two cocks against each other, of the game breed, and armed with spurs that inflict deadly wounds.

**COCKING** (in Carpentry). A method of securing beams to wallplates.

**COCKLE.** A sort of shell fish.

**COCKNEY.** A nick name given to one who is born and bred in the city of London, within the sound of Bow bells.

**COCKPIT.** A place where cocks fight; also an apartment in the treasury, where the king's speech is read before the meeting of parliament.

**COCKPIT.** The place in a ship of war where the wounded are dressed.

**COCK'S COMB.** A fine plant cultivated in gardens and hot houses. Some sorts are annuals and some perennials.

**COCKSWAIN,** vulgarly called **Cockson.** An officer who has charge of the cockboat.

**COCOA NUT TREE.** A tree common in Asia and South America, which yields the fruit called the cocoa nut. This fruit is a berried drupe, the shell of which is of a bony substance, containing a kernel and a sweet refreshing liquor, called by the natives *toddy*. The husk of the shell is used for making chocolate, and from the kernel is extracted an oil.



**COCTION.** The reducing the aliments to chyle; in Surgery, the reducing morbid matter to a healthy state.

**COD.** A large fish which inhabits the northern seas, and is much esteemed for its flesh.

**COD FISHER.** A vessel employed in the cod fishery; also the person employed.

**CODEX.** A name particularly applied to the volume containing the ancient Roman or Imperial law.

**CODICIL.** A supplement to a will.

**CODLIN.** An apple, so called because it is fittest to be coddled or boiled in milk.

**COFFEE.** The fruit of the coffee tree, and the drink which is made from it.

**COFFEE ROASTER.** An iron utensil in which the coffee is roasted gradually over a fire until it is in a fit state for grinding.

**COFFEETREE.** A tree of the jasmimine

kind, which bears a berry known by the same name. The berries grow in clusters like cherries. The tree which is a native of Arabia bears the best coffee.



**COFFER.** A chest or trunk; in Mineralogy, a trough in which tin ore is broken to pieces; in Fortification, a trench cut in the bottom of a dry ditch.

**COFFERDAM.** A case of piling fixed in the bed of a river for the purpose of building a pier dry.

**COFFIN.** A case or box for the reception of a dead body that is to be buried; in the veterinary art, the whole hoof of a horse's foot above the coronet.

**COG.** The tooth of a wheel.

**COGNIZANCE (in Law).** The hearing of a thing judicially; also the acknowledgment of a fine.

**COGNIZANCE OF PLEAS.** A privilege granted by the king to a city or town to hold pleas of all contracts, &c. within the liberty of the franchise; in Heraldry, the same as the crest.

**COHESION, or ATTRACTION OF COHESION.** That power by which the particles of bodies are held together: the absolute cohesion of bodies is measured by the force necessary to pull them asunder.

**COHORT.** A military body among the Romans, consisting of the tenth of a legion, or about 600 men.

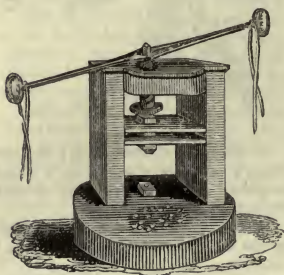
**COIF.** A sort of hood or cap for the head, formerly worn by serjeants at law.

**COIL.** The ring or circle formed by a cable in coiling or winding it.

**COIN.** A piece of metal stamped with certain marks, and made current at a certain value.

**COINING.** The process of stamping or

making coins, which has undergone an entire change within the last few years, in consequence of the invention of machinery first made by Messrs. Bolton and Watt. The coining press is now worked by means of complicated machinery, placed in an apartment over the coining room, and connected with the steam engine. To this is attached a contrivance by which it feeds itself with the blanks to be impressed, and removes them the instant they have received the impression. There are eight of these presses fixed in the coining room in the Mint, which, by the aid of the machinery, may be worked by four boys, so as to strike off 20,000 pieces of money in an hour.



**COINS** (in Architecture). The angles formed by the two sides of any building.

**COINS** (in Gunnery). Large wedges of wood for altering the position of a gun.

**COKE**, or **COAK**. A hard cinerous kind of charcoal, formed by the burning of black pit coal.

**COLD**. Not only the sensation of cold, but the state of the body which causes the sensation. By some, cold is supposed to be a distinct substance, and that when we call a body cold, we may be understood to signify that it absorbs caloric or heat from other bodies.

**COLEOPTERA**. The first order of insects in the Linnaean system, comprehending all those with four wings, as the beetle, glowworm, ladybird, leather eater, &c.

**COLEWORT**, or **KALE**. A variety of the cabbage, which thrives in the winter, and improves from the action of the frost upon it.

**COLIC**. A violent pain in the abdomen, so called from the colon, the intestine formerly supposed to be affected.

**COLLAR** (in Heraldry). An ornament for the neck, worn by knights, such as the

collar of the order of the Garter in the subjoined figure.



**COLLATERAL** (in Law). A term for what is sideways, or not direct, as collateral kinsmen, those who are not descended from one common stock, as the issue of two sons, who are collateral kinsmen to one another.

**COLLATING** (among Printers). The examining the whole number of sheets belonging to a book, in order to see if they are all gathered properly.

**COLLATION OF A BENEFICE**. The bestowing of a benefice by the bishop, when he has the right of patronage; it differs from institution in this, that institution into a benefice is performed by the bishop at the presentation of another who is patron.

**COLLATOR**. One who compares copies of manuscripts.

**COLLEAGUE**. An associate in the same office or magistracy.

**COLLECT**. A short prayer, particularly such prayers as are appointed with the epistles and gospels in the public service of the church of England.

**COLLECTION**. The act of collecting or bringing things together from different quarters, as a collection of money for charitable purposes, either at the church door or from house to house; also that which is collected or brought together into an assemblage, as a collection of coins, paintings, &c.

**COLLEGE**. A corporation or society of persons, having certain privileges, and founded by the king's license, as the College of Physicians, or the Colleges in the Universities.

**COLLEGIATE**. An epithet for a church that is endowed, for a society, &c.

**COLLIER**. A vessel employed in carrying coals from one port to another; also one who works in the coal mines.

**COLLUSION** (in Law). A compact between two persons to bring an action one against the other for some fraudulent or unlawful purpose.

**COLOCYNTHIS**. See **COLOQUINTIDA**.

**COLOGNE EARTH**. A substance used

by painters, much approaching to amber in its structure, and of a deep brown.

**COLON** (in Anatomy). The second of the three large intestines; in Grammar, a point marked thus (:) to divide a sentence.

**COLONEL**. The first in command of a regiment.

**COLONNADE**. A range of pillars running quite round a building.

**COLONY**. A company of people removed from one country to another, where they form a settlement under the sanction of the government; also the place where such a settlement is formed, as the colonies belonging to Great Britain in the East and West Indies and in North America, &c.

**COLOQUINTIDA**. The fruit of the wild gourd, brought from the Levant. The pulp, which is light, spongy, and white, is remarkable for its intense bitterness, whence it has the name of the bitter.

**COLOSSUS**. A statue of a prodigious size, such as that of the sun anciently in the harbour of the island of Rhodes. It was placed at the entrance of the harbour, with the right foot standing on one side the land and the left on the other.

**COLOURS**. Were anciently supposed to be an inherent property of the coloured substance, but they are now considered to be the property of light, the elementary rays of which being propagated to the sensorium, affect the mind with the different sensations of colour, according to their degrees of refrangibility.

**COLOURS** (in Painting). The various tints which are produced by the different mixture and application of certain drugs.

**COLOURS** (in Heraldry). The tinctures with which the field or any part of the escutcheon is distinguished, namely, *or*, yellow; *argent*, white; *gules*, red; *azure*, blue; *sable*, black; and *vert*, green.

**COLOURS**. A military term, for the banners, flags, and ensigns used in the army.

**COLUMN**. A cylindrical pillar, which serves either for the support or ornament of a building. It consists of a capital, which is the top or head; the shaft, which is the cylindrical part; and the base, or that on which it rests. Columns are distinguished as to their form into the Doric, Ionic, Corinthian, Composite, and Tuscan.

**COLUMN** (in the Military Art). A long deep file of troops or baggage.

**COLUMNIFERÆ** (in Botany). One of Linnæus's natural orders, including the mallow-like plants.

**COLURES** (in Astronomy). Two great imaginary circles, which intersect one another at right angles.

**COMB** (in Commerce). An instrument to clean, untangle, and dress flax, wool, hair, &c.; also a sea term, for a little piece of timber set under the lower part of the beakhead.

**COMBINATION** (in Chymistry). The intimate union of the particles of different substances, so as to form a new compound; in Mathematics, the alterations or variations in all possible ways of quantities, letters, sounds, and the like; thus, two square pieces, each divided diagonally into two colours, may be arranged and combined sixty-four ways.

**COMBUSTIBLES** (in Chymistry). All substances which have the property of uniting with the supporters of combustion, such as sulphur, phosphorus, carbon, &c.

**COMBUSTIBLES** (in the Military Art). Combustible materials used in offensive or defensive operations.

**COMBUSTION**. The decomposition of bodies accompanied with light and heat.

**COMEDY**. A dramatic representation of the light, humorous, and pleasant kind, particularly intended to ridicule the follies of men.

**COMET**. An opaque, spherical, and solid body, like a planet, performing revolutions about the sun in elliptical orbits, which have the sun in one of the foci. It is divided into the nucleus or dense part; the head; the coma, a faint light surrounding the head; and the tail, which is the long train of light by which these bodies are distinguished. The comet is sometimes borne in coats of arms, when it is said to be streaming.

**COMMA** (in Grammar). A point marked thus (,) and put between words and sentences.

**COMMANDER**. A military term, for one who has the command of a body of men. The Commander in Chief in the British army is he who has the supreme command over all his majesty's land forces in Great Britain. In the naval service the Commander in Chief is the chief admiral in any port or station.

**COMMANDER OF A SHIP**, otherwise called the **MASTER**. Is an officer next in rank to a post captain.

**COMMENTARY**. An explanation of the obscure passages in an author.

**COMMERCE**. A trafficking or dealing with foreign countries, by means of exporting and importing different commodities.

**COMMERCE, HISTORY OF**. The intercourse between different nations for purposes of commerce doubtless took place soon after the dispersion of mankind, for

we find it recorded in holy writ that the Ishmaelites, who were settled in higher parts of Arabia, carried on a trade with Egypt in spices, balm, and myrrh, and that in one of their journeys Joseph was sold to them by his brethren. As the commodities in which they dealt, as gums and sweet scented woods, which were to be procured only from the East Indies, there is no doubt that these people and the Egyptians were among the first who made distant voyages and travels in the way of trade. They were succeeded by the Phœnicians, an adventurous people who were the first that raised any naval power that makes any figure in history. By their enterprise and industry they became a wealthy and luxurious people, and their two cities, Tyre and Sidon, became the emporiums of the universe. In the time of David and Solomon we find the Jewish nation availed themselves of the assistance of this people in equipping their fleets. After the destruction of old Tyre, a new city arose out of the ruins, which rivalled the other in wealth, industry, and commerce; and while in her glory she planted the colony of Carthage, on the coast of Africa, which from the convenience of her situation and the industry of her inhabitants, rose to an extraordinary pitch of prosperity. The Carthaginians made themselves masters of Spain, and of the islands of Sicily and Sardinia, discovered the greatest part of the coast of Africa and the Canary Islands, traded with Britain by the route of the Scilly Islands, and are supposed to have made their way even to America. In the mean time Egypt, under the Ptolemies, also attained a high degree of grandeur and affluence. Ptolemy Philadelphus in particular, by encouraging trade, made his people rich and himself powerful. Such was the greatness of Alexandria alone, that the produce of the customs fell little short of two millions annually. Under the Romans commerce was encouraged in every part of the world where they had any influence, as may be learned not only from historians but also from various medals and inscriptions, showing that every considerable city had several colleges or trading companies.

On the decline of the empire, commerce was, owing to the unsettled state of all Europe, and the constant irruption of the barbarous tribes, almost at a stand. About this period it happened that some straggling people, either forced by necessity or led by inclination, took their abode in a few scattered islands that lay near the coast of

Italy, and as these islands were separated from each other by narrow channels, full of shallows, that prevented strangers from navigating, the inhabitants found themselves protected from all hostile inroads, and in the midst of this security they followed their pursuits with so much industry and success, that these once insignificant islands rose in the space of two centuries, that is from the sixth to the eighth century, into a great city and a powerful republic. Such was the humble origin of the once potent state of Venice, which by degrees acquired an extent of commerce and a naval power that had not for a length of time any rival. She drew to herself the profits of the Indian trade, and by availing herself of every favourable conjuncture, she not only monopolized the trade of all Italy, but of all the countries in subjection to the Mahometans; but as other countries in Europe began to enlarge their commerce, Venice lost the monopoly, and this combining with her own immoderate ambition, caused the decay of her trade and the decline of her power. From the league of Cambray, which was formed against her by the powers of Europe, Venice may be said to have ceased to hold the first rank as a commercial state.

The origin of the proud city of Genoa as it was called, was very similar to that of Venice. Like Venice, she rose from an assemblage of fugitives and adventurers on the rocky, barren, and inhospitable shores of Liguria; and like her she gained, by the industry and perseverance of her inhabitants, a prodigious extent of commerce. Her merchants traded with all countries, and throve by becoming the carriers from one country to another. Her fleets were formidable and her conquests numerous, but after perpetual wars with her rival, Venice, she was at length compelled to yield the dominion of the sea, and finally lost all her consequence.

In the mean time, the trade of Germany was rising in consequence. Some commercial cities, confederating together, formed a commercial league, known by the name of the Hanseatic League, the object of which was, by combining their resources, to form a fleet for the protection of their trade with other countries. These cities not only associated among themselves, but also formed alliances with other states, as England and France, and had a code of laws which were respected and observed, under the name of the *Lex Mercatoria*, for a long time throughout all Europe. In this manner the Hanse Towns acquired a considerable share of influence, and were



respected by all the sovereigns in Europe. The kings of France and England granted them considerable privileges, exempting their vessels in case of shipwreck from all demands whatsoever, either on the part of the admiralty or of private persons, and respecting their flag in times of war. This good understanding between them and the states of Europe was considerably increased by the freedom with which they lent their money to different princes in time of need, particularly during the crusades, when they gave powerful succours both in ships as well as in money. This confederacy did not, however, always retain its moderation; for, as they increased in wealth and power, so they grew ambitious and domineering, and more than once they ventured to set themselves up against the states of Germany; in consequence of this, the German princes gradually withdrew the cities that were subject to themselves from the confederacy, and thus effected its dissolution. The only cities which now retain the name of Hanse Towns, and some other vestiges of the Hanseatic league, are Hamburg, Bremen, and Lubeck.

The next important change in the state of European commerce was brought about in Portugal and Spain, by means of the discoveries which took place in the fifteenth and subsequent centuries. To the spirit and enterprise of Emanuel, King of Portugal, we are indebted for the discovery of the Cape of Good Hope, which was effected by Vasco de Gama, in 1498, and by opening a new way to the Indies afforded to the Portuguese an opportunity of making conquests and settlements which secured to them the commerce of India, which the Venetians had hitherto enjoyed through the medium of the Arabians. The discovery of America by Columbus, which followed quickly after, paved the way for a still greater extension of mercantile enterprise, which, though at first enjoyed only by the Portuguese and Spaniards, was at length shared by other states. The Dutch, an enterprising people, were the first who wrested from the Spaniards a portion of their conquered possessions, and made so good a use of the advantages they gained as to become one of the greatest trading people in Europe. By the help of increasing wealth, they converted their little fishing villages into large and populous cities and towns. Although their country was far from being fertile, and their native commodities few or none, yet by commerce they succeeded in filling their storehouses with all the productions and manufactures of the world.

Having given this general sketch of commerce from its earliest beginnings, we must not close this account without making mention of the commerce of our own country, which, though among the last to avail itself of this source of wealth and aggrandizement, has by slow and gradual steps raised its commerce to a pitch which has never been, and probably never can be, surpassed by any nation. It appears that a commercial intercourse with Britain was begun at a very early period, and that the Phœnicians and Carthaginians traded with this island for the tin of Cornwall, but it is probable that the native Britons did not for many ages take any active part in this traffic, or make any attempt to share in the advantages of commerce beyond the giving their commodities to such as wished to trade with them. They had nothing better than leather or wicker boats, which were too slight to enable them to leave their shores, even so as to cross the Channel.

The Saxons made considerable endeavours to extend their intercourse with foreign nations, particularly in the time of Alfred the Great, who sent people as far as the East for commercial purposes, as also for the sake of procuring information. After the Conquest, our princes were for a long time too much engaged in political and military concerns to turn their attention to this subject, and little was done beyond that of giving encouragement to foreigners to settle in England, or to have dealings with us. One provision of Magna Charta held forth indemnity and protection to foreign merchants in the passage to and from this country, as also during their stay here.

Safe conducts were afterwards given to the English going abroad, which afforded them the opportunity of carrying on a traffic for our commodities with foreign nations. In consequence we find that staples or markets were established both here and on the continent, where our wool, lead, and other productions were bought and sold; and as encouragement was given to the Hanseatic League, a trading company was in consequence formed in the reign of Edward I. first called the Company of Merchants trading to Calais, &c., afterwards the Merchant Adventurers of England, or the Company of Merchant Adventurers trading to Hamburg. This company, which is the first of the kind in England, was incorporated by Edward I. in 1296. In the reign of Edward III. commerce and manufactures both met with considerable encouragement, but the intercourse of foreigners with this country was now more

encouraged than that of Englishmen with foreign nations. In consequence the staple or mart was confined to certain towns, where, by the statute of the staple as it was called, it was ordained that foreigners might resort for the purchase of our commodities, but Englishmen were prohibited under great penalties from exporting any themselves. A number of other laws were made for the establishment and government of the staple, which formed that branch of the English law since known by the name of the Law-Merchant. For the encouragement of manufactures, protection was given to clothmakers to come from foreign parts and reside here. In the reign of Edward VI. the principle of confining our commerce within the limit of the country was, in consequence of the recent discoveries, somewhat altered. An intercourse with Russia was commenced by means of some English adventurers, who, going on a voyage of discovery in order to find out a north-east passage to China, came to the port of Archangel, where they were well received by the Muscovites, whence they afterwards formed a company and received a charter to secure to themselves the trade to Russia. This company was incorporated in the reign of Philip and Mary, under the name of the Russia Company. The reign of Elizabeth was still more favourable to commercial adventures of every kind. Drake, Sir Walter Raleigh, and Henry de Clifford, Earl of Cumberland, distinguished themselves by their voyages and discoveries; besides which several fresh companies were formed under the auspices of this queen. The Eastland Company was incorporated under the title of the Company of Merchants to the East; the Turkey or Levant Company was also incorporated in 1581; but the most important of all the companies which had hitherto been formed was the East India Company, which was first established by charter in 1600. In the reign of William III. a new East India Company was formed, which was for a time a rival to the old one, but in 1708 the two companies were consolidated into one; since which they have experienced considerable vicissitudes, and in consequence of the numerous wars in which they have been engaged their affairs were at one time so reduced that they were obliged to apply to the government for assistance, in consequence of which they have lost much of their independence, and are necessarily subject to more control than they were formerly. English commerce continued to increase from the reign of Elizabeth until the last war, when Eng-

land had at one time almost the whole trade of the universe in its hands, with the exception of what fell to the share of the Americans. The imports of England have sometimes exceeded thirty millions, and the exports fifty millions.

**COMMISSARY** (in Military Affairs). An officer appointed to inspect musters, &c.; in Ecclesiastical Affairs, a deputy, or one who supplies the place of the bishop.

**COMMISSION** (in Law). The warrant, or letters patent by which one is authorized to exercise jurisdiction; in Military Affairs, the warrant or authority by which one holds any post in the army; in Commerce, the order by which any one trafficks or negotiates for another; also the percentage given to factors and agents for transacting the business of others.

**COMMITTEE** (in Parliament). A certain number of members appointed by the house for the examination of any matter; in general, he or they to whom any matter is referred by some court for farther examination.

**COMMODITY**. Any merchandise or ware which a person deals or trades in.

**COMMODORE**. An officer in the British navy, invested with the command of a detachment of ships of war destined for a particular purpose. The Commodore of a convoy is the leading ship in a fleet of merchantmen.

**COMMON** (in Law). A right or privilege claimed by more persons in another man's lands, waters, woods, &c.

**COMMON COUNCIL**. A court in the city of London, composed of the Lord Mayor, Aldermen, and a certain number of citizens called common councilmen.

**COMMONER**. One who is not noble; also a member of the house of commons.

**COMMON HALL**. A court in the city of London, at which all the citizens, or such as are free of the city, have a right to attend.

**COMMON LAW**. The law of this realm grounded on general customs or immemorial usage.

**COMMON PLACE BOOK**. A sort of register or orderly collection of things worthy to be noted in a book.

**COMMON PLEAS**. One of the king's courts at Westminster Hall, where pleas or causes are heard between subject and subject.

**COMMON PRAYER**. The liturgy, or public form of prayer prescribed by the church of England to be used in all churches and chapels at stated periods.

**COMMONS**. In a general sense, the

whole people, as distinguished from the nobility; in a particular sense, the knights and burgesses who represent the Commons in parliament, whence the house in which they sit is called the House of Commons.

**COMMONS** (in Law). See **DOCTORS COMMONS**.

**COMMONWEALTH**. That form of government in which the administration of public affairs is common or open to all with few or no exceptions. It is distinguished from monarchy or aristocracy.

**COMMUNION**. A name given to the sacrament of the Lord's supper.

**COMMUNION SERVICE**. The office for the administration of the holy sacrament in the church of England.

**COMMUNION TABLE**. The table erected at the east end of the church, round which the communicants kneel to partake of the Lord's supper.

**COMMUTATION** (in Law). The substitution of one punishment for another.

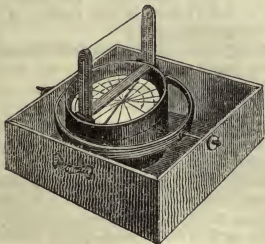
**COMPANY** (in Law). A society of traders forming a corporate body, as the chartered companies in London; in Commerce, a trading association, in which several merchants form a joint stock, with which they trade for the common interest of the stockholders, such as the East India and other companies. (See **COMMERCE**.)

**COMPANY** (in Sea Affairs). The whole crew of a ship, including the officers.

**COMPARATIVE ANATOMY**. The science which teaches the structure of the body in animals.

**COMPARATIVE DEGREE** (in Grammar). The second degree, as, better.

**COMPASS**, or the **MARINER'S COMPASS**. An instrument used by mariners to point out the course at sea. It consists of a card or fly, on which are drawn the several points of the compass; the needle, or magnetic needle, a small bar of steel, which has the property of turning one of its ends to the north pole; and the box, which contains the card and needle.



**COMPASSES**, or **PAIR OF COMPASSES**. A mathematical instrument, consisting of two sharp pointed branches or legs of iron, brass, or steel.

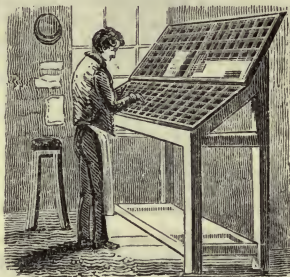


**COMPLEMENT** (in Astronomy). The distance of a star from the zenith.

**COMPLEMENT** (in Military Affairs). The full establishment of a regiment.

**COMPLEMENT OF AN ARC** (in Geometry). What an arc wants of  $90^\circ$  or the quadrant of a circle; thus the complement of  $50^\circ$  is  $40^\circ$ , and the complement of  $40^\circ$  is  $50^\circ$ .

**COMPOSING**. That branch of the art of printing which consists in arranging the types or letters in such an order as to fit them for the press. This the compositor performs by gathering a letter at a time into his composing stick, which when full he empties into a frame called a galley. Of the several lines arranged in order in the galley he makes a page, and of several pages he makes a form.



**COMPOSINGSTICK**. A compositor's tool made of iron plate, and consisting of the head, the bottom, the back, the two slides, and the two screws. While the compositor is in the act of composing he holds the composing-stick in his left hand, placing the second joint of his thumb over the slides of the stick, so as to keep the letter tight and square together as he places them in the stick. When the composing-

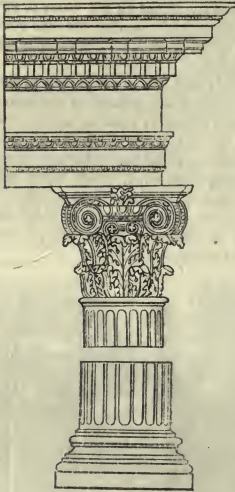
stick is full, he proceeds to empty it into the galley.



**COMPOSITÆ.** One of Linnæus' natural orders, comprehending the plants with compound flowers, as the dandelion, sunflower, &c.

**COMPOSITE NUMBERS.** Such numbers as some other numbers besides units will measure, as 12, which is measured by 2, 3, 4, and 6.

**COMPOSITE ORDER** (in Architecture). One of the five orders of architecture, so called because it is composed of the Ionic and Corinthian orders.



**COMPOSITION** (in Music). A piece of music composed according to the rules of art.

**COMPOSITION** (in Painting). The putting together the several parts of a picture, so as to set off the whole to the best advantage.

**COMPOSITION** (in Commerce). An agreement entered into between an insolvent debtor and his creditor, by which the latter accepts a part of the debt in compensation for the whole.

**COMPOSITOR** (among Printers). He who composes the matter for the press.

**COMPOST**, pronounced **COMPO** (in Husbandry). Several sorts of soils or earths and other matters mixed together, in order to make a particularly fine kind of mould.

**COMPOUND.** A term in botany applied to a flower consisting of several distinct lesser flowers.

**COMPOUND INTEREST.** Is that interest which arises from principal and interest put together.

**COMPOUNDING FELONY, or THEFT BOTE** (in Law). Where the party robbed takes his goods again of the thief upon an agreement not to prosecute.

**COMPOUNDING WITH ONE'S CREDITORS.** Where the debtor, not being able to pay all his debts, agrees with his creditors to pay a part.

**CONCAVE LENS.** An epithet for glasses ground hollow on the inside, so as to reflect on the hollow side.

**CONCENTRATION** (in Chymistry). The act of increasing the strength of fluids by volatilizing part of their water.

**CONCENTRIC.** An epithet for figures having one common centre.

**CONCERT.** A musical performance in which any number of practical musicians unite in the exercise of their talent.

**CONCERTO.** A piece of music consisting of several parts that are all to be performed together.

**CONCHOLOGY.** That branch of natural history which treats of testaceous animals, or such animals as have a permanently testaceous covering, which are comprehended under the testacea in the Linnæan system.

**CONCLAVE.** The room in the Vatican where the cardinals assemble to choose a pope; also the assembly itself.

**CONCORD** (in Grammar). That part of syntax which treats of the agreement of words according to their several inflections.

**CONCORD** (in Law). An agreement between parties who intend to levy a fine.

**CONCORD** (in Music). The union of two or more sounds in such manner as to render them agreeable.

**CONCORDANCE.** A sort of dictionary of the Bible, in which every word is given with references to the book, chapter, and verse in which it is to be found.

**CONCORDAT.** A treaty or public act of agreement between the pope and any prince.

**CONCRETION.** The growing together of several substances or parts of substances into one body.

**CONCRETION** (in Surgery). Morbid

concretions are substances formed in the animal body, as the calculus or stone, &c.

**CONDENSER.** A pneumatic engine or syringe, whereby an uncommon quantity of air may be crowded into a given space.

**CONDITION (in Common Law).** A restraint annexed to a thing, so that by the nonperformance the party to it shall sustain loss, and by the performance receive advantage.

**CONDITION (in Civil Law).** A clause of obligation stipulated, as an article of a treaty or contract.

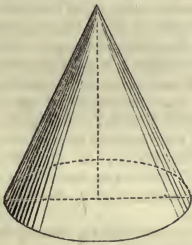
**CONDUCTOR.** A name given to those substances which are capable of receiving and transmitting electricity.

**CONDUCTOR OF LIGHTNING.** A pointed metallic rod, contrived by Dr. Franklin, to be fixed to the upper parts of buildings, to secure them from the effects of lightning.

**CONDUIT.** A pipe for the conveyance of water to any particular part.

**CONDOR.** A large kind of American vulture, measuring with the wings extended, from tip to tip, twelve or sixteen feet. It preys on birds, lambs, kids, or even children.

**CONE (in Geometry).** A solid figure, having a circle for its base, and its top terminating in a point or vertex. It is produced by the revolution of a right angled triangle about its perpendicular leg, called the axis of the cone.

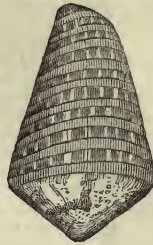


**CONE (in Botany).** The fruit of several evergreen trees, as of the fir, cedar, cypress, so called from its conical shape. It is com-



posed of woody scales, that are usually open, each of which has a seed at the end.

**CONE (in Conchology).** A beautiful sort of shell, inhabited by the limax. Shells of this sort mostly bear the highest price of any, one species being valued as high as a hundred pounds.



**CONFESSION (in Theology).** A public declaration of one's faith, or the faith of a public body; also a part of the Liturgy, in which an acknowledgment of guilt is made by the whole congregation. Auricular confession, a private confession or acknowledgment of one's sins made by each individual in the Romish church to his priest or father confessor. It is so called because it is made by whispering in his ear.

**CONFIRMATION.** A ceremony in the Christian church, by which baptized persons are confirmed in their baptismal vows by the laying on of hands. What is prepared for in catechising is performed by confirmation. This ceremony is performed by the bishop.

**CONFLUENCE.** The meeting of two rivers, or the place where they meet.

**CONGELATION.** A condensation of any fluid by means of cold.

**CONGER, or CONGER EEL.** An eel of an extraordinary size, and extremely voracious, which preys on carcasses, and other fish.

**CONGREGATION (in Ecclesiastical Affairs).** An assembly of persons who meet together for purposes of divine worship; (in Physics) a term for the least degree of mixture, in which the parts of the mixed body do not touch each other in more than one point.

**CONGRESS.** An assembly of envoys, commissioners, deputies, &c. from different courts, who meet to agree on matters of general interest; also an assembly of the deputies from the different states in the republics of America.

**CONGREVE ROCKET.** An invention so called from the inventor, Sir William Congreve, by which balls and other combustibles are discharged to an immense distance.



**CONIC SECTIONS.** Curve lines and plane figures produced by the intersection of a plane with a cone. These sections are derived from the different directions in which the solid cone is cut by a plane passing through it; they are the triangle, circle, ellipse, parabola, and hyperbola.

The doctrine of Conic Sections, which is one of the abstrusest branches of geometry, was particularly cultivated by the ancients. Aristæus is said to have composed five books relating to this subject, but they have not been handed down to us. The most ancient treatise extant is that of Apollonius, in eight books, the first four of which is said to have been written by Euclid, and afterwards perfected by Apollonius, with the addition of four other books. Among the moderns the principal treatises are those of Mydorgius, De la Hire, De l'Hopital, Emerson, Hutton, Vince, and Robertson.

**CONIFERÆ.** One of Linnæus's natural orders, containing the cone bearing trees.

**CONJUGAL RIGHTS, RESTITUTION OF.** A species of matrimonial suit, which may be brought either by the husband or the wife, against the party who is guilty of the injury of subtraction or living in a state of separation.

**CONJUGATE.** An epithet to denote the junction of two lines, as a conjugate axis, that which crosses another axis.

**CONJUGATING** (in Grammar). The act of going through the inflections of a

verb according to its several moods, tenses, and persons.

**CONJUGATION** (in Grammar). The moods, tenses, and persons of a verb coupled together in regular order.

**CONJUNCTION.** A term in Astronomy for the meeting of two planets in the same degree of the zodiac, which is marked thus ( $\sigma$ ).

**CONJUNCTION** (in Grammar). A part of speech which joins words and sentences.

**CONNOISSEUR.** A person well versed in any art or science.

**CONOID** (in Geometry). A figure resembling a cone.

**CONQUEROR.** In a general sense, one who has gained a battle or any thing by means of fighting; particularly applied to William I. who succeeded to the throne of England after having gained the battle of Hastings.

**CONSANGUINITY.** Kindred by blood and birth between persons descended from the same common stock.

**CONSCRIPT FATHERS.** An appellation for the Roman senators, so called because they were enrolled from the equestrian order into the list of senators.

**CONSCRIPTS.** Recruits in the French army.

**CONSEQUENCE.** That which follows from any principle by way of inference; among logicians, the last part or proposition of an argument, in distinction from the antecedents, being something gathered from a preceding argument.

**CONSEQUENT** (in Geometry). The latter of two terms of proportion, in distinction from the former, or antecedent.

**CONSIGNMENT.** The sending or delivering over of goods to another person.

**CONSISTORY, or CONSISTORY COURT.** The session or assembly of ecclesiastical persons held by the bishop or his chancellor.

**CONSONANCE** (in Music). An agreement of two sounds.

**CONSONANT** (in Grammar). A letter which cannot be sounded by itself without the help of a vowel; in Music, an epithet for that interval which produces consonant concords.

**CONSTABLE.** A civil officer, anciently of great dignity, as the lord high constable of England, and also the constables or keepers of castles, &c.; now an inferior officer of justice, as the constable of a hundred, petty constable, &c.

**CONSTELLATION.** An assemblage of fixed stars, imagined to represent the form

of some creature or other object, as a bear, a ship, and the like; whence they have derived those appellations which are convenient in describing the stars. The division of the heavens into constellations is very ancient, probably coeval with astronomy itself. Frequent mention is made of them by name in the sacred writings, as in the book of Job and in the prophecy of Amos. Some of the constellations are also mentioned by Homer and Hesiod, who flourished above 900 years before Christ; and Aratus, who lived about 277 years before Christ, professedly treats of all such as were marked out by the ancients, and were afterwards admitted into the *Almagest* of Ptolemy. These were forty-eight in number, called the *Old Constellations*, to which have since been added others, called *New Constellations*.

**CONSTITUENT** (in Law). One who by his vote constitutes or elects a member of parliament.

**CONSTITUENTS** (in Physics). The elementary parts of any substance.

**CONSTITUTION** (in Law). Properly, any form of government regularly constituted; in a particular sense, the mixed and popular form of government in England, consisting of king, lords, and commons.

**CONSTITUTION** (in Civil Law). A law made by some king or emperor; and in the canon law, the same as an ecclesiastical law or canon.

**CONSTITUTION** (in Medicine). The temperament of the whole body, arising from the quality and proportion of the parts.

**CONSUL**. A chief magistrate among the Romans, of which there were two that were elected every year.

**CONSUMPTION**. The wasting and decay of the body by disease.

**CONTEMPT** (in Law). A disobedience to the rules, orders, or process of a court.

**CONTINENT**. The main land, as distinguished from the sea.

**CONTORTÆ**. One of Linnæus' natural orders, including plants with a single twisted petal.

**CONTOUR**. The outline of a figure.

**CONTRABAND GOODS**. Goods prohibited by law to be exported or imported.

**CONTRACT**. A covenant or agreement between two or more persons with a lawful consideration or cause.

**CONTRACTION**. In general, the diminishing the extent or dimensions of a body.

**CONTRACTION** (in Surgery). The shrinking up of the muscles or arteries.

**CONTRACTION** (in Grammar). The reducing two syllables into one.

**CONTRACTION** (in Arithmetic). The shortening operations.

**CONTRAST** (in Painting). The due placing the different parts and objects of a figure, that they may be suitably opposed to each other.

**CONTRAVALLATION, LINE OF**. A line or trench cut round a place by the besiegers, to defend themselves against the sallies of the garrison.

**CONTRAVENTION** (in Law). The infringement of a contract.

**CONTROLLER** (in Law). An overseer or officer appointed to control or oversee the accounts of other officers.

**CONTUMACY** (in Law). A refusal to appear in court when legally summoned.

**CONVALESCENCE**. That period betwixt the departure of a disease and the recovery of one's health.

**CONVENTICLE**. A term applied first to the little private meetings of the followers of John Wickliffe, and afterwards to the religious meetings of the Nonconformists.

**CONVENTION** (in Law). Any assembly of the states of the realm; in military affairs, an agreement entered into between two bodies of troops opposed to each other.

**CONVERGING LINES**. Lines which continually approximate.

**CONVERGING RAYS** (in Optics). Those rays that issue from divers points of an object, and incline towards one another until they meet.

**CONVEX**. Curved, or protuberant outwards; as a convex lens, mirror, &c.

**CONVEYANCE** (in Law). A deed or instrument by which lands, &c. are conveyed or made over to another.

**CONVEYANCER**. One who follows the business of conveyancing, or drawing up conveyances.

**CONVOCAATION**. An assembly of the clergy, consisting of an upper and lower house, which meet when the parliament meets, to consult on the affairs of the church.

**CONVOLVULUS, OR BINDWEED**. A plant so called because it creeps up and twists itself round whatever is near it. Some few sorts are cultivated in gardens, and bear a beautiful blue flower.

**CONVOY**. A sea term, for ships of war which accompany merchantment in time of war, to protect them from the attacks of the enemy; in military affairs, a detachment of troops employed to guard any supply of money, ammunition, &c.

**COOK**. One who practises the art of cookery. The company of cooks was incorporated in the fifteenth century.

**COOLER.** A vessel used by brewers for cooling the beer after it is drawn off.

**COOMB.** A measure of corn, containing four bushels.

**COOP.** A place where fowls are kept confined; also a vessel made of twigs, in which fish are caught, and a barrel or vessel for keeping liquids.

**COOPER.** A maker of tubs, coops, or barrels. The company of coopers was incorporated in the reign of Henry VII.

**COOPERY.** The art of making tubs or barrels with boards bound by hoops.

**COOT.** A water fowl, mostly of a black colour, called also a **MOOR HEN**. These birds frequent lakes and still rivers, where they make their nests among the rushes, &c. floating on the water, so as to rise and fall with it.



**COPAL.** An American name for all odoriferous gums, but particularly applied to a resinous substance imported from Guinea. It is hard, shining, transparent, and citron coloured.

**COPERNICAN SYSTEM.** A particular system of the sphere, first proposed by Pythagoras, and afterwards revived by Copernicus, a Polish astronomer. According to this system the sun is supposed to be placed in the centre, and all the other bodies to revolve round it in a particular order; which notion is now universally adopted, under the name of the Solar System.

**COPING.** The stone covering on the top of a wall.

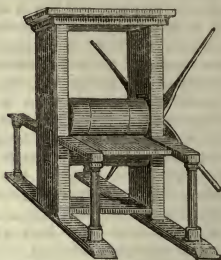
**COPPER.** A metal next to iron in specific gravity, but lighter than gold, silver, or lead. It is one of the six primitive metals.

**COPPERAS.** A name given to blue, green, and white vitriol: it is a factitious sulphate of iron.

**COPPERPLATE.** A plate on which figures are engraven; also the impression

which is taken off the plate on paper, by means of printing.

**COPPERPLATE PRINTING.** The process of taking engravings from copperplates, by means of a rolling press, as in the subjoined cut.



**COPPERSMITH.** An artisan who works copper into different utensils.

**COPPICE, or COPSE.** A small wood, consisting of underwood.

**COPULA** (among Logicians). The verb that connects any two terms in an affirmative or negative proposition, as, God made the world; made is the copula.

**COPULATIVE** (in Grammar). An epithet for such conjunctions as join the sense as well as the words; as and, or, &c.

**COPY** (in Law). The transcript of an original writing.

**COPY** (among Printers). The original MS. or the book from which the compositor sets his page.

**COPYHOLD** (in Law). A sort of tenure by which the tenant holds his land by copy of court roll of the manor at the will of the lord.

**COPYRIGHT** (in Law). The exclusive right of printing and publishing copies of any literary performance, which is now confirmed by statute, to authors or their publishers, for a certain number of years, that is to say, for twenty-eight years in all cases, whether the author survive that period or not; and to the end of the author's life if he live beyond that period; besides, as an action lies to recover damages for pirating the new corrections and additions to an old work, publishers may acquire almost a perpetual interest in a work by republishing it with additions and annotations.

**CORAL.** A hard, brittle, calcareous substance, which was formerly supposed to be of a vegetable nature, but is now found to be composed of a congeries of



animals, endued with the faculty of moving spontaneously. They are distinguished by the form of their branches, and are found in the ocean, adhering to stones, bones, shells, &c. The islands in the South Sea are mostly coral rocks covered with earth. The coral fishery is particularly followed in the Mediterranean, on the coast of France, where the red coral most abounds.

**CORBEL.** A shoulder piece jutting out in walls to bear up a post.

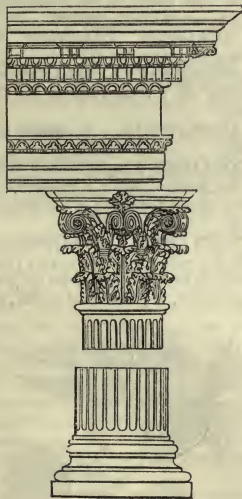
**CORCLE, or CORCULUM** (in Botany). The essence of the seed, or the rudiment of the future plant.

**CORD OF WOOD.** A parcel of fire-wood, four feet broad, four feet high, and eight feet long.

**CORDELIERS.** An order of monks, so called because they wear a cord full of knots about their middle.

**CORDOVAN.** A sort of leather made of goat skin at Cordova in Spain.

**CORINTHIAN ORDER** (in Architecture). The noblest and richest of the five orders, so called because columns were first made of that proportion at Corinth. Its capital is adorned with two rows of leaves, between which arise little stalks or caulicoles, forming sixteen volutes.



**CORK TREE.** A glandiferous tree of the oak kind, having a thick, spongy, and soft bark, known by the name of cork. It

grows abundantly in Italy and other parts in the South of Europe.

**CORMORANT, or CORVORANT.** An exceedingly voracious bird of the pelican tribe. It builds on the highest cliffs hanging over the sea.



**CORNEA.** One of the coats of the eye, which is transparent in the fore part, to admit the rays of light.

**CORNELIAN.** A precious stone, of a flesh colour, of which rings are made.

**CORNET** (in Military Affairs). An instrument very similar to a trumpet, which is used in the army; also a commissioned officer in a troop of horse or dragoons.

**CORNFLAG.** A plant having a double tuberoso root, with leaves like the fleur de lis, and a flower consisting of one petal, shaped like the lily.

**CORNFLOWER.** A plant that grows wild among the corn.

**CORNICE.** Any moulded projection that crowns or finishes the part to which it is affixed, as the cornice of a room, a door, &c.

**CORNISH CHOUGH.** A sort of crow, of a fine blue or purple black colour, with red beak and legs. It was reckoned the finest bird of its kind, and therefore borne in coats of arms.

**CORNUCOPIA, or THE HORN OF PLENTY.** Fabled to be the horn which Hercules broke off from Achelous' head. It was filled by the nymphs with all manner of flowers and fruits, and made the emblem of abundance.

**COROLLA.** The leafy parts of a flower which is marked with divers colours. Each leaf or division of the corolla is called a petal.

**COROLLARY.** A consequence drawn

from some proposition already proved or demonstrated.

**CORONARIÆ.** One of Linnæus' natural orders of plants, containing those of the libaceous tribe, which are most fitted for making garlands.

**CORONATION.** The act or solemnity of crowning a king; also the ceremony of investing the pope with his sacerdotal ensigns and dignity.

**CORONER.** An officer whose particular duty it is to make inquisition into the untimely death of any of the king's subjects.

**CORONET** (in Heraldry). A small crown worn by the nobility.

**CORONET**, or **CORNET** (in Farriery). The upper part of a horse's hoof.

**CORPORAL** (in Law). An epithet for any thing that belongs to the body, as corporal punishment, in distinction from a fine; a corporal oath, so called because the party taking it is obliged to lay his hand on the Bible.

**CORPORAL** (in Military Affairs). A rank and file man, with superior pay to a common soldier, and with nominal rank under a serjeant.

**CORPORATION.** A body politic or incorporate, so called because the persons composing it are made into one body.

**CORPS.** A French term for any body of forces forming the division of a grand army.

**CORRECTION** (in Printing). The correcting of proof sheets as they come from the compositor's hands, in order to free them from all faults.

**CORRECTIVES.** Medicines which serve to correct the qualities of other medicines.

**CORRECTOR.** The person appointed in a printing office to correct the proofs as they come rough from the compositor's hands.

**CORRIDOR** (in Fortification). A covert way round a fortress; in Architecture, a long gallery leading to several chambers.

**CORROSIVES.** Saline menstrooms, which have the property of dissolving bodies, as burnt alum, white vitriol.

**CORROSIVE SUBLIMATE OF MERCURY.** An oxy muriate of mercury, and an extremely acrid and poisonous preparation.

**CORRUPTION OF BLOOD.** An infection growing to the blood, estate, and issue of a man attainted of treason.

**CORSAIR.** A pirate or sea robber, particularly on the coast of Barbary.

**CORSLET.** An ancient piece of armour with which the body was protected.

**CORTES.** The states or the assembly of the states of Spain and Portugal.

**CORTEX.** The outer bark of a plant.

**CORUNDUM.** A mineral of the sapphire kind, which is found in the East Indies, especially in Pegu and the island of Ceylon.

**CORUSCATION.** A gleam of light issuing from any thing, particularly that which is produced by the electrical fluid.

**CORVUS** (in Astronomy). A constellation in the southern hemisphere.

**CORYDALES.** One of Linnæus' natural orders of plants, containing those which have helmet-shaped flowers.

**CORYMB** (in Botany). A mode of flowering, in which the lesser flower stalks are produced along the common stalk on both sides, rising to the same height.



**CO-SECANT** (in Geometry). The secant of an arc, which is the complement of another arc to ninety degrees.

**COSMETICS.** Preparations which whiten and soften the skin.

**COSMOGRAPHY.** The science of describing the several parts of the visible world.

**COSMOPOLITE.** A citizen of the world.

**COSSACKS.** Irregular troops attached to the Russian army; a predatory tribe which inhabit the banks of the Nieper and Don.

**COSTS OF SUIT.** The expenses attending a law suit, which are in part recoverable from the party who loses the cause.

**COTTON.** A sort of wool or flax, which



encompasses the seed of a tree that is much cultivated in the Indies. The linen or cloth which is manufactured from this wool, when spun, is also called cotton.

**COTTONGRASS.** A perennial of the grass tribe, so called because its seeds have a downy substance attached to them which resembles cotton, and has been used in its stead.

**COTTONHISTLE.** An herbaceous plant, with a biennial root, which is so called because it has downy leaves.

**COTYLEDONS** (in Botany). The lobes of the seed, of which there are mostly two. They are destined to nourish the heart of the seed.

**COUCH.** A seat, or small moveable bed to lie on.

**COUCH** (in Husbandry). A layer or heap of malt or barley.

**COUCH** (in Painting). The ground or basis on which the colour lies.

**COUCHGRASS.** A noxious weed, which spreads very fast in arable land, and chokes every thing else that is sown.

**COUCHING** (in Surgery). The removing the opaque lens out of the axis of vision, so as to restore the sight.

**COVENANT** (in Law). An agreement or consent of two or more by deed or writing.

**COVERT.** A thicket or shady place for deer or other animals.

**COVERT-WAY** (in Fortification). A space of ground level with the field on the edge of the ditch ranging quite round the works.

**COVERTURE** (in Law). The state of a married woman who is under the power and protection of her husband, whence she is called a *feme covert*.

**COVING** (in Architecture). The projection in houses beyond the ground plot.

**COUNCIL** (in Law). An assembly of the different members of any government who meet to consult about affairs. In England that is called the Privy Council wherein the king himself and his privy counsellors meet in the king's court or palace to deliberate on affairs of state. When the council is composed only of cabinet ministers, or the king's most confidential servants, it is called a Cabinet Council.

**COUNCIL** (in Ecclesiastical Affairs). The same as the synod.

**COUNCIL OF WAR** (in Military Affairs). An assembly of the chief officers in the army or navy, called by the general or admiral in particular emergencies, to concert measures for their conduct.

**COUNTERFEIT.** A fraudulent imitation of any thing, made so as to pass for genuine, as counterfeit coin.

**COUNTERMINE.** A mine made by the besieged, in order to blow up the mine of the besiegers.

**COUNTERSCARP** (in Fortification). That side of the ditch which is next the camp, and faces the body of the place.

**COUNTER-TENOR** (in Music). One of the middle parts, so called because it is as it were opposed to the tenor.

**COUNTINGHOUSE.** An office in which a merchant transacts his business.

**COUNTRY DANCE** (in Music). A lively pointed air calculated for dancing.

**COUNTY.** One of the ancient divisions of England, which by the Saxons were called shires; England is divided into forty counties or shires, Wales into twelve, Scotland into thirty.

**COUP DE MAIN.** A sudden unpremeditated attack.

**COUP D'ŒIL.** The first glance of the eye, with which it surveys any object at large.

**COUP DE SOLEIL.** Any disorder suddenly produced by the violent scorching of the sun.

**COUPLE.** A band with which dogs are tied together.

**COUPLE-CLOSE** (in Heraldry). An ordinary, so termed from its enclosing the chevron by couples, being always borne in pairs, one on each side a chevron.

**COUPLES** (in Building). Rafters framed together in pairs with a tie.

**COUPLET.** The division of a hymn, ode, or song, wherein an equal number or an equal measure of verses is found in each part.

**COURANT.** An epithet for any beast represented in an escutcheon in a running attitude.

**COURSE.** A sea term, for that point of the horizon or compass for which a ship steers.

**COURSE** (in Masonry). A continued range of bricks or stones of the same height.

**COURSE OF EXCHANGE** (in Commerce). The current price or rate at which the coin of one country is exchanged for that of another; which, as it depends upon the balance of trade and the political relations which subsist between the two countries, is always fluctuating.

**COURSER.** A race horse.

**COURSING.** The pursuing of any beast of chase, as the hare, &c. with greyhounds.

**COURT** (in Law). The king's palace or

mansion; but more especially the place where justice is judicially administered.

**COURTS OF CONSCIENCE.** Courts for the recovery of small debts.

**COVY.** An assemblage of wild fowl, particularly partridges.

**COW.** The female of the ox kind, which is kept for her milk and her calves.

**COWKEEPER.** One who keeps cows for the purpose of selling the milk.

**COWPOX.** A substitute for the smallpox. It is taken from the udder of the cow, and used in that sort of inoculation now known by the name of vaccination.

**COWRY.** A testaceous animal, which is said to have the power of leaving its shell and forming a new one. These animals live in sand at the bottom of the sea. The shell is used as a coin in India.

**COWSLIP.** A plant which grows wild in the meadows, and bears a pretty yellow flower.

**C. P. S.** *Custos privati sigilli*; i. e. keeper of the privy seal.

**CR.** An abbreviation for creditor.

**CRAB.** A sort of shell fish, which every year cast off their old shells. with much pain and difficulty.



**CRAB (in Astronomy).** Cancer, one of the signs of the zodiac.

**CRAB (in Botany).** A wild apple tree, and also the fruit of that tree.

**CRAB (among Shipwrights).** An engine with three claws for launching of ships.

**CRAB'S EYE.** A stone found in the craw fish, resembling an eye.

**CRADLE.** A moveable bed for a child.

**CRADLE (with Surgeons).** A wooden machine to lay a broken leg in after it has been set.

**CRADLE (with Shipwrights).** A frame of timber raised on each side of a ship, for the more convenient launching of her.

**CRAMP.** A spasmodic affection, which causes a violent distortion of the muscles, uerves, &c.; also a disease to which hawks are subject in their wings.

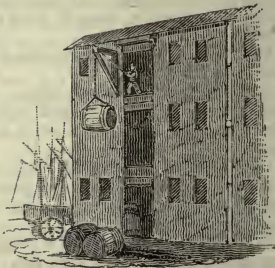
**CRAMP IRONS.** Irons which fasten stones in buildings.

**CRANBERRY.** A pale red berry of a tart taste, the fruit of the cranberry tree.

**CRANE.** A sort of heron, with a long neck, bill, and legs.



**CRANE.** A machine, with ropes, pulleys, and hoops, for drawing up heavy weights.



**CRANESBILL.** The English name for the geranium.

**CRANIOLOGY.** The science which professes to discover men's faculties and characters from the external appearances of the skull.

**CRANIUM.** The skull, or superior part of the head.

**CRANK.** A machine resembling an elbow, projecting from an axis or spindle, which by its rotation serves to raise or lower the pistons of engines for raising water; also a piece of brass work of a similar shape, on which the bell wire is fixed, so as to move the bell.

**CRAPE.** A light transparent stuff, resembling gauze.

**CRATE.** A large case made of open bars, in which earthen ware is packed.

**CRATER.** The mouth of a volcano, from which the fire issues.

**CRAY FISH, or CRAW FISH.** A small sort of lobster.

**CRAYON.** A small pencil of any sort of colouring stuff, made into a paste and dried.

**CREAM OF TARTAR.** The common white tartar freed from its impurities; a salt prepared from the lees of wine.

**CREDIT (in Commerce).** A mutual loan of merchandises, &c. Letters of Credit, letters given by merchants to persons whom they can trust to draw money from their correspondents.

**CREED.** A summary of the principal articles of the Christian faith; as the Apostles Creed, the Athanasian Creed, &c.

**CREEK.** That part of a haven where any thing is landed from the sea.

**CREPITATION.** The crackling noise made by some salts during the process of calcination.

**CRESCENT.** The state of the moon when in her increase; in Heraldry, an honourable ordinary, or a mark of distinction for the second sons of families, or those descended from him.



**CRESS.** A garden salad.

**CREW.** The company of sailors belonging to a vessel.

**CRICKET.** A little insect that haunts stoves and ovens.

**CRIER.** An officer who cries or makes proclamation.

**CRIMES.** Offences against morals, as far as they are prohibited by law.

**CRIMPS.** Persons who used formerly to decoy others into the land or sea service.

**CRISIS.** That stage of a disorder from which some judgment may be formed of its termination.

**CROCODILE.** An amphibious animal, and the largest of the lizard tribe, which inhabits the Nile and the Indian Sea. It is covered with hard scales, that cannot easily be pierced, except under its belly.

**CROCUS.** A bulbous plant, that flowers very early in spring.

**CROP.** The craw of a bird; also the produce of what is sown in a field.

**CROSS.** A gibbet, on which the Romans used to hang malefactors by the hands and feet.

**CROSS (in Heraldry).** The most ancient and the noblest of all the honourable ordinaries, formed by the meeting of two perpendicular with two horizontal lines, so as to make four right angles in the figure of a cross, such as the cross batonne in the subjoined figure.



**CROSS.** The name given to the right side of a coin, in distinction from the pile or reverse.

**CROSS (in Architecture).** Any building which is in the figure of a cross.

**CROSSBILL.** A sort of Grosbeak, a bird so called because the mandibles of its beak cross each other.

**CROSS BOW.** A kind of bow formerly much used, which was strung and set in a shaft of wood, with a trigger, &c.



**CROSS-EXAMINATION (in Law).** A close and rigid examination on the part of the adversary, consisting of cross questions, in order to elicit the truth.

**CROTCHET (in Music).** Half a minim, marked thus.



**CROTCHET (in Printing).** Marked thus [ ], to separate what is not the necessary part of a sentence.

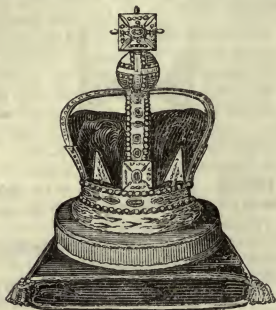
**CROUP.** The hindmost part of a horse.

**CROUPER.** A leathern strap fitted to go under the tail of a horse, to keep the saddle in its place.

**CROW.** A sociable noisy bird, that feeds partly on carrion.

**CROW** (among Mechanics). An iron instrument that is used as a lever for raising weights.

**CROWN**. A cap of state worn by sovereign princes. The crown of England is called St. Edward's crown, because it is made in imitation of the ancient crown supposed to have been worn by that monarch. That now in use was made at the Restoration, for the coronation of Charles the Second.



**CROWN**. A coin, in value five shillings, so called from the figure of the crown which was originally given upon it.

**CROWN** (in Anatomy). The vertex or highest part of the head.

**CROWN** (in Architecture). The uppermost member of a cornice.

**CROWN** (among Jewellers). The upper work of the rose diamond.

**CROWN-GLASS**. The finest sort of window glass.

**CROWN-IMPERIAL**. A well known beautiful flower, the root of which is perennial.

**CROWN-OFFICE**. An office belonging to the Court of King's Bench, of which the king's coroner or attorney there is commonly master.

**CROZIER**. A shepherd's crook; also a bishop's staff, which is of a similar form, and an emblem of his pastoral office.

**CRUCIBLE**. A melting pot used by chymists for the melting metals and minerals.



**CRUCIFIX**. A figure either in statuary or painting, representing our Saviour on the cross.



**CRUCIFIXION**. The act of nailing or fixing to a cross; the suffering of being crucified.

**CRUISE**. A voyage or expedition in quest of an enemy's vessels.

**CRUISER**. A vessel appointed for cruising.

**CRUOR**. Coagulated blood.

**CRUSADES**. The expeditions undertaken by the princes of Christendom for the conquest of the Holy Land, in the twelfth and three following centuries. On these occasions every soldier bore a crucifix on his breast, as an emblem of spiritual warfare.

**CRUSTACEOUS SHELL FISHES**. Fishes covered with shells which are made up of several pieces and joints; such as crabs, lobsters, crayfish, &c. in distinction from the testaceous fish, as oysters.

**CRYPTOGAMIA**. One of the classes of plants in the Linnæan system, comprehending those whose fructification or flower is too concealed or minute to be observed by the naked eye, as the mosses, the algae or seaweeds, the ferns, and the fungi or funguses.

**CRYPTS**. Subterranean places where the martyrs were buried, and the primitive Christians performed their devotions; also underground chapels, such as the crypt under St. Paul's and other churches which took their rise from this practice.

**CRYSTAL**, or **ROCK CRYSTAL** (in Mineralogy). A transparent stone as clear as glass. It is found in Iceland, Germany, and France, and belongs to the quartz or siliceous genus; also a factitious body cast in the glass-houses, called crystal glass, which is very brittle, and burns with little or no flame.

**CRYSTAL** (in Chymistry). That part

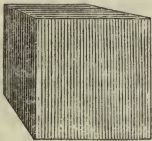
of a salt which assumes a regular and solid form, on the gradual cooling of its solution.

**CRYSTALLINE HUMOUR.** A pellucid humour of the eye, so called from its transparency like crystal.

**CRYSTALLIZATION.** The reducing of any salt into a regular form by dissolving it in a menstruum, and allowing it to cool until it shoots into the bodies called crystals.

**CUB.** The young of some particular beasts, as of a fox and a bear.

**CUBE (in Geometry).** A regular solid body, supposed to be generated by the motion of a square plane along a line equal and perpendicular to one of its sides. It is enclosed by six equal sides or faces, which are square, as in the annexed figure. A die is a small cube.



**CUBE (in Arithmetic).** The third power of any number, produced by multiplying the number into itself, and then again into the product, as  $3 \times 3 = 9 \times 3 = 27$ , the cube.

**CUBE ROOT.** The side of a cube number; thus 3 is the cube root of 27.

**CUBIT.** A measure equal to about 1 foot 9 inches.

**CUCKOO.** A bird which is heard about the middle of April, and ceases to sing at the end of July. It deposits its eggs in the nests of other birds, generally in that of the hedgesparrow.



**CUCKOO-SPITTLE.** A white froth or spume very common on the lavender and other plants in the spring, which forms the nidus of a sort of cicada.

**CUCURBITACEÆ.** One of Linnæus's

natural orders of plants, comprehending those which resemble the gourd, as the cucumber, the melon, &c.

**CULM (in Botany).** The stalk or stem of corn or grasses.

**CULM (among Miners).** A sort of coal in Wales.

**CULMINEÆ.** One of the Linnæan natural orders of plants, consisting of the grasses.

**CULPRIT (in Law).** A word of form, applied in court to one who is indicted for a criminal offence. It is as much as to say, in French, 'culpable prit, found or considered guilty.'

**CUMMIN SEED.** A long, slender seed of a rough texture, unctuous when bruised, of a strong smell and an acrid taste.

**CUPBEARER.** An officer of the king's household, who was formerly an attendant at a feast.

**CUPEL.** A chymical vessel made of earth, ashes, or burnt bone, in which assay-masters try metals.

**CUPOLA.** A roof or vault rising in a circular form, otherwise called the Tholus or Dome, as the cupola of St. Paul's Cathedral, here represented.



**CUPPING (in Surgery).** The operation of applying the cupping-glass to the fleshy parts of the body, for the purpose of drawing away corrupt blood or humours.

**CURATE.** Properly, one who has the cure of souls; now applied to one who officiates for hire in the place of the incumbent.

**CURB OF A BRIDLE.** A chain of iron that runs over the horse's beard.

**CURFEW.** Literally, cover feu or fire; a law introduced from Normandy into England by William the Conqueror, that all people should put out their fire and lights at the ringing of the eight o'clock bell.

**CURLEW.** A water fowl of a gray colour, with a large beak.

**CURRENT.** The fruit of a shrub having no prickles; the leaves of this plant are large, and the fruit, which is either black, red, or white, is highly esteemed; also a dried fruit that comes from the Levant.

**CURRENCY (in Law).** Paper money issued by authority, and passing current instead of coin; also, in general, any sort of money that passes current by authority, as the metallic currency, signifying the coin of the realm.

**CURRENTS.** Impetuous streams.

**CURRIER.** A dresser of tanned leather, to make it pliable and fit for use. The Company of Curriers was incorporated in the reign of Henry VI.

**CURRY-COMB.** An iron sort of comb for the dressing of horses.

**CURSITOR.** An officer in chancery, who makes out original writs for any particular county.

**CURTAIN (in Fortification).** The front of a wall or fortified place lying between two bastions.

**CURVE.** A line whose parts incline different ways.

**CUSP.** Properly, the point of a spear.

**CUSP (in Astronomy).** A term for the horns of the moon.

**CUSTOM (in Law).** A duty on the importation or exportation of goods.

**CUSTOS ROTULORUM, or KEEPER OF THE ROLLS.** He that has the keeping of the records of the sessions of the peace.

**CUTLER.** A maker and seller of knives and all cutting instruments.

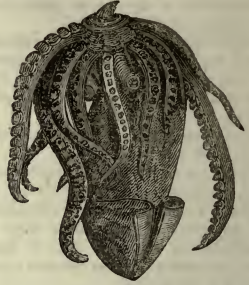
**CUTPURSE.** A sort of thieves who rob by cutting purses.

**CUTTER.** A kind of boat attached to a vessel of war, which is rowed with six oars, and is employed in carrying light stores, passengers, &c.



**CUTTLE-FISH.** A sea fish furnished

with many suckers and holders for securing its prey. It emits a black fluid used in making Indian ink.



**CYANOGEN (in Chymistry).** Carbon combined with azote.

**CYBELE (in Heathen Mythology).** The daughter of Cœlus and Terra, wife of Saturn, and mother of the gods; she is always represented with a turreted head, and accompanied with a lion.



**CYCLE.** A continual revolution of numbers, as applied to a series of years which go on from first to last, and then return to the same order again.

**CYCLOID.** A curve generated by the rotation of a circle along a line.

**CYCLOPÆDIA.** See *ENCYCLOPÆDIA*.

**CYLINDER.** A figure conceived to be generated by the rotation of a rectangle about the side.





**CYLINDER** (in Gunnery). The whole hollow length of a great gun; the bore.

**CYME**. Properly, a sprout or shoot; also a sort of flowering, where the florets do not all rise from the same point.

**CYMOSE**. One of Linnæus's natural orders, comprehending such plants as are disposed in the form of a cyme.

**CYPRESS**. A tree very celebrated

among the ancients, by whom it was accounted the emblem of death, and used in adorning their sepulchres. The leaves of the cypress are squamose and flat; the fruit is composed of woody tubercles, and the wood of the tree is always green.

**CZAR**. The title assumed by the emperors of Russia.

## D.

**D**, as a numeral, denotes 500; as an abbreviation, stands for Doctor, Domini, &c.; as a sign, is one of the Dominical or Sunday letters; and in Music, the nominal of the second note in the natural diatonic scale.

**DAB**. A flat fish, thinner and less than the flounder.

**DACE**. A river fish of the carp kind.

**DACTYL**. A foot or division in a poetical line, consisting of one long and two short syllables.

**DADO**. The die, or that part in the middle of the pedestal of a column between its base and cornice.

**DÆMON**. A spirit either good or bad, among the heathens; the devil, or an evil spirit, among Christians.

**DÆMONIAC**. One possessed with a devil.

**DAGON**. An idol of the Philistines, of the human shape upwards, and resembling a fish downwards, with a finny tail.

**DAMAGES** (in Common Law). The hurt or hinderance which a man receives in his estate, particularly those which are to be inquired of by the jurors, when an action passes for the plaintiff.

**DAMASCENE**, pronounced DAMSIN. A fruit tree, yielding a small black plum, of an oval shape, so called from Damascus, of which it is a native.

**DAMASK**. A silk stuff with a raised pattern, consisting of figures and flowers.

**DAMASK-ROSE**. A fine sort of rose, of a red colour.

**DAMPS**. Noxious exhalations in mines which sometimes suffocate those that work in them.

**DAMSIN**. See DAMASCENE.

**DAPPLE**. Light gray with spots; the colour of a horse.

**DATA** (in Geometry). Things given or taken for granted, as known or true.

**DATE**. That part of a writing or letter which expresses the day of the month and year.

**DATE-TREE**. A species of palm, native of Tunis and other parts of Africa, which grows to a great height, and yields a fruit formerly much used in medicine.

**DATIVE** (in Grammar). The third of Greek and Latin nouns.

**DAUPHIN**. The title of the next heir to the crown of France.

**DAWN**. The commencement of the day, when the twilight appears.

**DAY**. A space of time reckoned from the apparent motion of the sun. The day is distinguished into civil and astronomical. Civil day is a space of twenty-four hours, reckoned from sunset to sunset, or from sunrise to sunrise, which is different in different parts of the globe. The astronomical day is the space of twenty-four hours, reckoned from twelve o'clock at noon to the noon of the next day.

**DAY** (in Law). Is the civil day, including day and night; also the day of appearance of the parties in court.

**DAY-FLY**. A kind of insect, so called because it lives only a day.



**DAY-RULE** (in Law). An order of court, permitting a prisoner in custody in the King's Bench prison, &c. to go for one day without the bounds of the prison.

**DAYS OF GRACE** (in Commerce). A customary number of days allowed for the

payment of a bill of exchange, &c. after the same becomes due.

**D. D.** Doctor of Divinity.

**DEACON.** A minister or servant in the church, whose office it is to assist the priest.

**DEAD-EYE.** A sea term for a sort of flat block.

**DEAD LANGUAGES.** Those languages which have ceased to be spoken by any nation, as the Greek and Latin.

**DEAD NETTLE.** A sort of nettle without stings.

**DEAD RECKONING.** The account kept of a ship's course by the log, without any observation of the sun, moon, or stars.

**DEAF AND DUMB.** Those who have the misfortune to be born without the faculties of hearing or speaking. Means have been successfully employed to supply these defects in charitable institutions for the benefit of these unhappy objects, where the young are taught to communicate their thoughts by the help of signs, particularly by the language of the fingers, which, though before but a childish amusement, is now turned to a useful purpose.

**DEAL.** The wood of the fir tree cut up for building.

**DEAN.** A dignified clergyman who is at the head of a chapter.

**DEATHWATCH.** A little insect inhabiting old wooden furniture, which makes a ticking noise in such a manner, by a certain number of distinct strokes, as formerly to be considered ominous to the family where it was heard. This circumstance gave rise to its vulgar name.



**DEBENTURE (in Law).** A sort of bill drawn upon the Government. Custom House debentures entitle the bearer to receive a drawback on the exportation of goods which were before imported.

**DEBIT.** A term used in book-keeping to express the left-hand page of the ledger, to which all articles are carried that are charged to an account.

**DEBT (in Commerce).** A sum of money due from one person to another.

**DEBT (in Law).** An action which lieth where a man oweth another a certain sum of money.

**DEC.** An abbreviation for December.

**DECADE.** The number or space of ten days, which formed the third part of the Attic month; also the number of ten books, which was formerly the division of some volumes, as the Decades of Livy.

**DECAGON.** A plane geometrical figure consisting of ten sides and ten angles.

**DECALOGUE.** The Ten Commandments delivered by God from Mount Sinai to Moses.

**DECAMERON.** A volume of ten books, such as the Decameron or novels of Boccaccio.

**DECANDRIA.** One of the artificial classes of Linnæus, comprehending those plants which have ten stamens in the flower.



**DECANTER.** A glass bottle made so as to hold the wine which is for immediate use.

**DECEMBER.** The last month in the year, when the sun enters the tropic of Capricorn, making the winter solstice.

**DECENVIRS.** Extraordinary magistrates among the Romans, chosen for the particular purpose of collecting the laws of the twelve tables, which they gathered from the writings of Solon.

**DECIDUOUS PLANTS.** Plants which cast their leaves in winter.

**DECIMAL.** An epithet for what consists of the number of ten; as, Decimal Arithmetic, a mode of computation that proceeds on the scale of ten figures; Decimal Fractions, such as have 10, 100, 1000, &c. for their denominator, and marked with a point thus .5 for five-tenths.

**DECIMATION.** A military punishment among the Romans, inflicted on every tenth man of the company who had behaved themselves ill.

**DECK.** The floor of a ship. The decks may be either first, second, or third; where there are more than one, beginning from the lowest upwards.

**DECLARATION (in Law).** A statement of the cause of action by a plaintiff against a defendant.

**DECLENSION.** The different inflexions of nouns throughout their cases.

**DECLINATION.** The distance of any star or point of the heavens from the equator, either north or south. The greatest declination is 23 degrees and a half.

**DECOCTION.** A medicinal liquor.

**DECOMPOSITION** (in Chymistry). The reduction of a body to the parts of which it is composed.

**DECORATIONS.** Any ornaments or embellishments, such as prints to a book, or the mouldings and other carved works in buildings.

**DECOY.** A sea term for a stratagem employed by ships of war, to draw any vessel of inferior force into an incautious pursuit, until she comes within gun-shot.

**DECOY** (among Sportsmen). A place for catching wild fowl.

**DECOY-DUCK.** A wild duck trained to decoy others into the decoy or place where they may be caught.

**DEED** (in Law). A written contract, signed, sealed, and delivered.

**DEEP-SEA-LINE.** A sea term for a small line to sound with.

**DEER.** An animal that is kept in parks, either for ornament or for the chase; the flesh of which is called venison.

**D. F. Defensor Fidei,** Defender of the Faith.

**DE FACTO.** In deed or fact.

**DEFALCATION.** A falling off or a failure in any public accounts.

**DEFAMATION** (in Law). Slanderous words spoken or written against any one.

**DEFAULT** (in Law). A nonappearance in court without sufficient cause.

**DEFAULTER.** One who is deficient in his accounts.

**DEFECTION.** The falling off from a government or state.

**DEFENCE** (in Law). The reply which the defendant makes after the declaration is produced; in Military Affairs, any work that covers or defends the opposite posts, as flanks, parapets.

**DEFENDANT** (in Law). One who is sued in an action.

**DEFENDER OF THE FAITH.** A title given by Pope Leo X. to Henry VIII. for writing against Luther.

**DEFILE.** A narrow lane or passage through which a company of soldiers can pass only in file.

**DEFINITION.** The determining the nature of things by words, or explaining the signification of a word.

**DEFLAGRATION.** The burning off in a crucible any mineral body.

**DEFLEXION.** The turning of any thing out of its true course.

**DEFLUXION** (in Surgery). The falling of a humour in the body from a superior upon an inferior part.

**DEGRADATION** (in Ecclesiastical Affairs). The depriving a person of his dignity and degree, as the degradation of a clergyman by depriving him of holy orders.

**DEGRADATION** (in Military Affairs). The depriving an officer of his commission.

**DEGREE** (in Mathematics). The 360th part of the circumference of a circle, marked thus (°).

**DEGREE** (in Law). An interval of relationship between persons more or less nearly allied.

**DEGREES** (in a University). Titles of honour conferred on persons for their merit in the arts and sciences.

**DEGREES OF COMPARISON** (in Grammar). The inflexions of adjectives to express different degrees of the same quality.

**D. G.** An abbreviation for Dei Gratia, By the Grace of God.

**DEIST.** One who believes in a God, but rejects revelation.

**DE JURE.** By right.

**DELEGATES.** Commissioners of appeal appointed by the king to hear appeal causes from the ecclesiastical court.

**DELETERIOUS.** An epithet for drugs or any substances of a destructive and poisonous quality.

**DELFT WARE.** A kind of potter's ware, originally made at Delft in Holland; it is covered with an enamel or white glazing, in imitation of porcelain.

**DELIQUIUM, or DELIQUESCENCE.** A spontaneous solution of some salts by exposure to the air.

**DELIVERY, or GAOL DELIVERY** (in Law). A term applied to the sessions at the Old Bailey, &c. by which the gaol is delivered or cleared of prisoners.

**DELIVERY** (in the Mint). The quantity of moneys coined within a given period.

**DELIVERY** (in Oratory). The manner of pronouncing an address, as regards the voice and utterance of the speaker.

**DEMESNE LANDS.** Lands which the lord of a manor has in his own hands.

**DEMI.** A half-fellow at Magdalen College at Oxford; also a term in composition signifying half, as, demigod, a hero who was enrolled among the gods.

**DEMOCRACY.** A form of government where the supreme power is lodged in the people at large, or in persons chosen by them.

**DEMONSTRATION.** A proof or chain of arguments serving to prove the truth.

**DEMURRER** (in Law). A pause or stop in a suit upon some difficulty.

**DEMY.** A sort of paper much used in printing.

**DENIER.** One of the earliest French coins, answering nearly to the English penny.

**DENIZEN.** An alien who is naturalized.

**DENOMINATOR.** That part of a fraction which stands below the line, as 10 in the fraction  $\frac{5}{10}$ .

**DENOUEMENT.** The development of the plot in a play.

**DE NOVO.** Afresh, or from the beginning.

**DENSITY.** The property of bodies of containing a certain quantity of matter under a certain bulk.

**DENTIST.** One who draws teeth, and prescribes for their diseases.

**DEODAND.** A thing as it were forfeited to God, to atone for the violent death of a man by misadventure.

**DEPARTURE.** The easting or westing of a ship in respect to the meridian it departed from.

**DEPHLEGMATION.** The depriving any liquid of its superfluous water.

**DEPONENT.** One who gives information on oath before a magistrate.

**DEPORTATION.** The banishment of a person, among the Romans, to some distant island.

**DEPOSITION.** The testimony of a witness taken upon oath.

**DEPOT.** A place where military stores are deposited.

**DEPRESSION.** The distance of a star from the horizon below.

**DEPRESSION OF THE POLE.** Is said of a person sailing from the pole to the equator.

**DEPRESSION OF THE VISIBLE HORIZON, or, DIP OF THE HORIZON.** Its dipping or sinking below the true horizontal plane, by the observer's eye being above the surface of the sea.

**DEPRIVATION** (in Law). A taking away, as when a parson or vicar is deprived of his preferment.

**DEPUTY.** A person appointed by commission to act for another.

**DERELICT.** Forsaken, left; as derelict lands, lands which the sea has left; derelict ships, vessels left at sea, &c.

**DERIVATIVE** (in Grammar). Any word which is derived from another.

**DERMESTES.** An insect, called in vulgar language the Leather-eater.

**DERNIER.** Last, as a tribunal of dernier resort, the last or highest court of appeal.

**DERVISE.** An order of religious persons who practise great austerities on themselves.

**DESCENSION.** An arc of the equator which descends or sets with any sign or point in the zodiac. Descension is either right or oblique, according as it takes place in a right or oblique sphere.

**DESCENSIONAL DIFFERENCE.** The difference between the right and oblique descension of a star, &c.

**DESCENT.** In general, the tendency of heavy bodies towards the earth.

**DESCENT** (in Law). Hereditary succession to an estate.

**DESCENT** (in Military Affairs). Landing in a country for the purpose of invasion.

**DESCRIPTION.** An imperfect kind of definition that includes many accidents and circumstances peculiar to an object, without defining its nature precisely.

**DESERTER.** A soldier who runs away from his colours, or goes over to the enemy.

**DESIDERATUM** (in Literature). What is wanted or inquired after. A work is a desideratum, which, though wanted, is not executed.

**DESIGN.** The first draught or sketch of any picture.

**DESPOTISM.** A form of government where the monarch rules by his sole and sovereign authority.

**DESUNT CÆTERA.** The rest wanting; words put at the end of any chasm or deficiency in an imperfect or mutilated work.

**DETACHMENT** (in Military Affairs). A certain number of men selected for a particular expedition or service.

**DETAINER.** A writ for holding any one in custody.

**DETENTS.** The stops in clock-work, which, by being lifted up or let down, lock or unlock the clock in striking.

**DETERGENTS.** Medicines which remove viscid humours.

**DETERMINATE PROBLEM.** That which has one or a limited number of answers.

**DETONATION.** The noise and explosion which some substances make upon the application of fire to them, as gunpowder, &c.

**DETONATING POWDER, or FULMINATING POWDER.** A preparation of nitre, sulphur, &c.

**DETRITUS.** That which is washed



**DIAMOND** (Among Glaziers). An instrument for cutting glass; in Printing, the smallest types or letters.

**DIAMOND BEETLE**. An exceedingly beautiful insect, so called from the marks on its wing-sheaths, that resemble gems in brilliancy.

**DIANA**. The goddess of hunting, the daughter of Jupiter and Latona, and twin sister of Apollo; she is commonly represented with a bow and arrow.



**DIANDRIA** (in Botany). One of the classes in the Linnæan system, consisting of such plants as have hermaphrodite flowers with two stamens, as the olive, the privet, the nightshade, &c.



**DIAPASON** (in Ancient Music). The interval of an octave; among Musical Instrument Makers, the diapason is a scale or measure.

**DIAPER**. A kind of linen for the table, wrought with flowers.

**DIAPHANOUS**. Transparent like glass.

**DIAPHONIA**. The precepts formerly taught for the use of the organ.

**DIAPHORETICS**. Medicines which promote perspiration.

**DIAPHRAGM**. A muscular membrane which divides the thorax from the abdomen.

**DIARRHŒA**. A disorder which consists in the frequent discharge, by stool, of a bilious humour from the intestines.

**DIARY**. An account of what passes in the course of a day.

**DIATESSERON** (in Music). An interval composed of a greater and less tone.

**DIATESSERON** (in Theology). The four Gospels.

**DIATRIBE**. A disputation or controversial discourse.

**DIBBLE**. A pointed tool for making holes to plant in.

**DICE**. Pieces of bone or ivory, of a cubical form, and marked with dots on each of their faces from one to six.

**DICTATOR**. An extraordinary magistrate among the Romans, chosen upon particular occasions; and invested with absolute power. He laid down his office as soon as the occasion ceased for which he had been appointed.

**DICTIONARY**. A collection of the words of a language explained in alphabetical order.

**DICTUM**. The positive opinion pronounced by an individual.

**DIDACTIVE**. An epithet for what serves to teach or explain the nature of things, as didactic pieces.

**DIDYNAMIA** (in Botany). One of the Linnæan classes, including such plants as have flowers with four stamens in two pairs of different lengths.

**DIE**. The stamp used in coining.

**DIE** (in Architecture). The middle of the pedestal.

**DIER**. One who follows the trade of dyeing.

**DIER'S BROOM**. A shrub so called from its flowers, which yield a colour used by diers in dyeing wool green.

**DIES NON**; that is, Dies non juridici. Days on which no pleas are held in any court of justice.

**DIET**. Food regulated by the rules of medicine.

**DIETETICS**. That branch of the medical science which treats of the diet or food suited to particular cases.

**DIEU ET MON DROIT**; that is, God and my right. The motto on the arms of the King of England.

**DIFFERENCE** (in Arithmetic). The remainder, when one number has been subtracted from another.

**DIFFERENCE** (in Heraldry). What is added in coats of arms as a mark to distinguish younger families from the elder.

**DIFFERENCE OF LONGITUDE** (in Astronomy). An arc of the equator, comprehended between the meridians of two places on the earth.

**DIFFERENTIAL CALCULUS**. A

method of finding a differential, or that infinitely small quantity which taken an infinite number of times is equal to a given quantity.

**DIGESTER.** An apparatus for reducing substances to a pulp or jelly.

**DIGESTION.** The dissolving or concocting food in the stomach, so that its various parts may be applied to their proper uses.

**DIGESTION** (in Chymistry). The continual soaking of a solid substance in a liquid, so that by the application of heat it may be reduced to a soft substance.

**DIGESTION** (in Surgery). The disposing a wound to suppurate or discharge good pus.

**DIGESTIVES.** Medicines which help digestion.

**DIGESTS.** The first volume of the civil law.

**DIGIT.** A measure equal to three quarters of an inch; also a character denoting a figure, as 1, for one; 2, for two, &c.

**DIGIT** (in Astronomy). The twelfth part of a diameter of the sun or moon.

**DIGITALIS, or FOXGLOVE.** A kind of plant which is for the most part herbaceous, with a root that is either biennial or perennial. The stalk of this plant rises two or three feet high, and bears spikes of iron coloured or purple flowers. The purple foxglove is a native of England, and is much used in medicine.

**DIGNITY** (in Law). Honour and authority.

**DIGYNIA** (in Botany). An order in the Linnæan system, consisting of plants that have two pistils.

**DILAPIDATION** (in Law). The ruin or damage which accrues to a house in consequence of neglect.

**DILEMMA.** An argument which cannot be denied in any way without involving the party denying in contradictions.

**DILETANTE.** A lover of the fine arts.

**DIMENSION.** The measure or compass of a thing; a line has one dimension, namely, length; a surface two, namely, length and breadth; a solid three, namely, length, breadth, and thickness.

**DIMINUTIVE** (in Grammar). A word or ending which lessens the meaning of the original word; as, rivulet, a small river.

**DIOCESAN.** A bishop who has charge of a particular diocese.

**DIocese.** The district or circuit of a bishop's jurisdiction.

**DIœCIA** (in Botany). A class in the Linnæan system, comprehending such

plants as have no hermaphrodite flowers, but the males and females on distinct individuals, as the poplar, aspen, amber tree, willow, ozier, &c.



**DIOPTRICS.** That branch of optics which considers the different refractions of light in its passing through different mediums, as air, water, glass, &c.

**DIP OF THE MAGNETIC NEEDLE.** The property of the needle, when rubbed with the loadstone, of inclining the north end below the level of the horizon.

**DIP OF THE HORIZON.** See DEPRESSION.

**DIPHTHONG.** Two vowels sounded as one; as, æ.

**DIPLOMA.** A licence or certificate given by colleges, &c. to a clergyman to exercise the ministerial functions, or to a physician to practice physic.

**DIPLOMACY.** The functions of an ambassador residing at a foreign court.

**DIPPING NEEDLE.** The magnetical needle so duly poised about an horizontal axis, that, besides its direction towards the pole, it will always point to a determined degree below the horizon. The dipping needle was invented by Robert Norman, a compass maker at Ratcliffe, about the year 1580, and arose, according to his own account of the matter, from the following circumstance. It was his custom to finish and hang the needles of his compasses before he touched them, and he always found, after the touch, the north point would dip or decline downward, pointing in a direction under the horizon; so that to balance the needle again, he was always forced to put a piece of wax on the south end, as a counterpoise. After having observed this effect frequently, he was at length led to mark the quantity of the dip, or to measure the greatest angle which the dip would make with the horizon; he found at London it was  $71^{\circ} 50'$ , but by subsequent experiments the dip is found to decrease about  $1' 4''$  every year.

**DIPTERA** (in Entomology). An order in the Linnæan system, comprehending insects that have two wings, with a poiser, as the fly, the gnat, &c.

**DIRECTION** (in Astronomy). The motion and other phenomena of a planet

when it is direct, or going forward in the zodiac according to the natural order of the signs.

**DIRECTION, LINE OF** (in Gunnery). The direct line in which a piece is pointed.

**DIRECTION OF A LETTER.** The superscription or address.

**DIRECTION POST.** A post set up in roads to direct the traveller to particular places.

**DIRECTION WORD.** (in Printing). The word which begins the next page, which is set at the bottom of the page preceding.

**DIRECTORY.** A form of prayer set forth by the assembly of divines, and used by order of the Long Parliament instead of the Common Prayer.

**DIRGE.** A song of lamentation at funerals.

**DIRK.** A kind of dagger used by the Highlanders.

**DISBANDED.** An epithet used for a regiment discharged from service.

**DISC.** The body or face of the sun or moon as it appears to us.

**DISC** (in Optics). The magnitude of a telescope glass, or the width of its aperture.

**DISCHARGE** (in Law). A release from confinement.

**DISCHARGE** (in Military Affairs). A remission of service for the time that a soldier has been engaged.

**DISCHARGER, or DISCHARGING ROD.** An instrument made of glass or baked wool, by the help of which an electric jar is discharged.



**DISCLAIMER** (in Law). A plea containing an express denial.

**DISCIPLINE.** In general, a rule or method of government.

**DISCIPLINE** (in Military Affairs). The training up soldiers for service.

**DISCORD.** An inharmonious combination of sounds.

**DISCOVERY** (in Law). The disclosing or revealing any thing by a defendant in his answer to a bill filed against him in a court of equity.

**DISCOUNT** (in Commerce). An allowance made on a bill or any other debt not yet become due, in consideration of immediate payment.

**DISEASE.** That state of a living body which interrupts any of its functions.

**DISEMBOGUING.** A term applied to rivers which discharge themselves into the sea.

**DISJUNCTIVE.** An epithet for conjunctions which separate the sense, as but, nor, &c.

**DISLOCATION.** The putting a bone out of its place.

**DISPATCHES.** Letters sent to or from government on public business.

**DISPENSARY.** A charitable institution, where medicine and advice are given gratis to the poor.

**DISPENSATION** (in Law). An exclusive privilege to do any thing that is otherwise prohibited by law, which is granted by the King in council.

**DISPENSATION** (in Ecclesiastical Affairs). An indulgence granted by the Pope to do what is otherwise forbidden by the church, as the marriage of first cousins, &c.

**DISPENSATORY, or PHARMACOPŒIA.** A book which directs apothecaries in the compounding or making up medicines.

**DISPERSION** (in Optics). The divergency of the rays of light.

**DISPOSITION** (in Military Affairs). The placing an army ready for attack or defence.

**DISPOSITION** (in Architecture). The just placing all the several parts of a building.

**DISSECTION.** The cutting asunder animal bodies, in order to come at the knowledge of their parts.

**DISSEISIN** (in Law). The wrongful putting out of one that is seised of his freehold.

**DISSENTER.** One who dissents or departs from the forms of the Christian Church as established in England.

**DISSIPATION** (in Medicine). An insensible loss or consumption of the minute parts of a body.

**DISSIPATION** (in Optics). The Circle of Dissipation is that circular space upon the retina which is taken up by the rays of each pencil in indistinct vision.

**DISSOLVENT.** A liquor proper for reducing a solid body to the state of a fluid.

**DISSOLUTION.** The reducing of a solid body into a fluid state, by the action of some menstruum or dissolvent.

**DISSONANCE** (in Music). A disagreeable interval between two sounds, which being continued together offends the ear.

**DISTAFF.** An instrument anciently used in spinning.

**DISTEMPER** (in Painting). Colours



not mixed with oil or water, but with size, whites of eggs, &c.

**DISTEMPER** (in Farriery). A disease incident to dogs, horses, and other domestic animals.

**DISTICH.** A couplet or couple of verses in poetry making complete sense.

**DISTILLATION.** A chymical process of drawing out the humid, spirituous, oleaginous, or saline parts of mixed bodies by means of heat, these parts being first resolved into a gas or vapour, and then recondensed into a fluid, by means of cold.

**DISTILLER.** One who follows the trade of distilling. The distillers are one of the city companies, incorporated in the reign of Queen Elizabeth.

**DISTRESS** (in Law). The distraining or seizing upon a person's goods for the payment of rent or taxes, &c.

**DISTRIBUTION** (in Printing). The taking a form asunder, so as to separate the letters.

**DISTRIBUTION** (in Medicine). The circulation of the chyle with the blood.

**DISTRIBUTION** (in Logic). The distinguishing a whole into its several constituent parts.

**DISTRIBUTIVE JUSTICE.** Justice administered by a judge, so as to give every man his due.

**DISTRIBUTIVE NOUNS.** Words which serve to distribute things into their several orders, as each, either, every, &c.

**DISTRICT** (in Law). That circuit or territory within which a man may be forced to make his appearance.

**DITCH.** A trench cut in the ground about a field.

**DITCHER.** A labourer who makes ditches.

**DITHYRAMBIC.** A sort of hymn anciently sung in honour of Bacchus; any poem written with wildness.

**DITTO,** abbreviated *D<sup>o</sup>*. The same as the aforesaid; a term used in accounts.

**DIVAN.** A council of state among the Turks; also a court of justice.

**DIVER.** A waterfowl that frequents lakes, and goes with difficulty on land.

**DIVERGENT,** or **DIVERGING.** An epithet for several things which have the property of divergency.

**DIVERGING RAYS** (in Optics). Those which, issuing from a radiant point, continually recede from each other.

**DIVERGING SERIES** (in Mathematics). A series the terms of which always become larger the farther they are continued.

**DIVIDEND** (in Arithmetic). The number to be divided.

**DIVIDEND** (in Commerce). The share of profit in a joint stock, which is to be divided among the shareholders; also that part of a debtor's effects which is to be divided among the creditors.

**DIVINATION.** A practice among the heathens of foretelling future events by the flight of birds or other signs.

**DIVINE.** A minister of the gospel, a clergyman.

**DIVINER.** One who professes the art of divination; a conjuror.

**DIVING.** The art of descending under water to a considerable depth, and remaining there for a length of time, as occasion may require. The practice of diving is resorted to for the recovery of things that are sunk, &c.

**DIVING-BELL.** A contrivance by which persons may descend below the water and remain for some time without inconvenience. It is used for the recovery of property that is sunk in wrecks.



**DIVISION.** One of the four first rules or operations in arithmetic, by which we find how often one quantity is contained in another. There are three numbers contained in this operation, namely, the dividend, or number to be divided; the divisor, or that by which one divides; and the quotient, or that number which shows how often the second is contained in the first.

**DIVISION** (in Military Affairs). A body of men commanded by a particular officer.

**DIVISION** (in Music). That part into which an octave is divided, as quavers, &c.

**DIVISION** (in Printing). A mark to divide compound words, as (-) in May-pole.

**DIVORCE** (in Law). A lawful separation of man and wife, pronounced by a competent judge, on cognizance had of the cause.

**DIURETICS**. Medicines which promote the urinary discharge.

**D. M.** Doctor Medicinæ, Doctor of Medicine.

**DOCK** (in Shipbuilding). A trench near a harbour, fitted for the building and repairing of ships.

**DOCK** (in Botany). A plant which grows wild, and infects corn fields; some species of it have medicinal virtues.

**DOCK** (in Farriery). The stump of a horse's tail.

**DOCKET** (in Commerce). A bill with a direction tied to goods.

**DOCKET** (in Law). A small piece of paper or parchment containing the heads of a large writing; also a subscription at the foot of letters patent. 'To strike a docket,' is the same as to make a man a bankrupt by process of law.

**DOCKING**. Cutting off a horse's tail to the stump.

**DOCTOR**. Literally, a teacher; the highest degree in any faculty in a university, as D. D. Doctor of Divinity, M. D. Doctor of Medicine, D. Mus. Doctor of Music, LL. D. Doctor of Laws.

**DOCTOR'S COMMONS**. A college of civilians.

**DODECAHEDRON** (in Geometry). A solid bounded by twelve equal and equilateral pentagons.

**DODECANDRIA**. One of the Linnæan classes, comprehending those plants which have flowers with twelve stamens and upwards, as far as nineteen inclusive, as dyer's weed, purslane, houseleek, &c.



**DOE**. The female deer.

**DOG**. A domestic, faithful, and valuable animal, of which there are a great many species natives of England, as the mastiff, bulldog, hound, greyhound, spaniel, terrier, pointer, &c., besides those of foreign extraction, as the Newfoundland dog, the pudel, the Danish dog, the Spanish bloodhound, &c.

**DOG-DAYS**. Certain days in the month of July and August, which are usually very

hot, owing, as is supposed, to the influence of the Dogstar, which then rises and sets with the sun.

**DOGE**. The chief magistrate in the republics of Venice and Genoa.

**DOGFISH**. A fish of the shark kind.

**DOGGREL**. An irregular kind of versification.

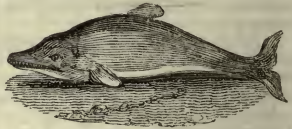
**DOGMATIC SECT**. An ancient sect of physicians, of which Hippocrates and Galen were at the head. They supposed principles, and from them drew inferences applicable to particular cases; they were opposed to the empirici, or theorists, answering to the quacks of modern days.

**DOGSTAR**, or **SIRIUS**. A star of the greatest magnitude in the constellation canis.

**DOG'S TOOTH**. A plant, the root of which resembles the tooth of a dog.

**DOLLAR**. A foreign coin, equal to about four shillings English.

**DOLPHIN**. An animal which, though commonly reckoned among the fishes, is classed by Linnæus under the mammalia. It has an oblong body, and swims with great rapidity.



**DOME**. A vaulted roof or tower of a church.

**DOMESDAY BOOK**. An ancient record, made in the reign of William the Conqueror; or a book of the survey of England, containing an account of all the demesnes of the crown.

**DOMINICAL LETTER**. One of the first seven letters in the alphabet, with which the Sundays throughout the whole year are marked in the Almanac. After the term of twenty-eight years, the same letters return in the same order again.

**DOMINO**. A game played by two or four persons, with twenty-eight pieces of ivory, called cards.

**DOMINO** (in Ecclesiastical Affairs). A sort of hood worn by canons of a cathedral.

**DON**. A title of honour in Spain, answering to Dom, or Dominus, Lord.

**DONATIVE** (in Law). A benefice given to a clerk by the patron, without presentation to the bishop.

**DONJON** (in Fortification). A tower or redoubt, where the fortress may retreat in case of necessity.

**DORIC ORDER** (in Architecture). The

most ancient of the Grecian orders, made, as is said, in imitation of the hovels erected by the original inhabitants of Greece.



**DORMER**, or **DORMENT** (in Architecture). A window made in the roof of a building.

**DORMOUSE**. An animal of the mouse kind, which remains torpid during winter.



**DORSAL**. An epithet for what belongs or relates to the back, as the dorsal fins of the fishes.

**DOSE**. The quantity of any medicine prescribed by the physician to be taken by the patient at one time.

**DOSE** (in Chymistry). The quantity of any substance which is added to any solution, in order to produce any chymical effect.

**DOTTEREL**. A foolish bird, which is found in many parts of England.

**DOUBLE ENTENDRE**. An ambiguous expression, mostly intended to convey some improper insinuation.

**DOUBLING A CAPE**. A sea term, for sailing round or passing beyond it.

**DOUBLINGS**. The turnings of a hare when she is pursued.

**DOUBLOON**. A Spanish coin, equal to £.3 6s. sterling.

**DOUCEUR**. A gift made to gain the favour or interest of a person.

**DOVE**. A wild pigeon, of which there are three sorts, namely, the ring dove, the largest of the pigeon tribe, so wild that it cannot be domesticated; the stock dove, that is migratory; and the turtle dove, a shy and retired bird living in the woods.

**DOVE-TAILING**. A method of joining one board into another, by pins in the one fitted to holes in the other.

**DOWAGER** (in Law). Properly, a widow who enjoys a dower, commonly applied as a title to the widows of princes and nobility.

**DOWER** (in Law). The portion which a widow has of her husband's lands at his decease.

**DOWLAS**. A sort of linen cloth.

**DOWN**. The finest and softest part of the feathers of a goose, &c.

**DOWNS**. A bank of sand formed by the sea along its shores; also a large open plain.

**DR**. An abbreviation for debtor and doctor.

**DRACHM**. The eighth part of an ounce.

**DRACO**. A constellation in the northern hemisphere.

**DRACO VOLANS**. A meteor in the form of a flying dragon, sometimes visible in marshy countries.

**DRAFT** (in Commerce). A bill drawn by one person upon another for a sum of money.

**DRAG**. A sort of hook to catch hold of things under water.

**DRAGOMAN**. An interpreter in the eastern countries, whose office it is to interpret for the European ambassadors at the Ottoman court.

**DRAGON**. See **FLYING DRAGON**.

**DRAGON FLY**. A particularly ravenous insect, which hovers over stagnant waters.

**DRAGON'S BLOOD**. A gum or resin of a tree in the Canaries and New Spain, formerly called *Draco Arbor*, now *Astragalus*; it is hard, compact, moderately heavy, and of a dusky red colour, but of a bright scarlet when powdered.

**DRAGON'S HEAD**. One of the nodes of the planets, particularly the moon, as distinguished from the dragon's tail. The former, marked thus (♁), is the northward point, as she ascends from the south to the north; the latter is the southward point, marked (♁).

**DRAGOON**. A soldier who fights sometimes on foot and sometimes on horseback.

**DRAGS.** Floating pieces of timber, joined so that they may carry a load down a river.

**DRAIN.** A watercourse sunk in a field for the purpose of carrying off the water.

**DRAINING, or LAND DRAINING.** The process of carrying water off from the land, sometimes by means of open drains, but more commonly by drains made to a certain depth under the ground, which are filled with bushes so as to admit the water.

**DRAM.** See **DRACHM.**

**DRAMA.** A play, or any piece fitted for theatrical representation. Dramas are either tragedies, comedies, operas, or farces.

**DRAMATIS PERSONÆ.** The performers and characters in any particular piece.

**DRAPER.** A seller of cloth; as a woollen draper and a linen draper. The Drapers are one of the city companies, incorporated in the reign of Henry VI.

**DRAUGHT, or DRAFT** (in Architecture). The figure of an intended building, described on paper.

**DRAUGHT** (in Navigation). The quantity of water which a ship draws when she is afloat.

**DRAUGHT** (in Military Affairs). A detachment of soldiers drawn off from the main army.

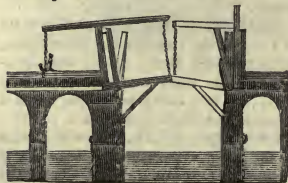
**DRAUGHT** (in Husbandry). What pertains to drawing, as draught horses.

**DRAUGHTS.** A game played with pieces on a checkered board, like a chess board, where by particular movements they are enabled to take each other, according to certain rules.

**DRAUGHTSMAN.** One who follows the profession of taking plans and sketches of buildings and places.

**DRAWBACK** (in Commerce). An allowance made to merchants on the exportation of goods which paid duty inwards.

**DRAWBRIDGE.** A bridge made so as to let up and down at pleasure.



**DRAWER.** A box in a case, from which it may be drawn.

**DRAWER OF A BILL.** One who writes and signs a bill for a sum of money to be paid to another.

**DRAWING.** The art of representing objects on paper, canvass, &c. by means of a pencil or a pen; also the representations so made, as drawings in India ink, pencil drawings, &c.

**DRAWINGROOM.** The room in which company assemble at court; or to which, in common cases, parties withdraw after dinner; also the company assembled at court to pay their respects to the sovereign.

**DRAW-WELL.** A deep well, in which water is drawn up by means of a wheel, a rope, and a bucket.

**DRAY.** A brewer's cart.

**DRAYMAN.** The driver of a dray.

**DREAM.** The acting of the imagination in sleep, which represents objects without the help of the senses.

**DREDGE.** A kind of net for catching oysters.

**DREDGING.** The process of catching oysters, by the removing or dragging the mud with dredges, &c.

**DRESS.** Clothing for the body.

**DRESS** (in Husbandry). Any stuff, such as loam, sand, &c. which is put on land to improve the soil.

**DRESSER.** One employed in putting on the clothes of another, particularly for the purposes of ornament.

**DRESSER** (in Military Affairs). One who dresses a line of soldiers, or makes them stand with an even front.

**DRESSER** (in Housewifery). A bench on which meat is dressed or prepared for the cook.

**DRESSING** (in Husbandry). The cleaning of hemp, flax, &c. so as to prepare it for spinning.

**DRESSING** (among Letterfounders). The scraping, bearding, &c. of letters before they are used by the printer.

**DRESSING** (in the Manege). The cleaning and trimming a horse.

**DRIFT.** A sea term for any thing that floats upon the water; also the course which a ship makes when she is driven by a storm.

**DRILLING** (in Military Affairs). The teaching young recruits the first principles of military movements.

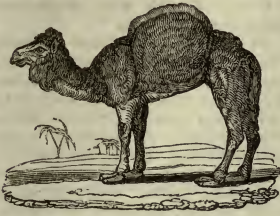
**DRILLING** (in Husbandry). A modern mode of putting seed into the ground by a machine called a drilling machine, which makes channels in the ground and lets the seed into them, so that it comes up in rows at regular distances from each other.

**DRINK.** A liquid medicine given to a horse.

**DRIP.** The projecting part of a cornice.

**DROMEDARY.** A sort of camel with

one bunch, which is said to be very swift, and able to travel more than one hundred miles in a day.



**DRONE.** A large kind of bee or wasp, which is without a sting. It is the male of this tribe of insects.



**DROP.** An ornament in pillars of the Doric order.

**DRUPSY.** A collection of watery humour, either throughout the whole body, or in some part of it, as the cavity of the abdomen.

**DROVERS.** Men employed to drive cattle to or from market.

**DRUGGET.** A kind of woollen stuff.

**DRUGGIST.** A dealer in drugs.

**DRUGS.** All kinds of simples, which are for the most part dry, and fit for medicinal uses.

**DRUIDS.** A sort of priests among the ancient Gauls and Britons.

**DRUM.** A musical instrument much



used in the army, consisting of vellum strained over a wooden cylinder on each end, and beaten with sticks.

**DRUM** (in Anatomy). A membrane of the cavity of the ear.

**DRUMMER** (in Military Affairs). A soldier who beats the drum.

**DRUM MAJOR.** He who has the command over the other drummers.

**DRUPE** (in Botany). A pulpy fruit, containing a nut or stone, with a kernel like the plum.

**DRYADS.** Nymphs inhabiting woods.

**DRY ROT.** A disease incident to timber in floorings, &c.

**DUCAL CORONET.** A circle of gold with eight strawberry or parsley leaves of equal height about the rim.



**DUCAT.** A foreign coin of different values. Dutch ducats are equal to 9s. 6d. sterling.

**DUCATOON.** A silver coin in Holland, worth about 5s. 6d.

**DUCK.** A water fowl, both wild and tame.

**DUCK, or RUSSIA DUCK** (in Commerce). The best sort of canvass.

**DUCKWEED.** A plant growing in ditches and stagnant waters; it is an annual much liked by ducks.

**DUCT.** A channel or passage for any fluid in the body.

**DUCTILITY.** A property possessed by certain bodies, particularly metals, of yielding to any pressure, by which their parts may be expanded by hammering.

**DUEL** (in Law). Originally a combat between two persons for the trial of the truth; but now an unlawful battle between two persons on some private quarrel, in the which, if death ensue, both the principal and the seconds are guilty of murder.

**DUES** (in Law). Monies due to the clergy, as Easter offerings, &c.

**DUET.** A little song in two parts.

**DUKE.** A sovereign prince in Germany; the highest title of honour in England next to the Prince of Wales.

**DUMOSÆ.** One of Linnæus's natural orders of plants, consisting of shrubs and bushes, as laurels, firs, &c.

**DUNGEON.** The darkest and closest part of a prison.

**DUODECIMALS, or CROSS MULTIPLYING**

**CATION.** A rule used by workmen and artificers in computing the contents of their work. Dimensions are usually taken in feet, inches, and parts.

**DUODENARY ARITHMETIC.** That in which the local value of the figures increases in a twelvefold proportion.

**DUPLICATE.** Any manuscript copied after another.

**DUPLICATE RATIO** (in Geometry). The product of a ratio multiplied into itself.

**DURA MATER.** One of the membranes which encloses the brain.

**DURANTE** (in Law). During, as *Durante bene placito*, during pleasure; *Durante minore ætate*, during minority.

**DURESS.** An unlawful imprisonment.

**DUTCHY** (in Law). A seignory or lordship formerly established by the king, with several privileges, honours, &c.

**DUTY.** What is paid or due by way of custom on merchandise in general.

**DWARF.** A man much below the ordinary size.

**DWARF** (in Botany). A term for plants

that grow low, as distinguished from those of the same kind which rise to a considerable height.

**DYKE.** A bank, mole, or causeway raised to stop the floods.

**DYNAMICS.** The science of moving powers, particularly of the motion of bodies mutually acting on one another. It is a branch of the science of mechanics, and is distinguished from statics in this, that the former considers bodies only as regards their motion, but the latter considers those bodies when in a state of rest, as to their equilibrium. When fluids, instead of solids, are the subjects of investigation, that which treats of their equilibrium, weight, pressure, &c. is called hydrostatics, and that which treats of their motion, hydrodynamics.

**DYNASTY.** A series of princes who have reigned successively in any kingdom, particularly applied to the Egyptian kings.

**DYSENTERY.** A difficulty or disturbance in the intestines, which impedes their functions.

## E.

**E**, the fifth letter of the alphabet, stood as a numeral for 250; stands as an abbreviation for *est*, as *i. e. id est*; also for east; as a sign of particular notes in music.

**EAGLE.** A bird of prey, said to be the swiftest, strongest, and boldest of all birds. It has a long hooked beak, yellow scaly legs, thick crooked talons, a short tail, and a very keen sight. The common eagle is here represented.



The eagle, as a bearing in coat armour, is reckoned as honourable among the birds as the lion is among the beasts.

**EAR.** The organ of hearing in an animal body, which consists of the external ear, or all that lies without the external orifice of the meatus auditorius, and the internal ear, or that which lies within the cavity of the os temporis.

**EARL.** A title of nobility, between a marquis and a viscount, now the third degree of rank.

**EARL MARSHAL.** Who has the care and direction of funeral solemnities. This office belongs by hereditary right to the Duke of Norfolk.

**EARL'S CORONET.** Has no flowers raised above the circle, like that of a duke and a marquis, but only points rising, and a pearl on each of them.



**EARNEST** (in Commerce). Money advanced to bind the parties to the performance of a verbal bargain.

**EAR-RING.** An ornament hung on the ears, particularly of women.

**EARTH** (in Mineralogy). A substance

formerly considered as one of the four elements of which the material world is composed. The term is now applied to such substances as have neither taste nor smell, that are incombustible, and nearly insoluble in water, the specific gravity being under five, as lime, barytes, silica, clay, &c.

**EARTH** (in Astronomy). One of the primary planets, marked by the character  $\oplus$ . According to the Ptolemaic system it was supposed to be immoveable in the centre of the universe, but according to that of Copernicus it moves from west to east, so as to occasion the succession of day and night, and also annually round the sun, so as to cause the different seasons.

**EARTH NUTS.** A kind of plant the pods or nuts of which ripen under ground. The nuts yield a quantity of oil.

**EARTHQUAKE.** A violent shock or concussion of the earth, or some parts of it, caused by an accumulation of electrical matter within the bowels of the earth, which force a passage, and cause much destruction of houses, cities, trees, and whole tracts of country. In hot countries earthquakes are most frequent.

**EARTHWORM.** A worm bred under ground, being the common species of the worm.

**EARWIG.** An insect with sheath wings, which was formerly imagined to creep into the ear, but this idea does not appear to be borne out by the fact, no case of the kind having yet been witnessed or recorded.

**EASEL.** A frame on which a painter sets the cloth, &c. to be painted.

**EAST.** One of the four cardinal points, where the sun rises.

**EASTER.** A solemn festival observed among Christians, in commemoration of the resurrection of our blessed Lord and Saviour Jesus Christ. This feast was fixed by the council of Nice, in the year 325, to be held on the Sunday which falls upon or immediately after the full moon which happens next after the twenty-first of March.

**EASTER OFFERINGS.** Money paid at Easter to the parson of the parish.

**EASTERLING.** A money coined by Richard II., which is supposed to have given rise to the name of sterling, as applied to English money.

**EAU DE LUCE.** A fragrant liquor, made chiefly of mastic dissolved in alcohol.

**EAVES.** The edges of the roof of a house, which overhang the wall, for the purpose of throwing off the water.

**EAVESDROPPER.** One who stands under the eaves of houses, for the purpose of listening to what passes within.

**EBB.** The retirement or going away of the tide.

**EBONY.** A sort of black wood, which admits of a fine polish. It is the wood of the eben tree, which grows in India, Ethiopia, and the Levant.

**EBULLITION.** The effervescence which arises from the mixture of an acid and alkaline liquor.

**ECCE HOMO.** A painting which represents our Saviour in a purple robe, and with a crown of thorns on his head.

**ECCENTRIC CIRCLES.** Circles not having the same centre.

**ECCENTRIC CIRCLE,** or **ECCENTRIC** (in Modern Astronomy). The circle that circumscribes the elliptical orbit of the planet.

**ECCENTRICITY** (in Modern Astronomy). Is the distance between the sun and the centre of the eccentric.

**ECCLESIASTIC.** A clergyman; one dedicated to the ministerial office.

**ECHO.** A sound reflected or reverberated from some body, and thence returned or repeated to the ear. Echoing bodies may be so contrived as to repeat the echo several times. At Milan there is said to be an echo which reiterates the report of a pistol fifty-six times, and if the report be exceedingly loud, the reiteration will exceed that number. The celebrated echo at Woodstock, in Oxfordshire, repeats the same sound fifty times. But the most singular echo hitherto spoken of is that near Rosneath, a few miles from Glasgow. If a person placed at a proper distance from this echo plays eight or ten notes of a tune with a trumpet, they are correctly repeated by the echo, but a third lower; after a short pause, another repetition is heard, in a lower tone; and then, after another interval, a third repetition follows in a still lower tone.

**ECHO** (in Architecture). Any vault or arch constructed so as to produce an artificial echo. These are generally of a parabolic or elliptic form: of this kind is the whispering gallery in St. Paul's Cathedral, and in some other large buildings.

**ECHO** (in Poetry). A sort of verse which returns the sound of the last syllable.

**ECHOMETER.** A kind of scale or rule to measure the duration of sounds.

**ECLECTICS.** Ancient philosophers, who adhered to no sect, but selected what was best and most rational.

**ECLIPSE.** An obscuration of the sun,

moon, or any heavenly body. An eclipse may be either partial, when only part of the body is darkened, or it may be a total eclipse, when the whole is darkened. A lunar eclipse is the depriving the moon of the sun's light, by the interposition of the earth between the sun and the moon. A solar eclipse is the privation of light which the sun suffers in regard to us by the interposition of the moon between the sun and the earth.

**ECLIPTIC.** A great circle of the sphere, in which the sun performs his apparent annual motion. It is supposed to be drawn through the middle of the zodiac, and makes an angle with the equinoctial of nearly  $23^{\circ} 30'$ , which is called the obliquity of the ecliptic.

**ECLOGUE.** A pastoral poem, wherein shepherds are introduced discoursing together. It is so called after the Eclogues of Virgil.

**ECONOMY.** In the general sense, the regulation of things, or the due distribution of means to an end. Political Economy is a science which treats on the wealth and resources of a nation, and the manner in which they may be best employed to increase the prosperity of the people. Adam Smith has treated at large on this subject in his *Wealth of Nations*.

**E CONTRA.** On the contrary.

**ECTHLIPSIS.** The cutting off a vowel or consonant.

**EDGE.** The sharp cutting part of an instrument.

**EDGE TOOL.** A tool made sharp for cutting.

**EDIBLE ROOTS.** Roots that are fit for food, as the potatoe, carrot, &c.

**EDICT.** A public ordinance or decree issued by a prince.

**EDITION.** The act of publishing a book; also the republication of a book generally.

**EDULCORATION** (in Chymistry). The washing of things that have been calcined, in order to purify them from their salts.

**EDULCORATION** (in Pharmacy). The sweetening any medicinal preparation.

**EEL.** A voracious slimy fish, very similar to a lizard, that lurks and feeds in mud.

**EEL POUT.** A young eel.

**EEL SPEAR.** A forked instrument with which eels are caught.



**EFFECTIVE** (in Military Affairs). A term for any body of men that are fit for service.

**EFFECTS.** The moveables or goods of any merchant, tradesman, &c.

**EFFERVESCENCE** (in Chymistry). A violent commotion in the parts of any liquor, accompanied with some degree of heat.

**EFFICIENT CAUSE.** Any cause that actually produces an effect.

**EFFIGY.** Any representation whatever which gives, or is intended to give, the figure of a person; thus, the figure of a man dressed up and carried about in derision of any one is called his effigy; when this is burnt, the person is said to be burnt in effigy.

**EFFLORESCENCE** (in Botany). The flowering of plants.

**EFFLORESCENCE** (in Chymistry). The conversion of any body into a dry powder.

**EFFLUVIA.** Small particles perpetually flowing out of mixed bodies in the form of vapours, which are sometimes visible, as in the case of smoke or steam; and sometimes not perceptible, as insensible perspiration.

**EFFUSION.** The pouring out a liquor so that the sediment may remain.

**EFFUSION** (in Surgery). The natural secretion of fluids from the vessels.

**EFT.** A sort of lizard, which has a body covered with scales.

**E. G.** An abbreviation for *Exempli gratia*, that is, for example, or by way of example.

**EGG.** The fœtus or production of feathered fowls; that which they lay, and from which they hatch their young; also the spawn or sperm of other creatures. The eggs of birds are composed of the shell, or external coating, a thin, white, and strong membrane, the albumen or white, and the yolk.

**EGLANTINE.** The wild rose.

**EGRET.** A bird of the heron tribe.

**EIDER-DUCK.** A kind of duck remarkable for the softness of its down.

**EIDOURANION.** An exhibition of the heavens and the heavenly bodies.

**EJECTMENT.** A writ or action which lies for the lessee for a term of years, who is cast out before his term is expired; also the putting any one out of an estate by a legal process.

**ELASTICITY.** That property of bodies of restoring themselves to their former figure after any external pressure. Elasticity is increased by augmenting the density of



bodies; thus metals are rendered more elastic by being beaten by a hammer: it is also sometimes increased by cold; thus the strings of a violin recover their situation with less force in hot than in cold weather.

**ELECTION** (in Law). The choice of two remedies, either of which, when chosen, the party is compelled to abide.

**ELECTION**. The choosing of persons to a particular office or situation by a majority of voices, as the election of parish officers, or the election of members of parliament, which takes place every seven years.

**ELECTIVE ATTRACTION**. Another name for chymical affinities.

**ELECTOR** (in Political Affairs). The title of such German princes as formerly had a voice in the election of the emperor of Germany.

**ELECTOR** (in English Law). Any one who has the right of giving his voice at an election, particularly at an election of a member of parliament.

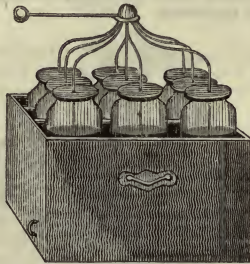
**ELECTRIC**. A term for any substance capable of being excited either by friction or otherwise so as to exhibit the phenomena of electricity. Bodies thus capable of accumulating and retaining the electric fluid are impervious to its power, and it should seem that in proportion as they are capable of being excited, so are they less pervious; and, on the other hand, those which are more pervious are less capable of excitation. They are called electrics, or nonconductors, in distinction from those which are capable of receiving and transmitting electricity, and on that account called conductors. To the class of electrics belong resins, bitumens, glass, dry animal substances, feathers, paper, white sugar, oils, chocolate, &c. Substances of this description may be excited, so as to exhibit the electric appearances of attracting and repelling light bodies, emitting a spark of light, attended with a snapping noise, and yielding a current of air, the sensation of which resembles that of a spider's web drawn over the face, and a smell like that of phosphorus. This excitation may be effected either by friction, or by heating and cooling, or by melting and pouring one melted substance into another.

**ELECTRIC FLUID**. A fine rare fluid, supposed to issue from and surround electrical bodies.

**ELECTRICAL APPARATUS**. The various instruments and machines necessary for the most usual experiments in electricity are two or three glass tubes, from three to five feet in length, and an inch and a half in diameter, one of which

should be closed at one end, and furnished at the other end with a brass cap and stopcock, to rarefy or condense the enclosed air; insulated stools or supports of various forms, wires, fine brass chains, sticks of sealing wax, or cylinders of baked wood, for producing the negative electricity; proper rubbers, as black oiled silk, with amalgam upon it, and soft new flannel or hare or cat skins tanned with the hair on; coated jars, or plates of glass, either single or combined in a battery for accumulating electricity; metal rods, or dischargers; an electrical machine, electrometers, &c.

**ELECTRICAL BATTERY**. A number of coated jars connected with each other, which being charged or electrified are then exploded or discharged with prodigious effect.



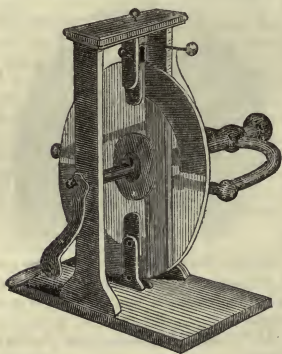
**ELECTRICAL EEL**. A particular sort of fish, so called from its power of producing an electrical shock whenever it is touched.

**ELECTRICAL JAR**. See **LEYDEN PHIAL**.

**ELECTRICAL KITE**. A contrivance devised by Dr. Franklin, for verifying his hypothesis respecting the identity of electricity and lightning. It consists of a large thin silk handkerchief, extended and fastened at the four corners to two slight strips of cedar, and accommodated with a tail, loop, and string, so as to rise in the air like a paper kite. To the top of the upright stick of the cross was fixed a sharp pointed wire, rising a foot or more above the wood, and to the end of the twine, next the hand, was attached a silk riband. From a key suspended at the union of the twine and silk, when the kite is raised during a thunder storm, a phial may be charged, and electric fire collected, as is usually done by means of a rubbed glass tube or globe: kites made of paper, covered with varnish, or with well boiled linseed oil, in order to preserve them from the rain, with

a stick and cane bow, like those of school-boys, will answer the purpose extremely well, particularly in determining the electricity of the atmosphere.

**ELECTRICAL MACHINE.** The principal part of the electrical apparatus so constructed as to be capable of exciting a great quantity of the electric fluid, and exhibiting its effects in a very sensible manner. It is constructed in various forms, but the cylindrical machine is in most common use. This consists of a glass cylinder, fixed in such manner that it may be turned with a winch; a cushion, supported by a glass pillar, and having a piece of silk which comes between it and the cylinder; and a tube, supported by a glass pillar, which is called the prime conductor, or simply the conductor. A more modern invention, called the Plate Machine, is here represented.



**ELECTRICAL RUBBER.** A part of the electrical apparatus, consisting of black oiled silk, which serves to aid the friction in the electrical machine.

**ELECTRICAL SHOCK.** The sudden explosion between the opposite sides of a charged electric; also the effect produced on the frame in the act of being electrified.

**ELECTRICITY, or ELECTRIC POWER.** That property first discovered in amber of attracting light bodies when excited by heat or friction. This property, which derives its name from the Greek Electron, amber, in which it was first observed, has since been found in other bodies, as sealing wax, agate, and most kinds of precious stones, and has also, by subsequent discoveries, been found capable of being communicated under different circumstances.

**ELECTRICITY.** The science which

treats of the electric power, and its various laws, operations, effects, experiments, &c.

**ELECTRICITY, HISTORY OF.** It does not appear that the ancients had any thing more than an imperfect and partial knowledge of the electric fluid. Thales, the Milesian, who lived about six hundred years before Christ, was aware of the electrical property of amber, that when rubbed it would attract light bodies to itself; and Theophrastus observed that lycurium or tourmalin possessed the same property, but beyond this there is no mention of the subject, either by this or any other writer, until the seventeenth century, when Dr. William Gilbert, a native of Colchester, published his treatise 'De Magnete,' in which we find many important and interesting particulars. These received farther illustration from the experiments of Boyle, Otto Guericke, Dr. Wall, and some others, but more especially from Mr. Hawksbee, who, in his work on electricity, first noticed the electrical power in glass, and the light proceeding from it. He also first heard the snapping noise that accompanies excitation, and noticed the different phenomena relating to electrical attraction and repulsion: besides, by introducing the glass globe into the electrical apparatus, he much facilitated his own experiments and those of others. After an interval of about twenty years, Mr. Stephen Grey added very materially to the science of electricity by numerous important experiments. He first showed how the power of native electrics might be communicated to other bodies in which it cannot be excited, by supporting them on silken lines, hair lines, cakes of resin or glass. He also more accurately distinguished between electrics and non-electrics, and displayed the effect of electricity on water more clearly than Gilbert had done.

The experiments of Mr. Grey were elucidated and enlarged by M. du Fay, member of the Academy of Sciences at Paris. He observed that electrical operations were obstructed by great heat, as well as by a moist air; that all bodies, both solid and fluid, would receive electricity, when placed on warm or dry glass or sealing wax; that those bodies which are naturally the least electric have the greatest degree of electricity communicated to them by the approach of the excited tube. He first observed the electric spark from a living body suspended on silken lines, and established a principle first suggested by Otto Guericke, that all electric bodies attract others that are not so, and repel them as soon as they are become

electric by the vicinity or contact of the electric body. He likewise distinguished electricity into two kinds, which he called vitreous, as belonging to glass, rock, crystal, &c., and resinous, as applied to that of amber, gum, lac, &c.; the former of these has since been called positive electricity, and the latter negative.

Mr. Grey resumed his experiments in 1734, the result of which was the discovery of conductors. He also concluded from several experiments that the electrical power was of the same nature as that of thunder and lightning. Desaguliers and other experimentalists in France, England, and Germany, followed up the experiments of Mr. Grey with further researches, which displayed the power of electricity in new forms, particularly by the discovery that if electricity be accumulated in a phial, it may be discharged again so as to occasion the electric shock. Mr. Van Kleist, of Leyden, first observed the property of the phial, and Cunæus followed it by exhibiting the experiment. Mr. Muschenbrock, who also tried the experiment with a very thin bowl, assured M. Reaumur, in a letter, that he felt himself struck in his arms, shoulder, and breast, so that he lost his breath, and was two days before he recovered from the effects of the blow, and the terror which this unexpected result produced. He added that he would not receive a second shock for the whole kingdom of France. M. Allemand made the experiment with a common beer glass, from which he found himself powerfully affected in his breath, and felt so severe a pain all along his right arm, that he apprehended serious consequences from it. These inconveniences, however, passed off after a few days, and others being induced to repeat the experiment, the practice of electricity became soon after common, and was, after a time, also applied to medical purposes. Machines of different forms were now invented, and the electrical apparatus was continually enlarged, by some new device, to increase the force or direct the operations of the electricity; among other things, when it was ascertained that lightning was no other than electrical matter, conducting rods began to be employed on the tops of buildings and on the masts of vessels, for the purpose of saving them from the effects of storms. Many important treatises on the science of electricity have been written within the last century, by Adams, Cavallo, Cavendish, Ferguson, Morgan, Van Marum, Van Swinden, &c.

**ELECTRIFYING.** The communication of electric matter to any body; when this

is effected by means of a charged phial, it is called an electric shock.

**ELECTROMETER.** An instrument for measuring the quantity and determining the quality of the electricity in any electrified body.



**ELECTROPHORUS.** A machine consisting of two plates, one of which is a resinous electric and the other metallic. When the former is once excited by a peculiar application of the latter, the instrument will furnish electricity for a considerable time. This is one of the ingenious contrivances devised by Professor Volta, about the year 1774, which may serve as a good substitute for the electrical machine. When properly constructed, it has been known to retain its electricity for three weeks.

**ELECTUARY** (in Pharmacy). A medicinal composition, in which honey or sirup forms a necessary ingredient.

**ELEGIAC VERSE.** A sort of verse used in elegies.

**ELEGY.** A plaintive kind of poetry, or a funeral song.

**ELEMENTS** (in Chymistry). The first principles of which bodies were supposed by the ancients to be composed; these were fire, air, earth, and water. In modern chymistry no such elementary principles are admitted, because it is considered that all bodies either are or may be decomposed.

**ELEMENTS** (in Geometry). The infinitely small parts of a right line, curve, or solid.

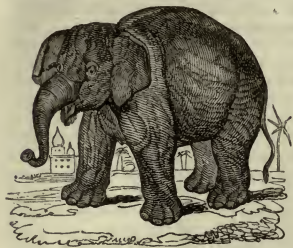
**ELEMENTS** (in Science). The first principles of any science.

**ELEMENTS** (in Divinity). The bread and wine prepared for the sacrament of the Lord's Supper.

**ELEMENTS** (in Grammar). The letters of the alphabet, which are the elements of language.

**ELEPHANT.** The largest, strongest, and

sensiblist of all quadrupeds. It is not carnivorous, but feeds on herbs, and all sorts of pulse. It is naturally very gentle, but when enraged is very terrible.



**ELEVATION** (in Astronomy). The height of the equator, pole, or star, &c. above the horizon.

**ELEVATION** (in Architecture). A draught or description of the face or principal side of a building, which, in common language, is called the upright.

**ELEVATION** (in Gunnery). The angle which the chase of a cannon or mortar makes with the place of the horizon.

**ELEVATION OF THE HOST** (in the Romish Church). That part of the ceremony of the mass which consists in the priest's raising the host above his head for the adoration of the people.

**ELF**. A wandering spirit supposed to be seen in unfrequented places.

**ELGIN MARBLES**. Curious marbles brought by the Earl of Elgin out of Greece, and deposited in the British Museum.

**ELISION** (in Grammar). The striking out a vowel at the end of a word, as 'th' arch,' for 'the arch.'

**ELIXIR**. A very powerful tincture. The Grand Elixir is another word for an all-powerful medicine.

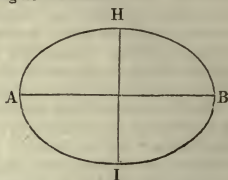
**ELK**. A quadruped of the stag kind, which inhabits all parts of the world except Africa.



**ELL**. A measure of length, different in

different countries. The English and Flemish ells are the most used: the former of which is three feet nine inches, or one yard and a quarter; the latter only three quarters of a yard.

**ELLIPSIS**, or **ELLIPSE**. A curve which cuts the cone obliquely through both sides. It is vulgarly called an oval, as in the subjoined figure, A H B I, where A B is the transverse diameter, H I the conjugate diameter



**ELM**. A sort of tree which grows to a very great height, and thrives best in a rich black earth. The timber of elm is next to that of oak for value, being particularly useful for mills.

**ELOCUTION** (in Rhetoric). The adapting words and sentences to the things or sentiments to be expressed. It consists in apt expressions, the happy order in disposing the words, and a certain musical cadence which arises from the whole.

**ELONGATION** (in Astronomy). The removal of a planet to the farthest distance it can be from the sun, as it appears to an observer on the earth.

**ELOPEMENT** (in Law). The voluntary departure of a wife from her husband to go and live with an adulterer; in common acceptance, the secret departure of any female with her lover.

**ELYSIAN FIELDS**. The paradise of the heathens.

**EMANCIPATION**. A deliverance from slavery or servitude; also the release of the Roman Catholics from the disabilities which prevented them from filling offices of state.

**EMBALMING**. The filling a dead body with spices, gums, and other antiseptics, to prevent it from putrifying. The Egyptians practised this art most successfully, so that bodies which they embalmed two thousand years ago remain whole to this day.

**EMBARGO** (in Commerce). A prohibition issued by authority on all shipping, not to leave any port.

**EMBER DAYS**. Particular days of fasting and humiliation in the Ember weeks.

**EMBER WEEKS**. Four seasons in the year more particularly set apart for prayer and fasting, namely, the first week in Lent,

the next after Whitsuntide, the fourteenth of September, and the thirteenth of December.

**EMBEZZLEMENT.** The appropriating a thing to one's own use, which has been intrusted to one.

**EMBLEM.** A kind of painted enigma, or certain figures painted or cut metaphorically, expressing some action.

**EMBOSSING.** A sort of sculpture or carving, where the figure is protuberant, and projects from the plane in which it is cut.

**EMBRASURE (in Architecture).** An enlargement made in a wall.

**EMBRASURE (in Fortification).** A hole in a parapet for the reception of a gun.

**EMBROCATION.** A kind of fomentation.

**EMBROIDERY.** Figured work wrought on silk, cloth, or stuffs.

**EMBRYO.** The fœtus, or child in the womb.

**EMENDATION.** An alteration made in the text of any book by verbal criticism.

**EMENDATION (in Law).** The correction of abuses.

**EMERALD.** A precious stone of a green colour, and next in hardness to the ruby.

**EMERSION (in Astronomy).** The re-appearance of the sun and moon after they have undergone an eclipse; also of a star that emerges from under the rays of the sun.

**EMERY.** A sort of iron ore, of a grayish-black colour, so very hard as to scratch topaz, and not to be frangible. It consists of alumina, silica, and iron, and is used in the form of a powder for polishing hard minerals and metals.

**EMIGRANT.** A person removing from his native country to reside in some foreign land.

**EMIR.** A title of dignity among the Saracens and Turks.

**EMISSARY.** A secret agent sent to sound the sentiments and designs of another.

**EMMET.** An ant or pismire.

**EMOLLIENTS.** Softening medicines.

**EMPALEMENT (in Botany).** The flower cup, or the green leaves which cover the flower.

**EMPANNEL.** The writing the names of a jury into a small pannel or parchment, or making out a list of such as are to be summoned to serve on a jury.

**EMPEROR.** Among the Romans, imperator, or commander, a title of political dignity assumed by Augustus and his suc-

cessors; now a sovereign prince who bears rule over large countries.

**EMPIRIC.** Literally, a trier or experimenter; particularly, one who, without regard to the rules of science, makes experiments with medicines; a quack.

**EMPORIUM.** A common resort of merchants for trade.

**EMPYREUMA.** The peculiar smell of burnt substances in distillation.

**EMULSION.** A medicinal drink.

**ENAMEL (in Anatomy).** The fine exterior covering of the teeth.

**ENAMEL (in Painting).** A composition of mineral colours, formed from metallic oxide, and used in potteries.

**ENAMELLER.** One who professes the art of painting with enamel colours.

**ENCAMPMENT.** The pitching of tents or disposing an army in an open country.

**ENCHANTMENT.** Magical charms practised for purposes of fraud.

**ENCHASING.** The beautifying gold, silver, and other metal works by figures. It is practised only on hollow thin works, as watchcases, caneheads, and the like. It is performed by punching or driving out the metal to form the figure, so as to stand out prominent from the surface of the metal.

**ENCHYRIDION.** A manual or small volume.

**ENCLOSING.** The parting off of common grounds into distinct possessions.

**ENCORE.** Literally, again; to be repeated, as applied to any song or performance in a theatre.

**ENCROACHMENT (in Law).** An unlawful gaining upon the rights and possessions of another.

**ENCYCLOPÆDIA.** A dictionary which professes to explain the whole circle of the sciences.

**ENDEMIC.** An epithet for disorders to which the inhabitants of particular countries are subject.

**ENDIVE.** An herbaceous plant, a sort of succory, used as a vegetable for the table.

**ENDORISING.** Writing on the back of a bill of exchange or check.

**ENDOWMENT (in Law).** The giving or assuring a dower to a woman; also the assigning certain rents and revenues for the maintenance of a vicar, almshouses, &c.

**ENFRANCHISEMENT (in Law).** The making a person a denizen, or free citizen.

**ENGINE (in Mechanics).** A compound machine, consisting of one or more mechanical powers, as of screws, levers, pullies, &c. in order to raise, cast, or sustain any weighty body.

**ENGINEER.** One whose office is to conduct the attack and defence of all fortresses.

**ENGLISH,** or the **ENGLISH LANGUAGE.** A compound of the original British or Welsh, the Anglo-Saxon, Norman, French, Latin, and Greek, which is now spoken not only in all parts of Great Britain, but throughout North America and all the English colonies in different parts of the habitable globe.

**ENGRAVING.** The art of representing figures in metal, wood, or stone, by means of lines cut thereon.

**ENGRAVING, HISTORY OF.** Engraving, as far as regards the representation of figures or characters on metal, stone, or wood, was one of the first arts on which human ingenuity was exercised. Moses speaks of the art of engraving as no new invention. The tables which God delivered to Moses are said to be the work of God, and the writing was the writing of God engraved upon the tables. The first engravings of human workmanship mentioned in the Scriptures, were executed by Aholiab and Bezaleel, for the decoration of the tabernacle and the ornaments for the dress of Aaron. It is also said that the tables of Seth contained the astronomical discoveries of that patriarch and his sons. In process of time we find that the clasps, buckles, rings, and other ornamental parts of dress, as also the cups and other household furniture, together with the arms of military chieftains, were probably enriched with the first specimens of engraving. The shields of the Carians, as described by Herodotus, were ornamented with rude portraitures, as were also those of the ancient Celtic nations, but the hieroglyphic figures of the Egyptians afford the best and earliest specimens of engraving properly so called. The Phœnicians probably learned this art from the Egyptians; and their coins, which are looked upon to be among the most ancient extant, prove, as Mr. Strutt observes, that they were by no means indifferent artists. It is, however, generally supposed, that there are no remains in antiquity, either in sculpture, painting, or engraving, prior to those of Etruscan original. Some of those which are preserved in the British Museum are exceedingly rude, and evidently executed with the graver only upon a flat surface, and if filled with ink and run through a printing press, provided the plate would endure the operation, might produce a fair and perfect impression.

The art of engraving on their shields was practised by the Saxons, in common

with the other northern tribes. Alfred the Great encouraged this among the other arts, and the works of the Saxon artists, as their shrines and caskets, rose by his encouragement and that of his successors, considerably in estimation, not only in England but on the continent. Strutt mentions a curious remnant of antiquity in the Museum at Oxford, namely, a very valuable jewel, made of gold, and richly adorned with a kind of work resembling filagree, in the midst of which is seen the half figure of a man, supposed to be Saint Cuthbert. The back of this jewel, which was engraved by command of Alfred, is ornamented with foliage very skilfully executed. Saint Dunstan, the celebrated archbishop of Canterbury, who died A. D. 988, is also noted for his skill in the arts. Osborn, his biographer, enumerates among his other endowments that he could 'scalpello imprimere ex auro, argento, ære, et ferro.'

After the Conquest, it appears that engraving, which had hitherto been mostly followed in conjunction with the sister arts of carving and chasing, was now followed as a distinct art, and carried to a higher state of perfection, as may be learned from the brass plates so frequently to be met with in our churches or on the tombstones in the fourteenth and following centuries. These are usually ornamented with the effigies of the person to whose memory they are dedicated, and are evidently executed by the graver only; the outlines being first made, then the shadows are expressed by strokes strengthened in proportion as they required more force, and occasionally crossed with other strokes a second or third time, precisely in the same manner as copperplate is at present engraved for printing. Thus we see that the art of engraving was for a long time practised before it was made to answer the noble purpose of perpetuating the labours of the painter.

That branch of the art of engraving which consists in taking impressions on paper was, according to Giorgio Vasari, first practised by the Italians, and took its rise from an accident. One Maso Finiguerra, an ingenious goldsmith and sculptor of Florence in the fifteenth century, used to design and emboss figures on gold and other metals, and before he inlaid them he used to fill the engraving with earth, and cast melted sulphur on it, which gave it a sort of olive colour, after which, pressing a piece of damp paper on it with a smooth wooden roller, the engraving on

the metal remained imprinted on the paper, just as if it had been designed with a pen, in consequence of which Andrew Mantegna set about making regular prints from his engravings. The correctness of this story, however, as far regards the priority of the discoverer, is disputed by Strutt and others.

It should seem that impressions from engravings on wood had been taken in Germany prior to this, and that the brief malers, or the makers of playing cards, practised the art of cardmaking about the fifteenth century, and from the making of cards were led to the execution of other figures of a devout nature, so as to form a kind of books containing a history of the Old and New Testament, which was printed only on one side of the paper. In this manner the engraving both in wood and brass continued to be followed by the same artists, and in their hands made great advances to perfection. Martin Schoen, of Culmbach, was one of the first who distinguished himself in this art. Israel von Mecheln, of Mechelen, was the rival of Schoen; the style of which latter artist was followed by Albert Durer. After this arose a succession of distinguished engravers in France, England, and Holland.

Engraving in chiaro-scuro is justly ascribed to the Germans, and was first practised by Muir. At what time etching was introduced is not known. One of the most early specimens of a print, by Albert Durer, is known by the name of the Cannon, dated 1518.

Engraving with dots was of Italian invention, and was first practised by Agostino de Musis. The method of engraving in mezzotinto was commenced about the middle of the seventeenth century. Engraving in aquatinta is a recent invention.

**ENGROSSING.** The writing any thing fair in a large hand.

**ENLISTING.** The entering for a soldier into his majesty's service for a certain stipulated time, as for a term of seven years, or during a war, &c.

**ENNEANDRIA** (in Botany). One of Linnaeus's classes of plants, including such as bear hermaphrodite flowers, with nine stamens, as the bay, the cashew nut, the flowering rush, &c.



**ENNUI.** Listless fatigue.

**ENSIGN.** The banner under which the soldiers are ranged, according to the different regiments to which they belong; also the officer who carries the ensign or colours.

**ENTABLATURE.** That part of a column which is over the capital, comprehending the architrave, frize, and cornice.

**ENTAIL.** An entailed estate, or an estate abridged and limited by certain conditions prescribed by the first donor.

**ENTERTAINMENT.** A species of theatrical representation following a tragedy or comedy; it may be either a farce or a pantomime, &c.

**ENTOMOLOGY.** The science which treats of insects, as to their structure, habits, and varieties. The body of an insect consists of four principal parts, namely, the head, the trunk, the abdomen, and the limbs or extremities. The head is furnished in most insects with eyes, antennæ or horns, and a mouth. The eyes are various, both in colour, shape, and number, in different kinds, some being of a different colour from that of the head, and some of the same colour, some placed close together, or almost touching each other, some having the pupil glassy and transparent, others having it scarcely distinguishable. Many insects have, besides the large eyes, also three small spherical bodies placed triangularly on the crown of the head, called ocelli, or stemmata. The antennæ are two articulated moveable processes, placed on the head, which are also subject to great variety in their form and structure, being setaceous, or bristle shaped, filiform, or thread-shaped, &c. The mouth in most insects is situated in the lower part of the head, and consist of the lips, upper and lower; the mandibles, or horny substances, one on each side of the mouth; the maxillæ, or jaws, two membranaceous substances, differing in figure from the mandibles, under which they are situated; the tongue, an involuted tubular organ, which constitutes the whole mouth in some insects, as the sphinx; the rostrum, beak, or snout, a moveable articulated member in the grasshopper, the aphid, &c.; the proboscis, or trunk, which serves as a mouth in the house fly, bee, and some other insects; the feelers, small moveable filiform organs, placed mostly on each side the jaw, and resembling the antennæ, but much smaller; these vary in number from two to six in different insects.

The trunk, which is the second general division of which an insect consists, com-

prehends that portion situated between the head and the abdomen. This consists of the thorax, or upper part of the body, to which the first pair of legs is attached; the breast, or under part of the thorax, to which the four posterior feet are attached; the breast bone, a ridge running under the breast, which is conspicuous in some insects; and the scutellum, or escutcheon, a lobe-like process, situated at the posterior part of the thorax.

The abdomen, or third principal portion of an insect's body, is composed of annular joints, or segments, which vary in form and number in different insects; this is distinguished into the back, or upper part, and the belly, or under part. The motion of the abdomen is most visible in the fly and bee tribes. To this division belong also the tail and the sting. The tail sometimes spreads like a leaf, as in the cockroach; and in other insects is bristle-shaped. The sting, which is peculiar to insects of the bee tribe and some few others, is sometimes simple, having but one dart, and sometimes compound, having two darts. In bees and wasps the sting is retractile, that is, capable of being drawn in; but in other insects it is almost always hid in the body, or seldom thrust out. In some tribes of insects it exists in the males, in others in the females only, but seldom in both sexes.

The members or extremities of insects are the legs and the wings. Insects have sometimes six legs, but never more, except what are observable in the larvæ, which are termed spirious feet. The feet vary in their form and use, being formed either for running, swimming, or leaping, with or without claws or spines, &c. The wings are mostly two, but sometimes four in number; mostly placed on each side the insect, so as that each pair should correspond in situation, form, &c.; but where there is more than one pair, the first are mostly larger than those behind. The wings are greatly diversified as to form, figure, texture, construction, &c. To the wings belong also the elytra, or wing cases, and the halteres, or poisers. The elytra are two coriaceous wings, which are expanded in flight, but when at rest serve to cover the abdomen and enclose their membranaceous wings, as in insects of the beetle tribe; the poisers are two globular bodies placed on slender stalks behind the wings in the tribe of winged insects, so called because they are supposed to keep the insect steady in its flight.

The internal parts of insects are less perfect and distinct than those of larger animals, and of course less known. The brain of insects is altogether different from the substance which bears that name in other animals, being little more than ganglions of nerves, two in number, that are observed in the crab, lobster, &c. The muscles consist of fasciculi of fibres, that serve apparently the office of producing two motions, namely, that of extending and that of bending. Some insects appear to be furnished with some floating vessels, which secrete a fluid varying in colour in different tribes, but very similar to saliva. The œsophagus, or organ of deglutition, is a straight short tube, consisting of annular muscular fibres, like the proboscis of the common fly.

The organs of digestion vary very much in different tribes of insects. Most have a single stomach, but some have it double, and others have a manifold stomach. In bees the stomach is membranaceous, fitted to receive the nectar of flowers: the bug, the boat fly, and such as feed on animal substances, have a muscular stomach. The beetle, ladybird, earwig, and some others that feed on other insects, have a double stomach, the first of which is muscular, after the manner of a gizzard, and the second is a membranaceous canal. Insects such as the cricket and grasshopper, which have many stomachs, seem to employ them much after the manner of the ruminating animals.

Instead of organs of respiration, it has been found that they have spiracula running on each side the body that serve for the reception of the air, and other vessels proceeding from these that serve for the expiration of air. Insects, among the ancients, were reckoned to be bloodless animals; but it has since been ascertained that the process both of circulation and secretion goes forward in the bodies of insects, although in a different manner. The process of secretion is supposed to be performed by means of a number of long slender vessels, which float in the internal cavity of the body, serving to secrete different fluids, according to the nature of the animal; thus the bee, wasp, sphinx, &c. have two vessels situated at the bottom of the sting, through which they discharge an acrid fluid. From the ant is extracted an acid well known to chymists, and other insects have other fluids peculiar to themselves. As to the process of circulation in insects, little more is known at present than that a contraction and dilatation of



the vessels is observable in some kinds, particularly in caterpillars; but the fluid which is supposed to supply the place of blood is not of the same colour.

The sexes in insects are of three kinds, namely, the males, the females, and the neuters, which have not the usual marks of either sex. The sexes are distinguished by the difference of size, brightness of colours, form of the antennæ, &c.; the male is always smaller than the female, and in some cases the female is several hundred times bigger than the male; on the other hand, the males have brighter colours and larger antennæ. In many cases the females have no wings; and in some instances, as that of the bee, the female has a sting, but the male none.

The metamorphoses of insects is one characteristic of these animals which distinguishes them from all others. In most insects the egg is the first state; but there are examples of viviparous insects, as in the case of the aphis, the fly, &c. The insect in the second or caterpillar state, is now called the larva, but formerly the *eruca*. The larvæ differ very much in different insects; those of the butterfly and moth are properly called caterpillars, those of the flies and bees are called maggots. The larvæ of the beetle tribe differ from the complete insect only by being destitute of wings. Butterflies, in their caterpillar state, are very voracious, but in their complete state they are satisfied with the lightest and most delicate nutriment. The third state into which insects transform themselves is the pupa, or chrysalis. In most of the beetle tribe the pupa is furnished with short legs, but the pupa of the butterfly tribe is without legs: that of the fly tribe is oval, but that of the bee tribe is very shapeless. The last and perfect state of insects is called by Linnæus the imago, in which state it continues until its extinction. The life of insects varies as to its duration. Some, as bees and spiders, are supposed to live for a considerable time; but others will not live beyond a year, a day, or some hours, in their perfect state, although they will continue for some time in their larva state. Water insects generally live longer than land insects.

As to the classification of insects, it suffices here to observe, that Linnæus, whose system is now generally followed, has classed them according to their wings into seven orders, namely, 1. Coleoptera, or such as have shells that cover the wings, as the beetle tribe. 2. Hemiptera, or half

winged insects, as the cock-roach, locust, grasshopper, bug, &c. 3. Lepidoptera, or scaly winged insects, as the butterfly and the moth. 4. Neuroptera, or nerve-winged or fibre-winged insects, the wings of which are furnished with conspicuous nerves, fibres, or ramifications, as the dragon fly, May fly, trout fly. 5. Hymenoptera, or insects with four wings and a sting, as the bee, wasp, hornet, termes, or white ant, &c. 6. Diptera, or two-winged insects, as the gnat, common fly, musquito, horse-leech, &c. 7. Aptera, or insects without wings, as the spider, flea, lobster, scorpion, &c.

ENTOMOLOGY, HISTORY OF. There are scattered notices respecting insects at an early period, from which we may infer that they had not escaped the notice of inquirers into the animal kingdom. Among the books of Solomon now lost to the world, it is recorded that he treated on insects or creeping things. Hippocrates wrote a work on insects, from which Pliny has given some few extracts. The labours of Aristotle on this subject are still extant, and show that he had made insects his particular study. What he has written on this subject has not been surpassed in accuracy by any thing that has followed. Nicander, Callimachus, and above all Theophrastus, are mentioned as writers on insects; but there is no work extant on that subject before the time of the Romans. Virgil treats on the subject of bees, which were much cultivated in his time. Pliny has devoted the eleventh book of his Natural History to this subject, and mentions several Latin writers who had directed their attention to it. Ælian, in his work on animals, devotes several chapters to particular insects, as the spider, scorpion, cricket, &c.; besides that, the subject is slightly touched upon by the medical writers Ætius, Paulus Ægineta, Trallian, and Oribasius, and also by the Arabian authors Rhazes, Avicenna, Avenzoar, and Averrhoes. From the twelfth to the fifteenth century no writer of any note occurs on the subject of entomology. Albertus Magnus has devoted some small part of his work *De Animalibus* to this subject. Agricola, in his work *De Animantibus Subteraneis*, which appeared in 1549, has given the first systematic arrangement of insects, by dividing them into creeping insects, flying insects, and swimming insects. This work was followed in the same century by Dr. Wotton's work, *De Differentiis Animalium*, and cursory remarks on insects in Rondeletius *Libri de*

*Piscibus Marinis*, and in Conrad Gesner's work *De Serpentium Naturâ*.

A far more important production on the subject of insects appeared in 1602, from the pen of that industrious naturalist Aldrovandus, entitled *De Animalibus Insectis*, in which he divided them into two classes, *terrestria* and *aquatica*, and subdivided them into orders, according to the number, nature, position, &c. of their wings. This work was followed by the *Historia Animalium Sacra* of Wolfgang Frenzius, and other works from the pen of Fabius Columna, Hoefnagle, and Archibald Simpson. This latter work is entitled to notice because it was the first work on entomology that had appeared in Britain.

The graphic art was also called into aid about this period, to illustrate the subject of entomology, as appears from the works of the celebrated engravers Hoefnagle, Robert Aubret, De Bry, Vallet, Robin, Jonston, &c. The invention of the microscope also afforded great facilities to the study of entomology, and enlarged the sphere of observation very considerably. Of these facilities many naturalists amply availed themselves, as Hooke, Leuwenhoek, Hartsoeker, and others. The latter writer discovered the circulation of the fluids in insects. Christopher Marret published, in 1667, a work containing an account of British insects; and a particular description of the tarantula was published about the same time by Wolferdus Sanguerdus; but the most important work on this subject was Swammerdam's *General History of Insects*, which displayed an anatomical knowledge of these animals that raised the reputation of this writer very high. This appeared in 1669, and in 1678 Lister's valuable *History of English Spiders*; the year following the first part of Madame Merian's extensive work on the metamorphoses of lepidopterous insects, which was followed by other parts in 1683, 1718, and 1726, which last is a splendid performance on the insects of Surinam. Leuwenhoek also, about the same time, added materially to the stock of entomological knowledge, by giving an account of the anatomy of insects, drawn from microscopical observations. Ray published, in 1710, his *Historia Insectorum*, which was the joint labour of himself and his friend Willoughby. In this history insects are divided into the *transmutabilia* and *intransmutabilia*. The *transmutabilia* are divided into four orders, namely, *vaginipennes*, those which have wings covered with a sheath; *papiliones*, the lepidopterous insects; qua-

*dripennes*, four winged insects; and *bi-pennes*, two winged insects: which are again subdivided into families. In 1735, the system of Linnæus was published, which has since been universally adopted. It consisted at first of four orders, which he afterwards increased to the number of seven. Some writers, as Deger, Reitzius, and Fabricius, have attempted to improve upon the Linnæan system, but their alterations have not been admitted.

As to the history of insects, many naturalists since his time have contributed their share to the stock of information, either by the description of the insects in particular parts, or by the description of insects generally. In 1753, appeared the *Entomologia Carniolica* of Scopoli; in 1769, Birkinfront published *Outlines of Natural History of Britain*; in Seward's *Natural History* is given an account of many exotic insects. In 1770 were published *Illustrations of Natural History*; in 1775 Fabricius published his *Systema Entomologiæ*; and within the last few years we have had Donovan's *Natural History of British Insects*, in 15 vols.; Lamarck's *Système des Animaux sans vertèbres*; Marcham's *Entomologia Britannica*, and Kirby's *Monographia Apium Angliæ*.

**ENTRY** (in Commerce). The act of setting down in merchant's account books the particulars of trade.

**ENTRY** (at the Custom House). The passing the bills through the hands of the proper officers.

**ENTRY** (in Law). The taking possession of lands.

**ENVELOPE**. The cover that encloses a letter or note.

**ENVIRONS**. The country lying round a large town or city.

**ENVOY**. A person in degree lower than an ambassador, sent on some particular occasion from one prince to another.

**EPACT** (in Chronology). A number arising from the excess of the common solar year above the lunar, by which the age of the moon may be found every year.

**EPAULETTE**. The shoulder knot worn by a soldier or footman.

**EPAULEMENT**. A work raised to cover sidewise, made of earth, gabions, &c.

**EPHEMERAL**. Beginning and ending in a day; an ephemeral insect lives but for a day, as the day fly.

**EPHEMERIS**. An astronomical almanack or table, showing the present state of the heavens for every day at noon.

**EPHOD.** A garment worn by the priests of the Jews.

**EPIC POEM.** A narrative poem formed upon a story partly real and partly fictitious, the subject of which is always some hero or distinguished person.

**EPICENE** (in Grammar). An epithet for the gender of such words as are common to both sexes, as in the Latin, *hic et hæc parens*.

**EPICUREAN PHILOSOPHY.** The doctrine taught by Epicurus, that the universe consisted of atoms or corpuscles of various forms, magnitudes, and weights, which, having been dispersed at random through the immense space, fortuitously concurred into innumerable systems. To this scheme of infidelity he added the notion that happiness consisted in sensual indulgence, particularly in the pleasures of the table.

**EPICUREANISM, or EPICURISM.** The doctrine of Epicurus: the practice of an epicurean or epicure, or of one who is addicted to his sensual gratifications.

**EPICYCLE.** A little circle that is in the centre of a greater circle.

**EPIDEMIC DISEASES.** Such as prevail at particular seasons, and spread among the inhabitants of a country.

**EPIDERMIS** (in Anatomy). The cuticle or scarf skin, that which rises in a blister.

**EPIGRAM.** A short, witty, pointed poem.

**EPIGRAPHE.** An inscription on a building, stone, &c.

**EPILEPSY, or the FALLING SICKNESS.** A convulsion of the whole body, with a privation of sense.

**EPILOGUE** (in Dramatic Poetry). A speech addressed to the audience when the play is ended.

**EPILOGUE** (in Rhetoric). The conclusion of a speech, a recapitulation of the whole.

**EPIPHANY, vulgarly called TWELFTH DAY.** A festival celebrated on the twelfth day after Christmas, in commemoration of the manifestation made to the Gentiles of our Saviour's nativity.

**EPISCOPACY.** A form of church government by bishops.

**EPISCOPALIAN.** One who supports episcopacy.

**EPISODE** (in Poetry). A separate incident or story, which the poet introduces into his narrative as connected with the principal action.

**EPITAPH.** An inscription on a tombstone.

**EPITHALAMIUM.** A song sung at weddings.

**EPITHET.** A word expressive of a quality.

**EPITOME.** An abridgment or short draught of a book.

**EPOCH, or EPOCHA.** A term or fixed point of time, whence years are numbered, such as the Creation, 4004 B. C.; the Taking of Troy, 1184 B. C.; the Building of Rome, 753 B. C.; the Birth of our Saviour, the commencement of the Christian era, and the Hegira, or the flight of Mahomet from Mecca, A. D. 622.

**EPODE** (in Lyric Poetry). The third or last part of the ode.

**EPOPEIA** (in Poetry). The fable or subject of an epic poem.

**EPSOM SALTS.** Sulphate of magnesia, formerly procured by boiling down the mineral water from the spring at Epsom, but now prepared from sea water. They are used as an aperient.

**EQUABLE.** An epithet for uniform motion, &c.

**EQUALITY.** A term of relation between things the same in magnitude, quantity, or quality.

**EQUATION** (in Algebra). An expression in which two quantities differently represented are put equal to each other by means of the sign of equality, as  $7ax + 3x = b$ .

**EQUATION, or the EQUATION OF TIME** (in Astronomy). The difference between mean and apparent time, or the reduction of the apparent unequal time or motion of the sun, &c. to equable time or motion.

**EQUATION, or EQUATION OF PAYMENTS** (in Arithmetic). A rule for finding a time when if a sum be paid which is equal to the sum of several others due at different times, no loss will be sustained by either party.

**EQUATOR.** A great circle on the terrestrial sphere, equidistant from the pole.

**EQUATORIAL, or PORTABLE OBSERVATORY.** An instrument by which most of the problems in astronomy may be performed.

**EQUERRY** (in Law). An officer who has the care of the king's horses.

**EQUES AURATUS.** A knight, so called because none but knights were allowed to gild their armour.

**EQUESTRIAN.** One on horseback.

**EQUESTRIAN ORDER.** The second rank in Rome, next to the senators.

**EQUESTRIAN STATUE.** The representation of a person mounted on a horse.

**EQUIANGULAR.** Having equal angles.

**EQUIDISTANT.** At an equal distance.

**EQUILATERAL.** Having equal sides.

**EQUILIBRIUM.** An equal balance or equality of weight and poise, as when two ends of a lever hang so even as to poise neither way.

**EQUIMULTIPLES** (in Arithmetic or Geometry). Numbers and quantities multiplied by one and the same number and quantity, as 12 and 6, which are equimultiples of 4 and 2, called their submultiples.

**EQUINOCTIAL, or EQUINOCTIAL LINE.** A great circle of the celestial globe, answering to the equator on the terrestrial globe. Whenever the sun comes to this circle the days and nights are equal all over the globe.

**EQUINOXES.** The times when the sun enters the first points of Aries and Libra, that is, about the twenty-first of March and the twenty-first of September, when the days and nights are equal all over the world.

**EQUIPAGE** (among Travellers). Whatever is necessary for a voyage or journey, as horses, attendants, attire, &c.

**EQUIPAGE** (in Military Affairs). Whatever is necessary for an army on its march, as tents, baggage, kitchen furniture, &c.

**EQUIPOLLENCE.** Equality of force and power; as equipollent propositions, such as have the same meaning, though differently expressed.

**EQUITY** (in Law). A correction of the common law wherein it is deficient.

**EQUITY, COURT OF.** A title given by way of distinction to the Court of Chancery, in which the rigour of other courts is moderated, and controversies are supposed to be determined according to the exact rules of equity and conscience.

**EQUIVOCAL.** An epithet for words which have a double meaning, and may be applied equally well in both.

**EQUIVOCATION.** The use of equivocal terms, which may be understood by the hearer in a different sense from that in which they are taken by the speaker.

**EQUULEUS.** An old constellation, having from four to six stars.

**ERA.** See *ÆRA*.

**ERIDANUS.** A constellation in the southern hemisphere, containing, according to different authors, from nineteen to eighty-four stars.

**ERMINE.** A little animal about the size of a squirrel, the fur of which, bearing the same name, is very valuable. This animal

is white all over, except the tip of the tail, which is black.



**ERMINE** (in Heraldry). A fur used in coat armour, and supposed to represent the linings and doublings of mantles and robes. It is represented by a white field powdered or semé with black spots.



**ERRATUM.** An error of the press; in the plural, Errata, errors of the press.

**ERRATIC.** Wandering, not fixed.

**ERUPTION** (in Medicine). A breaking forth in a morbid manner, as spots on the skin.

**ERUPTION** (in Mineralogy). The breaking forth of fire, ashes, stones, &c. from a volcano.

**ERYSIPELAS**, vulgarly called **SAINT ANTHONY'S FIRE.** A disorder in the skin, which consists in a swelling, with redness, heat, and pain.

**ESCALADE.** An attack of a fortified place by scaling the walls with ladders, without breaking ground or carrying on a regular siege.

**ESCALOP SHELLS.** The shells of escalops, a sort of fish, which are regularly indented.

**ESCAPE** (in Law). A violent or privy evasion out of some lawful restraint.

**ESCAPEMENT.** See *SCAPEMENT*.

**ESCARBUNCLE.** See *CARBUNCLE*.

**ESCHEAT.** Lands or profits that fall to a lord within his manor, either by forfeiture or the death of the tenant.

**ESCHEATOR.** An officer formerly ap-

pointed to make inquests of titles by escheats.

**ESCORT.** A company of armed men, attending by way of distinction or protection.

**ESCUAGE.** A kind of knights' service.

**ESCULENT.** A plant that may be eaten.

**ESCUTCHEON, or SHIELD.** The representation of the ancient shields used in war, on which armorial bearings are painted.

**ESPALIER.** A low branching fruit tree, having the branches trained to a frame.

**ESPIONAGE.** A system of employing spies either in military or political affairs.

**ESPLANADE** (in Fortification). The sloping of the parapet of the covered way towards the campaign.

**ESQUIRE.** Anciently, the person that attended a knight in time of war, and carried his shield; now, a title of honour given to the sons of knights, or those who serve the king in any worshipful calling, as officers of the king's courts, counsellors at law, &c.

**ESSAY.** A short discourse or treatise on some subject.

**ESSAYIST.** A writer of essays, of which there have been many in England, as Addison, Steele, Swift, Pope, Johnson, Hawkesworth, Goldsmith, Mackenzie, &c. whose works have been collected under the name of the British Essayists.

**ESSENCE** (in Chymistry). The purest and subtlest parts of a body, drawn by means of fire, &c.

**ESSENTIAL OILS.** Acrid, volatile oils, having a strong aromatic smell, which are drawn from plants by distillation, in distinction from native oils procured by coction.

**ESSOIN** (in Law). An excuse by reason of sickness or any other just cause for one that is summoned to appear and answer an action, &c.

**ESTABLISHMENT** (in Military Affairs). The quota of officers and men in an army.

**ESTABLISHMENT** (in Trade). The stock, capital, &c. which are essential for carrying on a business.

**ESTAFETTE.** A military courier, sent from one part of an army to another.

**ESTATE** (in Law). The title or interest a man has in lands or tenements.

**ESTATES OF THE REALM** (in Law). The distinct parts of any state or government, as the King, Lords, and Commons in England.

**ESTIMATE.** A calculation of the expenses of any undertaking, made according to the regular charges of trade, as the estimate of builders, engineers, printers, publishers, &c.

**ESTOPPEL.** An impediment or bar to an action.

**ESTRAY.** A tame beast found without any owner known.

**ESTREAT** (in Law). The copy of an original writing, particularly of the penalties or fines to be levied by the bailiff or other officer, of every man for his offence.

**ESTUARY.** The mouth of a lake or river, or any place where the tide comes.

**ETC. or &c. i. e. ET CÆTERA.** Literally, And other things not mentioned.

**ETCHING.** A method of engraving, in which the lines and strokes are eaten in with aquafortis.

**ETHER.** A very volatile fluid, produced by the distillation of alcohol with an acid.

**ETHICS.** The science of moral duties, showing the rules and measures of human conduct which tend to happiness.

**ETIQUETTE.** Rules and ceremonies of good manners observed either at court or in genteel life.

**ETYMOLOGY.** A branch of grammar, which teaches the original and derivation of words.

**ETYMOLOGIST.** One who traces words from their original sources.

**EVACUATION** (in Medicine). The discharge of superfluous humours or excrements out of the body.

**EVACUATION** (in Military Affairs). The leaving a town, fortress, or any place which has been occupied as a military post or position.

**EVANGELIST.** Literally, the bringer of good tidings; particularly, the writers of our Saviour's history, as Matthew, Mark, Luke, and John.

**EVAPORATION** (in Chymistry). A process in which the superfluous moisture of any liquid substance is dispersed by means of fire.

**EUCARIST.** The sacrament of the Lord's Supper, so called because the death of our Redeemer is thereby commemorated with thankful remembrance.

**EUDIOMETER.** An instrument for ascertaining the purity of air, or the quantity of oxygen and nitrogen in atmospheric air.

**EVERGREEN** (in Gardening). A species of perennials which preserve their verdure all the year round, such as hollies, laurustinus, bays, pines, firs, &c.

**EVERLASTING PEA.** A perennial of the vetch kind, which grows naturally in some places, and may be cultivated with advantage as food for cattle.

**EVIDENCE** (in Law). The testimony adduced in a court, which may either be written, as by deeds, bonds, and other documents, or verbal, by witnesses examined *vivâ voce*.

**EULOGY.** Praise or commendation of a person.

**EVOLUTION** (in Arithmetic). The extraction of the roots of any power.

**EVOLUTION** (in Military Tactics). The complicated movement of a body of men when they change their position.

**EVOLUTION** (in Geometry). The unfolding of a curve.

**EVOLUTION** (in Botany). The expansion or opening of the bud.

**EUPHONY** (in Grammar). Good sound in pronouncing a word. It is properly a figure whereby a letter that is too harsh is converted into a smoother, contrary to the ordinary rules, for the purpose of promoting smoothness and elegance in pronunciation.

**EURITHMY** (in Painting, Architecture, and Sculpture). A certain majesty and elegance of appearance in the composition of diverse parts of a body, painting, or piece of sculpture. Vitruvius, who ranks eurithmy among the essentials in architecture, makes it to consist in the beauty of the construction or assemblage of the several parts of the work.

**EWE.** The female of the sheep.

**EX** (in Composition). Now signifies late, as the ex-minister, the late minister.

**EXACTION** (in Law). Injury done by an officer, or one who, under colour of his office, takes more than what the law allows.

**EXAGGERATION.** The making things appear more than they really are.

**EXALTATION** (in Chymistry). The raising a thing to a higher degree of virtue, or increasing the principal property in a body.

**EXAMINATION** (in Law). The examining of witnesses by questions.

**EXAMINERS** (in Law). Two officers in the Court of Chancery, appointed to examine witnesses.

**EXCELLENCY.** The title given to ambassadors, commanders, and others not entitled to that of highness.

**EXCENTRICITY.** See **ECCENTRICITY**.

**EXCEPTION** (in Law). A stop or stay to any action, which consists either of a denial of the matter alleged in bar to the action, or, in the Court of Chancery, it is

what is alleged against the sufficiency of an answer.

**EXCHANGE** (in Commerce). The trucking or bartering one thing for another; also the place where merchants meet for the purpose of transacting business; and likewise the giving a sum of money in one place for a bill, ordering the payment of it in another place.

**EXCHANGE** (in Arithmetic). The reducing of monies of different denominations from one to another, or the method of finding what quantity of the money of one place is equal to a given sum of another, according to a certain course of exchange.

**EXCHANGE** (in Law). A mutual grant of equal interests, the one in consideration of the other.

**EXCHANGE BROKERS.** Men who give the merchants information how the exchange goes.

**EXCHEQUER** (in Law). The office or place where the king's cash is kept and paid.

**EXCHEQUER COURT.** A court in which all causes relating to the revenue are tried; also the Prerogative Court of the Archbishop of York.

**EXCHEQUERED.** Summoned before the Exchequer to answer any charge of defrauding the revenue, &c.

**EXCISE DUTIES.** Inland taxes on commodities of general consumption.

**EXCOMMUNICATION.** An ecclesiastical censure, whereby a person is excluded from communion with the church, and deprived of some civil rights.

**EXCORIATION.** The rubbing or peeling away the cuticle or external skin.

**EXCORTICATION.** The stripping a tree of its bark.

**EXCRESCENCE** (in Surgery). Any preternatural formation of flesh on any part of the body, as warts, wens, &c.

**EXECUTION** (in Law). A judicial writ granted on the judgment of the court whence it issues.

**EXECUTION** (in Military Affairs). The plundering and wasting a country in time of war.

**EXECUTIVE** (in Law). That branch of the government which executes the functions of governing the state.

**EXECUTOR** (in Law). One appointed by a testator to see that his will is executed.

**EXECUTRIX.** A female executor.

**EXEMPLIFICATION.** A duplicate of letters patent.

**EXERCISE** (in Military Tactics). The practice of all military movements.

**EXHALATION.** A fume or vapour rising from the earth.

**EXHIBITION.** A public display of whatever is interesting either as a matter of art or a natural curiosity; particularly the exhibition of paintings at Somerset House, which is by distinction called The Exhibition.

**EXHUMATION.** The act of digging up a body that has been interred.

**EXIGENT (in Law).** A writ or part of the process of outlawry.

**EXILE (in Law).** A person sent into some place distant from his native country, under a penalty not to return within a certain period.

**EXIT (in Theatricals).** Going off the stage.

**EX OFFICIO.** By virtue of one's office, as *ex officio* informations, prosecutions commenced by the king's attorney general by virtue of his office, without applying to the court for permission.

**EXORCIST.** One who by prayers and incantations professes to cast out evil spirits.

**EXORDIUM.** The commencement of a speech, serving to prepare the audience.

**EXOTIC PLANTS.** Plants of foreign growth, which in this climate require a hothouse and every kind of nurture.

**EXPANSION.** An increase of the bulk of any body by a power acting within, particularly by the action of heat.

**EX PARTE (in Law).** On one side, as *ex parte* statements, a partial statement, or that which is made on one side only.

**EXPECTATION.** In the doctrine of chances, is applied to any contingent event, upon the happening of which some benefit is expected.

**EXPECTORANTS.** Medicines which promote expectoration, or a discharge of mucus from the breast.

**EXPERIMENT.** A trial of the results of certain applications and motions of natural bodies, in order to discover something of their laws, nature, &c.

**EXPERIMENTAL PHILOSOPHY.** That philosophy which deduces the laws of nature from sensible experiments and observations.

**EXPERIMENTUM CRUCIS.** A leading or decisive experiment.

**EXPIRATION.** A breathing out air from the lungs.

**EXPLOSION.** A sudden and violent expansion of an aerial or elastic fluid, accompanied with a noise.

**EXPONENT (in Algebra).** The number or quantity expressing the degree or eleva-

tion of a power, as, in  $x^2$ , 2 is the exponent of the square number.

**EXPORTS (in Commerce).** Goods exported or sent out of one's own country to a foreign land.

**EXPOSITOR.** One who explains the writings of others, particularly one who professes to expound the Scriptures.

**EX POST FACTO.** Literally, from something done afterwards, as an *ex post facto* law, a law which operates upon a subject not liable to it at the time the law was made.

**EXPRESS.** A messenger sent with direct and specific instructions.

**EXPRESSED OILS.** Oils obtained from bodies by pressing.

**EXPRESSION (in Chymistry or Pharmacy).** The pressing of the oils or juices of vegetables.

**EXPRESSION (in Painting).** The distinct exhibition of character or of sentiment in the characters represented.

**EXTEMPORE, or EXTEMPORANEOUSLY.** Without preparation or premeditation.

**EXTENSION.** One of the essential properties of a body, to occupy some space.

**EXTENT (in Law).** A writ of execution for valuing lands and tenements.

**EXTENT (in Music).** The compass of a voice or instrument.

**EXTENT IN AID.** A seizure made by the crown, when a public accountant becomes a defaulter.

**EXTINGUISHMENT (in Law).** The annihilation of an estate, &c. by means of its being merged or consolidated with another.

**EXTIRPATION (in Surgery).** The complete removal or destruction of any part, either by excision or by means of caustics.

**EXTORTION.** The unlawful act of an officer who, by colour of his office, takes money or any other thing when none at all is due.

**EXTRACT (in Chymistry).** The purer parts of any substance extracted from its grosser parts by means of decoction, and formerly also by distillation, until they were of the consistence of paste or honey.

**EXTRACT (in Literature).** Some select matter or sentences taken from a book.

**EXTRACT (in Law).** A draught or copy of a writing.

**EXTRACTION (in Surgery).** The drawing any foreign matter out of the body.

**EXTRACTION (in Arithmetic).** The finding out the true root of any number or quantity.

**EXTRACTION (in Genealogy).** The

line, stem, or branch of a family from which a person is descended.

**EXTRACTOR** (in Surgery). An instrument for drawing the stone from the body.

**EXTRAORDINARY**. Out of the common course; as an Extraordinary Courier, one sent on an urgent occasion; Extraordinary Gazette, one published to announce some particular event.

**EXTRAVASATION**. The state of the fluids when they are out of their proper vessels, as when by the breaking of a blood vessel in the dura mater the blood is effused in the ventricles of the brain.

**EXTREME UNCTION**. A solemn anointing of any person in the Romish church, who is at the point of death.

**EXUDATION**. The emitting of moisture through the pores, as the exudation of gums through the bark of trees.

**EXUVIÆ**. The slough or cast off coverings of animals, particularly those of the snake kind.

**EYE** (in Anatomy). The organ of sight, whereby visible objects are represented to the mind. The external parts of the eye are the eyebrows, eyelashes, eyelids, the lachrymal ducts, &c.; the internal parts of the eye, which compose the ball or globe of the eye, consist of membranes, chambers, and humours.

**EYE**. A term applied to different objects from some supposed resemblance to the natural eye.

**EYE** (in Architecture). The aperture at the top of a dome, and to the centre of a volute.

**EYE** (in Botany). That part of a potatoe and other things where the bud puts forth.

**EYE** (in Printing). The graving in relief on the top or face of the letter.

**EYEGLOSS**. A glass put close to the eye, for the purpose of bringing objects nearer.

## F.

**F**, the sixth letter in the alphabet, stood as a numeral for 40, and with a dash over it, for 40,000; it now stands for one of the Dominical or Sunday letters, and also, in Music, for the fourth note in the diatonic scale.

**FA** (in Music). The fourth note of the modern scale, which is either flat or sharp; the flat is marked thus **b**, and the sharp thus **#**.

**FABLE**. A tale or fictitious narration intended to instruct or convey a moral, as the Fables of Æsop; also the principal part of an epic or dramatic piece.

**FABRIC** (in Commerce). The same as manufacture; lace of the fabric of Brussels, &c.

**FACADE**. The front or the principal side of a building.

**FACE** (in Anatomy). The lower and anterior part of the skull; in general, the fore part of any thing, as the face of a stone, anvil, &c.

**FACE** (in Fortification). The face of a bastion, the most advanced part towards the field.

**FACE** (in Gunnery). The metal at the extremity of the muzzle of a gun.

**FACE** (in Military Tactics). The side of a battalion formed into a square.

**FACET**. The small side of a diamond.

**FAC SIMILE**. The copy of a person's writing, as of a letter in imitation of his own handwriting.

**FACTITIOUS**. Made by art, as factitious cinnabar, in distinction from that procured naturally.

**FACTOR** (in Commerce). An agent commissioned by merchants to buy or sell goods on their account.

**FACTORS** (in Arithmetic). The two numbers that are multiplied together.

**FACTORY**. A place in a distant country, where factors reside for purposes of trade; also the trades themselves collectively.

**FACULÆ** (in Astronomy). Bright spots on the surface of the sun.

**FACULTIES, COURT OF**. A court under the archbishop of Canterbury for granting faculties or privileges.

**FACULTIES** (in the Universities). The divisions under which the arts and sciences are classed, and degrees granted. These are for the most part four, as 1. Arts, including Humanity and Philosophy; 2. Theology; 3. Physic; and 4. Civil Law.

**FACULTY** (in Law). A dispensation or privilege.

**FACULTY** (in Physics). That power by which a living creature moves and acts. This may be either an animal or corporeal faculty belonging to the body, or a rational faculty belonging to the mind.

**FÆCES**. The dregs or gross substances which settle after fermentation.

**FÆCULÆ**. Small dregs or lees.

**FAGG**. A sea term, for the end of the



strands which do not go through the tops when a cable or rope is closed.

**FAINTS** (in Chymistry). The weak spirituous liquor that runs off from the still after the proof spirit is taken away.

**FAIR**. A larger kind of market, held once, twice, or oftener in the year, according to the charter granted to any particular place.

**FAIR MAID OF FRANCE**. A plant of the ranunculus tribe, bearing an exceedingly white flower.

**FAIRY**. A kind of genii or imaginary spirits of a diminutive size, and fabled to haunt houses and revel in meadows during night, &c.

**FAIRY CIRCLE** or **RING**. A phenomenon frequently seen in the fields, consisting of a round bare path with grass in the middle, formerly ascribed to the dances of the fairies. It is supposed by some to be a fungus which eats away the grass in this circular form, or by others the effect of lightning.

**FAIRY TALES**. Eastern tales of the wonderful proceedings wrought by fairies.

**FAKIR**. A sort of dervises or Mahometan monks.

**FALCHION**. A kind of sword turned up somewhat like a hook.

**FALCON**. A bird nearly allied to the hawk, about the size of a raven, and capable of being trained for sport, in which it was formerly much employed. It is usually represented in coats of arms with bells on its legs, and also decorated with a hood, viols, rings, &c. The falcon gentil is here represented.



**FALCONER**. One who looks after and trains hawks.

**FALL** (in Physics). The descent or natural motion of bodies towards the earth.

**FALL** (in Military Affairs). The surrender of a town; among Seamen, the loose end of a tackle.

**FALL** (in Husbandry). The descent of ground which serves to carry off the water.

**FALLACY**. A logical artifice, or an argument framed so as to deceive; a sophism.

**FALLING SICKNESS**. See **EPILEPSY**.

**FALLOW**. Land laid up and left without a crop for a year, in order to give the soil time to recover itself; the act of so doing is called fallowing.

**FALLOW-FINCH**. A bird, otherwise named White-Ear.

**FALSE**. An epithet used in Law, as False Imprisonment, the trespass of imprisoning a man without lawful cause; in Mineralogy, as False Diamond, a diamond counterfeited with glass.

**FALSE FLOWER** (in Botany). A flower which does not seem to produce any fruit.

**FALSE ROOF** (in Carpentry). That part of a house which is between the roof and the covering.

**FALSIFYING** (in Law). Proving a thing to be false, as falsifying records.

**FAMILY** (in Law). All living in one house under one head; also the kindred or lineage of a person.

**FAMILY** (in Natural History). Any order of animals, or other natural production of the same class.

**FAN**. A sort of basket in which the corn is winnowed, to separate the chaff from it.

**FANDANGO**. A dance much used in Spain.

**FAR**. An abbreviation for farthing.

**FARCE**. A sort of mock comedy, in which there is much grimace and buffoonery.

**FARCY**. A sort of leprosy in horses.

**FARE**. Money paid for the passage of a person in any vehicle, either by land or by water.

**FARINA**. The pulverulent and glutinous part of wheat and other seeds, obtained by grinding.

**FARM**. Part of an estate in land employed in husbandry, and let to a tenant on condition of paying rent to the owner thereof.

**FARMER**. Properly, one who occupies and cultivates a farm or hired ground; a cultivator of ground generally.

**FARMING**. The cultivating of land for the purposes of profit.

**FARRAGO**. A mixture of several sorts of seed sown in the same plot of ground.

**FARRIER**. One who shoes horses, and also cures their diseases. The farriers are one of the oldest of the city companies.

As farriers worked most in iron, they were originally called ferrers or ferriers, from ferrum, iron.

**FARRIERY.** The art of shoeing and managing a horse altogether, including also the cure of his diseases. On the application of science to this art, it rose in importance and estimation; a college was formed some years ago for practitioners in animal medicine and surgery, which, in imitation of the French, was called the Veterinary College, and the art itself the Veterinary Art.

**FARTHING.** The fourth part of a penny.

**F. A. S. i. e. Fratrnitas Antiquariorum Socius,** or Fellow of the Antiquarian Society.

**FASCES.** Bundles of rods bound round the helms of hatchets, which were carried before the Roman consuls as insignia of their office.

**FASCETS.** Irons used in a glass manufactory.

**FASCINES** (in Fortification). Small branches of trees bound up in bundles for filling ditches, &c.



**FAST.** An abstinence from food on a religious account.

**FASTI.** The Roman calendar, in which were set down the feasts, games, ceremonies, &c.

**FAT.** A concrete oily matter contained in the cellular membrane of animals.

**FATES.** The destinies; according to the poets, the three fatal sisters, Clotho, Lachesis, and Atropos, who determined the duration of life.

**FATHER LASHER.** A voracious fish, inhabiting the shores of Greenland and Newfoundland.

**FATHER LONG-LEGS.** A harmless insect, with a small body and exceedingly long legs.

**FATHOM.** A long measure of six feet.

**FAUNS.** Rural deities having horns on their heads, with pointed ears and tails.

**FAWN.** A young deer; a buck or doe of the first year.

**F. E.** An abbreviation for Flemish Ells.

**FEASTS.** Anniversary times of feasting and thanksgiving, such as Christmas and Easter, &c. Some feasts are moveable, that is, not confined to any particular day, as Easter and all that are governed by it; others, as Christmas, &c. are immoveable, that is, fixed to a day.

**FEATHER.** That which forms the co-

vering of birds. The constituent parts of feathers are, for the most part, albumen, with a little gelatin.

**FEATHER** (in the Manege). A row of hair turned back and raised on the neck of a horse.

**FEATHER-EDGED BOARDS.** Boards having one edge thinner than the other.

**FEATHERS.** The finest kind of feathers, as Ostrich Feathers, which are used for ornament. The Prince's Feathers are those which adorn the cognizance of the Prince of Wales.

**FEB.** An abbreviation for February.

**FEBRIFUGE.** A sort of medicines which abate the violence of fever.

**FEDERAL.** United by a compact, as Federal States.

**FEE.** An estate of inheritance, or the interest which a man has in land or some other immoveable: this is called a fee simple when it is unconditional, and a fee tail when limited to certain heirs according to the will of the first donor.

**FEED.** What is given to a horse at one time, either of hay or corn.

**FEEDER.** A sort of drain which carries the water into other drains.

**FEELERS.** Organs fixed to the mouth of insects, which are vulgarly called horns: the feelers are, however, smaller than the antennæ, or horns, in some insects.

**FEELING.** One of the five senses, which acts by means of the nerves that are distributed in all parts of the body.

**FEES.** Perquisites allowed to officers in the administration of justice.

**FEIGNED ACTION.** An action which is brought simply to try the merits of a question.

**FEINT** (in Military Tactics). A mock attack, made to conceal the true one.

**FELLOES.** The pieces of wood which form the circumference or circular part of the wheel.

**FELLOW.** The member of a college or of a corporate body.

**FELLOWSHIP** (in Arithmetic). A rule by which the loss and gain of each particular person in a joint stock concern is discovered.

**FELO DE SE,** i. e. properly **FELONIA DE SE.** A suicide, or one who commits a felony on himself by self-murder.

**FELONY.** Any offence next to treason, such as murder, burglary, &c. the punishment of which is death.

**FELSPAR.** A siliceous mineral found mostly in mountains.

**FELT.** A sort of coarse wool or hair used in the making of hats.

**FELT-GRAIN.** The grain of cut timber that runs transversely to the annular rings or plates.

**FELTING.** The process of working felt into hats.

**FELTING** (in Carpentry). The splitting of timber by the felt-grain.

**FELUCCA.** A light open vessel with six oars, much used in the Mediterranean. Its helm may be used either at the head or the stern.

**FEMALE FLOWER.** A flower having pistils or stigmas without stamens.

**FEMALE SCREW.** A screw, the spiral thread of which is cut in the cavity of the cylinder.

**FEME COVERT** (in Law). A married woman.

**FEME SOLE.** A single woman.

**FEMINE GENDER** (in Grammar). Nouns which, by their ending, denote the female sex.

**FEN.** A place overflowed with water, and abounding in bogs.

**FENCE** (in Husbandry). A hedge, wall, or ditch, &c. made to part off a field or garden.

**FENCING.** The art of using the sword, either in attack or defence. In the exercise of this art, foils or thin swords are used, which, being blunted at the points and bending readily, are perfectly harmless.

**FENDER.** An iron plate to keep the fire and ashes from the room.

**FENDERS.** A sea term for pieces of old cable, &c. hung over the sides of a ship to keep off other ships.

**FEOFFEE** (in Law). He to whom a feoffment is made.

**FEOFFMENT** (in Law). The gift or grant of any hereditament to another in fee simple.

**FEOFFOR.** He who makes a feoffment.

**FERÆ.** The third order of animals in the Linnæan system, including such as have from six to ten conic fore teeth and one tusk, as the seal, the dog, the wolf, the hyæna, the jackal, the lynx, the tiger, the panther, &c.

**FERMENT.** Any substance which has the property of causing fermentation in another body, as the acid in leaven.

**FERMENTATION.** The intestine commotion in the small insensible particles of a mixed body, usually caused by the operation of acid matter. When animal liquids alone, or mixed with vegetable, become sour, this is called acetous fermentation, and the product is, generally speaking, acetic acid or vinegar. When saccharine matter, or the sweet juices of fruits,

undergo this intestine change, it is called vinous fermentation, and the result is an intoxicating liquor, as wine or beer, &c.

**FERN.** A weed, very common in dry and barren places, which is very injurious to the land in which it has once taken root.

**FERRET.** An animal of the weasel tribe, with red eyes and a long snout; it is much used in catching rabbits and rats.



**FERRUGINOUS.** An epithet for any thing partaking of iron, or containing any particles of that metal.

**FERRY.** A vessel employed for conveying persons and goods over a narrow piece of water.

**FERRYMAN.** One who keeps a ferry.

**FERULA.** An instrument of correction in schools, with which boys are beaten on the hand.

**FERULA** (in Botany). A plant, otherwise called Fennel Giant, which is an herbaceous perennial.

**FESCUE-GRASS.** A sort of grass cultivated as food for cattle.

**FESSE.** One of the honourable ordinaries, which occupies the third part and the middle of the field.



**FESTOON.** An ornament of carved wood, in manner of wreaths or garlands hanging down.

**FETLOCK.** A tuft of hair that grows behind the pastern joint in the feet of many horses.

**FETTERS** (in Law). A sort of irons put on the legs of malefactors.

**FEUD** (in Law). The right which the vassal or tenant had in lands and other immoveable things of his lord's, to use the same and take the profits thereof, rendering unto his lord such duties and services as belonged to military tenure, the property of the soil, &c. always remaining to the lord. The laws respecting these fiefs, which are comprehended under the name of the Feudal System, regulated all the principles of landed property in this kingdom until the reign of Charles II.; and vestiges of this system are still to be seen in our modern tenures, particularly in copyholds.

**FEVER**. A disease characterized by an increase of heat, an accelerated pulse, a foul tongue, and an impaired state of several functions.

**FIAT**, i. e. **LET IT BE DONE**. A short order or warrant of some judge for making out and allowing certain processes.

**FIBRE** (in Anatomy). A simple filament, serving to form other parts, as the muscles, nerves, &c.

**FIBRE** (in Botany). Threads or hair-like strings in plants, roots, &c.; the first constituent parts of bodies.

**FIBRIL**. A small fibre.

**FIBRINA** (in Chymistry). That substance which constitutes the fibrous part of muscles. It is of a white colour, without taste or smell, and not soluble in alcohol or water.

**FIBROLITE**. A mineral consisting of alumina, silica, and iron.

**FIBULA** (in Anatomy). The lesser and outer bone of the leg.

**FICTION** (in Law). A supposition that a thing is true, so that it may have the effect of truth as far as is consistent with equity.

**FIELD**. Arable land, or any plot of ground parted off for cultivation.

**FIELD** (in Heraldry). The whole surface of the shield or escutcheon.

**FIELD** (in Military Tactics). The ground chosen for any battle.

**FIELD** (in Painting). The ground or blank space on which any thing may be drawn.

**FIELD-BED** (in Military Affairs). A folding bed used by officers in their tents.

**FIELDFARE**. A migratory bird of the thrush tribe, that visits England about Michaelmas and leaves it in March.

**FIELD-OFFICERS**. Those who command a whole regiment.

**FIELD-PIECE**. A sort of cannons, consisting of eighteen-pounders and less.

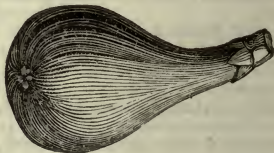
**FIELD-WORKS** (in Fortification). Works thrown up by an army in besieging a fortress.

**FIERI FACIAS**. A writ commanding a sheriff to levy the debt or damages on the goods of one against whom judgment has been had in an action of debt.

**FIFE**. A shrill wind instrument of the martial kind, consisting of a short narrow tube, with holes disposed along the side for the regulation of its tones.

**FIFER**. One who plays on the fife in the army.

**FIG**. A tree, with an upright stem branching fifteen or twenty feet high, with large palmated or hand-shaped leaves. It flourishes in warm climates, and bears a fruit as represented underneath, which, when dried, is remarkable for its luscious sweetness.



**FIG** (in Farriery). A kind of wart on the flesh of a horse, that is often filled with foul humours.

**FIGHTS**. Waste clothes hung round a ship in battle, to prevent the men from being seen.

**FIGURE** (in Painting). The lines and colours which form the representation of an object.

**FIGURE** (in Geometry). A space terminated on all parts by lines curved or straight.

**FIGURE** (in Arithmetic). One of the nine digits, as 1, 2, 3, &c.

**FIGURE** (in Grammar and Rhetoric). A word or form of expression which deviates from the common and natural meaning.

**FILACER**. An officer of the Court of Common Pleas who files the writs, whereon he makes out process.

**FILAGREE**, or **FILIGRANE**. An ornamental work in which flowers or other figures are wrought with gold or silver threads.

**FILAMENT** (in Botany). The thread-like part of the stamen, which supports the anther.

**FILBERT**. A sort of nut tree cultivated in gardens, the fruit of which is larger and finer than the common wild nut.

**FILE** (in Trade and Law). A wire or thread on which loose papers are filed up together.

**FILE** (among Mechanics). A tool of steel, with which iron or any metal is

polished. Files are cut in little furrows in a certain direction, and of a certain depth, according to the grain or touch required. Files are either cut by the hand with a chisel and mallet, or by means of a machine; but the latter mode is not so good.

**FILE** (in Military Tactics). A straight line or row formed by soldiers.

**FILICES**. An order of plants of the class cryptogamia in the Linnæan system, including the fern, horse-tail, adder's tongue, maiden-hair, spleenwort, polypody, &c.

**FILLET** (in Heraldry). A kind of bordure.

**FILLET** (in Architecture). A little member that connects the other members.

**FILLET** (in Painting). A little ringlet of leaf gold.

**FILM** (in Surgery). A thin skin that covers the eye.

**FILM** (in Botany). The thin woody skin that separates the seed in the pod.

**FILTER** (in Chymistry). A strainer through which any fluid is passed so as to separate the grosser particles from it.

**FILTERING PAPER**. Paper without size, that may be used in filtering.

**FILTERING-STONE**. A sort of stone or bason which is sometimes used for purifying water. It is artificial as well as natural, and has been variously constructed to answer the purpose.

**FIN**. The membrane in fishes by which they perform their movements in the water.

**FINAL**. The last or concluding. Final letters are those which are used only at the end of words, as in the Hebrew and other oriental languages.

**FINAL** (in Music). The last sound of a verse in a chant.

**FINALE**. The last piece in a concert, &c.

**FINANCES** (in Political Economy). The treasures or revenue of the king.

**FINANCIER**. An officer who manages the finances of a kingdom.

**FINE** (in Law). A penalty or amends made in money for an offence; also money paid for the renewal of a lease, and a conveyance of lands or tenements in order to cut off all controversies.

**FINE-DRAWING**. Sewing up the rents in woollen cloths so finely that they cannot be seen.

**FINERS OF GOLD AND SILVER**. Those who separate the metals from coarser ores.

**FINERY**. The furnace in which metals are refined, that is, hammered and fashioned into what is called a bloom or square bar.

**FIN-FISH**. A smaller sort of whale.

**FIR**, or **FIR TREE**. A tree valuable

for the timber, pitch, tar, &c. which it yields in abundance. The sorts most esteemed are the Scotch fir, Norway fir, Spruce fir, and Canada fir.

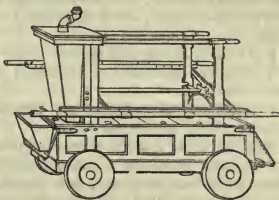
**FIRE** (in Chymistry). Was formerly reckoned one of the four elements; but it is now a matter of dispute whether it be a distinct substance, or whether it arises solely from the intestine and violent motion of the parts of bodies.

**FIREBALLS**. Luminous bodies usually appearing at a great height.

**FIREBRAND**. A piece of burning wood taken out of the fire.

**FIRE-DAMPS**. See **DAMPS**.

**FIRE-ENGINE**. An engine for the extinguishing of fire, which consists of two forcing pumps so combined that their joint action produces a constant and powerful stream of water, which, by means of a pipe, may be directed at pleasure to any point.



**FIRE-FLY**. A species of flies common in Guiana, having on each side of the head a globular luminous body, that shines like a star. They live in rotten trees in the day, and always appear at night.

**FIRE-MAN**. One who is employed in extinguishing fires.

**FIRE-SHIP**. A ship filled with combustibles, to set fire to the vessels of the enemy.

**FIRE-WORKS**. Compositions of sulphur, saltpetre, and charcoal, which exhibit a handsome appearance when fired off.

**FIRKIN**. An English measure of capacity, containing nine gallons of beer.

**FIRMAN**. A passport granted in Turkey and India for the liberty of trade.

**FIRST-FRUITS** (in Law). The profits of every spiritual living for one year, given to the king.

**FIRSTLING**. The young of cattle which are first brought forth.

**FISH**, or **FISHES** (in Natural History). Water animals in general; one class of the animal kingdom in the Linnæan system.

**FISH**, or **ROYAL FISH** (in Law). The

whale and sturgeon, so denominated because the king is entitled to them whenever they are thrown on shore or caught near the coasts.

**FISH** (among Mariners). A machine employed to hoist and draw up the flocks of ships' anchors towards the top of the bow.

**FISHERY**. The place where fish are caught for the purposes of trade.

**FISH-GIG**. An instrument for striking fish at sea.

**FISHING-FLY**. A bait used for catching fish.

**FISHING-HOOK**. An instrument of steel wire, fitted for catching and retaining fish.

**FISHING-LINE**. A line of twisted hair fixed to a rod called the fishing-rod, and having at one end the fishing-hook.

**FISHMONGER**. A dealer in fish. There were formerly two companies of fishmongers, namely, the stock-fishmongers and salt-fishmongers, which were united in 1536.

**FISTULA**. A long and sinuous ulcer.

**FITCHET**. An animal of the weasel or ferret kind.

**FIXATION**. The making any volatile spirituous body endure the fire.

**FIXED AIR**. A name formerly given by chymists to the air which was extracted from lime, magnesia, and alkalies, now commonly called carbonic acid gas.

**FIXED BODIES**. Such as neither fire nor any corrosive menstruum have the power of reducing to their component elements, as ammonia.

**FIXED STARS**. Such as do not change their positions in respect to one another.

**FLAG** (in Naval or Military Affairs). The colours or ensign of a ship, or of a regiment of land forces. The first flag in Great Britain is the standard, only to be hoisted when the king or queen is on board.



**FLAG** (in Botany). A sort of rush with a large leaf. It is of different kinds, as the

common flag, or water iris, that grows in rivers and bears a yellow flower; the corn flag, or gladiole, a bulbous plant; and the sweet flag, a perennial; which two last are cultivated in gardens.

**FLAGEOLET**. A little flute.

**FLAG-OFFICER**. An officer commanding a squadron.

**FLAGON**. A large drinking vessel.

**FLAG-SHIP**. A ship commanded by a flag-officer.

**FLAG-STAFF**. The staff set on the head of the topgallant mast, on which the flag is placed.

**FLAGSTONE**. A sort of stone used for smooth pavement.

**FLAIL**. An instrument used for threshing corn.

**FLAME**. The most subtle part of fire, which is properly the fume or vapour of fire heated red-hot so as to shine.

**FLAMINGO**. A sort of bird in Africa and South America.

**FLANK**. The side of an army, or a battalion encamped on the right and left.

**FLANK** (in Fortification). Any part of a work that defends another work along the outside of its parapet.

**FLANNEL**. A slight, loose, woollen stuff, woven on a loom with two treadles after the manner of baize. It serves to keep the body warm, because, from its light and spongy texture, it does not admit of a passage for the heat.

**FLASK**. A measure for holding gunpowder.

**FLAT** (in Music). A character marked thus  $\flat$ , which lowers a note one semitone.

**FLAX**. A plant, from the fibres of which linen thread is made. Common flax, as represented underneath, is an annual; but the other kinds are perennials.



**FLAX EARTH**, or **MOUNTAIN FLAX**. See **ASBESTOS**.

**FLEA**. A little insect of a deep purple colour, remarkable for its agility in leaping, for which it has three pair of legs. It sucks the blood of larger animals.

**FLEAM**. An instrument for lancing the guns or bleeding cattle.

**FLEECE**. A flock of wool, or what comes from a sheep at one shearing.

**FLEET**. A number of ships together in company or under one commander.

**FLEET** (in Law). A prison in London, where debtors are confined.

**FLESH** (in Anatomy). The soft and fibrous part of an animal body; also the red part of a muscle.

**FLESH** (in Botany). The pulpy substance of any fruit or root.

**FLEUR DE LIS**, or **FLOWER DE LUCE** (in Heraldry). A bearing in the arms of France and in other coats of arms.

**FLINT**. A semitransparent and hard stone, which possesses the property of emitting fire when struck.

**FLINT** (among Gunsmiths). A piece of flint cut so as to go between the jaws of the cock of a gun.

**FLOAT**. A raft or number of pieces of timber fastened together with rafters athwart, to be driven down a river with the tide.

**FLOATING BATTERY**. Vessels used as batteries to cover troops in landing on an enemy's coast.

**FLOCK**. A number of sheep in company; also a lock of wool.

**FLOETZ**. Beds or strata of earth, containing the remains of animal or vegetable substances, &c.

**FLOOD**. The flux of the tide when the water continues rising.

**FLOOD-GATE**. A sluice or gate that may be opened or shut, for the admission or exclusion of the water.

**FLOOR**. The area or surface of a room.

**FLOOR** (in Ship Building). The bottom of the ship which rests on the ground.

**FLORA** (in the Heathen Mythology). The goddess of flowers; in Botany, the title of some botanical works.

**FLORIN**. A coin of different value; the silver florin of Holland is worth about 1s. 8d.

**FLOUR**. The fine parts of wheat corn ground and sifted.

**FLOWER**. The beautiful part of a plant, the blossom; the parts or divisions of which are called petals. It contains the parts of fructification, or the germ of the fruit.

**FLOWER DE LUCE**. A species of

the iris; a bulbous root having a lily flower of one leaf, shaped like that of the common iris.

**FLOWERS** (in Chymistry). The fine mealy matter which, in sublimation, is carried up to the head of the vessel, as the flowers of benjamin, zinc, &c.

**FLUATES**. A kind of salts formed by the combination of fluoric acid with different bases, as the fluuate of ammonia.

**FLUE**. The small winding chimney in a furnace for conveying smoke, air, and heat into a larger chimney; also the down or soft hair of rabbits and feathers.

**FLUELLEN**. An annual that grows in gardens.

**FLUID** (in Physiology). A fluid body, or one whose parts yield to the smallest force impressed, and are easily moved among each other. Fluids are either elastic, as the air, or non-elastic, as water, mercury, &c.

**FLUID** (in Anatomy). The fluids of the animal body are the humours and juices, as the blood, chyle, saliva, &c.

**FLUIDITY**. The state of bodies when their parts are very readily moveable in all directions with respect to each other. It stands directly opposed to solidity or firmness, and is distinguished from liquidity and humidity, inasmuch as the latter imply also wetting and adhering. Melted metals, air, ether, smoke, and flame are fluid but not liquid bodies, their parts being dry and leaving no sense of moisture. Solids are converted into fluids by means of heat.

**FLUOR SPAR**, or **DERBYSHIRE SPAR**. A species of salt which abounds in nature, and consists of a calcareous earth in combination with fluoric acid. It is called fluor because it melts readily; it is called spar because it has a sparry form and fracture; and it is also called vitreous spar because it has the appearance of glass.

**FLUORIC ACID**. A gaseous substance procured from fluor spar, which is of a corroding nature, and will dissolve glass, for which reason it has been used for etching on glass. This acid gas readily combines with water; and when dropped in, a hissing noise is produced with much heat.

**FLUTE**. A wind instrument, and the simplest of its kind, with stops for the fingers.

**FLUTES**. The hollow channels found along the surface of a column.

**FLUX** (in Physiology). That motion of the water by which it rises.

**FLUX** (in Chymistry). Any substance or mixture added to assist the fusion of minerals and metals. In assaying, alkalies

are used as fluxes, which render the earthy mixtures fusible by connecting them with glass.

**FLUXIONS.** That branch of algebra which treats of the velocities with which the fluents or flowing quantities increase or decrease. The variable or flowing quantities are represented by the letters *v, w, x, y, z*; the invariable quantities, by the letters *a, b, c, d, &c.* The fluxion is represented by a dot thus, *ẏ, ż.*

**FLY** (in Natural History). A small winged insect, that is always flying about in houses.

**FLY** (among Mechanics). That part of a jack which puts the rest of the machine in motion.

**FLY** (among Mariners). That part of a compass on which the thirty-two points are described.

**FLY** (among Carpenters). Flies or flyers are the series of steps which go straight forward without winding.

**FLY-BOAT.** A large vessel with a broad bow, used in the coasting trade.

**FLY-BLOW.** The deposit of the eggs, maggots, or nymphæ of flies in meat.

**FLY-CATCHER.** A sort of bird inhabiting Asia, Africa, and America, so called because it lives upon flies.

**FLYING BRIDGE.** See **BRIDGE.**

**FLYING DRAGON.** A four-footed reptile of the lizard tribe, inhabiting Africa and India, which has a lateral membrane serving as a wing.



**FLYING FISH.** A fish inhabiting the European and American seas, which, by the help of its long pectoral fins, is enabled to raise itself out of the water and to fly a short distance when pursued by other fish.

**FLY-ORCHIS.** A plant, so called from the resemblance it bears in its figure to a fly.

**FLY-TRAP,** or **VENUS'S FLY-TRAP.** A sensitive plant, the leaves of which consist of two lobes, that close when they are irritated within, and consequently entrap any insect that lights upon them.

**FOAL.** The young of a horse or other beast of burden.

**FOCUS** (in Optics). The point of convergence or concourse, where all the rays meet after passing through a convex lens.

**FOCUS** (in Geometry and Conic Sections). A certain point in the parabola and ellipses, &c. where the rays reflected from all parts of these curves concur.

**FODDER.** Dry food for cattle.

**FODDER** (in Law). The prerogative of the king formerly, to be provided with fodder for his horses in any warlike expedition.

**FOG,** or **MIST.** A meteor consisting of condensed vapours floating near the surface of the earth.

**FOIL** (in Fencing). An instrument without a point, to fence with by way of exercise.

**FOIL** (among Glass-grinders). A sheet of tin laid on the back of a looking-glass, to make it reflect.

**FOIL** (among Jewellers). A thin leaf of metal placed under a precious stone, to increase its brilliancy.

**FOLD.** An enclosed place in which sheep are confined.

**FOLIAGE.** A cluster or assemblage of the leaves of trees.

**FOLIAGE** (in Architecture). Ornaments representing leaves, used in cornices, &c.

**FOLIATING.** Spreading the plates of glass over with the foil, in order to make them reflect.

**FOLIO.** The full size of paper as it comes from the manufacturer; also books printed on paper of that size.

**FOLIO** (in Merchants' Accounts). The page, including the right and left hand page, in a merchant's ledger, which are numbered by the same figure so that they may correspond.

**FOMENTATION.** The bathing any part of the body with a decoction of herbs, &c. A similar application with bags of herbs and other ingredients is called a dry fomentation.

**FOOT.** A measure of length consisting of twelve inches.

**FOOT** (in Poetry). A certain number of syllables which serve for measuring the verse.

**FOOT** (in Military Tactics). Soldiers who serve on foot.

**FORAGE.** Provender for horses in an army.

**FORCE** (in Physiology). Whatever is or may be made the primary cause of motion in bodies.

**FORCE** (in Law). Unlawful violence.

**FORCE** (in Military Affairs). Any body of men that may be employed in action.

**FORCEPS.** A surgeon's tongs, pin-cers, &c.

**FORCER,** or **FORCING-PUMP.** A pump with a forcer or piston without a valve.



**FORCING** (among Gardeners). A method of obtaining fruits and flowers before their season, by the application of heat.

**FORCING** (in Commerce). The fining down wines so as to render them fit for immediate use.

**FORE**. A sea term for near the stem; as 'fore and aft,' that is, from stem to stern.

**FORECASTLE**. A short deck in the fore part of the ship.

**FORECLOSED** (in Law). Excluded or barred the equity of redemption on mortgages, &c.

**FOREIGN ATTACHMENT** (in Law). An attachment of foreigners' goods found within a liberty or city.

**FORENSIC**. Belonging to the bar or courts of law.

**FORESHORTENING** (in Painting). The making a head or face in a drawing appear shorter before.

**FOREST** (in Law). A large wood privileged to hold the king's game of all kinds.

**FORESTALLING**. The buying or bargaining for corn or other merchandise before it comes into the market.

**FORESTER**. The keeper of a forest.

**FORFEITURE** (in Law). The loss of goods, lands, or employments, &c. for neglecting to do one's duty, or for some crime committed.

**FORGE**. A furnace, in which smiths heat their metals red-hot, or in which the ore taken out of the mine is melted down.

**FORGERY** (in Law). The fraudulent making or altering any record, deed, or writing, &c. to the prejudice of another man's right, particularly the counterfeiting the signature of another with intent to defraud, which, by the law of England, is made a capital felony.

**FORGING** (in Smithery). The beating or hammering iron on an anvil.

**FORK**. An instrument divided at the end into two or more prongs, for various uses.

**FORM** (in Physiology). The essential and distinguishing modification of the matter of which any body is composed.

**FORM** (among Mechanics). A kind of mould in which any thing is wrought.

**FORM** (among Printers). The chase or frame filled with type or letter the size and form of a page, made ready for the press. This form will be quarto if the sheet consist of 8 pages, octavo if it consist of 16 pages, and duodecimo if it consist of 24 pages.

**FORMA PAUPERIS**, i. e. **IN THE FORM OF A PAUPER**. A form in which any one may sue who swears that he is not worth five pounds, and brings a certificate

from some lawyer that he has just cause of suit. In that case he has counsel assigned, and is released from costs of suit, &c.

**FORMIC ACID**. The acid of ants, which is obtained chiefly from the red ant.

**FORMULA** (in Mathematics). A general theorem or literal expression for resolving any part of a problem.

**FORMULA** (in Theology). A profession of faith.

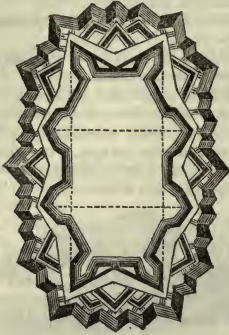
**FORMULARY**. A book of forms and precedents for law matters.

**FORT**. A small castle or strong hold; a place of small extent, fortified either by art or nature, being encompassed with a moat, rampart, and parapet, as represented underneath, to secure some high ground or the passage of a river.



**FORTIFICATION**. The science of military architecture, which teaches the best mode of putting a city, town, or any other place, into a state of defence by making works around it. A fortification is either regular or irregular: a regular fortification is built in a regular polygon, as in the subjoined figure; an irregular fortification is where the sides and angles are not uniform. A temporary fortification is that which is raised for any particular emergency, as fieldworks, &c. This is distinguished from a durable fortification, which serves as a permanent defence of a place. A defensive fortification is that by which a town is defended in case of a siege, in distinction from an offensive fortification, which is raised by besiegers for the attack of a place. The works of a place are those about the place, in distinction from the outworks, which are constructed before the body of the place. The principal works belonging to a fortification are, the ditch or trench made round each work; the rampart, or elevation of earth, raised along the faces of any work, to cover the inner part; the parapet, or that part of a rampart which serves to cover the troops planted there; the bastion, that part of the inner enclosure of a fortification making an angle towards the field; the counterscarp, the slope of the ditch facing the body of the place; the covert way, the space extending round the counterscarp; the glacis, the part beyond the covert way, to which it serves as a parapet; the curtain, the front of a

wall between two bastions; the flank, any part of a work which defends another; the gorge, that part next to the body of the place where there is no rampart; the epaule, the shoulder of the bastion; besides the barriers, palisades, portcullis, place of arms, &c.



**FORTIORI, or A FORTIORI.** A term used in reasoning for any conclusion or inference that is much stronger than another.

**FORUM.** A public place in Rome, where causes were tried and business transacted.

**FOSS (in Fortification).** A hollow ditch, commonly full of water, lying between the scarp and the counterscarp.

**FOSSILS.** All manner of things dug out of the earth, whether they be native fossils growing in and of the earth, as metals, stones, salts, earths, and other minerals; or whether they be foreign substances, as the exuvia of sea and land animals, namely, shells, bones, teeth, &c.; or whether they be vegetables, as leaves, wood, &c. which have lain long buried in the earth.

**FOUL.** A sea term for the running of one ship against another.

**FOUNDATION (in Architecture).** That part of a building which is under ground.

**FOUNDATION (in Law).** A donation in money or lands for the maintenance and support of some community, as an hospital, a school, &c.

**FOUNDER (in Law).** One who founds and endows a church, school, college, &c.

**FOUNDER (in Trade).** One who casts metals in various forms, as gun-founders, bell-founders, &c. The company of founders was incorporated in 1614.

**FOUNDRY.** The art of casting metals in various forms; also the place where this business is done. Small works are cast in sand, which, being duly prepared,

is put into a wooden frame; then wooden or metal models of what is intended to be cast are put into the sand so as to leave their impression, and along the middle of the mould is laid a small brass cylinder to form a chief canal for the metal to run through, from which canal run others extending to each model or pattern placed in the frame. When the moulds are fully prepared, the fused metal is poured out of the crucible into the chief canal, and thence conveyed to each pattern. After the whole has been set to cool, the cast work is taken out of the sand. The mould for very large articles is made of wet tempered loam, built up by degrees in a pit, into which the melted metal is made to run along a channel on the ground to the mould. The composition used in casting bells is termed bell metal.

**FOUNT, or FONT.** A set or certain quantity of letters cast at one time by a letter-founder for the use of a printer. Founts are large or small, according to the wants of a printer, who orders them by the hundred weight or by the sheet. A fount of five hundred, including letters, points, spaces, quadrats, &c. is to weigh 500 lb. A fount of ten sheets is expected to contain a sufficiency for composing ten sheets without being obliged to distribute; in the making of which the founder takes care that those sorts of letters should be best supplied for which there are the greatest calls in composition, so that scarcely any two boxes will contain the same number of letters. The proportion which the different sorts of characters in a fount should bear to each other has been now reduced to a rule, which by the French is called the police.

**FOUNTAIN.** A natural spring of water rising out of the ground; also a stream of water ejected through a pipe by means of a machine contrived for this purpose. Artificial fountains are various in their forms, but they all act on the principle of a pressure, either from a head of water, or arising from the spring and elasticity of the air. When fountains are formed by the pressure of a head of water, or any other fluid of the same kind, with the fountain or jet, then will this spout up nearly to the same height as that head, allowing a little for the resistance of the air, with that of the adjutage, &c. in the fluid rushing through; but when the fountain is produced by any other force than the pressure of a column of the same fluid as itself, it will rise nearly to the altitude of the fluid, whose pressure is equal to the given force that produces the fountain. The subjoined figure repre-

sents the circulating fountain, or the fountain of Hero of Alexandria, so called because it was invented by him, in which the air, being compressed by a concealed fall of water, forms a jet that appears as if it had a perpetual motion, and that the same water which fell from the jet rose again; but, in reality, that water does not come up again, for, running down through a pipe into the bottom box, it drives out the air through an ascending pipe into the box at the top containing water, which, being pressed upon, is forced through the spout as long as there is any in it.



**FOWL.** The largest sort of birds, whether domestic or wild, as geese, pheasants, partridges, &c.; also a full grown chicken or young hen.

**FOWLING.** The art of taking or killing birds, either by means of snares or nets, or by various devices, as imitating their voices or using decoy birds and the like.

**FOWLINGPIECE.** A light gun for shooting birds.

**FOX.** A crafty, lively animal, nearly allied to the dog, which seeks its food by night among the poultry, rabbits, and hares. The fox is borne in coats of arms, and as a charge, is supposed to denote a subtle wit by which a man has served his country.



**FOXGLOVE.** See DIGITALIS.

**FOX-TAIL-GRASS.** An herbaceous plant.

**F. R. S.** Fellow of the Royal Society.

**FRACTURE** (in Mineralogy). The breaking of minerals, or the manner in which they break, which is one of their specific characters.

**FRACTURE** (in Surgery). The breaking of any bone by an external act of violence.

**FRÆNUM LINGUÆ** (in Anatomy). The ligament under the tongue.

**FRAME** (with Painters). A kind of square, composed of four long pieces or slips of wood joined together, the intermediate space of which is divided by little strings or threads into a great number of little squares, like the meshes of a net, used in reducing figures from great to small or from small to great.

**FRANCHISE** (in Law). A privilege or exemption from ordinary jurisdiction.

**FRANK FREE.** A term much used in our old law, as Frank pledge freemen, who used to be pledges or sureties for the good behaviour of those who were of their community; in modern law, an exemption from paying postage for letters, which is enjoyed by members of parliament to a certain extent.

**FRANK.** A French coin, worth twenty sols, or ten pence halfpenny.

**FRANKINCENSE.** An odoriferous, dry, resinous substance, procured from the juniper tree in Turkey and the East Indies.

**FREEBOOTER.** A soldier that serves for plunder, without pay.

**FREEHOLD.** That land or tenement which a man holds in fee simple, fee tail, or for term of life.

**FREEHOLDERS.** Possessors of a freehold estate.

**FREEMAN** (in Ancient Law). One free from servitude, as distinguished from a villain or bondsman; also one who enjoys the freedom of a city or borough.

**FREE SCHOOL.** An endowed school, where children are taught free of expense.

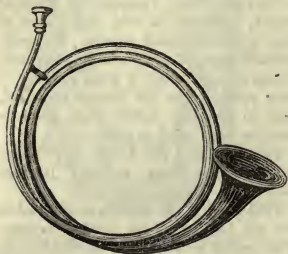
**FREESTONE.** A sort of stone used in building, that may be cut freely in any manner.

**FREEZING** (in Physiology). The fixing a fluid body into a firm and solid mass by the action of cold. The process of freezing may be artificially produced by means of the air pump, and sometimes by certain freezing mixtures, or compositions of such

ingredients as when mixed with other bodies, cause them to congeal; such as snow and common salt, or muriate of ammonia, nitre and water, &c.

**FREIGHT** (in Commerce). The sum of money agreed to be paid for the burden of a ship; also the burden itself, or the cargo of a ship.

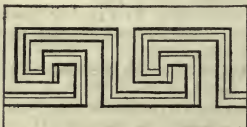
**FRENCH HORN.** A musical instrument, bent into a circle, and going two or three times round. It grows gradually larger and wider towards the end, and in some horns is nine or ten inches over.



**FRESCO.** A method of painting in relieve on walls, so as to endure the weather; it is performed with water colours on fresh plaster, so that the colours incorporate with the mortar.

**FRESHES.** A sea term for an impetuous ebb tide increased by heavy rains.

**FRET** (in Architecture). An ornament consisting of small fillets interlaced, that were used by the ancients on flat members.



**FRET** (in Music). A kind of stop on some instruments, particularly bass viols and lutes.

**FRICTION** (in Mechanics). The rubbing of the parts of engines and machines against each other, by which means a great part of their effect is destroyed.

**FRIENDLY SOCIETIES.** Associations chiefly among the lower classes, for affording relief to each other in time of sickness, or to the widows and children at their death.

**FRIGATE.** A light built ship of war,

from twenty to fifty guns, fitted for fast sailing.



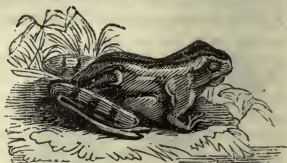
**FRIGID ZONES.** The two zones or divisions of the earth, comprehended between the poles and the polar circles. They are the north frigid zone, at the north pole, and the south frigid zone, at the south pole.

**FRIT**, or **FRITT** (in the Glass Manufacture). The matter or ingredients of which glass is to be made, after they have been calcined or baked in a furnace. It is of different kinds, according to the quality of the glass. Crystal frit, for the best kind, is made with salt of pulverine and sand. The ordinary or common glass is made of the bare ashes of pulverine, or barilla, without extracting the salt from them; this is the second kind of frit. The third kind of frit, for green glass, is made of common ashes, without any preparation.

**FRITH** (in Geography). An arm of the sea, as the Frith of Forth, or of Edinburgh, the Frith of Clyde, &c.

**FRIZING CLOTH.** A process in the woollen manufacture, of forming the nap of cloth or stuff into a number of little hard burrs or prominences, so as to cover almost the whole ground. This process is now performed by machinery.

**FROG.** An amphibious animal, having a smooth body, and longer legs than the toad.



**FROG** (in Farriery). The hard projecting substance in the hollow of a horse's foot.

**FROG-FISH**, or **FISHING FROG.** A kind

of fish resembling a frog in the tadpole state, that puts forth its slender horns and entices the little fish to itself, in order to seize them.

**FRONT.** The principal face or side of a building.

**FRONTIER.** The boundary of a kingdom, which separates it from another kingdom on the land side.

**FRONTISPIECE.** The ornament or picture which faces the title page in a book.

**FRONTLET.** A band worn on the forehead.

**FRUCTIFICATION** (in Botany). The temporary part of vegetables, appropriated to their propagation, consisting of the flower and the fruit.

**FRUIT** (in Botany). That which succeeds the flower; it may either be seed only, or it may be an esculent pulpy substance, as the apple or the pear; or it may be hard, like the nut, pea, &c.

**FRUITERER.** One who deals in fruit. The company of fruiterers was incorporated in 1604.

**FRUSH.** The tender part of a horse's heel, next the hoof.

**FRUSTUM** (in Mathematics). A part of some solid body separated from the rest.

**FRUSTUM OF A CONE.** The part of a cone that remains when the top is cut off by a plane parallel to the base; it is otherwise called a truncated cone.

**FRUSTUM OF A GLOBE OR SPHERE.** Any part of it cut off by a plane.

**F. S. A.** An abbreviation for Fellow of the Society of Arts.

**FUCI.** A genus of plants in the Linnæan system, comprehending most of those which are commonly called seaweeds, from which, when burnt, an impure alkali is procured called kelp.



**FUCUS.** The name given by the ancients to a sea plant, from which a dye was procured for dyeing woollen and linen cloths of that colour.

**FUGITIVE PIECES.** Little pieces of composition of temporary interest.

**FUGITIVE'S GOODS** (in Law). The goods of one who flies upon felony.

**FUGUE** (in Music). A species of composition, in which the different parts follow each other, each repeating in order what the first had performed.

**FULCRUM** (in Mechanics). The prop or support by which a lever is sustained.

**FULLER.** One who cleans and scours cloth.

**FULLER'S EARTH.** A species of clay remarkable for the property of absorbing oil, wherefore it is used by fullers to take grease out of cloth.

**FULLING.** The art of cleansing, scouring, and pressing cloths, to make them stronger, closer, and firmer, which is done by means of a water mill, called a fulling or scouring mill. These mills are nearly the same as corn mills, except in the millstones and the hopper. In France, corn is ground and cloth is fulled by the motion of the same wheel: cloths and woollen stuffs are sometimes fulled by means of soap, in the following manner; the cloth is laid in the trough of the fulling mill, and then the soap dissolved in pails of river or spring water is to be poured upon it by little and little. The cloth, after lying two hours in the soap, is taken out, stretched, and then returned to the trough. Upon being taken out a second time, the grease and filth is then wrung out. This process is afterwards repeated, and when the cloth has thus been brought to the quality and thickness required, it is scoured in hot water until it is quite clean.

**FULMINATION.** The noise which some minerals or metals make when heated in a crucible; as fulminating powder, which is made of nitre, potash, and the flowers of sulphur, triturated in a warm mortar. If this powder be fused in a ladle, and then set on fire, it will explode with a noise like thunder. If a solution of gold be precipitated by ammonia, the product will be fulminating gold, a grain of which, if held over a flame, will explode with a sharp loud noise.

**FUMIGATION.** A process by means of which the nitrous and other mineral acids, in a state of vapour, are dispersed through any place.

**FUNCTION.** The performance of any duty.

**FUNCTION** (in Physiology). The ex-

ercise of any faculty or power, as the vital functions, or those which are necessary to life.

**FUNCTION** (in Algebra). An algebraical expression of a certain letter or quantity.

**FUND** (in Commerce). The capital or stock of a public company.

**FUNDAMENTAL NOTE** (in Music). The lowest note of the chord, to which all the rest are in some measure adapted, and by which they are regulated; it is otherwise called the key to the song.

**FUNDS, PUBLIC FUNDS, or STOCKS.** The national debt formed into different capitals, upon which interest is payable.

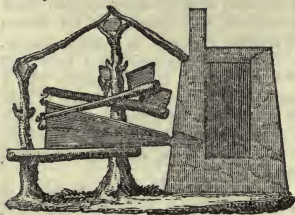
**FUNGI.** The fourth order of the class Cryptogamia in the Linnæan system, consisting of funguses, mushrooms, truffles, &c. A fungus of this order is represented underneath.



**FURLONG.** A measure of length, consisting of forty poles.

**FURLOUGH.** Leave of absence given to a soldier or noncommissioned officer.

**FURNACE.** A fire place for melting, distilling, and other chymical processes, so built as to cause the fire to burn vehemently.



**FUR.** The coat or covering of some animals, as sables, beavers, martens, squirrels, &c. which is used in various articles of dress, either for ornament or warmth.

**FURS.** Tinctures in coats of arms, which are supposed to represent the furs of animals.

**FURRIER.** One who deals in furs, and prepares them for the manufacturer.

**FURRING** (in Carpentry). The fixing thin scantlings or laths on the edges of timbers, to bring them to the even surface they were intended to form.

**FURRINGS** (in Carpentry). The pieces of timber employed in making an even surface.

**FURROW.** A small trench cast up by the plough between the lands.

**FUSEE** (in Clockwork). A mechanical contrivance for equalizing the power of the main spring of a watch. The fusee on which the chain or catgut is wound, is made somewhat conical, so that its radius at every point may correspond with the strength of the spring, being greater and greater as the action of the spring becomes more and more weakened by unbending.

**FUSEE** (in Gunnery). The tube fixed into a bomb or grenade shell, which is filled with combustible materials, and furnished with a quick match on the top of it. When it is used it is driven into the bomb, being cut to a length proportioned to the distance that the bomb is to be thrown, that it may be spent and the bomb break when it falls.

**FUSIL.** A small light musket.

**FUSIL** (in Heraldry). An artificial charge, representing a spindle. It is of the same shape as the lozenge, but it is longer.

**FUSION.** The art of reducing bodies to a fluid state by the artificial application of heat; as in the case of metals, glass, and similar bodies. Those substances which admit of being fused are termed fusible, but those which resist the action of fire or heat are termed refractory.

**FUST.** The shaft of a column.

**FUSTIAN.** A sort of nappy cotton.

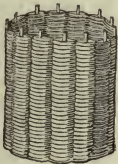
**FUSTIC.** A dyeing wood brought from the West Indies.

## G.

**G**, the seventh letter in the alphabet, as a numeral, formerly stood for 400; as a sign, it stands for the treble cliff, or the highest of the three cliffs; as an abbreviation, for grand, as G. C. B. Knight Grand Cross of the Bath.

**GABEL**. Formerly an excise in France on salt; in our old records, a rent, custom, or duty due to the lord.

**GABIONS**. Baskets of willow filled with earth to make a parapet or cover.



**GABLE END**. The triangular end of a house, from the cornice or eaves to the top.

**GADFLY**. An insect which has a face resembling that of an ape. It deposits its eggs on the backs of horses and other cattle.



**GAGE**, or **GAUGE**. An instrument for ascertaining measures of different kinds, as for measuring the state of rarefaction in the air pump, or determining the variations in the barometer, or for measuring the force of the winds, &c.

**GAL**. An abbreviation for gallon or Galatians.

**GALAXY**, or **MILKY WAY**. A long white luminous tract which seems to encompass the heavens like a girdle, formed by innumerable stars.

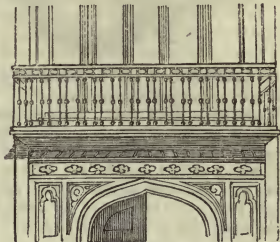
**GALBANUM**. A resinous substance like frankincense.

**GALE** (among Mariners). A storm or violent wind.

**GALL**. Another name for the bile.

**GALL BLADDER**. An oblong membranous receptacle for the bile.

**GALLERY**. A passage leading to several apartments.



**GALLERY** (among Miners). A long narrow passage under ground.

**GALLERY** (in Fortification). A covered walk across a ditch in a besieged town, made of strong planks and covered with earth. It was formerly used for carrying a mine to the foot of the ramparts. It ought to be eight feet high and ten or twelve feet wide. The beams ought to be half a foot thick, and planks nailed on each side.

**GALLEY** (in Printing). A frame into which the compositor empties his stick as often as it is filled.

**GALLEY** (in Shipbuilding). A low built vessel, much used in the Mediterranean.



**GALLEY-SLAVE**. One condemned by way of punishment to work at the oar, to which he is chained, on board of a galley.

**GALL-FLY**. An insect which produces the galls or excrescences on the branches and leaves of trees.

**GALLICISM**. A form of expression peculiar to the French.

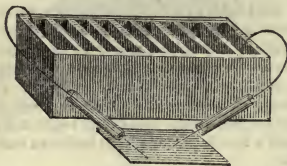
**GALL NUTS**, or **GALLS**. Excrescences on trees, which are occasioned by the gall-flies. Those which come on the oak, vulgarly called oak apples, are used

in making ink, dyeing, and dressing leather. They are represented underneath.



**GALLOWAY.** A kind of Scotch horse not more than fourteen hands high.

**GALVANIC BATTERY.** An apparatus which is employed in accumulating the electricity of galvanism by the mutual agencies of certain metallic and carbonaceous substances and peculiar fluids. See **GALVANISM.** This battery, as represented underneath, consists of pieces of zinc, silver, and wet cloth, disposed in threes alternately, to the number of twenty or thirty triplicates, as may be thought proper.



**GALVANISM.** A branch of the science of electricity, first discovered accidentally by Galvani, a professor of Bologna, from whom it derives its name. This science treats of the effects of applying metals to the nerves and muscles of dead animals, which has been found to produce strong contractions and convulsions. The first observation on this extraordinary effect of electricity was made in the laboratory of M. Galvani, when one of his assistants happened to bring the point of his scalpel to the crural nerves of a skinned frog lying near the conductor, upon which the muscles of the limb were agitated with strong convulsions. Madame Galvani, who was present at the time, was struck with the circumstance, and communicated it instantly to M. Galvani, who repeated the experiment, and found that the convulsion only took place when a spark was drawn from the conductor at the time the scalpel was in contact with the nerve. After this, Galvani continued his experiments in various ways, and ascertained that the mere agency of metallic substances, provided they were dissimilar metals, would produce

such convulsions. This subject engaged the attention of experimentalists both before and after the death of M. Galvani, which happened in 1798; but none added any thing materially to his discovery except M. Volta, who repeated the experiments of the former, and found that when two pieces of metal of different kinds were placed in different parts of an animal, and were either brought into contact or into connexion by means of a metallic arc, convulsions ensued every time, and that this effect was strongest when the metals were zinc and silver, particularly when several pairs of metals were employed, having pieces of moist cloth between them. This led him to the idea of constructing a battery, for the purpose of accumulating electricity, which has since been called the galvanic battery, or Voltaic pile.

The apparatus first made by Volta, in 1800, consisted of a certain number of pairs of zinc and silver plates, separated from each other by pieces of wet cloth, in the order of zinc, silver, wet cloth, zinc, silver, wet cloth, in regular succession. The silver plates were chiefly pieces of coins, the plates of zinc and the pieces of wet cloth being of the same size. He found this much more powerful when the pieces of cloth were moistened with a solution of common salt instead of pure water, and an apparatus thus prepared was found to possess the power of giving a very smart shock, similar to that of a small electric jar; and this effect took place as often as a communication was made between each end of the pile, and as long as the pieces of cloth remained moist: an improvement was made on this apparatus by Mr. Cruickshank, of Woolwich, which was denominated a galvanic trough, and consists of a box of baked wood, in which plates of copper, or of silver and zinc, soldered together at their edges, are cemented in such a manner as to leave a number of watertight cells, corresponding to the number of the series; this serves to remedy the defect of the Voltaic pile, which, on account of the loss of moisture, loses its electrical action in a few days; but by Mr. Cruickshank's contrivance its activity may be renewed by filling the cells with the proper saline fluid.

**GAMBOGE.** A yellow resinous substance used by painters. It is the produce of a tree native of Cambogia or Cambaja, in the East Indies.

**GAME.** All sorts of birds and beasts that are objects of the chase. The laws which particularly protect this sort of pro-



perty are known by the name of the Game Laws. By these laws certain qualifications of property are required to give a person the privilege of being allowed to kill game; and penalties are imposed on all persons who kill game either without such qualification or at improper seasons; likewise the sale of game is prohibited under every circumstance. Attempts have been repeatedly made in parliament to procure a repeal, either wholly or in part, of these laws, which are thought to be oppressive in their operation.

**GAME.** Any sport or amusement which affords a subject of contest, and a display of skill or superiority.

**GAMECOCK.** A cock bred to fight.

**GAMESTER.** One who is viciously addicted to playing at games.

**GAMING.** The wanton and extravagant playing at games for purposes of gain.

**GAMUT (in Music).** The table or scale of notes laid down by Guido, and marked by the monosyllables *ut, re, mi, fa, sol, la*; also the first note in the scale.

**GANG (among Mariners).** A select number of a ship's crew appointed on any particular service.

**GANG (in the Police).** A number of persons who go or herd together for wicked purposes.

**GANGLIONS.** Small, hard, knotty tumours, formed on the nervous and tendinous parts.

**GANGRENE.** A mortification in its first beginning.

**GANGWAY (among Mariners).** The name of several ways or passages from one part of a ship to another.

**GANTLOPE, or GANTLET (in Military Affairs).** An old punishment in which the criminal, running between the ranks, receives a lash from every man.

**GAOL (in Law).** A prison for the confinement of criminals or debtors.

**GAOL DELIVERY.** The clearing of a prison by a judicial condemnation or acquittal of the prisoners; also a commission from the king to deliver or clear the gaols.

**GARB.** A wheatsheaf, signifying peace and plenty, in coats of arms.

**GARBLERS (in Law).** Officers of the city, authorized to examine spices and drugs offered in shops for sale.

**GARDEN.** A plot of ground enclosed and cultivated with extraordinary care, and furnished with the fine kinds of plants and flowers, for pleasure and use.

**GARDENING.** The process of tilling a garden and keeping it in order.

**GARDENING, HISTORY OF.** Gardening is one of those domestic arts so essentially connected with the refined enjoyments of mankind, that with a garden has ever been associated every idea of cultivation and pure pleasure. From Holy Writ we learn that our first parents, before their fall, passed their lives in a garden, and their posterity, although, according to the denunciation of their Maker, doomed to till the ground with the sweat of their brow, nevertheless have at all times endeavoured to sweeten their labour by bringing home to themselves the enjoyments of cultivation within the narrow circle of their own habitation. The accounts of gardens among the ancients are confined to those of princes or great men, as the garden of Solomon and the garden of Alcinous the Phæacian king, which is minutely described by Homer in his *Odyssey*. The hanging gardens of Babylon, particularly spoken of by Diodorus and Strabo, may be reckoned among the wonders of art. Each side extended four hundred feet, so that the area of the base was nearly an acre. They rose with terraces, constructed one above another, and supported with pillars to the height of four hundred feet. These terraces were formed of stone, covered with reeds, and cemented with bitumen, over which was laid a double row of bricks, and then a layer of earth of sufficient depth for plants to grow in it. The Persian kings also displayed their magnificence in their gardens, which they took care should contain all that was useful as well as beautiful. Their trees were ranged in straight lines and regular figures, and the margins of the walks were lined with tufts of roses, violets, and other odoriferous flowers. Firs and planes were their favourite trees.

The Greeks appear to have derived their ideas of gardening from the Persians, if we may judge from the allusions of writers to this subject. Xenophon particularly admires the garden of Cyrus at Sardis. The narcissus, the violet, the rose, the ivy, the pines, and other plants chosen by the Persians, either for their beauty or their fragrance, were the theme of praise among the Grecian poets and philosophers. They also consulted shade, fresh breezes, and the beauties of verdant scenery, as we learn from the vale of Tempe described by Ælian, and the shady groves of Athens described by Plutarch. With the beauties of nature they also associated those of art, particularly such as derived an interest from their religious or social attachments.

Hence we find that their gardens were decorated with temples or altars dedicated to their gods, or the tombs of their ancestors or of great men whose memory they held dear. Their favourite fruits were the vine, the fig, the pomegranate, and the melon.

The first garden mentioned among the Romans is that of Tarquinius Superbus, which abounded with flowers, chiefly roses and poppies. As the Roman people extended their conquests, and their intercourse with other nations became more frequent, they increased in luxurious and expensive indulgences, which they displayed in the decorations of their gardens. Lucullus, the conqueror of Mithridates, who introduced from Asia the cherry, the peach, and the apricot, first gave the Romans a specimen of Asiatic grandeur, in his garden near Baiæ, in Naples, which was remarkable for prodigious works of art, as artificial mountains, immense pieces of water, and numerous costly embellishments. This gave that tone of artificiality to the Roman gardens which was for so many centuries after retained in Europe. Slopes, terraces, a wilderness, shrubs methodically trimmed or cut into certain shapes, a marble basin, artificial fountains, or a cascade falling into the basin, bay trees alternately planted with planes, a straight walk, from which issued others, parted off by hedges of box, and apple trees, with obelisks placed between every two; these were the ingredients of a Roman garden, as described by Pliny the younger, in which was wanted nothing but the decoration of a parterre to make a garden in the reign of Trajan to serve for a description of one in the seventeenth century. A more correct taste in the art of gardening has obtained within the last century. Nature now derives every possible assistance from art without losing any thing of her simplicity.

**GARLAND.** An ornament of flowers made for the head or other purposes.

**GARLAND (among Mariners).** A collar of rope wound up about the head of a main mast, to keep the shrouds from galling.

**GARLIC.** A bulbous root, consisting of many small tubercles included in its coats. It has a strong smell and an acrid taste, but is much used for food.

**GARNET.** A sort of carbuncle, so called from its red colour, resembling the seed of a pomegranate.

**GARNISHMENT (in Law).** A warning given to any one for his appearance in court.

**GARRET.** The uppermost floor in a house.

**GARRISON.** A place of defence occupied by troops; also the troops themselves.

**GARTER.** A bandage for the leg.

**GARTER (in Heraldry).** The principal badge of the highest order of knighthood in the kingdom, called the Most Noble Order of the Garter.

**GARTER KING AT ARMS.** The chief of the three kings at arms.

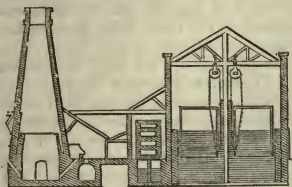
**GARTER, ORDER OF THE.** An order of knights instituted by Edward III. which consists of twenty-six knights companions. The habit and ensigns of this order are the garter, mantle, cap, and collar. The badge of the order is the image of Saint George, called the George.

**GAS.** A chymical term derived from the German *geist*, spirit, denoting an elastic aerial fluid, of which there are different kinds, some being acid, as carbonic acid; some alkalies, as ammonia, &c.

**GAS LIGHT.** Light produced by gas burning in lamps, &c. This gas, which is a combination of oxygen and hydrogen, is carried away by pipes and burnt at the orifice of escape. It is produced either from pit coal or whale oil. The process for producing coal gas is as follows. The coal, being broken to a convenient size, is placed in oblong cast iron retorts, ranged in furnaces to keep them at a red heat, and all the volatile products are conveyed by a common tube into a condensing vessel, which is kept cool by being immersed in water. In the condenser are retained the water, tar, and other condensable vapours, while the gaseous products, namely, the carburetted hydrogen, the sulphuretted hydrogen, and the carbonic oxyde and acid are passed through strata of slaked lime, by which the sulphuretted hydrogen and carbonic gases are absorbed, and the carburetted hydrogen and hydrogen gases in their purified state are transmitted into the gasometers, from which the several pipes are supplied that convey the gas to the lamps. The best kind of coal for distillation is that which contains most bitumen and least sulphur.

After the discovery of obtaining gas from coal, attempts were made to extract it from other substances. The method of procuring it from oil is said to have originated in an attempt made in 1814 to convert coal tar into gas. Since that period numerous works have been constructed in different parts of the country for the manufacture of oil gas, which, in the opinion of many, is preferable to the coal gas.

**GASOMETER, or GAZOMETER.** A reservoir for holding a considerable quantity of gas. It is made of thin tinned iron plate, and mostly provided with some contrivance for measuring the quantity of gas it contains.



**GASTRIC JUICE.** A fluid separated by the capillary vessels of the stomach, and serving as the principal solvent of the food. This juice in a healthy subject is inodorous, of a saltish taste, and limpid like water.

**GATE.** A moveable part of a fence, made of wood or iron. Gates with five or six bars, large enough to admit of carts passing through, are most commonly employed in fences for parting off fields.



**GAVELKIND.** A tenure or custom in Kent, whereby the lands of the father were divided equally at his death among his sons.

**GAUGING.** The art of measuring the capacities of all kinds of vessels.

**GAUNTLET.** An iron glove for the hand, which was formerly used in single combat. It is borne in coat armour, as in the annexed figure.



**GAUZE.** A very thin sort of silk.

**GAZETTE.** A newspaper; particularly that published by authority. The first Gazette in England was published in 1665, at Oxford, where the court then was.

**GAZETTEER.** A writer or publisher

of a Gazette; also the title of a geographical dictionary.

**GELATINE, or JELLY.** An animal substance, soluble in water, and capable of assuming an elastic or tremulous consistence when cooled, and liquifying again by the application of heat.

**GEM.** A precious stone; or a sort of siliceous earth, consisting of silica and alumina, with a small portion of lime and oxyde of iron. The gem is remarkable for its hardness and internal lustre. Under this name is comprehended the diamond, ruby, sapphire, hyacinth, beryl, garnet, chrysolite, &c. To these have been added rock crystals, the finer flints of pebbles, the cat's eye, the oculus mundi, the chalcedony, the moon stones, the onyx, the cornelian, the sardonyx, agate, &c.

The imitation of antique gems, by taking the impressions and figures upon them, in glass of the colour of the original gem, or on sealing wax or brimstone, has been practised at different times by persons who, in respect to the first method of taking them on glass, have kept the art to themselves, and suffered it to die with them. But the process adopted by Mr. Homberg, which has also been communicated by him to the world, is highly esteemed for the perfection to which he has brought the art. From the engraved gems of the king's cabinet, he took such exact resemblances of the originals as sometimes to deceive the nicest judges, who mistook them for the true antique stones. His method consists in taking the impression of the gem in a very fine earth, and then conveying the impression from the earth to a piece of half melted glass.

**GEMINI, the TWINS.** A constellation, and sign in the zodiac, marked thus II.

**GEN.** An abbreviation for General and Genesis.

**GENDARMES, or GENS D'ARMES.** A select body of horse in the French army, who are now much employed by the police.

**GENDER (in Grammar).** A distinction in nouns to mark the sexes; genders are either masculine, for the male sex; feminine, for the female sex; or neuter, for those which are of neither sex.

**GENEALOGY.** A series or succession of ancestors; also an account of the relations and alliances of any person or family.

**GENERAL (in Military Affairs).** An officer in chief, to whom the command of troops is intrusted; also a particular beat of drum in the morning, to give notice to the foot to march.

**GENERALISSIMO.** The supreme general or commander in chief of an army.

**GENERAL ISSUE** (in Law). That plea which traverses or denies at once the whole declaration or indictment.

**GENERAL OFFICERS.** All officers above the rank of lieutenant-colonel in the line.

**GENERATING** (in Geometry). A term for a line or figure which by its motion produces any other figure.

**GENERIC CHARACTER** (in Natural History). The character which distinguishes the genera or general kinds of plants, animals, &c. from each other. This character belongs to all the species of the same genus or kind.

**GENERIC NAME** (in Natural History). The name of any genus or kind of animal, plant, or mineral. This name can be described only by describing the generic character.

**GENET.** An animal of the weasel kind, resembling the civet cat in its musk smell.

**GENEVA.** See **GIN.**

**GENITIVE CASE.** The second case in Latin and Greek nouns, which denote possession. It is marked in English by s with an apostrophe, thus ('s).

**GENII.** Good or evil spirits, much thought of in the eastern nations. The Tales of the Genii profess to give an account of their proceedings and dealings with mankind.

**GENTILES.** A name given by the Jews to all who were not of the twelve tribes of Israel; among Christians, it is the name of all heathens who did not embrace the Christian faith.

**GENTLEMAN.** Anciently, one above the state of a yeoman.

**GENTRY** (in Law). The order and rank of gentlemen, descended from ancient families, that had always borne coat armour.

**GENTOO.** A native of Hindostan.

**GENUS** (in Natural History). A subdivision of a class or order of natural objects, animal, vegetable, or mineral, and having under it different species or variety.

**GENUS** (among Logicians). That which is common to a number of individuals; the summum genus, or highest genus, is that which appertains to the greatest number of individuals, as substance, which belongs to all material.

**GEOCENTRIC.** Being concentric with the earth, or having the earth for its centre; a term applied to a planet in its orbit.

**GEOGRAPHICAL MILE.** The 60th part of a degree.

**GEOGRAPHY.** The science which

treats of the earth as an habitable world, comprehending a description of the whole globe, together with an account of all its parts, limits, inhabitants, &c. Geography is either general or particular. General geography comprehends the knowledge of the earth in general, and the affections common to the whole globe, as its figure, magnitude, motions, circles, winds, tides, meteors, divisions into land and water, &c. Particular geography has respect to particular countries, showing their boundaries, figure, climate, seasons, inhabitants, arts, customs, language, history, &c. When it respects regions, districts, or parts of countries, it is called chorography, and when particular cities, towns, or villages, &c. it is called topography. Particular geography is also distinguished into ancient geography, when it treats of the countries and places existing among the ancients; modern geography, when it treats of modern places; the geography of the middle ages, which treats of places that flourished in the middle ages; and lastly, sacred geography, which treats of places mentioned in the Bible.

The earth, considered as a planet, is supposed to be marked by circles corresponding to those which the sun apparently describes in the heavens, as the horizon, which divides the sphere into two parts or hemispheres, the one upper and visible, the other lower and invisible; the equator, which is equidistant from both the poles, and divides the globe into northern and southern hemispheres; the azimuth, or vertical circles, which intersect each other at the zenith and nadir; the meridian, which crosses the equator at right angles, and from which the distance of places east and west is reckoned; the parallels of latitude, small circles supposed to be parallel to the equator, which show the latitude of places, or their distance north and south from the equator; the arctic and antarctic circles, two circles at the distance of twenty-three degrees and a half from the north and south poles; the two tropics, namely, the tropic of Cancer and the tropic of Capricorn, the first north and the second south, twenty-three degrees and a half distant from the equator; to these might be added the hour circles, or the twenty-four circles passing through the equator, and corresponding to the twenty-four hours of the day.

From the diversity in the length of the days and nights, geographers divide the globe into certain districts, called climates, measured either by hours or half hours;

and from the effects of light and heat upon the earth in different parts, it is distinguished into five zones, namely, one torrid or burning zone, between the tropics; two temperate, between the polar circles and the tropics; two frigid or frozen zones, between the polar circles and the poles. The inhabitants of the earth, as to their relative situation in regard to each other, are distinguished into the antipodes, who live directly opposite to each other; the antoeci, who live under the same meridian, but opposite parallels of latitude; the perioeci, who live under the same parallels of latitude, but opposite meridians.

The earth is naturally divided into land and water, and according to some computations about three-fourths of it is occupied by water, and the remaining fourth by land. The land is distinguished into continents, or large portions not separated by any sea, as the four great continents, Europe, Asia, Africa, and America, which are the four quarters of the world; islands, smaller portions, entirely surrounded by water, as Great Britain, Ireland, &c.; peninsulas, or tracts of land almost surrounded by water, as the Morea, in Greece; isthmuses, or necks of land joining two continents, as the isthmus of Suez, joining Africa to Asia; promontories, or capes, high portions of land stretching out into the sea, as the Cape of Good Hope; mountains, or elevations of the earth's surface, such as the Alps and Pyrenees in Europe, the Caucasus and Uralian Mountains in Asia, and the Andes in America. The water is distinguished into oceans, which are vast collections which separate the continents from each other, as the Pacific and Atlantic Oceans; seas, or smaller collections of water, as the Indian Sea, Black Sea, &c.; gulfs, parts of any sea surrounded nearly with land, as the Gulf of Venice; if they have a wide entrance they are bays, as the Bay of Biscay; straits, narrow passages joining two seas, as the Strait of Gibraltar; lakes, large collections entirely surrounded by land, as the Lake of Geneva; rivers, streams of water which have their source in some spring, and empty themselves into some other river or piece of water. The principal rivers, as to their magnitudes, are the Amazons, Senegal, Nile, St. Lawrence, La Plata, Mississippi, Volga, Oronooko, Ganges, Euphrates, Danube, Don, Indus, Dnieper, and Dwina, but if estimated according to the length of course which they run, their order will be rather different, but the Amazons is the largest in every respect.

The earth is politically divided into countries, which, according to their government, are distinguished into empires, if they are of great extent, as the Russian and Austrian empires; or kingdoms, as the kingdoms of Great Britain, France, Spain, &c.; or states, as the states of Holland and America; or republics, as the republics of Venice, Genoa, &c. Under this head geography treats of the subdivisions of each country into provinces, cities, towns, &c.; also of the number of inhabitants, the nature and produce of the soil, the animals peculiar to each place, the state of the arts, manufactures, commerce, &c. which constitute the wealth of each country, and is comprehended under the name of statistics. To all this may be added an account of curiosities, natural and artificial, as volcanoes, caverns, canals, springs, fountains, and the like. Besides geography treats not only of the earth's surface, but also of the affections which it is exposed to from the waters of the ocean which produce the flux and reflux of the tide, and the currents belonging to particular seas, as in the Mediterranean and Euxine seas; likewise of the winds which blow in particular manners and directions, such as the monsoons, or trade winds, which blow for some months in the year one way and the rest another; and, lastly, the meteorological peculiarities of each country, such as regards the degree of heat and cold, the quantity of rain which falls in particular places, or within a given period, the duration of frosts, and other particulars respecting the climate, and its effects upon the surrounding objects.

Geographical descriptions are moreover illustrated by engraved delineations, which when they represent an ocean, sea, or any piece of water, is called a chart, but when they represent any parts of the earth generally are termed maps. In all maps the north is at the top and the south at the bottom, the east on the right and the west on the left. Maps are always laid down according to a certain scale, taken from the degrees of latitude which are marked on the east and west side of the map, those of longitude being marked on the north and south side. As the earth is a globe, a map of the whole earth must necessarily consist of two parts, both sides of the globe not being visible at once; accordingly in a universal map the right hand circle shows the old world, that is, Europe, Asia, and Africa, and the left hand circle the new world, or America. Upon the general map are marked the

circles correspondent to those of the sphere, as the equator, &c. Particular maps, being parts of this globe, retain the meridians and parallels belonging to the particular part, which are made smaller or larger according to the size of the map, and the distance of the places mentioned are proportioned to the breadth of the parallels as nearly as they can be.

In maps the sea is denoted by an open space, the thick shadowing denotes the sea-coast, rivers are marked by shadowed serpentine lines, if large by double and treble lines made strong and black, roads by double lines, divisions of countries by dotted lines, and sometimes distinct colours, those for kingdoms and provinces being larger than the rest; forests are represented by trees, mountains by rising shadows, sands by dotted beds, lakes by shadowed coasts, rocks by pointed things sticking up sharp in the sea, the course of the winds by arrows. The names of villages are written in a running hand, those of towns in a Roman character, those of cities in small capitals, and those of provinces in large capitals. Cities or great towns are made like small houses, with a little circle in the middle of them, but smaller towns or villages are marked only with little circles; bridges by a double line across the river. In some maps, particularly old maps, cities, as the sees of bishops, were marked with a cross or mitre, and those of archbishops with a double cross, universities with a star or a caduceus, abbeys with a crook or pastoral staff, fortresses with an angle, as of a bastion, castles with a little flag, gentlemen's seats with a single house only, &c.

The apparatus called the terrestrial globe, has a complete map of the earth drawn on its surface, with the several imaginary circles, and is moreover fitted to illustrate the movements of the earth as a planet, the latitudes, longitudes, and distances of places, the hours of day and night in different part, with a number of other interesting problems.

**GEOGRAPHY, HISTORY OF.** The study of geography, as far as it was connected with or depended upon astronomy, in all probability began and kept pace with it. Thales, the Grecian astronomer, constructed a globe, representing the land and sea upon a table, which art he derived from the Egyptians, among whom maps were in use even as early as the days of Sesostris. This conqueror is said to have represented in this manner the conquests he made and the countries he marched through. That the Israelites practised the art of geography at

an early period is clear from the account we have in Scripture of Joshua having sent men to walk through the land of Canaan, which they described in seven parts, in a book. The first map among the Greeks on record is that of Anaximander, which is probably referred to by Hipparchus, under the designation of the ancient map. Geographical descriptions were, however, prior to this, for the works of Homer abound with the names of places and an account of several particulars respecting them. The first professed writer on the subject of geography was Scylax, if the author of the *Periplus* now extant be the same as the philosopher of that name mentioned by Herodotus. Herodotus the historian has interspersed his work with a minute geographical description of the places which occur in the course of his narrative; and geographical notices are also to be found scattered in the writings of Thucydides and Xenophon. The conquests of Alexander doubtless increased the desire to know more of the habitable world, which that prince encouraged by sending Nearchus on a voyage of discovery in the Red Sea, a description of which is still extant. About the same time flourished the geographer Dicaearchus, of whose works some fragments remain.

Eratosthenes is said to have been the first who attempted to reduce the science of geography to a system, by the application of astronomical principles. He introduced a regular parallel of latitude, which began at the Straits of Gibraltar, and proceeded through the isle of Rhodes to the mountains of India, noting all the places it passed through. He drew this parallel not by the sameness of the latitude, but by observing where the longest day was fourteen hours and a half, which Hipparchus afterwards found to be thirty-six. Eratosthenes also drew maps of the countries then known, with as much accuracy as his scanty information would enable him, but they contained little more than an imperfect representation of the states of Greece and the dominions of Alexander's successors. He was ignorant, as Strabo informs us, of Gaul, Spain, Germany, Britain, Italy, and the coast of the Adriatic, and had only a faint idea of the western parts of Europe. Hipparchus improved upon the labours of Eratosthenes, and determined both the latitudes and longitudes from celestial observations.

Under the Roman emperors geography acquired an increasing interest, from the perpetual accessions which were made by

conquest to the empire. Accordingly, we find the number of geographical writers to be greatly increased, and their writings to be more correct and particular. Besides Pomponius Mela, who, in his *Cosmographia*, has given a neat and comprehensive account of the known world, and Dionysius Perigetes, who has written a system of geography in verse, Strabo has left a work on this subject which, in point of methodical arrangement and extent of information, exceeded any thing that had been hitherto published. This was followed, after the interval of more than a century, by the great work of Ptolemy on this subject, in the execution of which he took astronomy to his aid for determining the situation of places. He fixed the latitudes and longitudes of all the principal places in the known world, and expressed them in degrees, after the manner of Hipparchus, making his calculations from the proportions of the gnomon to its shadow, as observed by different astronomers at the time of the equinoxes and solstices, and deduced from these the length of the longest days. He also measured and computed the distances of the principal roads mentioned in the different surveys and itineraries which had been made at different times by order of the emperors, and compared them with such reports as he could gather from travellers. In this manner did Ptolemy execute his system of geography, which, as a work of science, has deservedly held the first rank among the works of the ancients, and, considered as the labour of one man, was never surpassed, and scarcely ever equalled.

With the exception of the *Geographical Dictionary* of Stephanus Byzantinus, in the fifth and sixth centuries, and the scattered geographical notices interspersed in the works of the Byzantine historians, the subject of geography was neglected until the thirteenth century, when John Sacro Bosco published his treatise on the sphere, which contained an account of the earth as far as it was connected with the doctrine of the sphere. Nothing farther was done towards the advancement of this science until the discovery of the New World, when geographical knowledge received continual accessions by new discoveries, and the spirit of investigation and research which they awakened. Since that time the writers on geography have been exceedingly numerous. Among those who have treated it in immediate connexion with astronomy and the other sciences may be reckoned Piccioli, in his *Geographia*

et *Hydrographia Reformata*; Deschales, in his *Mundus Mathematicus*; and Wolfius, in his *Elementa Matheseos*. Among those who have written on ancient and modern geography, Cellarius, Cluverius, and Baudrand are the most distinguished: the most esteemed modern works on this subject are the systems of Busching, Salmon, Guthrie, Pilkington, Playfair, and Myer, &c.

**GEOLOGY.** The science which treats of the structure of the earth, or of the different minerals, stones, earths, &c. which enter into its composition, and the manner in which they are disposed in regard to each other. This science has of late attracted particular notice, and from the important facts which have thus been brought to light, the subject has justly awakened a considerable interest. Geology may be considered under two heads, namely, first, as regards those bodies which naturally form constituent parts of this globe; and, secondly, as regards those foreign bodies which have been buried in the earth and partly amalgamated with it. These are now distinguished by the name of fossil or organic remains. In the consideration of these two branches of the science of geology, it will appear that the earth has undergone such changes, since its original formation, as nothing but a universal deluge could have produced, and in this point of view it furnishes to the believer a wonderful and gratifying confirmation of the Scripture account of that great and miraculous convulsion.

The study of geology having been most effectually pursued by inquiring into the structure of mountains, it has been on that account likewise designated by the name of orycthology. Mountains have been found by geologists to consist, at a considerable depth, of strata regularly disposed, which have been classed under the heads of granite, gneiss, mica slate, clay slate, primitive limestone, primitive trap, serpentine porphyry, syenite topaz, quartz rock, primitive flinty slate, primitive gypsum. These are altogether denominated primitive rocks, which have no organic remains, and appear to have been undisturbed. But in the strata above these there are evident signs of violent fractures caused by the action of waters. In this manner valleys have been excavated, and a separation thus occasioned in strata that once evidently formed one continuous range. Such water-worn fragments have, from the cause of their existence, been denominated diluvium, to distinguish them from other de-

bris produced by causes still in operation, such as the alluvium or the accession to lands by inundations, torrents, and the like, as also the volcanic rocks formed by the eruptions of mountains. Besides the rocky fragments and insulated hills above mentioned, the strata above these primitive rocks contain also organic remains. In those immediately above, called transition rocks, fossil remains of corals and shells are found in small quantities, as also in the carboniferous limestone that lies next to these rocks. The coal strata, which follow, abound with vegetable remains of ferns, flags, reeds of unknown species, and large trunks of succulent plants, which are altogether unknown either in description or in nature. Above the coals are beds containing corals and shells, which, like those in the strata below, are characterized by this peculiarity, that in some places they are to be found in families, and that in other places there will be found beds of marine shells in one layer, and those peculiar to fresh water in another layer, resting one over the other in alternate succession. In the highest of the regular strata, called the crag, will be found the shells at present existing in the same coast, and, lastly, over all these strata is a covering of gravel, which is remarkable for containing the remains of numerous quadrupeds, as the bones, horns, teeth, shells, scales, &c. These animals are for the most part either foreign to the climates where their remains are found, or they are of a larger size than any now known, or they are altogether different from any species of animal hitherto known or mentioned. Among those animals whose remains have been found in countries far distant from the places which they inhabit are the elephant and the rhinoceros, numerous remains of which have been found in England, France, Germany, Italy, and other parts of Europe, but still more in Siberia, where, throughout the whole extent of that country, there is scarcely a river or a shore in which have not been found the bones of elephants and other animals. Near the river Willioni, in the eastern part of Siberia, has been dug up a rhinoceros still possessing the skin, fat, and muscles; and fossil ivory has been procured in immense quantities in the countries nearest to the arctic circle. So numerous are the remains that have already been dug up, as to form immense collections in the cabinets of the great, particularly in that of the Prince of Hesse Darmstadt and the Elector of Manheim. Naturalists have also been enabled, in part,

to ascertain the species of these animals, at least as far as regards the rhinoceros, which is of the double horned kind; but in regard to the elephantine remains, although very numerous, it is not so certain whether they are of any known species or otherwise. As to the animals differing in size from those of their own species at present, Ireland furnishes specimens of deer that have been dug up of an extraordinary magnitude; and in Scotland, a kind of oxen has been found bigger than the largest species existing at present. Of animals altogether unknown, both North and South America, and other parts, furnish several examples, as the mammoth, the mastodon, and other nameless animals of a prodigious size.

This remarkable fact, of the fossil remains of animals, did not escape the notice of the ancients, for Xenophanes, above four hundred years before the Christian era, is said to have discovered the remains of some marine animals imbedded in rocks, from which he absurdly inferred the eternity of the world. Herodotus also ascertained the existence of fossil shells, from which, with much greater reason, he was led to conclude that the sea had once occupied those parts. Also in the pyramids, the stones were found to contain the remains of animals, of which there existed in his time no corresponding species. Strabo, who saw these fragments of stone lying about the pyramids, took them to be petrified lentils, that had been used by the workmen; at the same time this writer, as well as Pliny and others, attest the existence of such animal remains, and in a high state of perfection. In the Natural History of Pliny many fossil remains are spoken of, as the bucardia, resembling an ox's heart; the glossopetra, having the form of a tongue; the horns of ammon, resembling a ram's horn; the lepidotes, like the scales of fishes, &c.

**GEOMETRY.** That branch of mathematics which treats of the properties of extension and figure. Geometry is distinguished into the theoretical and the practical. Theoretical or speculative geometry treats of the various properties and relations in magnitudes, &c. Practical geometry comprehends the construction of figures, the drawing of lines in certain positions, as parallel or perpendicular to each other, &c. Speculative geometry is again distinguished into elementary geometry, that treats of the properties and proportions of right lines and right lined figures, as also of the circle and its several parts; and the



sublime or transcendental geometry, that treats of the higher order of curves, &c.

The simple principles of geometry are explained in definitions and axioms. The following are the most important definitions. A point is that which has neither length, breadth, nor thickness; a line has length without breadth or thickness; a superficies, or surface, has length and breadth only, the boundaries of which are lines; a solid has length, breadth, and thickness, the boundaries of a solid are surfaces. A straight line lies evenly between the parts, parallel lines keep at the same distance from each other when extended indefinitely. A perpendicular line is perpendicular to another line. An angle is formed by the meeting of two lines in a point; it is a right angle when formed by one line falling perpendicularly on another line; an obtuse angle, when it is greater than a right angle; and an acute angle when it is less. A figure is a space included within one or more boundaries, called sides; it is rectilinear when contained by light lines, and curvilinear when contained by curved lines; a rectilinear figure contained by three right lines is a triangle; if by four, quadrilateral; if by five, a pentagon; if by six, a hexagon, &c.; if by more than twelve, a polygon.

Triangles are distinguished according to the length of their sides, into equilateral, having all the sides equal; isosceles, having two sides equal; and scalene, having all the sides unequal; or according to their angles, into right angled, if they have one right angle; obtuse angled, if they have one obtuse angle; and acute angled, if they have all acute angles. Every quadrilateral or four-sided figure is called a parallelogram when it has its sides parallel, and a rectangle when all its angles are right angles. Four-sided figures are moreover distinguished according to their sides and angles, into a square, which has all its sides equal and its angles right ones; an oblong square, which has its opposite sides equal and its angles right ones; a rhombus, having all the sides equal, but the angles not right ones; and a rhomboid, having the opposite sides equal and the angles not right ones. When a quadrilateral has none of its sides parallel it is a trapezium, and when only two of its sides parallel a trapezoid. The diagonal is the right line which divides a parallelogram into two equal parts. The base of a figure is the side on which it is supposed to stand. The vertex is the extreme point opposite to the base; the altitude is the perpendicular distance from the vertex to

the base. The area of a figure is the quantity of space contained within its boundaries.

Of curvilinear figures in common geometry is the circle, which is a plane figure bounded by a curve line called the circumference, which is equally distant from a point called the centre. The diameter of a circle is a straight line drawn from one side of the circumference to the other, through the centre, so as to divide it into two equal parts. The radius of a circle is a straight line drawn from the centre to the circumference; the segment of a circle is a part cut off by a line called the chord. The circumference of every circle is supposed to be divided into 360 equal parts, called degrees, every degree into 60 parts called minutes, and every minute into 60 parts called seconds.

Solids are distinguished into a prism, the sides of which are parallelograms, and the two ends or bases are similar; polygons, parallel to each other; the cube, consisting of six equal square sides or faces; the pyramid, having any plane figure for its base and triangles for its sides, all terminating in one common point or vertex; the cylinder, which is generated by the rotation of a rectangle about one of its sides supposed to be at rest; the cone, a solid having a circular base, and its other extremity terminated in a single point or vertex. Those curves which are formed by the intersection of a plane with a cone form the subject of conic sections, which is a branch of sublime geometry.

Ratio is the mutual relation of two magnitudes of the same kind to one another, in respect to quantity, as 2 to 1, which is double; the former of these is called the antecedent, and the latter the consequent; proportion is the similitude of ratios, as 6 is to 2 as 3 is to 1, that is a triple ratio in both cases.

An axiom is a plain truth that wants no demonstration, as that the whole is greater than a part. A postulate is that which requires to be granted as true before another thing can be demonstrated. A proposition is that which proposes something to be done or demonstrated; it is a problem when it proposes any thing to be done, as to divide a given line into two equal parts, or to raise a perpendicular, &c.; and a theorem when it proposes something to be shown, as that triangles of the same base and altitude are equal to each other, or that all the angles in the same segment of an arch are equal, &c.

GEOMETRY, HISTORY OF. The origin

of geometry is ascribed by Herodotus to the Egyptians, who, in consequence of the inundations of the Nile, which carried away all their landmarks, were under the necessity of distinguishing and laying out their lands by the consideration of their figure and quantity, whence the word geometry in the Greek signifies literally land-measuring. The Greeks, who cultivated this science more than any other people, doubtless learned the rudiments from the Egyptians; for Thales, who travelled into Egypt and acquired a sufficient knowledge of astronomy to calculate, must also have first become acquainted with the principles of geometry to assist him in his astronomical inquiries. Pythagoras, the pupil and friend of Thales, distinguished himself by his discoveries in arithmetic, as well as geometry. He invented the multiplication table, called after him the *Abacus* Pythagoricus, and in geometry he discovered the thirty-second and forty-seventh propositions in the first book of Euclid's *Elements*. Soon after this flourished Anaximander, Anaximenes, Anaxagoras, Cleostratus, *Ænopydes*, and Zenodorus, all celebrated geometricians, of whose works nothing remains except of the last. They were succeeded by Hipparchus, who rendered himself celebrated by the quadrature of the lines called after him, as also by his attempt at the quadrature of the cube, which was a matter of great interest among the ancient mathematicians, and is said to have taken its rise in an answer of the oracle at Delphi, which, when consulted on the occasion of some public calamity, answered 'Double the altar,' which was an exact cube. Notwithstanding the failure of Hipparchus, others renewed the attempt, which although it proved unsuccessful as to that particular object, nevertheless is said to have led to the discoveries of other geometrical properties, as the conchoid of Nicomedes, the cissoid of Diocles, and the quadratrix of Dinostratus. This latter geometrician was the follower and friend of Plato, whose devotion to the science of geometry was such that he caused it to be inscribed over the door of his school, 'Let no one enter here who is ignorant of geometry.' To Plato we are indebted for that branch of geometry known by the name of conic sections, of which his scholar Aristæus is said to have composed five books that are highly spoken of by the ancients, but are not now extant. Eudoxus and Menechmus were also disciples of Plato, and distinguished themselves, the former in geometry as well as astronomy,

the latter by his application of conic sections to many problems. After an interval of ninety years from their time, that is, about three hundred years before Christ, flourished Euclid, who, by collecting and methodizing all the principles of geometry then known into a regular system, called his *Elements* of Geometry, secured to himself a celebrity which, in point of extent, has never been surpassed, and perhaps scarcely ever equalled, his work having ever since been considered as the standard of all geometrical knowledge. Euclid was quickly followed by Archimedes, a mathematical genius, who added many discoveries to the sciences of geometry, mechanics, optics, and hydrodynamics. In geometry he discovered the ratio between the sphere and the circumscribing cylinder, found the quadrature of the parabola, and the solidity of its conoid; he invented the spiral which bears his name, and discovered its rectification, besides a variety of other important geometrical propositions, many of which are extant, and attest the skill and ingenuity of the author.

Apollonius of Perga, who, from his writings, acquired the name of the Great Geometrician, flourished about thirty years after Archimedes. His work on the *Conic Sections*, which is the principal piece of his extant, was in all probability the best of its kind in that day, and has since been the groundwork of all works published on that subject. Of those who after Apollonius distinguished themselves in their time in the cultivation of the geometrical science, there are but few who added any thing worthy of particular notice. Eratosthenes attempted to measure the circumference of the earth; Ctesibius invented water pumps; Hero of Alexandria, *clepsydre*; Theodosius, who lived in the first century of the Christian *æra*, wrote a treatise on the sphere, which was one of the first on spherical trigonometry.

After an interval of three or four centuries from the time of Theodosius, we meet with the names of Pappus the commentator of Apollonius, Theon, the commentator of Ptolemy, and of Proclus another commentator on the ancient mathematicians. The destruction of the library of Alexandria by the Saracens was very fatal to the cultivation of geometry, which had flourished there more than any where else: all the geometricians from every part had assembled there, and when driven away they were deprived both of their books and instruments. It is not surprising,

therefore, that the study of geometry was for many centuries almost entirely forgotten amidst the troubles which desolated all Europe on the irruption of the northern tribes. The Arabs, who by the ravages they committed at Alexandria had done the most injury to the science of geometry, were, after the lapse of two centuries, the cultivators of that which they had nearly annihilated. They studied the works of the Greeks, and showed their proficiency in the correctness of their comments on these writings.

Whilst the Arabs were thus promoting the cause of science generally, Europe remained in a state of comparative barbarism, nor was the study of geometry revived among the Europeans before the fourteenth and fifteenth centuries, when by the translations of the ancient writings, the taste for geometry became very general among the thinking part of the community. In the following century there arose mathematicians who added very materially to the stock of geometrical knowledge. Cardan applied algebra to the resolution of geometrical problems; and Descartes, who followed at the distance of nearly a century, pursued this application of algebra to geometry still farther. At the same period with Descartes flourished Cavalieri who, in his work on 'Indivisibles,' struck out a new path to himself, in which he was followed by many writers of great celebrity, as Wallis, Pascal, Fermat, Roberval, Leibnitz, Newton, and many others, who set forth geometry in a new light, and formed a new system of the science. Among the treatises in which are embodied the geometrical principles of the moderns and ancients may be reckoned the Elements of Euclid by Simson and Playfair, the treatises of Ozanam, Clavius, Bonnycastle, Hutton, &c.

**GEORGE, St.** The patron saint of England, is said to have been a great warrior of Cappadocia, and a martyr in the Christian cause.

**GEORGICS.** Books treating of husbandry, after the manner of Virgil's poems on rural subjects, which are so called.

**GERANIUM.** A genus of plants, the numerous species of which are remarkable for the beauty either of their leaves or their flowers, or both. The seeds of the flower are contained in a husk, which resembles a stork's beak, whence it has acquired the English name of crane's bill.

**GERMAN (in Law).** Whole or entire as respects genealogy or descent, as bro-

thers german, those who are so on both father and mother's side.

**GERMEN (in Botany).** The germ, ovary, or seed bud, which is the lower part or base of the pistil.

**GERMINATION.** The act of sprouting forth, as applied to the seeds of vegetables; also the time when they vegetate.

**GIANTS CAUSEWAY.** A vast collection of a black kind of marle, called basaltes, in the county of Antrim in Ireland. The masses of rock are there disposed in such regular order, and to such an extent, as to make this causeway one of the greatest curiosities in nature.

**GIBBOUS (in Astronomy).** A term applied to the enlightened part of the moon, during her course from full to new, when the dark part appears falcated or horned, and the light part convex or gibbous.

**GIFT (in Law).** A conveyance which passeth either lands or goods; a transfer of any thing without a valuable consideration.

**GIG.** A very light kind of two-wheeled chaise.

**GILD.** See **GUILD.**

**GILDING.** The art of covering the surface of bodies with gold.

**GILLIFLOWER, or JULY FLOWER.** A smaller kind of carnation that flowers in July.

**GIMLET.** A carpenter's tool for boring holes.

**GIN, or GENEVA.** A hot fiery spirit, formerly drawn from the berries of the genevre or juniper tree, but now made by the distillers of the oil of turpentine and malt spirits. The Hollands Geneva is manufactured chiefly at a village near Rotterdam, and is drawn from wheat and the juniper berries. The English gin is a destructive drink among the lower orders.

**GIN (among Sportsmen).** A machine which serves as a trap or snare for catching beasts.

**GIN (among Mechanics).** A machine for driving piles.

**GINGER.** An Indian root of a biting hot taste; the flower consists of five petals, shaped something like those of the iris.

**GIPSIES.** A wandering tribe, who are to be found in different countries of Europe, and are supposed to be of Egyptian origin. They are altogether a distinct class of people, both in their habits, which are predatory and uncivilized; and in their complexion, which is sallow and brownish. But they are now beginning to follow the occupations of civilized life, and in winter

to reside in towns, where they occasionally send their children to school.

**GIRDERS** (in Architecture). Some of the largest pieces of timber in a floor.

**GIRT**. The circumference of a tree.

**GLACIERS**. A name in Switzerland for the extensive tracts of ice and snow which occur in the Alps.

**GLACIS** (in Fortification). A mass of earth serving as a parapet to the covered way.

**GLADIATORS**. Persons who fought in the arena at Rome for the amusement of the people. These were usually slaves, who fought until one was killed. This cruel custom was abolished by Constantine the Great.

**GLANDS**. A sort of kernels in the animal body, which serve to secrete the fluids. They are composed of blood vessels, nerves, and absorbents.

**GLANDERS**. A virulent disease in horses, which shows itself by a discharge of mucus from the nostrils.

**GLASIER**. See **GLAZIER**.

**GLASS**. An artificial substance formed by the action of fire on sand, or siliceous earth with salts and metallic oxides. It is remarkable for its brittleness and transparency, which latter quality renders it available for many purposes of domestic use. There are five kinds of glass, namely, flint glass, or glass of lead; plate glass, or glass of pure soda; crown glass, the best window glass; broad glass, a coarse window glass; and bottle glass, a coarse green glass.

**GLASS** (among Mariners). Sometimes the telescope, and sometimes the hourglass or sand glass.

**GLASSBLOWER**. One who blows glass in a glasshouse.

**GLASSHOUSE**. A house where glass is manufactured.

**GLAUBERS SALTS**. The sulphate of soda; a purgative.

**GLAZIER**. One who works with glass, or makes glass windows. The company of glaziers were incorporated in the reign of Elizabeth.

**GLAZING**. The crusting over earthenware with a vitreous substance; also the putting glass into windows, or making glass lights for windows.

**GLEANING**. Picking up the scattered ears of corn after the corn is cut and carried. It was once thought that, by the common law, the poor might claim this liberty as their right; but it has been adjudged by a solemn judgment of the Court of Common Pleas, that no such right exists by the common law of the land.

**GLEBE LAND** (in Law). A portion of land belonging to a parsonage or vicarage.

**GLEE** (in Music). A composition of three or more parts; originally used for convivial purposes.

**GLIRES**. The fourth order of the class mammalia in the Linnæan system, including such animals as have two fore teeth, a cutting one in each jaw, no tusks, and feet with claws formed for running, as the beaver, the hare, &c.

**GLOBE** (in Geometry). A round spherical body, more commonly called a sphere; as the armillary sphere.

**GLOBE** (in Astronomy). An artificial sphere, or a round solid body, on which is drawn a representation of the earth, as on the terrestrial globe; or of the heavens, as on the celestial globe.

**GLOBULES**. Little globes or round bodies observable in fluids.

**GLOSSARY**. A vocabulary or small dictionary, attached for the most part to any work, and serving to explain the obscure words used therein.

**GLOVERS**. Those who make gloves. The company of glovers were incorporated in the reign of Charles I.

**GLOWWORM**. An insect that shines in the dark. The female is larger than the male, and emits a beautiful phosphoric light.

**GLUCINE**. An earth of a sweetish taste, which has been lately discovered by Vanquelin in analyzing the beryl. It is infusible in the fire and insoluble in water, but combines with acids, making with them soluble salts.

**GLUE**. An inspissated jelly, made from the parings of hides and other offals by boiling them in water, then straining off the impurities and boiling them again.

**GLUME** (in Botany). The calyx or corolla of grasses.

**GLUTEN**. An adhesive, tenacious, and elastic substance, similar to glue, which is procured by the decomposition of wheat flour or other vegetable substances, of which it forms a part.

**GLUTTON**. A cunning voracious animal, larger than a badger, which inhabits Europe, Asia, and America, and preys on the carcasses of hares, mice, &c.

**GNAT**. An active little insect, which lives by sucking the blood of other animals.

**GNEISS**. A sort of rock that lies immediately over granite.

**GNOMON** (in Dialling). The stile or pin of a dial, the shadow of which points out the hours.

**GNOMON** (in Astronomy). An instrument or apparatus for measuring altitudes.

**GNOMON** (in Geometry). A figure formed by the two complements with either of the parallelograms about the diameter.

**GNU**. A particular kind of antelope, having horns bent forward at the base and backward in the middle.

**GOAD**. A staff pointed with a sharp iron for driving cattle.

**GOAT**. A quadruped fond of dry, rocky situations, and feeding on aromatic vegetables. The varieties of the goat are distinguished principally by their horns.

**GOAT-SUCKER**. An American bird, so called because it was supposed to suck the teats of the goats.

**GODFATHER**. One who stands sponsor for a child in baptism.

**GOLD**. The richest and heaviest metal except platina, being the most solid and the least porous. The ductility and malleability of gold is such, that one grain of it will cover upwards of fifty square inches, and an ounce is capable of being extended in the form of wire many hundred miles. Gold is found in beds of quartz, sand stone, &c. and also in many rivers, particularly in Peru, in minute and irregular grains, which are known by the name of gold dust.

**GOLDBEATERS SKIN**. The skin or membrane of any animal, particularly the gut of an ox, which is used by the goldbeaters in preparing gold leaf.

**GOLDEN NUMBER**. A number beginning with one and increasing one every year till it comes to nineteen, when it begins with one again, and is used to show what year in the lunar cycle any given year is.

**GOLDEN ROD**. A plant which is for the most part a native of North America. Two species only are found in Europe.

**GOLDEN RULE**. A name given to the Rule of Three.

**GOLDFINCH**. A beautiful bird with a fine yellow mark in its black quill feathers. It sings very charmingly, and is very docile.

**GOLD FISH**. An elegant fish of a gold colour, originally brought from China, and now kept by way of ornament.

**GOLD LEAF**, or **LEAF GOLD**. Gold that is hammered by the beaters until it becomes as thin and extended as a leaf.

**GOLDSMITH**. A worker or seller of gold or silver vessels. The company of goldsmiths were incorporated in the reign of Richard II.

**GONDOLA**. A sort of Venetian pleasure barge.

**GONG** (in Music). A Chinese instrument, the form of which is a shallow circular concave.

**GOODS** (in Law). The valuables of which a man is possessed.

**GOOSANDER**. A water bird, the size of a goose.



**GOOSE**. A well known domestic fowl, which exists in a wild as well as a tame state. The gray lay goose, or common wild goose, is the largest of the British species, and is easily tamed: from this sort has sprung the domestic breed.

**GOOSEBERRY** (in Botany). A plant that is set with prickles, and yields a fruit of an oval and globular figure, containing many small seeds in a pulpy substance. It is a bush much cultivated in gardens.

**GORGE** (in Fortification). The entrance of a bastion, ravelin, or other outwork.

**GORGET**. A piece of armour round the neck; something similar is now worn by officers on duty by way of ornament.

**GOSHAWK**. That species of hawk which was formerly much used in falconry.

**GOSPEL**. The four books in the New Testament written by the Evangelists, St. Matthew, St. Mark, St. Luke, and St. John.

**GOSSAMER**. A fine filmy substance, like a cobweb, which is seen in clear days in autumn in stubble fields, and is probably worked by spiders for catching flies.

**GOTHIC ARCH**. An arch called by the Italians *arche de terzo et di quarto acuto*, i. e. of the third and fourth point, consisting of two arcs of a circle meeting in an angle at the top.



**GOTHIC STYLE.** A style of architecture in which pointed arches of greater height than breadth, and a profusion of ornaments, in imitation of leaves and flowers, are the principal characteristics.

**GOVERNMENT.** The power in a state by which the whole is governed; if this power be in the hands of one it is a Monarchy; if in the hands of the nobility, an Aristocracy; and if in the hands of the people, or those chosen by them, a Democracy. The Executive Government is the power of administering public affairs, the Legislative Government that of making the laws. In England, the Executive Government is in the king and his ministers; but the Legislative Government is in the Parliament, that is, the King, Lords, and Commons; whence the constitution of England is denominated a Mixed Government.

**GOUGE.** An instrument for boring holes.

**GOURD.** A plant nearly allied to the cucumber, and still nearer to the melon. The fruit of some species are long, and others round or bottle-shaped.

**GOURDWORM.** A worm which infests the intestines of animals.

**GOUT.** A painful periodical disease, which may affect any membranous part, but commonly those at the greatest distance from the heart and the brain, as the feet or hands.

**GOUTWEED.** A perennial, so called from its supposed efficacy in curing the gout.

**GRACE, ACT OF (in Law).** An act of parliament for the relief of insolvent debtors.

**GRACE, DAYS OF (in Commercial Law).** Three days allowed for the payment of a bill after it has become due.

**GRACE (in Heraldry).** The style used in speaking of or to a duke or duchess, as your Grace, his or her Grace.

**GRADATION (in Chymistry).** A process by which metals are gradually raised to a still higher degree of purity.

**GRADUATE.** One who has taken a degree in a university.

**GRADUATION.** Dividing any thing into equal parts or degrees.

**GRAFTING (in Horticulture).** The process of inserting a branch of one tree into the stock of another, so that it may receive nourishment from it, while at the same time it produces a new tree, like the old one whence the graft was taken.

**GRAFTING-TOOL.** A kind of curved spade fit for cutting trenches.

**GRAIN.** A general name for all kinds of seed corn.

**GRAIN (in Commerce).** A small weight, the twentieth part of a scruple in Apothecaries weight, and twenty-fourth in Troy weight.

**GRAIN (in Mineralogy).** The veins of wood, or the component particles of stone and metals as they are disposed in the mass, &c.

**GRAINS OF PARADISE.** The seeds of the ammonium, which have a pungent taste like pepper.

**GRAIN TREE.** The cochineal tree.

**GRAKLE.** A bird not inhabiting Europe, having a thick bill and sharp hooked claws.

**GRALLÆ.** An order of birds in the Linnæan system, with obtuse bills and long legs, as the crane, snipe, stork, and ostrich.

**GRAMINA.** Grasses; the fifth family in the Linnæan system, comprehending among the species the ray grass, clover, trefoil, sanfoin, lucern, &c. which are called artificial grasses, as distinguished from the meadow grass.

**GRAMMAR.** The art of speaking and writing truly, according to the rules established by custom and the authority of good writers. Universal Grammar is that which treats of the first principles or elements of language, which are founded on logic; Particular Grammar is the grammar of each language, containing not only the general principles of grammar, but also the peculiarities in the structure of each language.

Grammar is divided into four parts, namely, 1. Orthography, or the right mode of writing and spelling, which treats of letters, their powers, different offices, and divisions into vowels, consonants, diphthongs, mutes, liquids, syllables, words, &c. together with punctuation, or the right mode of distinguishing words, &c. by points or accents, &c. 2. Etymology, which treats of the formation or derivation of words from one another, and their distribution into the several parts of speech, according to their several offices, into nouns, adjectives, pronouns, verbs, adverbs, prepositions, conjunctions, and interjections. Etymology also treats of the several inflections to express number, gender, case, mood, tense, person, &c. Sometimes etymology treats of the derivation of words of one language from those of another, which is called remote etymology. 3. Syntax treats of words as they are connected with or dependant on each other, giving rules for the right construction and disposition of words in a sentence. 4. Prosody treats of the quantities and accents of syllables as

parts of a verse, and the right rules of versification.

**GRAMMAR, HISTORY OF.** Grammar, as a practical art, must have existed long before it was considered as a science, and the rules of grammar must have been formed after language had assumed a settled shape by the practice of good writers. The works of Homer contained a practical illustration of all the rules of the Greek grammar long before the subject of grammar excited any attention. It is likewise clear that as there is a close connexion between correctness of thinking and correctness of speaking, the study of logic preceded that of grammar; hence we find that Aristotle makes a logical distinction between words denoting time and words not denoting time, the former of which he denominates by a word answering to the verb in grammar, and the latter by a word answering to the noun. But although the Greeks, particularly the Athenians, cultivated their language for purposes of oratory, yet there appears to have been no particular advances made towards bringing it under grammatical rules. They seem to have studied their language by the ear, which was so universally nice that a herb woman at Athens is said to have distinguished Theophrastus to be a stranger from the affectation of a single word in expressing himself; and for the same reason the orators were careful not to let a single injudicious expression escape them which might offend the audience. We are likewise informed that it was a common thing for the young people to get the tragedies of their favourite authors by heart, which they would recite on various occasions. When the Athenians, after their defeat at Syracuse, were made slaves, they softened their slavery by reciting the works of Euripides to their masters, who treated them the better on that account. In this manner the Grecian youth were taught their language at school, where a Homer was looked upon as indispensable. To a light minded people, like the Athenians, this mode of learning a language would be far more agreeable than the dry method of studying grammar; but as this former course was not so practicable in the acquiring a foreign language, this is probably the reason why grammar seems first to have been cultivated among the Romans, who, being studious of the Greek, were naturally led to a comparison of languages, and to a logical and abstract consideration of language in general. Certain it is, that the study of grammar com-

menced with the Romans, and that the names of all the parts of speech are Latin, and to be found in the writings of authors subsequent to the age of Varro and Cicero, as Ælius Dionysius, Julius Pollux, Valerius Probus, Herodian, Suetonius, Charisius, Macrobius, Diomedes, Augustin, Priscian, Ælius Donatus, &c.

**GRAMMARIAN.** One who is skilled in grammar learning.

**GRAMMAR SCHOOL.** A school in which the learned languages are grammatically taught.

**GRAMME.** A small French weight.

**GRANARY.** A storehouse for threshed corn.

**GRAND JURY (in Law).** The jury which find bills of indictment against offenders, who are afterwards tried before a petty jury, in case the former find a true bill against the party accused.

**GRAND SEIGNIOR.** The title of the Turkish sultan.

**GRANITE.** A compound rock, consisting of quartz, felspar, and mica, crystallized and cohering without cement. Granite is hard, and admits of an elegant polish.

**GRANT (in Law).** A gift in writing of such things as cannot conveniently be passed or conveyed by word of mouth.

**GRANULATION (in Chymistry).** Pouring melted metals into cold water, that they may divide themselves into grains.

**GRAPE.** The fruit of the vine, growing in clusters, from which wine is expressed. Grapes are found by a chymical analysis to contain supertartrate of potash, tartaric acid, citric and malic acids, abundance of sugar, a portion of mucilage jelly, some albumen, and also, as is said, some gluten.

**GRAPESHOT (in Artillery).** A combination of small shot put into a thick canvass bag, and corded so as to form a kind of cylinder.

**GRASSES.** See GRAMINA.

**GRASSHOPPER.** An insect that hops in the summer grass: it is allied to the locust in its make, but is very harmless.

**GRAVEL.** A kind of loamy sand mixed with pebbles, which adhere so as to form a solid handsome path.

**GRAVER.** A tool used in engraving.



**GRAVE SOUND.** A low deep note.

**GRAVIMETER.** An instrument for measuring the specific gravities of bodies.

**GRAVITATION.** The pressure that a body, by the force of its gravity, exerts on another body under it.

**GRAVITY.** The force by which bodies are carried or tend towards the centre of the earth.

**GREEK FIRE.** An artificial fire invented by the Greeks in the middle ages, during their wars with the Arabs and Turks. It consists of naphtha, bitumen, sulphur, gum, &c.

**GREEN.** One of the seven original colours excited by the rays of light, which is the most grateful to the eye and most favourable to the sight.

**GREEN CLOTH, BOARD OF.** A court of justice held in the counting house of the king's household.

**GREENFINCH.** A yellowish green bird, an inhabitant of Europe, which lays green eggs.

**GREENHOUSE.** A place of shelter for exotics and tender plants.

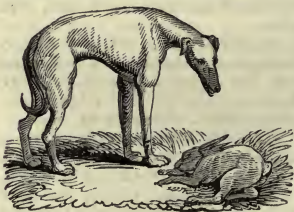
**GREENSHANK.** A sort of snipe.

**GREGORIAN STYLE, or the NEW STYLE (in Chronology).** A new account of time according to the improved Calendar made by order of Pope Gregory XIII.

**GRENADE.** A hollow globe of iron, filled with combustibles, and thrown out of a mortar.

**GRENADIERS.** Foot soldiers selected for their stature, being the tallest and stoutest men in the army.

**GREYHOUND.** A slender dog, fitted for running with great swiftness, who is employed mostly in coursing hares.



**GREYWACKE.** A mountain formation, consisting mostly of a sort of slate.

**GRIDIRON.** A utensil for broiling meat.

**GRINDERS.** The large teeth which serve best for grinding the food.

**GRIST.** Corn ground.

**GRIT.** The smallest particles of sand; also the coarser parts of meal.

**GROAT.** A silver coin, first struck in the reign of Edward I. It has since been used as a money of account equal to four pence.

**GROCER.** One who sells tea, sugar, plums, spices, &c. The company of grocers were incorporated in 1344.

**GROOM.** A servant who looks after horses.

**GROOM OF THE STOLE.** An officer of the court, who has the charge of the king's wardrobe.

**GROOVE.** A hollow channel cut with a tool.

**GROSS-BEAK.** A bird with a stout bill, and of a fiery red colour, except round the bill and on the throat, which is black. It is to be met with in North America, and is called the Virginia nightingale, on account of the fineness of its song.



**GROSS WEIGHT.** The weight of goods together with the cask or vessel.

**GROT, or GROTTO.** A hollow under ground; also an artificial hollow made in a garden.

**GROTESQUE (in Painting and Sculpture).** A work or composition in the grotesque or wild taste.

**GROVE.** A small wood or place set with trees.

**GROUND (in Husbandry).** Any piece of land in cultivation, or set apart for cultivation.

**GROUND (in Architecture).** The ground plot, or piece of ground selected for a building.

**GROUND (in Military Tactics).** The field or place for action.

**GROUND (in Painting).** The surface on which the figures and objects are raised and represented.

**GROUND (in Music).** The plain song or tune in which the descents are raised.

**GROUND (among Mariners).** The place where the anchor is fixed.

**GROUNDASH.** A sapling of ash taken from the ground, in distinction from a branch cut from a tree.

**GROUNDIVY.** A herb, the shoots of



which trail upon the ground, and take root at their different joints.

**GROUNDLING.** A fish, so called because it keeps under stones in small brooks.

**GROUND-PINE.** A plant, the smell of which resembles resin. It grows on dry and barren hills, and on the ditchbanks by the roadside.

**GROUNDSILL.** The lowest horizontal timber on which the exterior wall is erected.

**GROUP** (in Painting). An assemblage of figures, appearing to have a connexion with each other.

**GROUPING** (among Painters). Putting figures together in groups.

**GROUSE.** A bird larger than a partridge, living in the mountainous parts of Europe and Asia.

**GRUB.** The worm or maggot produced from the beetle, which afterwards becomes a winged insect.

**GRUINALES.** One of Linnæus's natural orders of plants, containing the geraniums, flax, lignum vitæ, &c.

**GRUS.** One of the new constellations.

**GUIACUM.** A resinous substance procured from a tree of the same name in the West Indies.

**GUARANTEE** (in Diplomacy). A prince or power appointed by the stipulating powers, to see that the articles of any treaty or agreement are performed on each side.

**GUARD.** The duty of guarding or defending any post or person from an attack or surprise; also the soldiers who do this duty.

**GUARD** (in Fencing). A posture or action proper to defend the body.

**GUARDBOAT** (in Naval Tactics). A boat appointed to row among ships of war, to see that the officers keep a good look out.

**GUARDIAN.** One who has the charge of a person committed to him; as the guardian of an infant, who sees to his education and manages his affairs, &c.

**GUARDSHIP.** A vessel appointed to superintend the marine affairs in a harbour or river.

**GUDGEON.** A fresh water fish, of the carp kind, the flesh of which is very delicate.

**GUIDE** (among Travellers). One who accompanies another in order to show him the way.

**GUIDE** (in Music). The leading note in a figure.

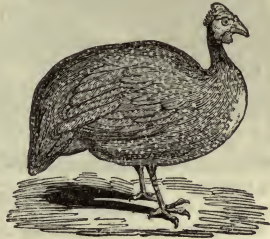
**GUILD** (in Law). A company or incorporated society.

**GUILDHALL.** The common hall of the guilds or companies, which was built in 1411, by Thomas Knolls, then mayor.

**GUILLOTINE.** A machine for beheading, which is used in France, and was introduced during the revolution.

**GUINEA.** An English gold coin, first coined in the reign of Charles II. and till lately current for 21s. It was so called because it was made from the gold that was brought from Guinea, on the coast of Africa.

**GUINEA HEN.** An African bird domesticated in Europe, which makes a harsh unpleasant cry.

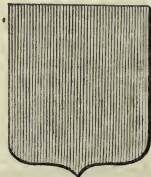


**GUINEA PIG.** An animal betwixt a rabbit and a mouse, an inhabitant of Brazil. It is perpetually restless when awake.



**GUITAR.** A musical stringed instrument, rather larger than a violin, and played with the fingers.

**GULES.** A tincture in heraldry, marked in engraving by straight lines.



**GULF.** A part of the sea running in land, as the Gulf of the Adriatic.

**GUM.** A concreted vegetable juice, which exudes through the bark of trees. A gum, properly speaking, is that only among chymists which is soluble in water; that which is insoluble in water is a gum

resin. The gum arabic flows from the acacia, in Egypt; gum lac is the juice of the croton lácifera; gum ammoniac was first drawn from ammonia.

**GUMS.** The vascular and elastic substance that covers the arches of the upper and under jaws, embracing the roots of the teeth.

**GUN.** Any sort of offensive weapon from which shot, bullets, &c. are discharged.



**GUNBOAT.** A boat with a flat bottom, serving as a floating battery.

**GUNNER.** One who manages the artillery.

**GUNNERY.** The art of determining the course and directing the motions of bodies shot from the artillery.

**GUNPOWDER.** A composition of saltpetre, sulphur, and charcoal, duly mixed together, and pounded with a small quantity of water.

**GUNPOWDER-PLOT.** The plot or conspiracy in which Guy Faux was the principal agent, to blow up the parliament house, by means of gunpowder placed underneath, which was to have been set fire to when King James I. was assembled with his parliament; also the anniversary of that day, namely, the fifth of November, when this plot was discovered.

**GUNSHOT.** The reach or range of a gun.

**GUNSTOCK.** The wood to which the barrel of a gun is fixed.

**GUNTER'S CHAIN.** The chain commonly used in measuring or surveying land, so called from Mr. Gunter, the inventor. The chain is 66 feet in length, and is divided into 100 links of 7.92 inches each, consequently an acre of land is equal to 10 square chains.

**GUNTER'S LINE.** A logarithmic line, usually graduated upon scales, sectors, &c.

**GUNWALE, or GUNNEL.** The uppermost wale of a ship.

**GUST (among Mariners).** A sudden and violent squall of wind.

**GUTA SERENA.** A disease in the eye, which deprives the patient of his sight.

**GUTTURAL LETTERS.** Letters which are pronounced with the throat.

**GYMNASIUM.** A place among the ancients where the youth were trained in gymnastic exercises; also a public school of learning, in which latter sense it is now frequently employed.

**GYMNASTICS.** Athletic exercises, such as wrestling, leaping, running, and throwing the dart or quoit, which were much in use among the Greeks, from whom the word is derived.

**GYMNOSOPHISTS.** A sect of Indian philosophers, who always went naked, and lived a solitary life.

**GYNANDRIA.** One of the classes in the Linnæan system, consisting of plants with hermaphrodite flowers, in which the stamina are placed on the style.



**GYPSUM.** A sort of calcareous earth, consisting of sulphate of lime. When highly burnt it falls into powder, from which plaster of Paris is made.

## H.

**H,** the eighth letter of the alphabet, formerly stood as a numeral for 200, with a dash over it for 20,000; in Heraldry, it stands for the middle base, a point in the escutcheon; as an abbreviation, for hour.

**HABEAS CORPUS.** A writ which may be made use of by the courts at Westminster for removing prisoners to

answer any cause, as a Habeas Corpus ad respondendum, ad satisfaciendum, &c.; but the most celebrated writ of this kind is that of Habeas Corpus ad subjiciendum, which a man who is, or supposes himself to be aggrieved by an unlawful imprisonment, may have out of the King's Bench, directed to the person detaining him, and

commanding him to produce the body of the prisoner, to submit to or receive whatever the court shall consider in that behalf. This writ was founded on the common law, and secured by many statutes, particularly that of the 31 Chas. II. which is by distinction called the Habeas Corpus Act.

**HABERDASHER.** A dealer in small wares, as tape, thread, pins, needles, &c. The company of haberdashers was incorporated in 1447.

**HADDOCK.** A fish of the cod kind, which inhabits the northern coast.

**HADLEY'S QUADRANT.** A quadrant that is particularly used for taking altitudes at sea.

**HÆMORRHAGE.** A flux of blood from any part of the body.

**HAIL.** A meteor, which consists of frozen rain, or drops of rain agglutinated together by the frost, so as to form little pieces of ice, called hailstones.

**HAILING** (among Mariners). Saluting or accosting a ship at a distance.

**HAIR.** Small filaments issuing out of the pores of the skin of animals, and serving for the most part as a covering. The principal constituent parts of hair are animal matter, oil, silex, sulphur, carbonate of lime, &c.

**HAIR** (in Botany). The down, or hair-like threads on the surface of plants.

**HAIR-GRASS.** A plant, some species of which are perennials and some annuals.

**HAIR'S BREADTH.** A measure of length, equal to the forty-eighth part of an inch.

**HALBERT.** A weapon something like a spear, formerly carried by the serjeants of foot and artillery.

**HALCYON.** A name for the kingfisher.

**HALF-BLOOD** (in Law). Relationship by the father's or the mother's side only.

**HALF-MOON** (in Fortification). An outwork having two faces.

**HALFPENNY.** A copper coin, the half of a penny.

**HALL.** A public edifice, a court of justice.

**HALL** (in Architecture). A large room at the entrance of a fine house.

**HALLELUJAH.** A part of church music in which these words are repeated.

**HALLIARDS.** Ropes for hoisting up the yards.

**HALLOO.** A hunter's cry after the dogs.

**HALLUCINATION.** An affection either in the senses or the imagination, which causes a person to feel, see, or hear wrong.

**HALM.** The stalk of corn which is left on the ground when it is cut.

**HALO.** A meteor, in the form of a luminous ring or circle, appearing round the bodies of the sun, moon, or stars.

**HAMMOCK** (among Mariners). A piece of hempen cloth, six feet long and three feet wide.

**HAMSTER.** An animal of the mouse tribe, entirely black, except at the tip of the nose, edges of the ears, feet, and sometimes the tail, which are white.



**HANAPER OFFICE.** An office in the Court of Chancery, out of which issue all original writs.

**HAND.** An important member of the body, which consists of the carpus, or wrist; the metacarpus, or the four bones within the palm and the fingers.



**HAND** (among Watchmakers). The index of a clock or watch.

**HAND** (in the Manege). The fist clenched or a measure of three inches, by which the height of a horse is computed; also the parts of a horse, as the forehead, for the head, neck, and fore quarters; the hind-hand, which includes the rest; and also the horseman's hand, as the spur hand, which is his right hand; and the bridle hand, which is his left hand.

**HAND-BARROW.** A barrow without wheels.

**HANDCUFFS.** Two circular pieces of iron locked over the wrists of a prisoner to prevent him using his hands.

**HANDSPIKES.** Wooden levers used at sea.

**HANGINGS.** Tapestry hung or fastened against the wall.

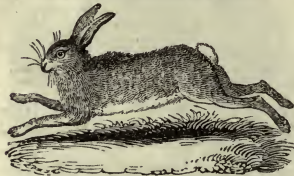
**HANSE TOWNS.** Port towns of Germany, which were incorporated for the purpose of protecting their trade. The three principal of these towns were Ham-

burgh, Bremen, and Lubec, which still retain the name.

**HARBOUR.** A place where ships may ride in safety.

**HARDNESS** (in Physiology). The resistance opposed by a body to the separation of its parts.

**HARE.** A timid animal of exquisite sight and hearing, with a short tail. It is a beast of chase, and is sometimes pursued by greyhounds in open ground, which is called coursing; and sometimes by harriers, or hare hounds, which is called hare hunting. Shooting of hares is not lawful.



**HARELIP.** A lip cloven or parted like that of a hare.

**HARMATTUN.** A wind which blows periodically from the interior parts of Africa towards the Atlantic. This wind is remarkable for its dry and parching character.

**HARMONICA.** A musical instrument constructed with drinking glasses.

**HARMONICS.** That branch of music which considers the differences and proportions of sounds.

**HARMONY** (in Music). The agreeable result or union of several musical sounds heard at one and the same time. Melody is produced by a succession of musical sounds, as harmony is produced by their combination.

**HARMONY OF THE SPHERES.** A kind of music, supposed by the ancients to be produced by the accordant motions of the stars and planets.

**HARP.** A musical stringed instrument of great antiquity, of a triangular form, and played with the fingers.



**HARPER.** One who plays upon the harp.

**HARPINS** (among Mariners.) The breadth of a ship at the bow.

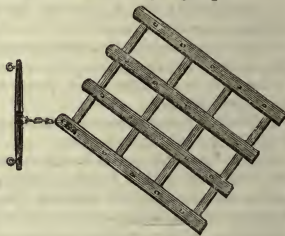
**HARPOONS, or HARPING IRONS.** Irons formed at one end like a barbed arrow, and having a rope at the other, for the purpose of spearing the whale.

**HARPSICHORD.** A stringed and keyed instrument in a mahogany case.

**HARPY.** A fabulous monster, with the head of a woman, the wings of a bird, and the tail of a beast.

**HARRIER.** A hunting dog who pursues hares.

**HARROW.** A drag with iron teeth, to break the clods after ploughing.



**HART.** A stag or male deer of the forest, which if hunted by the king or queen, and he escape alive, is styled a Hart Royal.

**HARTSHORN.** A volatile alkali, originally drawn from the horn of the stag; it is now known by chymists under the name of the subcarbonate of ammonia.

**HARVEST MOON.** The moon which, in the season of harvest, rises several nights successively soon after sunset.

**HATCHING.** The act of maturing fecundated eggs, so that they should produce young birds. This is commonly done by the incubation of the mother; but sometimes by means of artificial heat in ovens, as is practised in Egypt.

**HATCHMENT.** See **ATCIEVEMENT.**

**HATCHWAY** (among Mariners.) An opening in the deck, to serve as a passage from one deck to another.

**HATTER.** A manufacturer and seller of hats. The company of hatters, or hat-makers, is very ancient.

**HAVERSACK.** A kind of bag of strong coarse linen, to carry bread and provisions on a march.

**HAUL, or YAUL** (among Ropemakers). A yarn of four hundred threads.

**HAUNCH.** The hind part of a stag, or of a horse, &c.

**HAUNT.** The walk of a deer.

**HAUTBOY.** A musical wind instrument, shaped much like the flute, only that it spreads and widens at the bottom, and is sounded through a reed at one end.

**HAWFINCH.** A sort of finch, so called because it feeds on haws and cherries.

**HAWK.** A bird of prey of the eagle and falcon tribe, the two principal species of which are the sparrowhawk and the goshawk, both used formerly in falconry.

**HAWKERS.** Itinerant petty chapmen, who go with their goods from town to town and from house to house. They are obliged by law to have a license.

**HAWKING.** The ancient sport of fowling with hawks.

**HAWKING (in Trade).** The going about with commodities to sell, after the manner of a hawker.

**HAWK'S BELL.** The bell put about the feet of a hawk.

**HAWKWEED.** A plant which bears a flower in the form of a marigold. The whole plant has a milky juice.

**HAWSE.** A sea term, for the situation of the cables before the ship's stern, when she is moored with two anchors out from the bows, as 'a clear or open hawse,' 'a foul hawse,' &c.

**HAWSER.** A small cable.

**HAZARD.** A game of chance, played much by gamblers and gamblers.

**HAZLE NUT.** A shrub having male flowers growing at remote distances from the fruit on the same tree. The nuts grow in clusters, and are of three kinds, the common hazel nut, the cob nut, and the filbert, which latter are the most esteemed.

**HEAD (in Anatomy).** The superior part of the body, placed on the neck, and consisting externally of the face and the hairy scalp; internally, of the brain and the medulla oblongata.

**HEAD (among Mechanics).** The upper and more solid part of inanimate bodies, as the head of a nail, the head of a gate, the head of a hammer.

**HEAD (in Painting).** The representation of the head of a person.

**HEAD (in Architecture).** An ornament of sculpture or carved work.

**HEAD (in Gunnery).** The fore part of the cheeks of a gun.

**HEAD (in Printing).** The top of a page.

**HEADBOROUGH.** Formerly the chief of a borough, or frankpledge; now a sort of petty constable.

**HEADER (in Masonry).** A name for

the bricks which are inserted lengthwise in the thickness of a wall.

**HEADLAND.** A point of land lying farther out at sea than the rest.

**HEADSTALL.** That part of a bridle that goes about the head; also a kind of halter.

**HEALING (in Surgery).** Curing a wound.

**HEALING (among Bricklayers).** The covering a roof with any thing, as lead, slates, &c.

**HEARING.** One of the five senses, of which the ear is the organ, with the help of the auditory nerves and membrane.

**HEARSE.** A close carriage for conveying dead bodies.

**HEART.** The seat of life in the animal body, is situated in the thorax, and divided externally into the base, which is the broad part; the superior and inferior surface; and the anterior and posterior margin. Internally, it is divided into two ventricles, right and left.

**HEARTBURN.** A burning pain in the stomach.

**HEARTSEASE.** A plant cultivated in gardens, that yields a variegated, sweet-smelling flower.

**HEARTH.** The pavement of a fireplace.

**HEAT (in Physiology).** See **CALORIC.**

**HEAT (among Geographers).** The heat of different climates, which arises from the different angles under which the sun's rays strike upon the surface of the earth; added to which, the heat of different places is either increased or diminished by the accidents of situation, with regard to mountains and valleys, proximity to the sea, and the like.

**HEAT (among Smiths).** The degree of heat requisite for iron work, namely, the blood-red heat, the smallest degree; the flame, or white heat, the second degree; and the sparkling, or welding heat, which is the strongest degree.

**HEAT (among Sportsmen).** A certain prescribed distance which a horse runs on the course.

**HEATH.** A wide open place, generally overgrown with heath.

**HEATH (in Botany).** A shrub, which either grows wild or is cultivated with great care in hothouses. The cultivated sorts are remarkable for their variety and beauty.

**HEAVEN (in Astronomy).** That immense region wherein the planets, stars, and comets are disposed, and perform their

motions; among the ancients, a heaven denoted an orb or circular region of the ethereal heaven. Astronomers therefore assumed as many different heavens as they observed different celestial motions; thus they had seven heavens for the seven planets, the Moon, Mercury, Venus, the Sun, Mars, Jupiter, and Saturn. The eighth was the fixed stars, which was particularly denominated the firmament. Ptolemy added a ninth heaven, which he calls the Primum Mobile; Alphonsus afterwards added two crystalline heavens, to account for some irregularities in the motions of the other heavens. Other ancient astronomers admitted more heavens, according to their different hypotheses.

**HEB.** An abbreviation for Hebrews.

**HECATOMB.** The sacrifice of a hundred oxen.

**HECTIC FEVER.** An habitual fever, or one which is slow and continued, ending in a consumption.

**HEDGE.** A fence of thorns or shrubs to part off land.

**HEDGEHOG.** A quadruped defended all over with sharp prickles, which is a native of Europe, and found also in Madagascar. It lives in thickets, and swims easily. When frightened, it rolls itself up in its spiry skin, and presents nothing but a ball of prickles.



**HEDGESPARROW.** A kind of sparrow that lives in the fields and about the hedges.

**HEEL.** The back of the foot protuberating behind.

**HEEL (among Mariners).** The heel of a mast, that part at the foot of a ship's mast that is pared away slanting.

**HEELPIECE.** A piece of leather put upon the heel of a shoe.

**HEGIRA (in Chronology).** An æra which takes its date from Mahomet's flight from Mecca, A. D. 622.

**HEIR (in Law).** One who succeeds by descent to lands and tenements.

**HEIRLOOM.** Household goods and furniture which have for several descents belonged to a house, and necessarily come to the heir with the house.

**HELICAL (in Astronomy).** A term applied to the stars or planets when they rise and set with or at the same time as the sun.

**HELIOCENTRIC.** An epithet for what relates to the centre of the sun.

**HELIOMETER.** An instrument for measuring the diameter of the heavenly bodies. This instrument is a kind of telescope, consisting of two object glasses of equal focal distance, placed one by the side of the other, so that the same eyeglass serves for both.

**HELIOTROPE, or TURNSOLE.** A plant which is said always to follow the course of the sun.

**HELLEBORE.** A plant, the flower of which expands in the form of a rose. The seed is oblong, like a grain of wheat. It is very doubtful whether the plant now so named be the true hellebore so famous for its poisonous quality among the ancients.

**HELM (in Naval Architecture).** A long flat piece of timber suspended at the hind part of a ship's sternpost, which serves to direct the course of the ship. It is composed of three parts, namely, the rudder, which turns upon its hinges; the tiller, which serves to direct the rudder; and the wheel, round which the tiller rope is wound in large vessels.

**HELMET.** A headpiece, or armour for the head, which was formerly the noblest piece of coat armour.

**HELMINTHOLOGY.** The science of worms.

**HELVE.** The handle of an axe.

**HEM.** The edge part of cloth.

**HEMIPTERA.** The second order of insects in the Linnæan system, including those which have their upper wings semi-crustaceous, as the cock-roach, mantis or walking leaf, locust, cricket, grasshopper, lantern-fly, boat-fly, water scorpion, aphid or plant louse, and the coccus or cochineal.

**HEMISPHERE.** One half of the mundane sphere.

**HEMLOCK.** A narcotic plant, the leaves of which are cut into many minute segments, like parsley. It is doubtful whether this be the true hemlock of the ancients.

**HEMP.** A fibrous plant, of which linen and ropes are made.

**HEN.** A female bird of any species, particularly the domestic fowl.

**HENBANE.** A poisonous plant that grows in hedges.

**HENDECAGON.** A figure of eleven sides.

**HEPTAGON.** A figure of seven sides and seven angles.



**HEPTANDRIA.** One of the Linnæan classes, including those plants which have seven stamens to the flower, as the horse-chestnut, chickweed, lizard's tail, &c.



**HEPTARCHY.** The seven kingdoms formed by the Saxons on their first settlement in England. They were all united into one kingdom by Egbert.

**HERALD.** An officer whose business it is to proclaim war and peace, to marshal processions, and regulate armorial ensigns, &c. The heralds are six in number, and are distinguished by the names of Richmond, Lancaster, Chester, Windsor, Somerset, and York. They are all equal in degree, and have precedence only according to the seniority of their creation.

**HERALDRY.** The science which teaches the true use of arms; as how to blazon or describe them in proper terms, and how to marshal or dispose the different arms in an escutcheon or shield.

**HERALDRY, HISTORY OF.** Although the science of heraldry, as far as regards the distinctions of families by means of coat armour, is comparatively of modern date, yet the Romans were not without their marks of honour, which, being hereditary, served as a proof of nobility, and a title to a certain rank. This was known among them by the name of *jus imaginum*, which was the right of having the statues or images of their ancestors; that belonged to those only who were either of patrician rank or had risen to distinction in the state. He who had the privilege of using the statues or images of his ancestors was termed '*nobilis*,' he who could only use

his own was a '*novus homo*,' or an upstart, like one who first procures a coat of arms; and he who had neither his own statues nor those of his ancestors was termed '*ignobilis*.' These images or statues were made of wood, brass, marble, and sometimes in waxwork, and were painted, according to the life, with the several emblems of military honour which belonged to the individual. Thus the collar or chain on the statue of Torquatus, and the tuft of hair on that of Cincinnatus, were the trophies of which these brave warriors had despoiled their enemies.

These statues commonly stood in their courts in a cabinet of wood, whence probably originated our cabinets of arms, where the helmet, crest, gauntlet, spurs, banner, &c. were kept; and as, upon particular occasions, these cabinets were set open, and the statues were exposed to public view before the porch or gate of their houses, so our nobility and gentry have their coats of arms cut in stone, and painted in escutcheons over their gates. At their funerals those statues were borne before such as had the *jus imaginum*, whence in after times it became the practice, at the funerals of great men, to carry their ensigns of nobility, and the arms of those from whom they were descended, which, being all painted, are placed under the name of an achievement on the house of the person deceased. As a farther proof that our heraldic distinctions take their rise from the *jus imaginum* of the Romans, it appears that the law of arms among the Europeans in the middle ages was regulated by the civil law.

The introduction of armorial bearings, in place of the images and statues of the Romans, is to be ascribed to the northern tribes who overran Europe on the decline and fall of the empire. The Goths, Vandals, and other such people, were in the practice, like their ancestors the Celts and Scythians, of painting on their shields the figures of animals, either for the purpose of rendering themselves formidable, or more probably by way of distinction; and although, from their martial character, their ensigns of honour were at first purely military, yet, by being transmitted to their posterity, they became badges of civil rank and honour; and, in process of time, other circumstances gave rise to bearings which were not purely military. Thus, on the establishment of the feudal system, the tenants of the king, or the great lords, represented on their shields the services they owed to their superiors by way of an ac-

knowledge of their fidelity, whence originated roses, cinque-foils, sparrowwells, bows and arrows, hunting-horns, ships, &c. which are to be found so frequently in coats of arms. So, in like manner, the crusades gave rise to the figures of the cross, which is borne in a diversity of forms; and tournaments, which were introduced by Henry the Fowler in the tenth century, are supposed to have given rise to the fesse, pale, bend, and other ordinaries which represented the fillets or lists of different kinds which were worn by the combatants and those who attended. From the practice and ceremony of the herald's recording the names, arms, and proofs of the nobility of the knights at tournaments, the science of heraldry took its name; and as this ceremony was preceded by the blowing of a horn, blazon, which comes from the German 'blason,' to blow, is now used for a scientific description of coats of arms.

**HERB** (in Botany). That part of the vegetable which rises from the root, and comprehends the stem and leaves, &c.

**HERBÆ**. Herbs; the fourth tribe into which Linnæus divided the vegetable kingdom.

**HERBAL**. A book giving an account of the names, natures, and uses of plants.

**HERCULANEUM**. An ancient city of Naples, overwhelmed by an eruption of Mount Vesuvius in the reign of Titus; it was discovered in the year 1689, since which time many manuscripts, paintings, statues, and other relics of antiquity, have been discovered by digging.

**HERCULES**. A celebrated hero of antiquity, the son of Jupiter and Alcmena, who travelled as far as the Straits of Gibraltar, and is said to have erected two pillars, one at Cadiz in Spain, and the other at Ceuta in Africa. His exploits are celebrated by the poets and historians of antiquity.



**HEREDITAMENTS** (in Law). Immoveables, which a man may have to him and his heirs.

**HERESY**. An error in some fundamental doctrine of the Christian faith, or a private opinion different from that of the catholic and orthodox church.

**HERETIC**. One tainted with heresy.

**HERIOT** (in Law). The best beast that the tenant died possessed of, which was due to the lord of the manor.

**HERISON**. A barrier made of beams stuck with spikes, to block up a passage.

**HERMETICAL SEAL** (among Chymists). A method of stopping glass vessels so closely that the subtlest spirit cannot escape.

**HERNIA**. Every kind of rupture, varied according to the part affected.

**HEROIC POEM**. A poem setting forth the exploits of some hero.

**HEROIC VERSE**. Hexameter verse, so called because it is used by poets in their heroic poems.

**HERON**. A bird similar in form to the crane and stork, but much larger, being seven feet in standing.



**HERRING**. A small seafish of a green colour, which inhabits the North seas, and migrates southerly in immense shoals, particularly in the month of June. Their progress is marked by the number of birds which follow them to prey upon them. Those which flock to the British coasts are to be found in the greatest number off Yarmouth, the mart for herrings.

**HERSE** (in Fortification). An engine like a harrow, stuck full of spikes.

**HESPERIDÆ** (in Botany). A natural order of plants, including the myrtle tribe.

**HETEROSCHII** (in Geography). Those inhabitants of the earth which have their shadows falling but one way, as those living between the tropic and polar circles.

**HEXAEDRON** (in Geometry). A solid figure of six equal sides.



**HEXAGON** (in Geometry). A figure of six sides and six angles.



**HEXAGYNIA** (in Botany). An order of plants which have six styles in the flowers.

**HEXAMETER** (in Poetry). A verse consisting of six feet.

**HEXANDRIA** (in Botany). One of the Linnæan classes, comprehending those plants which have six stamens in each flower, as the pineapple, bamboo, spider-wort, lily of the valley, arrow-grass, &c.



**HHD.** An abbreviation for hogshead.

**HIATUS.** A gap or chasm in verses; also any deficiency in a manuscript which destroys the connexion.

**HICCOUGH, or HICCUP.** A convulsive motion of the stomach.

**HIDE** (in Law). A portion of land, from 100 to 120 acres.

**HIDE** (among Tanners). The skins of beasts after they are taken off.

**HIDEBOUND** (in Farriery). A disease in horses and cattle when the skin cleaves to the sides.

**HIDEBOUND** (in Botany). A disease in trees when the bark cleaves to the wood.

**HIERARCHY.** Church government, or the subordination of rank among the different orders of clergy.

**HIEROGLYPHICS.** Certain characters, figures, or signs, made use of by the Egyptians instead of letters, to express the conceptions of men, particularly the mysteries of their religion. In a general sense, an hieroglyphic is any symbol or figure which may serve to represent an object; thus the astronomical characters are many of them of this nature, as the character for Mercury, ♀, which is the figure of his

caduceus; that of Mars, ♂, which is supposed to represent his shield and spear; that of Saturn, ♄, which represents his sickle, &c.

**HIGHNESS.** A title of honour given to a prince.

**HIGH-WATER.** When the tide is at its highest point.

**HIGHWAY** (in Law). A public or free passage for the king's subjects, thence called the king's highway.

**HIGHWAYMEN.** Robbers on the highways.

**HIGLER.** One who buys poultry in the country, and carries them up to town.

**HINGE.** The iron work on which a door is made to turn.

**HIP.** The upper part of the thigh.

**HIPPOPOTAMUS, or THE RIVER-HORSE.** An amphibious creature found in the Nile.



**HIP-ROOF** (in Architecture). A particular kind of roof, which has neither gable heads, shred heads, nor jerkin heads.

**HIPS** (in Botany). The ripe fruit of the dog-rose, which is principally made into a sweetmeat.

**HISTORY.** In its most general sense, an account or description of events and things in an orderly series, comprehending Civil or Political History, Sacred History, Ecclesiastical History, and Natural History; in a particular sense, a narrative of political events in the order of time.

**HISTORY** (in Painting). A picture composed of diverse figures or persons, representing some transaction.

**HITCH** (among Mariners). A sort of knot or noose for fastening a rope to any thing.

**HIVE.** A basket which serves as a receptacle for bees.

**H. M. S.** An abbreviation for His Majesty's Ship.

**HOBSON'S CHOICE.** A by-word, signifying that or none, taken from one Hobson, a livery-stable keeper at Cambridge, who obliged his customers either to take the horse that stood next the stable door, or to go without.

**HODMAN.** A bricklayer's labourer.

**HOE.** A husbandman's tool for cutting up weeds.

**HOEING** (in Husbandry). The process of clearing the weeds with a hoe, and breaking up the earth on sown ground.

**HOG.** A domestic quadruped, very voracious and very prolific.

**HOGSHEAD** (in Commerce). A measure of capacity, containing 63 gallons.

**HOLD.** The whole interior cavity or belly of the ship, where, in merchantmen, the goods are commonly stowed.

**HOLDFAST.** An iron hook for fixing any thing to a wall.

**HOLERACEÆ.** One of Linnæus's natural orders of plants, including shrubs and perennials, as rhubarb, &c.

**HOLLOW** (in Architecture). A concave moulding.

**HOLLY.** A prickly shrub, which forms an impenetrable hedge. The variegated hollies are remarkable for their beauty; some bear yellow berries, and others white.

**HOLM-OAK.** The evergreen oak.

**HOLY GHOST.** The third person of the Holy Trinity.

**HOMAGE** (in Law). The oath of submission and loyalty, which the tenant, under the feudal system, used to take to his lord when first admitted to his land.

**HOME.** A sea phrase for the situation which belongs properly to the tackling or parts of the vessel, as the anchor comes home when it is drawn out of the ground.

**HOMICIDE** (in Law). The causing the death of a human creature, which is justifiable if justified by unavoidable necessity; excusable if it happens by misadventure; and felonious if done without excuse.

**HOMILY.** A plain discourse made to the people, instructing them in matters of religion.

**HOMOGENEAL** (in Physiology). Of the same nature and properties as homogeneous particles.

**HONE.** A fine kind of whetstone used for setting razors.

**HONEY.** A thick, viscid fluid substance, collected by the bees from vegetables and flowers. It is distinguished into three kinds, namely, first, the virgin honey, which is the first produce of the swarm, obtained by draining from the combs without pressing; the second sort is thicker than the first, and is procured by pressure; the third is the worst sort, which is extracted by heating the combs over the fire, and then pressing them. In the flowers of plants, near the basis of the petals, are certain glands containing a sweet juice, which the

bees suck up by means of their proboscis or trunk, and, flying with it to their hives, discharge it again from the stomach through the mouth into some of the cells of the comb. This honey is destined for the food of the young, but, in hard seasons, the bees are sometimes reduced to the necessity of feeding on it themselves, and die of hunger after they have eaten it all up. In France, a good swarm of bees will yield, in two years, nearly thirty pounds of honey; but honey is most abundant in the islands of the Archipelago, and other countries which abound with flowers throughout the year. From honey is made the strong liquor called mead.

**HONEY-BAG.** The stomach of the bee, which is the reservoir of the honey.

**HONEY-COMB** (in Husbandry). The repository which the bees make in the hive for saving their honey in.

**HONEY-COMB** (in Gunnery). A flaw in the metal of a piece of ordnance, when it is badly cast.

**HONEY-DEW.** A sort of mildew of a sweet taste, found early in the morning on plants, flowers, &c.

**HONEY-FLOWER** (in Botany). A plant having the appearance of a shrub, and bearing spikes of chocolate-coloured flowers in May, in each of which a quantity of black sweet liquor is found.

**HONEY-SUCKLE** (in Botany). A shrub with a climbing stalk, the flowers of which form a tube in the shape of a huntsman's horn. They are produced in clusters, and are very sweet.

**HONI SOIT QUI MAL Y PENSE.** The motto of the most noble order of the Garter, signifying, Evil be to him that evil thinks.

**HONOUR** (in Law). The most noble part of seignories.

**HONOUR** (in Military Affairs). External marks of honour paid to superior officers.

**HONOUR COURTS.** Courts held within the bounds of an honour.

**HONOUR, MAIDS OF** (in Court Etiquette). Ladies in the queen's household, who attend the queen when she goes out.

**HONOURS OF WAR.** Honourable terms granted to a vanquished enemy, when he is permitted to march out of a town with all the insignia of military etiquette.

**HOOD.** An upper covering for the head of a woman.

**HOOD** (at the University). An ornamental fold that hangs down the back of a graduate, to mark his degree.

**HOOF.** The horny part of the foot of a horse or other cattle.

**HOOK.** A bended iron to hang things upon; also a bent piece of iron or wire attached to a fishing-rod for catching fish.

**HOOP, or HOOPOE.** A bird inhabiting Europe, Asia, and Africa, which is solitary and migratory.



**HOP.** A plant with a creeping root, the stalks of which climb and twist about whatever is near them; wherefore, in hop grounds, poles are fixed near to the plant for them to rise upon. Hops are said to have been introduced into England from the Netherlands in the sixteenth century; they are principally used to boil up with beer, in order to prevent it from turning sour, and to give it a strengthening quality. Hops require to be planted in open situations, and in a rich strong ground. The two best sorts are the white and the gray bind. These should be planted in hills about eight or nine feet asunder. About the beginning of July hops begin to blow, and are ready to gather about the latter end of August; when, by their strong scent, their hardness, and the brown colour of the seed, they may be known to be fit. The best method of drying hops is on a kiln over a charcoal fire; when the stalks are brittle, and the top leaves easily fall off, they are properly dried. When taken from the kiln, they should be laid to cool for three weeks or a month before they are bagged.

**HORIZON (in Astronomy).** A great circle of the sphere, which divides it into upper and lower hemispheres. The apparent or sensible horizon is that circle of the heavens which bounds the view of the observer, in distinction from the rational or real horizon, which is a circle encompassing the earth exactly in the middle. It is represented in the globes by the wooden frame which contains the globe.

**HORN (in Natural History).** The hard, pointed bodies which grow on the heads of some granivorous animals, and serve either for defence or ornament; also the slender bodies on the heads of insects, &c.

**HORN (in Chymistry).** Is mostly composed of albumen, gelatin, and phosphate of lime, but the horns of the buck and stag are of an intermediate nature between horn and bone.

**HORN (in Music).** A wind instrument, chiefly used in hunting and in the chase.

**HORNBEAM.** A tree that has leaves like the elm or beech tree; it was formerly used in hedgerows. The timber is very tough and inflexible.

**HORNBLLENDE (in Mineralogy).** A sort of slaty stone, of a green and blackish green colour. It is found in great abundance in many parts of Great Britain.

**HORN-BOOK.** The first book for children, containing the alphabet, which was formerly covered with transparent horn.

**HORNET.** A large, strong, and stinging insect, of the wasp kind.

**HORN-ORE (in Mineralogy).** One of the species of silver ore.

**HORNPIPE.** An animated sort of dance.

**HORN-STONE.** A species of flint.

**HORNWORK (in Fortification).** An outwork which advances towards the field.

**HOROLOGY.** The science which treats on the measuring of portions of time. The principal instruments used in the measuring of time are dials, clepsydræ or water-clocks, clocks, watches, and in some cases also hour-glasses.

The dial was doubtless one of the first instruments contrived for the measuring of time by means of the sun. The first on record is the dial of Ahaz mentioned in Isaiah. This king began to reign 400 years before Alexander, and within 12 years of the building of Rome. The Chaldee historian Berosus is said to have constructed a dial on a reclining plane almost parallel to the equator. Aristarchus the Samean, Thales, and others are also mentioned as the makers of dials. The first sun-dial at Rome was set up by Papius Cursor in the 460th year of the building of the city. The subject of dialling, or of making dials, has particularly occupied the attention of mathematicians within the last three centuries. Clavius is the first professed writer on the subject. Deschales and Ozanam in their Courses, and Wolfius in his Elements, have simplified the science. M. Picard gave a new method of making large dials by calculating the hour lines,

and De la Hire, in his *Dialling*, gave a geometrical method of drawing hour lines from certain points determined by observation. The method of drawing primary dials on easy principles is to be found in the *Dialling* of Everhard Walper, and the *Rudimenta Mathematica* of Sebastian Munster. Among the more modern treatises on this subject may be reckoned that of Wells in his *Art of Shadows*, Ferguson in his *Lectures on Mechanics*, Emerson in his *Dialling*, Leadbetter in his *Mechanic Dialling*, Mr. W. Jones in his *Instrumental Dialling*, and Bishop Horsley in his *Mathematical Tracts*.

Scipio Nastica was the first who constructed the clepsydra, although it is supposed to have been invented by the Egyptians under the Ptolemies about 150 years before the Christian era. They serve for measuring time in the winter, as the sundials do in the summer; but they had two great defects: the one, that the water ran out with greater or less facility, as the air was more or less dense; and the other, that the water ran more readily at the beginning than towards the conclusion. The Egyptians, by this machine, measured the course of the sun; and Tycho Brahe, in modern times, made use of it to measure the motion of the stars, &c. Dudley also used the same contrivance in making all his maritime observations.

The invention of clocks has been ascribed to different authors; namely, to Boetius in the sixth century, to Paciticus, Archdeacon of Verona, and to Silvester in the tenth century.

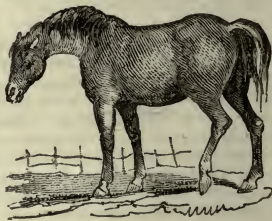
**HOROMETRY.** The art of measuring hours.

**HOROPTER** (in Optics). A right line drawn through the point where the two optic axes meet, parallel to that which joins the two pupils.

**HOROSCOPE** (in the exploded Science of Astrology). The degree or point of the horizon rising above the eastern point of the horizon at any given time, when a prediction was to be made of a future event; also a scheme or figure of the twelve houses.

**HORSE.** A domestic animal, that excels all others in beauty and usefulness. The most esteemed breeds of horses are, the Barbary or Arabian horses, remarkable for their fleetness; the English racehorse and hunter, which combines beauty with swiftness; and the English draught-horses, which are distinguished for their size and strength, &c. There is no creature so valuable as the horse, and none that often-

times fares worse. The age of a horse under eight years old is mostly to be known by his teeth. The horse has twenty-four grinders; four tushes, or single teeth; and twelve front teeth, or gatherers. Mares in general have no tushes. The black mark or cavities denoting the age, are to be found in the corner front teeth, adjoining the tushes. At four years and a half old, the mark teeth are just visible above the gum, and the cavity is distinctly to be seen. At five, the remaining colt's teeth are shed, and the tushes appear. At six, the tushes are up, and appear white, small, and sharp, with a small circle of flesh growing near them; the horse's mouth is then completed, the corner teeth being filled up. At eight, the black marks disappear. The subjoined figure represents the old English road-horse, the breed of which Mr. Loudon observes is almost extinct, although attempts are made to preserve it by those who know its value.



**HORSE** (in Military Affairs). A body of horsemen.

**HORSE** (among Carpenters). A frame or trestle on which boards or planks are laid to be cut and otherwise worked.

**HORSE** (among Printers). A stage on which pressmen set their heaps of paper for printing.

**HORSE.** A sea term for a rope made fast to one of the shrouds, having a dead man's eye at the end.

**HORSE-BEAN.** A small bean usually given to horses.

**HORSE-BREAKER.** One who breaks in young horses; and fits them for use.

**HORSE-CHESTNUT.** A tree, which yields a prickly nut.

**HORSEDEALER.** One who buys horses to sell them again.

**HORSE-DOCTOR.** One who undertakes to cure the diseases of horses.

**HORSE-LEECH.** A large sort of leech that fastens on horses.

**HORSEMAN.** One skilled in riding.

**HORSEMANSHIP.** The art of riding and managing horses.

**HORSERACE.** A match of horses in running.

**HORSESHOE** (in Smithery). A circular piece of iron fitted to the foot of a horse. This shoe is sometimes turned up in the winter season, to prevent the horse from slipping: this is called rough-shoeing. As an improvement upon this sort of shoeing, the clips have been made removeable at pleasure by means of a screw.



**HORSESHOE** (in Fortification). A work, sometimes of an oval figure, raised in marshy grounds.

**HORSESHOEING.** The fitting and nailing a shoe to a horse's foot.

**HORTICULTURE.** The art of cultivating a garden, and rearing the finest kinds of plants.

**HORTUS SICCUS.** Literally, a dry garden; an appellation given to a collection of specimens of plants carefully dried and preserved. Various methods have been adopted by botanists for obtaining a hortus siccus; but that of pressing the plants, that are to be dried, in a box of sand or with a hot smoothing iron, has been recommended. If pressure be employed, that is best effected by means of a botanical press made for the purpose, in which the plants are put, with sheets of dry paper between. At first they ought to be pressed gently, and occasionally taken out in order to see that none of the leaves are rumpled or folded. As they continue to dry, the pressure may be increased. When they are sufficiently dried, they may be taken out and laid on dry paper. Plants that are succulent require a longer and harder pressure, but for the most part three days' pressure is sufficient.

**HOSANNA.** A solemn acclamation used by the Jews in the Feast of Tabernacles.

**HOSE** (among Mariners). A leathern tube for conveying water from the main decks into the casks.

**HOSIERY.** Stockings, and other goods in a shop that are spun or wove.

**HOSPITAL.** A house, erected out of charity, for the support and relief of the sick and poor.

**HOSPITALLERS.** An order of knights

who built an hospital at Jerusalem for the entertainment of pilgrims.

**HOST.** The consecrated wafers in the Roman Catholic communion.

**HOSTAGE.** A person left as a surety for the performance of the articles of a treaty.

**HOTBED.** A bed made in a wooden frame with horse-dung, and covered with glasses, for raising early plants.

**HOTCH-POT.** Properly, flesh cut into small pieces, and stewed with herbs and roots; in Law, the putting lands together, that belong to coparceners, for the purpose of distributing them equally.

**HOTHOUSE.** A building, constructed in a garden, for the rearing of exotics and tender plants that require heat.

**HOUND.** A kind of sporting dog, having pendulous ears.



**HOUND'S TONGUE.** A plant cultivated in gardens, bearing a pink flower.

**HOURLY.** The twenty-fourth part of a natural day; the space of sixty minutes.

**HOURLY-GLASS.** A glass for measuring the hours by the running of the sand from one part of the vessel to another.

**HOUSE.** A building, constructed with all conveniences for habitation.

**HOUSE** (among Genealogists). A noble family, or an illustrious race descended from the same stock.

**HOUSE** (in Astrology). The twelfth part of the heavens.

**HOUSEHOLD.** The whole of a family, including the mistress, children, and servants. To his majesty's household belong several officers, as the lord steward, the lord chamberlain, &c.

**HOUSEHOLDER.** An occupier or master of a house.

**HOUSELEEK.** A plant with a perennial root, that grows on the roofs of houses or the tops of walls.

**HOWITZER.** A kind of mortar, mounted upon a carriage like a gun.

**HOY.** A small vessel for carrying passengers from one place to another.

**HUE AND CRY** (in Law). The common law process of pursuing a felon.

**HUGUENOTS**. The Protestants of France, so called by way of contempt in the sixteenth century.

**HULK**. Any old vessel that is laid by, unfit for further service.

**HULKS**. Old vessels, stationed in the river Thames, wherein convicts are kept to hard labour.

**HULL**. The main body of a ship.

**HUMMING-BIRD**. The smallest of all birds, which extracts the nectar from the flowers with a humming noise like that of a bee.



**HUMOURS OF THE EYE**. Are three; namely, the aqueous or watery humour, which lies in the fore part of the globe; the crystalline, or icy, next to the aqueous; and the vitreous or glassy humour, which is larger than the rest, and fills the backward cavity of the eye.

**HUNDRED**. A number consisting of ten multiplied by ten.

**HUNDRED** (in Law). A part of a shire or county, which formerly consisted of ten tithings, or ten times ten households.

**HUNDRED-WEIGHT**. A measure of weight, equal to 112 lbs.; commonly denoted by the abbreviation *cwt*.

**HURDLES**. Frames of split wood or willows wattled together, serving for sheepfolds or fences.

**HURDLES** (in Fortification). Frames of osier twigs laden with earth, for making batteries.

**HURRICANE**. A storm of wind, frequent in the West Indies, which arises from the conflict of opposite winds.

**HUSBANDRY**. The practical part of agriculture.

**HUSH-MONEY** (in Law). A bribe given to a person not to reveal something to which he is privy.

**HUSSARS**. Hungarian horsemen, said to be so called from the huzza or shout which they gave at the onset in battle.

**HYACINTH** (in Botany). A bulbous plant, the leaves of which are long and narrow, the stalk upright and naked, and

the flower growing on the upper part of a spike.

**HYACINTH** (in Mineralogy). A sort of pellucid gem of a red colour with a mixture of yellow.

**HYADES**. A cluster of five stars in the face of the constellation Taurus.

**HYÆNA**. A ferocious beast, nearly allied to the wolf and dog. It infests burying grounds, and seizes whatever comes in its way.

**HYBRID**. An epithet for any animal whose sire is of one kind, and dam of another kind.

**HYDATID**. An animal substance, in shape like a bladder, and distended with an aqueous fluid, which grows in the viscera of the human body.

**HYDRA**. A fabulous monster with many heads, that is said to have infested the lake Leonæa.

**HYDRA** (in Astronomy). A southern constellation.

**HYDRANGEA**. A greenhouse plant, bearing a flower with a large head.

**HYDRATE** (in Modern Chymistry). The combination of water with other bodies in a solid state, as slacked lime, which, being a combination of lime and water, is a hydrate of lime.

**HYDRAULICON, or WATER-ORGAN** (in Music). An instrument acted upon by water.

**HYDRAULICS**. That part of statics which treats of the motions of fluids, particularly of water issuing from orifices in reservoirs, or moving pipes, tubes, canals, rivers, &c. Among the machines which serve for the display of the phenomena of hydraulics, are the syphon, the pump, and the fire-engine. Among the moderns, the terms Hydraulics and Hydrodynamics are employed indifferently to denote this science. See **HYDRODYNAMICS**.

**HYDRODYNAMICS**. Is properly that science which treats of the power or force of water, whether it acts by impulse or pressure; but in an extended sense, it is that branch of mechanics which treats of the motion of liquids or nonelastic fluids, and the forces with which they act on other bodies.

**HYDRODYNAMICS, HISTORY OF**. Although the doctrine of fluids and their motion is but partially treated by the ancients, yet, as respects the action of water in rivers, fountains, and aqueducts, it is certain that they must have had a considerable portion of practical knowledge. Aristotle treats on the nature of subterraneous waters, as also of those which are

above. Hero of Alexandria made an artificial fountain, which bears his name. The Romans displayed their acquaintance with the art of carrying waters, in their famous aqueducts; and Frontinus, an engineer, who wrote on this subject, has given some few rules and hints on the motion of fluids. It is, however, only within the three last centuries, that this subject has attracted any particular notice. Benedict Castelli was the first who, in his treatise *Dell' Amesura dell' Acque Currenti*, investigated the measure of the flux of waters, which he found to depend upon the area of the section and the velocity of the water conjointly. Since his time, many discoveries and theorems have been made on the motions of fluids by Sir Isaac Newton in his *Principia*; Daniel Bernoulli, in his *Hydrodynamique*; D'Alembert, in his *Traité des Fluides*; M. Bossut, in his *Hydrodynamique*; M. Buat, in his *Principes d'Hydraulique*; and M. Eytelwein, in his *Handbuch der Mechanik und der Hydraulik*.

**HYDROGEN GAS.** A constituent of water and the lightest species of ponderable matter hitherto known, which was discovered by Mr. Cavendish in 1766. It is an inflammable air, or an invisible aeriform fluid, which burns rapidly when kindled, in contact with atmospheric air, and forms what are now termed gas-lights. When combined with oxygen, it produces water. It is unfit for respiration, so that animals, when obliged to breathe it, die almost immediately.

**HYDROGRAPHY.** A description of rivers, bays, lakes, and other pieces of water.

**HYDROLOGY.** That part of natural history which treats of and explains the nature and properties of waters in general.

**HYDROMETER.** An instrument for measuring the density and gravity, &c. of water and other liquids. That which is designed simply for ascertaining the specific gravity of different waters is more commonly called an aerometer or waterpoise, the term hydrometer being more commonly used to denote an instrument for measuring the specific gravity of spirits, though sometimes used indifferently for either. Dr. Desaguliers contrived an hydrometer for determining the specific gravities of different waters to such a nicety, that it would show when one kind of water was but the 40,000th part heavier than another.

**HYDROMETRY.** The mensuration of fluids, as to their density, gravity, &c.

**HYDROPHOBIA, i. e. A DREAD OF WATER.** A distemper arising from the bite

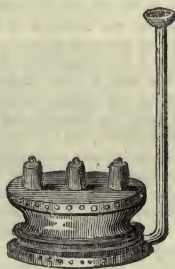
of a mad dog, which is always accompanied with a horror of water and other liquids.

**HYDROSCOPE.** An instrument anciently used for the measuring of time.

**HYDROSTATICAL BALANCE.** A kind of balance contrived for the finding the specific gravities of bodies, solid as well as fluid.



**HYDROSTATICAL BELLOWS.** A machine for showing the upward pressure of fluids, and the hydrostatical paradox.



**HYDROSTATICAL PARADOX.** A principle in hydrostatics, so called because it has a paradoxical appearance at first view; it is this, that any quantity of water or other fluid, how small soever, may be made to balance and support any quantity or any weight, however great it may be.

**HYDROSTATICS.** The science which treats of the laws regulating the motions, pressure, gravitation, and equilibrium of fluid bodies, particularly water, and also of solid bodies immersed therein. This science is divided into three branches, namely, hydrostatics, properly so called, which treats of fluids in an equilibrium, their density, gravity, &c.; hydraulics, which treats of fluids in a state of motion; and pneumatics, which treats of elastic

fluids. These two last branches will be found explained in their respective places.

The first branch of hydrostatics engaged the attention of Archimedes, who appears to have first attempted to determine the specific gravity of bodies, in consequence of the following circumstance. Hiero, king of Syracuse, having reason to suspect that a goldsmith, whom he employed to make him a crown of gold, had adulterated it with a quantity of silver, he requested Archimedes to detect the cheat. Accordingly this philosopher procured two masses of gold and silver of equal weight with the crown, which he immersed in a vessel full of water, at the same time carefully noticing the quantity of water which each displaced; after which he immersed the crown of gold also in the same vessel, and by comparing the quantity of water which flowed over each time, he was enabled to ascertain the proportions of gold and silver in the crown. He is said to have been led to this idea by observing on one occasion, whilst he was bathing, that as he immersed his body, the water ran over the bath, whence he concluded that the water which ran out when his whole body was immersed was equal in bulk to his body; and on the same principle he considered that if the crown were altogether of gold, the ball of gold, being of the same bulk as the crown, would, when immersed, raise the water just as high as the crown immersed, but if it were wholly of silver, the ball of silver being immersed would raise the water no higher than the crown immersed; and if the crown was of gold and silver mixed in a certain proportion, this proportion would be discovered by the height to which the crown would raise the water higher than the gold and lower than the silver. The authors who have treated further on this subject may be found under the article **HYDRODYNAMICS**.

**HYGROMETER**. An instrument for measuring the degree of moisture and dryness of the atmosphere.

**HYMEN**. The god of marriage.

**HYMENOPTERA**. An order of insects in the Linnæan system, having membranaceous wings, as the gall-fly, the saw-fly, the bee, the wasp, the ichneumon, &c.

**HYPERBOLA**. One of the curves formed by cutting a cone obliquely to its axis; and if the plane be produced so as to cut the opposite cone, another hyperbola will be formed, which is called the opposite hyperbola to the former.



**HYPERBOLE**. An exaggerated representation of any thing.

**HYPOCHONDRIAC**. One troubled with the spleen or melancholy.

**HYPOTHENUSE**. The longest side of a right-angled triangle.

**HYPOTHESIS**. A principle taken for granted, in order to draw conclusions therefrom for the proof of a point in question.

**HYSSOP**. A plant with long narrow leaves, bearing a crest of flowers. It is doubtful whether this be the hyssop mentioned in Scripture.

**HYSTERIC**. Spasmodic, convulsive affections of the nerves, to which women are particularly subject.

## I and J.

**I**, the ninth letter of the alphabet, used as a numeral signifies one, and stands for any numbers of units as often as it is repeated, as **II**, two, **III**, three, &c. When placed before a higher numeral, it diminishes it by one, as **IV**, four, **IX**, nine; and when after, it increases it by one, as **XI**, eleven, **XII**, twelve, **XIII**, thirteen, &c.

**JACK** (in Mechanics). An instrument in common use for raising very great weights of any kind.

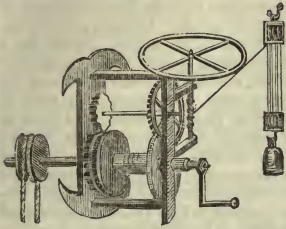
**JACK** (among Mariners). The flag which is hung out in the bowsprit end.

**JACK** (in Natural History). A kind of pike that is very destructive in fishponds.

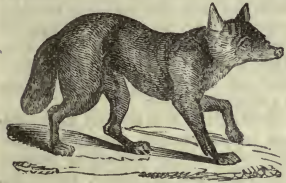
**JACK, SMOKE**. An engine placed in chimneys, and turned by means of the



ascending smoke, which answers the purpose of the kitchen jack.



**JACKAL.** A beast of prey nearly allied to the dog. It rouses other beasts by its cry, so that they are easily taken by the lion, whence it is called the lion's provider.



**JACKDAW.** A bird of the crow kind, having a white collar about its neck.

**JACKS.** Small bits of wood fixed to the keys of virginals, harpsichords, and spinnets.

**JACK-WITH-THE-LANTHORN,** or **WILL-O'-THE-WISP.** Vulgar names for the ignis fatuus or meteor which hovers in the night about marshy places, and seems to be mostly occasioned by the extrication of phosphorus from rotten leaves and other vegetable matters. It appears like a candle in a lanthorn, and has sometimes caused travellers to lose their way.

**JACOBIN.** A partisan of the French revolution.

**JACOBITES.** A name given to the adherents of James II. at and after the revolution in England.

**JACOB'S STAFF.** A mathematical instrument for taking heights and distances.

**JACOBUS.** A gold coin in the reign of James I. current at 20s. 23s. and 25s.

**JACTITATION OF MARRIAGE.** A suit in the ecclesiastical court, when one of the parties boasts or gives out that he or she is married, which the other party denying, and no adequate proof of the marriage being brought, the offending party is enjoined silence on that head.

**JADE.** See **NEPHRITE.**

**JAG** (in Botany). A division or cleft in a leaf.

**JAGUAR.** The tiger of the Brazils.



**JALAP.** The root of a West Indian plant, of the convolvulus tribe, of a black colour on the outside, and reddish within, with resinous veins. It was not known in England until after the discovery of America, and received its name from Xalapa, a town in New Spain. The principal constituent parts of jalap are resin and starch.

**JAMB** (among Carpenters). Any supporter on either side, as the posts of a door.

**JAMB** (among Miners). A thick bed of stone that obstructs the miners in their pursuing the veins of ores.

**IAMBIC VERSE.** Verses composed of iambic feet, that is, a short and a long foot alternately.

**JANIZARIES.** The grand seignior's guard, or the soldiers of the Turkish infantry, which have lately been abolished, and their places supplied by troops trained after the European manner.

**JANUARY.** The first month in the year, supposed to take its name from Janus, an ancient king of Italy.

**JAPANING.** The art of varnishing and painting figures on wood, metal, &c. as is practised by the inhabitants of Japan, &c.

**JAPONICA.** The Japan rose.

**JAR.** A measure of capacity, as a jar of oil, containing from 18 to 26 gallons.

**JASMIN.** See **JESSAMINE.**

**JASPER.** A precious stone of a green transparent colour, with red veins. It is a sort of silicious earth, consisting mostly of silica, with a small portion of alumina, oxide of iron, magnesia, and potash.

**JAVELIN.** A sort of half pike or spear.

**JAUNDICE.** A disease proceeding from obstructions in the glands of the liver, which causes the bile to overflow, and turns the complexion yellow.

**JAW.** A bone of the mouth, in which the teeth are fixed.

**JAWS.** The two pieces in the cock of a gun between which the flint is fixed.

**JAY.** A bird with particoloured plumage, of the crow kind. It is taught to speak.



**IB. IBID. or IBIDEM.** The same.

**IBIS.** A bird like a stork, which was worshiped in Egypt.

**ICEHOUSE.** A house in which ice is deposited against the warm months.

**ICH DIEN, i. e. I serve.** The motto on the arms of the Prince of Wales, first taken by Edward the Black Prince.

**ICHNEUMON.** An Egyptian rat, and a bitter enemy to the crocodile, whose eggs it breaks.



**ICHNEUMON (in Entomology).** A sort of fly, which deposits its eggs in the bodies of other insects.

**ICHOGRAPHY (in Architecture).** The ground plan of a building.

**ICHOGRAPHY (in Fortification).** A draught of the length and breadth of the works raised about a place.

**ICHTHYOLOGY.** That branch of general zoology which treats of fishes. These animals are divided into five orders, namely, into apodal, or those which have no ventral fins; jugular, which have the ventral fins placed more forward than the pectoral; abdominal, or those which have the ventral fins situated behind; thoracic, or those which have their ventral fins situated immediately under the pectoral; and the cartilaginous fishes, which have a cartilaginous instead of a bony skeleton.

**ICHTHYOLOGY, HISTORY OF.** The subject of fishes has engaged the attention of naturalists from the time of Aristotle to the present period. Aristotle, probably the first writer on the subject, divided fishes into cetaceous, spinose, and cartilaginous; he was, after a long interval, followed by several others, who treated of the fishes of particular places, as Ovid, who treats of the fishes of the Euxine, Appian of those of the Adriatic, and Ausonius of those of the Moselle, &c.; among the moderns there are also some who have treated this subject partially, as Paul Jovius, who described the fishes of the Mediterranean, Schwenkfelt those of Silesia, Schonefelt those of Hamburgh, Marcgrave the fishes of Brazil, Russell and Francis Valentine those of Amboyna. Pliny was a general writer on the subject, and pursued no method; Ælian and Athenæus have only scattered notices of some few fishes. Among the moderns, Bellonius, Rondeletius, Gesner, Willughby, Ray, Artedi, and Linnæus have done most towards reducing this science to a systematic order.

**ICOSANDRIA (in Botany).** The twelfth class in the Linnæan system, including plants with twenty stamens or more to their flowers, as the melon, Indian fig, pomegranate, plum, &c.



**IDIOM.** A manner of expression peculiar to any language.

**IDIOSYNCRACY.** A peculiarity of constitution.

**IDOL.** Properly an image; but particularly the image of any false god.

**IDOLATRY.** The worshipping of idols.

**IDYLL.** A little pastoral poem, treating of shepherds and shepherdesses, such as the Idylls of Theocritus, Gesner, &c.

**I. E. ID EST.** That is.

**JEHOVAH.** The proper name of the Most High in the Hebrew.

**JELLY.** Any liquid, as the juice of fruits, coagulated into a tremulous, soft substance: when long boiled it loses the property of gelatinizing, and becomes analogous to mucilage.

**JERUSALEM ARTICHOKE.** A sort of sunflower, which resembles the artichoke in taste.

**JESSAMINE**, or **JASMIN**. A plant bearing fragrant flowers, which is commonly trained to the walls of houses.

**JESUITS**, or the **ORDER OF JESUS**. A religious order founded by Ignatius Loyola in 1538, and abolished in 1773, on account of their intrigues, but partially restored since.

**JESUITS BARK**. The Cinchona or Peruvian Bark, so called because it was first used by the Jesuit missionaries in Peru.

**JET** (in Mineralogy). A deep black sort of bitumen.

**JET D'EAU**. The pipe of a fountain which throws up the water in the air.

**JETSAM** (in Law). Any thing thrown out of a ship which is in danger of a wreck.

**JEU D'ESPRIT**. A lively, pretty thought.

**JEWEL**. The name of the precious stones which are worn as ornaments.

**JEWELLER**. One who works or deals in jewels and all kinds of precious stones.

**JEWEL OFFICE**. An office where the king's plate is fashioned, weighed, and delivered out by the warrant of the lord chamberlain.

**JEWS**. The descendants of the twelve tribes of Israel, who were so called after their return from the captivity of Babylon, from Judah, one of the sons of Jacob, whose tribe formed the most considerable part of those that remained of the Israelites. Although the Jews have lost the distinction of their tribes, and are dispersed throughout all nations, yet they remain a perfectly distinct people, and adhere to the religion of their forefathers. Their condition has been considerably ameliorated in all Christian countries where they now reside.

**JEW'S-EAR**. A kind of mushroom.

**JEW'S-HARP**. A musical instrument which is played between the teeth.

**JEW'S-MALLOW**. A plant whose leaves are produced alternately at the stalks. The flower expands in the form of a rose.

**IGNIS FATUUS**. See **JACK WITH THE LANTHORN**.

**IGNITION** (in Chymistry). The application of fire to metals till they become red hot without melting.

**IGNORAMUS**. An ignorant fellow, a pretender to knowledge.

**IGNORAMUS** (in Law). The term used by the Grand Jury when they ignore or throw out a bill of indictment. It denotes 'We know nothing about it, or have not sufficient evidence respecting it.'

**IGNORING A BILL** (in Law). The

throwing out a bill of indictment by a grand jury, who indorse it with the word 'ignoramus.'

**I. H. S.** An abbreviation for Jesus Hominum Salvator, i. e. Jesus the Saviour of Mankind.

**JIB**. The foremost sail of a ship.

**ILEX**. The name formerly for the holm oak, but now the generic name for the holly.

**ILIAC PASSION**. A nervous colic.

**ILLUMINATING**. The art of laying colours on initial capitals in books, or otherwise embellishing manuscript books, as was formerly done by artists called illuminators.

**IMAGE** (in Optics). The appearance of an object made either by reflection or refraction.

**IMMEMORIAL** (in Law). An epithet for any custom that has existed time out of mind, or beyond the memory of man.

**IMMERSION** (in Physiology). The act of plunging any thing into water, or any other fluid.

**IMMERSION** (in Astronomy). The term is applied to a planet when it comes so near the sun that we cannot see it; also the beginning of the eclipse of the moon, or that moment when she begins to be darkened.

**IMMOVEABLE** (in Law). Things not liable to be carried away, real property, as land, &c.

**IMMOVEABLE FEASTS**. Such as are constantly on the same day of the month, as Christmas, &c.

**IMPACT**. The single or simple act of one body upon another, so as to put it in motion.

**IMPARLANCE** (in Law). A petition in court for a day to consider or advise what answer the defendant shall make to the plaintiff's declaration.

**IMPEACHMENT** (in Law). The accusation of a person in parliament for treason or other crimes and misdemeanors. An impeachment by the commons house of parliament is of the nature of a presentment to the house of lords, the supreme court of criminal jurisdiction. The articles of impeachment found by the commons are the same as a bill of indictment, which is to be tried by the lords. In the case of Warren Hastings it was determined that an impeachment does not abate by the dissolution of parliament.

**IMPERATIVE** (in Grammar). One of the moods of a verb, used when we would command, entreat, or advise.

**IMPERSONAL VERB** (in Grammar). A verb used only in the third person.

**IMPLEMENTS.** All things necessary for following any mechanical business, as tools, furniture, &c.

**IMPORTATION.** The bringing goods into a country.

**IMPOSTS** (in Architecture). The capitals of pillars which support arches.

**IMPRESSING.** A compulsory mode of obtaining men for the king's service in the navy.

**IMPRESSION** (among Printers). The number of copies of any book printed off at one time.

**IMPRIMATUR**, i. e. Let it be printed. The form of a license for printing a book, which was formerly required in England.

**IMPRIMIS.** In the first place.

**IMPROMPTU**, i. e. off hand, without preparation, applied particularly to poetic effusions of the moment.

**IMPROPRIATION** (in Law). The act of appropriating or employing the revenues of a church living to one's own use. Lay impropriation is an ecclesiastical living in the hands of a layman.

**IMPROVISATORE.** One who repeats or recites verses extemporaneously, as is the practice in Italy. This gift of reciting extemporaneous verses has been carried to a high pitch, it being no uncommon thing to see two masks meeting during the carnival and challenging each other in verse, and answering stanza for stanza in a surprising manner.

**IMPULSE**, or **IMPETUS** (in Mechanics). The single or momentary force with which one body strikes or impels another.

**IN.** An abbreviation for inch.

**INACCESSIBLE HEIGHT.** A distance which cannot be measured by reason of some obstacle in the way, as a river, a ditch, &c.

**INARCHING.** A method of ingrafting called grafting by approach, where the stock and tree are properly joined.

**INAUGURATION.** The ceremony performed at the coronation of a king, or making a knight of the garter.

**INCA.** The prince of the Peruvians.

**INCARNATION.** The act of assuming body, or taking flesh, as the Incarnation of our blessed Saviour.

**INCENDIARY** (in Law). He who sets fire to houses maliciously.

**INCH.** A measure of length, being the twelfth part of a foot.

**INCIDENCE**, or **LINE OF INCIDENCE** (in Mechanics). The direction or inclination in which one body acts or strikes on another.

**INCIDENCE** (in Optics). The place where two rays meet.

**INCLINATION.** The mutual tendency of two bodies or planes to each other.

**INCLINED PLANE** (in Mechanics). A plane inclined to the horizon, or making an angle with it, which is one of the mechanical powers.



**INCOGNITO**, or **INCOG.** Literally, unknown, not to be recognised; a mode of travelling without any mark of distinction, which is sometimes adopted by princes and great people who do not wish to be recognised.

**INCOMBUSTIBLE.** A body that is incapable of undergoing combustion.

**INCOMBUSTIBLE CLOTH.** A sort of linen cloth made from a stone in the form of a talc; which stone is called lapis amianthus, and asbestos.

**INCOME.** Revenue, profit, or produce from any thing.

**INCOME TAX.** A tax imposed, during the last war, on the annual gains of every person.

**INCOMMENSURABLE** (in Geometry). A term applied to two lines or quantities which have no common measure by which they can be divided.

**INCORPORATION** (in Law). The formation of a body politic.

**INCORPORATION** (in Chymistry). The mingling the particles of different bodies together into one mass, in such manner that the different ingredients cannot be distinguished.

**INCREMENT** (in Fluxions). The small increase of a variable body. Dr. Brook Taylor, to whom we are indebted for the doctrine of increments or finite differences, denoted his increments by a dot under the variable quantity, thus the increment of  $x$  was denoted by  $\dot{x}$ ; others have employed a small accent, thus  $x'$ , or thus  $x$ . M. Nicole uses another letter to denote the increment of  $x$ , or any variable, as by  $n$ ; but Euler employs the character  $\Delta$ , thus  $\Delta x$  the increment of  $x$ , and  $\Delta y$  the increment of  $y$ . Dr. Brook Taylor first published his Methodus Incrementorum in 1715, which was afterwards illustrated by M. Nicole in the Memoirs of the Royal Academy of Sciences for the years 1717, 1723, and 1724. In 1723, Emerson published his Method of Increments; but the writer who contri-

buted most to the elucidation of this subject was Euler, who, in his *Institutiones Calculi Differentialis*, gave a new and extended form to this branch of analysis. Various other writers have since treated on this subject, among whom Lacroix, in his *Traité des Différences*, &c. is thought to have been the most happy.

**INCUBATION.** The process of a bird sitting on eggs and hatching its young; the time required for this varies in different birds, domestic fowls sit three weeks, ducks, geese, and turkeys a month, pigeons eighteen days, &c.

**INCUBUS, or NIGHT MARE.** A disease which consists in an obstructed respiration that produces the sensation in sleep of a weight pressing on the breast.

**INCUMBENT.** One in present possession of a benefice.

**INDECLINABLE.** Not varied by terminations, as an indeclinable noun.

**INDEFINITE PRONOUNS.** Words that are loose and undetermined in their meaning, as whatsoever, any, every, &c.

**INDEMNITY (in Law).** The saving harmless; or a writing to secure one from all damage and danger that may ensue from any act.

**INDEMNITY, ACT OF.** An act passed every session of parliament for the relief of those who have neglected to take the necessary oaths, &c.

**INDENTURE (in Law).** An agreement or contract made between two or more persons, so called because it was indented or cut scollopwise, so as to correspond with another writing containing the same words.

**INDEPENDENTS.** A sect of Protestants in England and Holland, who govern themselves in their own congregations, without acknowledging any dependance upon or connexion with any other church.

**INDEX (in Arithmetic and Algebra).** The number that shows to what power the quantity is to be raised, as in  $10^3$ , the figure 3 is the exponent or index.

**INDEX (in Watchmaking).** The little stile or hand fitted either to a clock or watch, &c.

**INDEX (in Literature).** An alphabetical table of the contents of a book.

**INDIAN ARROW ROOT.** The root of a plant growing in the West Indies, where it was formerly used as an antidote against poisons.

**INDIAN FIG.** *Ficus Indica* in the Linnaean system; another name for the Banian tree.

**INDIAN RUBBER, or CAOUT-CHOUC.** An elastic gum, a substance procured from a tree in South America, called the *syphonia elastica*. It is mostly brought into Europe in the shape of bottles, which are formed by spreading the gum over a mould of clay.

**INDIAN WHEAT.** See **MAIZE**.

**INDICATIVE MOOD (in Grammar).** That mood of a verb which simply affirms or denies.

**INDICTED (in Law).** That is, accused of some offence by bill preferred to jurors at the suit of the king.

**INDICTION, or CYCLE OF INDICTION (in Chronology).** A mode of computing time by the space of fifteen years, instituted by Constantine the Great. The popes, since the time of Charlemagne, have dated their acts by the year of the indiction, which was fixed on the first of January. At the time of the reformation of the calendar the year 1582 was reckoned the tenth year of the indiction. Now this date when divided by fifteen leaves a remainder seven, that is three less than the indiction, and the same must necessarily be the case in all subsequent cases, so that in order to find the indiction for any year divide the date by fifteen and add three to the remainder.

**INDICTMENT.** A bill or accusation drawn up in form of law, and exhibiting some offence, which is preferred to a grand jury preparatory to the trial in open court.

**INDIGENOUS.** Native, as applied to animals and plants.

**INDIGO.** A beautiful blue colour or dye procured from a plant called by the Americans, anil; in the Linnaean system, *Indigofera*. The indigo used by the diers is a faecula procured from the leaves of the plant, which are laid in vats full of water, and left to ferment. The liquor is then drawn off into another vat, and after having been well stirred up, it is drawn off, and what remains at the bottom is exposed to the air until it is thoroughly dry, when it is fit for use. The principal constituent parts of indigo are mucilaginous, resinous, and earthy matter, with some oxide of iron.

**INDORSING.** See **ENDORING**.

**INDUCTION (in Law).** Putting a clerk in possession of his living.

**INDUCTION (in Logic).** A mode of argumentation or reasoning, when the species is gathered out of the individuals, and the genus out of the species, &c.: as, if it be true that all planets borrow their

light from the sun, then, by induction, it is true that Jupiter, Mars, and each individual planet does the same.

**INDULGENCES** (in the Romish Church). Pardons for sin, granted by the pope to such as profess to be penitents.

**INERTIA**, or *Vis Inertile* (in Physiology). A passive principle, supposed by Sir Isaac Newton to reside in bodies, by which they persist in their motion or rest, and receive motion according to the force impressed upon them, and resist as much as they are resisted.

**INFANT** (in Law). Any person under the age of twenty-one.

**INFANTA**. The title given to the eldest daughter of the king of Spain or Portugal.

**INFANTE**. The title given to the eldest son of the king of Spain and Portugal.

**INFANTRY**. The body of foot soldiers.

**INFECTION**. The communication of a disease by certain effluvia which fly off from distempered bodies, or from goods that are infected.

**INFINITESIMALS**. Indefinitely small parts.

**INFINITIVE MOOD**. The mood of a verb, so named because it is not limited by number or person.

**INFIRMARY**. A place where the sick poor are received, or can get advice and medicines gratis.

**INFLECTION** (in Optics). A multiplex refraction of the rays of light, caused by the unequal thickness of any medium.

**INFLECTION** (in Grammar). The change which a word undergoes in its ending, to express case, number, gender, mood, tense, &c.

**INFLECTION, POINT OF** (in Geometry). A point where a curve begins to bend a contrary way.

**INFLORESCENCE**. The manner in which plants flower, or in which flowers are fastened to the stem by means of the peduncle.

**INFLUENZA**. A sort of catarrh or disease from cold, so called because it was supposed to be produced by the peculiar influence of the stars.

**IN FORMA PAUPERIS**. See **FORMA**.

**INFORMATION** (in Law). An accusation or complaint exhibited against a person for some criminal offence. An information differs from an indictment, inasmuch as the latter is exhibited on the oath of twelve men, but the information is only the allegation of the officer or individual who exhibits it.

**INFORMER** (in Law). One who gives

information, particularly private information, to a magistrate.

**INFUSIBLE**. Not to be fused or made fluid.

**INFUSION**. A method of obtaining the virtues of plants, roots, &c. by steeping them in a hot or cold liquid.

**INFUSORIA**. One of the Linnæan orders of animals, of the class vermes, including such as are simple, microscopic animalculæ found in stagnant water.

**INGOT**. A wedge or bar of gold.

**INGREDIENT**. Any simple that enters into the composition of a compound medicine.

**INGRESS** (in Astronomy). The sun's entering into the first scruple of Aries, &c.

**INGROSS**. See **ENGRASS**.

**INHERITANCE** (in Law). An estate to a man and his heirs.

**INJECTION** (in Anatomy). The filling the vessels of a dead subject with any coloured matter to show their ramifications.

**INJECTION** (in Surgery). The forcing any liquid into the body by means of a clyster.

**INITIALS**. Letters placed at the beginnings of words or sentences.

**INJUNCTION**. A kind of prohibition granted by courts of equity, principally with a view of preserving property pending a suit.

**INK**. A black liquor for writing; it is sometimes red, when it is called red ink. Black ink is of three kinds: namely, Indian ink, made in China of lamp-black and size; printer's ink, composed of oil and lamp-black for the black ink, or of vermilion for the red ink; writing ink, composed of an infusion of nutgalls, sulphate of iron or copper dissolved in water, logwood, and gum arabic. The red ink is composed of Brazil wood, gum, and alum.

**INK, SYMPATHETIC**. See **SYMPATHETIC INK**.

**INLAND**. That place which is situated in the interior of a country, far from the seacoast.

**INLAND BILLS** (in Commerce). Bills payable in the country where they are drawn.

**INLAND TRADE**. Trade carried on within the country; home trade, as opposed to foreign commerce.

**INLAYING** (among Mechanics). Working in wood or metal with several pieces of different colours, curiously put together.

**IN LIMINE**. In the outset; before any thing is said or done.

**INN.** A house of entertainment for travellers.

**INNS OF COURT.** Houses or colleges for the entertainment of students in the law; the principal of these societies at present are Lincoln's Inn, the Inner Temple, and the Middle Temple.

**INNUENDO** (in Law). A hint, a doubtful or obscure expression.

**INOCULATION** (in Surgery). The operation of giving the small-pox to persons by incision. When a person is inoculated with the cow-pox, it is called vaccination.

**INOCULATION** (in Gardening). A kind of grafting in the bud; as when the bud of the fruit tree is set in the stock or branch of another, so as to make several sorts of fruit grow on the same tree.

**INOSCULATION** (in Anatomy). The joining the mouths of the capillary veins and arteries.

**IN PROPRIA PERSONA.** In one's own person or character.

**INQUEST** (in Law). An inquisition by jurors, the most usual mode of trial in cases both civil and criminal in this country.

**INQUISITION** (in Ecclesiastical Affairs). A tribunal in some Roman Catholic countries for the suppression of heresies.

**INQUISITOR** (in Law). Any officer, as the sheriff and the coroner, having power to inquire into certain matters; in Ecclesiastical Affairs, Grand Inquisitor is the name of the judges of the Inquisition.

**INROLLMENT** (in Law). The registering or entering in the rolls of the Chancery and King's Bench, &c. any lawful act, as recognizances, &c.

**INSCRIBED** (in Geometry). An epithet for a figure inscribed in another, so that all its angles touch the sides or planes of the other figure.

**INSECTA.** The fifth class of animals in the Linnæan system, comprehending all insects except worms, which Linnæus has formed into a distinct class called vermes. The insecta are divided into seven orders, namely, the coleoptera, lepidoptera, hemiptera, neuroptera, diptera, and aptera. See **ENTOMOLOGY.**

**INSECTS.** Small animals that either creep or fly, having many feet, and bodies composed of joints and segments, in some cases they have the head distinct from the body, as flies, bees, &c. Those that are capable of being parted without destroying life were also included under this head, but Linnæus has classed them under the head of vermes, worms.

**INSIGNIA.** Ensigns.

**INSOLUBLE** (in Chymistry). An epithet for any body which is not to be dissolved or separated.

**INSOLVENCY** (in Law). The state of not being able to pay one's debts.

**INSOLVENT.** In a state of insolvency.

**INSOLVENT ACTS.** Acts of parliament passed for the purpose of releasing from prison, and sometimes from their debts, persons who cannot take the benefit of the bankrupt laws.

**INSPECTION** (in Law). A mode of trial, when the judges decide a point of dispute upon the testimony of their own senses.

**INSPECTOR.** A military officer whose duty it is to inspect regiments, &c.

**INSPIRATION** (in Anatomy). The act of breathing or taking in the air by the alternate contraction and dilatation of the chest.

**INSPIRATION** (in Theology). The conveying certain extraordinary notices or motions into the mind; or, in general, any supernatural influence on the human mind.

**INSTALLATION.** The ceremony of installing or putting into any office or dignity, as placing a dean or prebendary in his stall or seat, or a knight into his order.

**INSTALMENT.** The payment of a certain portion of a gross sum, which is to be paid at different times, or, as the phrase is, by instalments.

**INSTANCE** (in Civil Law). The prosecution of a suit.

**INSTANT.** The smallest perceptible portion of time; that wherein we perceive no succession.

**INSTANTER.** Instantly.

**IN STATU QUO** (in Diplomacy). A term signifying that condition in which things were left at a certain period, as when belligerent parties agree that their mutual relations should be in statu quo, or as they were before the commencement of a war, and the like.

**INSTINCT.** The sagacity or natural aptitude of brutes, which supplies the place of reason.

**INSTITUTE.** Any society instituted or established according to certain laws, or regulation for the furtherance of some particular object, such as colleges, or academies, as they are sometimes called, Literary Institutes, Mechanics' Institutes, and the like.

**INSTITUTES** A book so entitled, containing the elements of the Roman or Civil Law. The Institutes are divided into four

books, and contain an abridgment of the whole body of the Civil Law.

**INSTITUTION.** The putting a clerk into possession of a spiritual benefice, previous to which the oath against simony, and the oaths of allegiance and supremacy, are to be taken; besides which the party must subscribe the thirty-nine articles, the articles concerning the king's supremacy, and the Book of Common Prayer.

**INSTRUMENT.** A tool to do any thing with.

**INSTRUMENT (in Law).** A deed or writing drawn up between two parties, and containing several covenants agreed between them.

**INSTRUMENT (in Music).** Any frame, structure, or contrivance, by which harmonious sounds may be produced.

**INSTRUMENTAL (in Music).** An epithet for the music of instruments, as distinguished from the vocal music, or that of the human voice.

**INSULATE.** Properly, standing alone; as, in Architecture, an insulate column, that which stands alone.

**INSULATED (in Chymistry).** A term for bodies that are supported by electric or nonconductors, so that their communication with the earth, by conducting substances, is interrupted.

**INSURANCE, or ASSURANCE (in Law).** A contract or agreement by which one or more persons, called insurers or assurers, engage, for a certain premium paid, to make good the loss of any house, ship, or goods, by fire, shipwreck, or otherwise. Casualties by fire are protected by the annual payment of from 2s. to 7s. 6d. for each £.100. The premium on ships and merchandise is so much on the voyage, as from £.1 to £.5 per cent.

**INSURANCE COMPANIES.** Companies of persons who form a fund or capital, which they dispose of in insuring the property of others against casualties by fire, &c.

**INSURANCE OFFICE.** The place where insurance companies conduct their business, of which there are many in London and in all the capitals of Europe.

**INTAGLIOS.** Precious stones, having the heads of great men or inscriptions, &c. engraven on them, such as are to be seen on ancient rings, seals, &c.

**INTEGER (in Arithmetic).** A whole number, as distinguished from a fraction; as one pound, one yard, &c.

**INTEGRAL PARTS.** Parts which make up a whole.

**INTEGUMENTS (in Anatomy).** The

coverings of any part of the body, as the cuticle, cutis, &c. The common integuments are the skin, with the fat and cellular membrane adhering to it; also particular membranes, which invest certain parts of the body, are called integuments, as the tunics or coats of the eye.

**INTENDANT.** A military officer, who has the inspection and management of certain affairs.

**INTENSITY.** The state of being affected to a high degree; the power or energy of any quality raised to its highest pitch.

**INTERCALATION (in Chronology).** An inserting or putting in a day in the month of February every fourth year.

**INTERDICT.** A papal censure, prohibiting divine offices to be performed within any parish or town, &c.; which was put in force in England in the reign of King John, and in Germany several times at different periods.

**INTEREST (in Commerce).** Money paid for the use or loan of money. The sum lent is called the principal; the sum paid by the borrower, the interest; and when the two are incorporated, the interest paid upon that is called compound interest, or interest upon interest.

**INTEREST (in Arithmetic).** A rule by which the interest of money is computed, which is either simple or compound.

**INTERJECTION.** An indeclinable part of speech, serving to express the emotions of the mind.

**INTERLOCUTORY ORDER (in Law).** An order which does not decide the cause itself, only some intervening matter relating to it.

**INTERLOPERS (in Law).** Those who, without legal authority, intercept or hinder the trade of a company lawfully established to trade in a particular way or part.

**INTERLUDE.** An entertainment between the acts of a play, for the purpose of allowing the performers time to rest, &c.

**INTERPOLATING (among Critics).** Inserting a spurious passage into the writings of some ancient author.

**INTERREGNUM.** The vacancy of a throne by the death or deposition of a king.

**INTERREX.** He who governs while there is no king.

**INTERROGATION.** A question put.

**INTERROGATION, or NOTE OF INTERROGATION (in Grammar).** A mark thus (?) put at the end of a question.

**INTERROGATIVES.** Words used in asking a question, as why, wherefore, &c.

**INTERROGATIVE SYSTEM.** A mode



of teaching by means of question and answer.

**INTERROGATORIES** (in Law). Questions in writing demanded of witnesses in a cause, particularly in the Court of Chancery.

**IN TERROREM**. By way of frightening or deterring.

**INTERSECTION** (in Mathematics). The cutting of one line or plane by another.

**INTERVAL** (in Music). The difference between two sounds, as respects acute and grave.

**INTESTATE**. One dying without a will.

**INTESTINA** (in Zoology). An order in the Linnaean system, of the class vermes, including earthworms and leeches.

**INTESTINEMOTION** (in Physiology). That motion which takes place in the corpuscles or smallest particles of a body.

**INTESTINES**. The convoluted membranous tube in the body of animals. In the human subject, the intestines are divided into large and small, each of which consists of three distinct portions.

**INTOLERANCE**. The not tolerating or allowing of every man's private judgment in matters of doctrine or discipline.

**INTONATION** (in Music). The act of sounding the notes in the scale with the voice, or any other given order of musical tones.

**INTRANSITIVE VERBS**. Verbs that express actions, that do not pass over to an object, as go, come, &c.

**IN TRANSITU**. During the passage from one place to another.

**INTRUSION** (in Law). A violent or unlawful seizing upon lands or tenements.

**INTUITION**. The mental view of a matter, or the instantaneous act of the mind in perceiving the agreement or disagreement of ideas.

**IN VACUO**, i. e. In empty space, or in space comparatively empty.

**INVALID** (in Military or Naval Affairs). A soldier or sailor wounded or disabled in war, and unfit for service.

**INVENTION**. Any new mechanical contrivance for assisting human labour.

**INVENTORY**. A catalogue or list of goods.

**INVERSION** (in Geometry). The changing antecedents into consequents in the terms of proportion, and the contrary.

**INUNDATÆ** (in Botany). One of the Linnaean natural orders, consisting of aquatic plants.

**INVOCATION** (among Poets). An address to their favourite poet.

**INVOICE**. A bill or account of goods

sent by a merchant to his correspondent in a foreign country.

**INVOLUNTARY HOMICIDE** (in Law). The killing a man by accident, which differs from excusable homicide by misadventure in this, that the latter happens in the performance of a lawful act, but the former may be an indifferent or a positively unlawful act, which is murder or manslaughter according to the nature of the case.

**INVOLUTION**. The raising any quantity to a given power by multiplying it into itself the required number of times; thus, the cube of 3 is got by multiplying 3, the root, into itself twice, as  $3 \times 3 \times 3 = 27$ .

**JOBBER**. One who buys and sells cattle for another.

**JOCKEY**. A man who rides horses at races.

**IODINE**. A deadly poison, of a black colour and metallic lustre, procured from kelp, which resembles chlorine in its odour, and power of destroying vegetable colours. Iodine is incombustible, but with azote it forms a curious detonating powder.

**JOINER**. A worker in wood, who fits together the several pieces which have been prepared for each other. He differs from the carpenter inasmuch as he does the finer work, that requires more skill. The company of joiners was incorporated in 1570.

**JOINT** (in Anatomy). The place where any bone is articulated or joined with another.

**JOINT** (in Masonry). The separation between the stones which is filled with mortar.

**JOINT** (in Joinery). The parts where two pieces of wood join.

**JOINT** (in Botany). The knot in the stalk of a plant.

**JOINT** (among Butchers). The limb that is cut from the carcass of an animal.

**JOINT STOCK** (in Commerce). A stock or fund formed by the union of several shares from different persons.

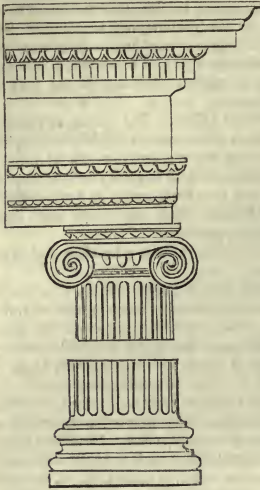
**JOINT STOCK COMPANIES**. Commercial associations, having a stock consisting of many shares; in such associations the shareholders gain or lose according to the number of shares which they hold.

**JOINTURE** (in Law). A settlement of lands and tenements made over by the husband to the wife, to be enjoyed after his decease.

**JOISTS**. Timbers framed into the girders or sommers of a building.

**IONIC ORDER** (in Architecture). An order so called from Ionia in Lesser Asia. The body of the pillar is usually channeled

or furrowed with twenty-four gutters, and its length, with the capital and base, is twenty-nine modules, the chapter being chiefly composed of volutes or scrolls.



**JONQUIL.** A plant of the Narcissus kind, the flowers of which are either single or double, and are much esteemed for their sweet scent.

**JOURNAL.** Any book in which is kept an account of what passes in the day.

**JOURNAL** (in Merchants' Accounts). A book wherein every thing is posted out of the waste-book.

**JOURNAL** (among Publishers and Booksellers). A periodical work, either daily, weekly, or monthly, &c.

**JOURNAL** (among Mariners). A book wherein is kept an account of the ship's way at sea.

**JOURNEY** (in Husbandry). A day's ploughing.

**JOURNEY** (in Coining). Money coined within a certain period.

**JOURNEYMAN.** One who works by the day, the week, or the year, &c. for another.

**IPECACUANHA.** A medicinal root, which comes from America, and was introduced into Europe in the seventeenth century, when it was much esteemed for the cure of dysenteries, but afterwards fell into disuse.

**IPSE DIXIT.** Literally, He himself

said it; a term signifying an opinion that rests on the word or authority of an individual only.

**IPSO FACTO.** The very fact.

**IRIDIUM.** A metallic substance procured from platina.

**IRIS** (in Anatomy). A striped, variegated circle, next to the pupil of the eye.

**IRIS** (in Botany). The flower de luce or flag-flower, &c.; a plant with a bulbous root, which bears a beautiful blue flower. There are many species of it, as the common yellow or water iris, the flag iris, the dwarf iris, &c.

**IRIS** (among Opticians). The changeable colours which appear in the glasses of telescopes, &c.

**IRON.** One of the most useful and abundant metals, which was one of the first metals that was known and worked. This metal is easily oxidized, but is infusible except by an intense heat; it is, however, malleable at a less degree of heat, and several pieces may be united into one mass by a process called welding. Iron is the only metal that is susceptible of magnetic attraction. Pure iron is very rarely to be found; the principal varieties of iron are the cast or pig iron, or that which is immediately extracted from the ore; wrought iron, that which has gone through the process of melting in a furnace; and steel, that which has been heated in charcoal, and hardened by its combination with carbon.

**IRON.** The name of several tools made of iron, particularly that which serves, when heated, to smooth linen after it has been washed.

**IRONMONGER.** A dealer in iron. The company of ironmongers were incorporated in 1462.

**IRONMOULDS.** Spots in linen, left after ironing from stains of ink.

**IRONMOULDS** (among Miners). Yellow lumps of iron or stone found in chalk-pits.

**IRRATIONAL** (in Mathematics). An epithet applied to surd quantities.

**ISINGLASS.** A gelatinous matter, formed of the dried sounds of cod and other fish. It is the principal ingredient in the blancmanger of the cooks, and is also used medicinally.

**ISIS** (in the Mythology of the Egyptians). The wife and sister of Osiris.

**ISLAND.** A country surrounded on all sides with water, as Great Britain, Ireland, &c.

**ISLAND CRYSTAL.** A transparent stone of the nature of spar, a piece of

which laid upon a book, every letter seen through it will appear double. It was originally found in Iceland, whence it was called Iceland or Island Crystal, and is to be met with in France and other parts of Europe.

**ISOCHRONAL** or **ISOCHRONOUS VIBRATIONS.** Vibrations of a pendulum performed in the same space of time.

**ISOPEROMETRICAL FIGURES.** Figures having equal perimeters or circumferences.

**ISOSCELES TRIANGLE.** A triangle having two sides or legs equal to each other.

**ISSUE** (in Law). 1. The children begotten between a man and his wife. 2. The profits arising from lands, tenements, fines, &c. 3. The point of matter at issue between contending parties in a suit, when a thing is affirmed on the one side, and denied on the other. Issues may be either on matters of fact or matters of law.

**ISSUE** (in Medicine). An artificial aperture, giving vent to noxious humours in the body.

**ISSUES** (in Military Affairs). Certain sums of money given into the hands of agents for the payment of the army.

**ISSUES** (in Fortification). Outlets in a town.

**ISTHMIAN GAMES.** Games formerly celebrated by the Greeks at the Isthmus of Corinth every three, four, or five years.

**ISTHMUS.** A little neck of land joining a peninsula to a continent, as the Isthmus of Corinth, &c.

**ITALIC.** A kind of letter used in printing, by way of distinction from the Roman, as in this word, *Italy*.

**ITCH.** A cutaneous disease, supposed to be caused by an insect of the acarus tribe called the itchmite. This small insect, which is white, with reddish legs, is found in the small pellucid vesicles of the hands and joints infected with the itch.

**ITEM.** Also; a word used to denote an article added to an account.

**ITINERANT.** Going from place to place.

**ITINERANT JUSTICES,** or **JUSTICES IN EYRE.** Justices sent into divers counties, to hear and determine causes.

**ITINERARY.** A book pointing out the roads and distances of places, for the use of travellers.

**JUBILEE.** Every fiftieth year, celebrated as a festival among the Jews, in commemoration of their deliverance out of Egypt. At this festival, which was a season of joy, bondservants were set free.

**JUBILEE** (in the Romish Church). A solemnity instituted A. D. 1300, by Pope Boniface, to be observed every hundredth year, or every twenty-fifth year, as enjoined by Pope Sixtus IV. for the performance of several ceremonies in order to obtain pardons, remissions from sins, indulgences, &c. The jubilee lasts a whole year, and as it brings in great stores of wealth to the popes, it has been called the Golden Year.

**JUDAISM.** The rites, customs, and doctrines of the Jews.

**JUDGE** (in Law). A chief magistrate appointed to administer justice in civil and criminal causes. In England there are commonly said to be twelve judges, namely, the Lord Chief Justice of the King's Bench; the Lord Chief Justice of the Common Pleas; the Lord Chief Baron of the Exchequer; the three Puisne or inferior Judges of the two first courts; and the Puisne Barons of the latter court. The Chief Justices are installed or placed on the bench by the Lord Chancellor, and the Puisne Judges by the Lord Chancellor and the Chief Justices.

**JUDGE MARTIAL,** or **JUDGE ADVOCATE,** or **ADVOCATE GENERAL.** The supreme judge in courts martial.

**JUDGMENT** (in Law). The sentence of the court pronounced by the judge on the matter in the record, either in cases of default, where the defendant puts in no plea; or of confession, when the defendant acknowledges the action; or upon demurrer, where the defendant pleads a bad plea in bar; or upon a nonsuit or retraxit, where the plaintiff withdraws or abandons the prosecution. Judgments are either interlocutory, that is, given in the middle of a cause on some intermediate point, or final, so as to put an end to the action.

**JUDICIAL** (in Law). An epithet for what appertains to a court, as judicial decisions, &c.

**JUGULARES** (in Ichthyology). An order of fishes in the Linnæan system, including those that have the ventral fins placed before the pectoral, as the cod, the whiting, the haddock, &c.

**JUGULAR VEINS.** Veins running from the head down the sides or the neck.

**JULIAN PERIOD** (in Chronology). A period of 7980 consecutive years, produced by the multiplication of the three cycles of the sun, moon, and indiction into one another. It was so called because it consists of Julian years.

**JULIAN YEAR.** A space of time consisting of 365 days and 6 hours, so called

from Julius Cæsar, by whom it was established. The calendar, which contained an account of Julian time, was called the Julian Calendar; and the time when it was first instituted, namely, 46 A. C., the Julian Epoch.

**JULY.** The seventh month in the year, so called in honour of Julius Cæsar.

**JUNIPER TREE.** A sort of tree or shrub, having long, narrow, and prickly leaves, and bearing a soft pulpy berry. This shrub is common with us on heaths and barren hills, but the berries which are used medicinally are brought from Germany. From the berries is made, in Holland, the gin called Hollands gin.

**JUNO** (in the Heathen Mythology). The wife of Jupiter, whose emblem was the peacock.



**JUNO** (in Astronomy). One of the newly discovered planets.

**JUNTA.** A Spanish term for a meeting of men sitting in council.

**IVORY.** A finer sort of bone, or an intermediate substance between bone and horn, prepared from the tusk of the male elephant.

**JUPITER** (in the Heathen Mythology). The son of Saturn and Ops, and chief of the gods, was the most honoured among men. His most usual attributes are the eagle, and thunder, and sometimes a figure of victory, and a spear, &c.



**JUPITER** (in Astronomy). One of the largest of all the planets, being, according to some, upwards of two thousand times bigger than our earth. It is the most brilliant star after Venus, revolves on its own axis in 9 hours and 56 minutes, and performs its revolution round the sun in 4322 days 14 hours 18 minutes and 41 seconds.

**JURISDICTION.** The power or authority invested in any individual or court, of doing justice in the causes brought before them.

**JURISPRUDENCE.** Properly, a knowledge of the laws, or skill in interpreting and applying them; also the laws themselves, together with all that relates to their administration. English jurisprudence comprehends the common and statute law, together with such parts of the civil and canon law as have been admitted into our courts.

**JURY** (in Law). A certain number of persons sworn to inquire of and to declare the truth upon the evidence offered to them relating to the matter of fact. Juries are of different kinds, as the grand jury, petty jury, special jury, common jury, coroner's jury, &c. The grand jury, consisting of twenty-four gentlemen or yeomen, is chosen to consider all bills of indictment preferred to the court, which they return as true, by writing upon them, 'billa vera,' true bill, or throw out by indorsing the word 'ignoramus.' The petty jury, consisting of twelve men, is chosen to try all causes civil and criminal: in the latter causes they give a verdict of Guilty or Not Guilty; in civil causes they bring a verdict either for the plaintiff or the defendant; and in real actions, either for the demandant or tenant. A jury is called special when it is returned for a particular cause, and common when it is returned by the sheriff in the same panel to try every cause at the same assizes.

**JURYMAN.** One who is sworn on a jury.

**JURY-MAST.** A great yard used in the place of the foremast or mainmast when it is broken down by a storm.

**JUSTICE** (in Law). A person deputed by the king to administer justice to his subjects. Justices are distinguished into Justices of the King's Bench, and Common Pleas, Justices of Assize, Justices of the Forest, Justices of Gaol Delivery, &c.

**JUSTICES OF THE PEACE.** Persons of interest and credit appointed by the king's commission to maintain the peace within certain limits.

**JUSTICIARY,** or COURT OF JUSTI-

CIARY, in Scotland. A court of supreme jurisdiction in all criminal cases.

**JUSTIFICATION** (in Law). The showing good reason in a court, why one has done the thing for which he is called to answer.

**JUSTS**. Exercises in former times for the display of martial prowess at great

solemnities, as the marriages of princes, &c.

**JUXTAPOSITION** (with Philosophers). The state of being placed in contiguity or near to each other.

**IVY**. A parasitic or twining plant, that runs about trees, walls, &c. by means of roots and fibres from its branches.

## K.

**K**, the tenth letter in the alphabet, stood as a numeral for 250, with a stroke over it thus,  $\bar{K}$ , for 250,000; as an abbreviation, it stands for Knight, as K. G. Knight of the Garter, K. B. Knight of the Bath.

**KALE**. A hardy kind of winter cabbage, with a curled leaf.

**KALEIDOSCOPE**. An optical instrument for exhibiting a diversity of beautiful figures, invented by Dr. Brewster. It is chiefly used by calico-printers, potters, and carpet manufacturers, who are thus supplied with an immense variety of patterns.

**KALI** (called in Botany **SALSOLA KALI**). A sort of marine plants, from which the alkali of commerce is procured by burning.



**KALMUCS**. A nation of Tartars inhabiting the government of Caucasia in Russia, which lies near the Caspian Sea.

**KAMSIN**. A hot and dry southerly wind, common in Egypt and the deserts of Africa, which prevails more or less for fifty days. On the approach of this wind the sky becomes dark and heavy, the air gray and thick, and filled with a dust so subtle that it penetrates every where. It is not remarkably hot at first, but increases in heat the longer it continues, during which time it causes a difficulty of breathing, and when at its highest pitch, will cause suffocation and sudden death. To prevent this, it is necessary to stop the nose and mouth with handkerchiefs.

**KAN**. A magistrate in Persia, answering to a governor in Europe.

**KANGUROO**. An animal in New Holland, which, when full grown, is as large as a sheep. It leaps and eats like a squirrel. It is furnished, like the opossum, with a pouch in the abdomen, which is a receptacle for its young during the time of breeding, and is resorted to after the birth for the sake of warmth and protection.



**KAOLIN**. A sort of earth which is used as one of the two ingredients in porcelain.

**KECKLING** (among Mariners). Winding or twining small ropes about a cable or bolt-rope, to preserve them from galling.

**KEDGER**. A small anchor.

**KEDGING** (among Mariners). Setting up the sails, and letting a ship drive with the tide when the wind is contrary to the tide.

**KEEL**. The lowest piece of timber in a ship, running her whole length. Sometimes a second keel, or false keel, as it is called, is put under the first. This name is also given to a low flat-bottomed vessel used in the river Tyne for bringing coals from Newcastle.

**KEELERS** (among Mariners). Small tubs used in calking ships.

**KEEL-HAULING** (among Mariners). A punishment of offenders at sea by letting them down with ropes, and drawing them under the keel from one side to the other.

**KEELSON** (in Naval Architecture). A principal timber in a ship, laid withinside across all the timbers.

**KEEP**. A strong tower in old castles, where the besieged retreated in cases of extremity.

**KEEPER** (in Law). An officer of different descriptions, as the Keeper of the Great Seal, a lord by his office, and one of the Privy Council, through whose hands pass all charters, commissions, and grants of the king under the Great Seal; Keeper of the Privy Seal, through whose hands pass all charters, &c. before they come to the Great Seal; besides which there is the Keeper of the Forests, the Keeper of the Touch, an officer of the Mint, &c.

**KEEPING** (among Painters). The management of lights and shades, so as to preserve the proper distances of objects according to the rules of perspective.

**KEG**. A barrel of pickled fish.

**KELP**. The ashes of the salsola soda and other marine plants, which, when burnt in pits, and stirred about for a length of time, form hard masses, that are used in making soap. In this manner the mineral alkali called soda is procured.

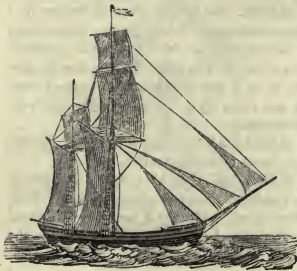
**KENNEL** (among Sportsmen). A place in which dogs are kept; also the hole in which a fox lies.

**KERMES**. A round body of the size of a pea, and of a brownish-red colour, which contains a number of soft granules filled with a red colour. It is found in the southern parts of Europe adhering to the scarlet oak, and was till lately supposed to be a vegetable excrescence, but is now known to be the extended body of an animal filled with a numerous offspring, which are the little red granules.

**KERMES MINERALIS**. A preparation of antimony, so called from its beautiful deep orange colour.

**KESTREL**. A small kind of hawk.

**KETCH**. A small vessel constructed for carrying bombs.



**KETCHUP**. The liquor of mushrooms, which is much used as a sauce.

**KETTLE-DRUM**. A drum, the vellum head of which is spread over a body of brass.

**KETTON STONE**. An opaque compact sort of marble found in different parts of Britain.

**KEY** (among Smiths). An instrument for opening a lock, having cavities to correspond to the wards of the lock.

**KEY** (in Gunnery). The firelocks and springlocks of gun-carriages.

**KEY** (in Carpentry). The last board that is laid.

**KEY** (in Music). A name for the pieces of wood or ivory in an organ or harpsichord, which are struck by the finger in playing an instrument; also the fundamental note, otherwise called the cleff or cliff.

**KEY** (in Commerce). The same as QUAY.

**KEY**, or **GOLD KEY** (in Court Etiquette). The key which is worn by the Lords of the Bedchamber.

**KEYS** (in Naked Flooring). Pieces of timber framed in between every two joists.

**KEYS** (in Joinery). Pieces of timber let in transverse to the fibres, into the back of a board.

**KEYS** (in Law). The twenty-four commoners in the Isle of Man, who are the conservators of the liberties of the people.

**KEY-STONE** (among Architects). The name for those stones which form the sweep of an arch, particularly the last or middle stone placed on the top of the arch or vault.

**KIDNAPPING** (in Law). The forcible taking away a man, woman, or child, in order to carry them abroad. This is an offence at common law, and punishable by fine, imprisonment, and pillory.

**KIDNEY-BEAN**. A garden pulse having a papilionaceous flower, the pistil of which becomes a long pod, that is eaten before the seeds are fully formed.

**KIDNEYS**. Glands shaped like a kidney-bean, which separate the urine from the blood. There are two kidneys, one on each lumbar region.

**KILDERKIN**. A liquid measure containing eighteen gallons.

**KILN**. A furnace in which chalk is burnt for making lime; also a place where bricks, tiles, and malt are burnt or dried.

**KILN-DRYING**. The process of drying wetted barley on a kiln for the purpose of making malt.

**KIND** (in Law). In their natural state, as tithes in kind, that is, in the commodities themselves as distinguished from their value in money; so, in Military Affairs, ratios supplied in kind.

**KINDRED** (in Law). Persons of the same blood or descent.

**KING.** The sovereign ruler of a state. The law ascribes to the king of England, in his political capacity, immortality, for the king never dies; and on his decease, which is called his demise, his regal dignity is vested, without any interregnum or interval, at once in his heir.

**KING AT ARMS** (in Heraldry). An officer at arms, that has the preeminence over the rest, and is otherwise called Garter King at Arms.

**KINGDOM** (in Law). Any country governed by a king.

**KINGDOM** (in Natural History). A general division of natural objects, as the animal, the mineral, and the vegetable kingdoms in the Linnæan system.

**KING-FISH.** A European fish of remarkably splendid colours.

**KING-FISHER.** A bird that feeds on fish, whose plumage resembles the purple colour of the king's robes.

**KING-PIECE,** or **KING-POST** (in Carpentry). The chief beam under the roof.

**KING'S BENCH,** **BANCUS RÆGIUS,** or **B. R.** The supreme court of common law in this kingdom, consisting of the Lord Chief Justice, and three puisne or inferior judges, who hear and determine, for the most part, all pleas which concern the king's crown and dignity.

**KING'S BENCH PRISON.** A prison wherein debtors, and offenders against the state, are confined.

**KING'S EVIL.** A scrofulous disease, in which the glands are ulcerated, the gift of curing which was formerly attributed to the kings and queens of England from the time of Edward the Confessor. The practice of touching for the evil is now abolished.

**KING'S SILVER** (in Law). Money due to the king in the Court of Common Pleas, for a licence there granted to any man for passing a fine.

**KIRK.** The Scotch Presbyterian church.

**KITE.** A bird of prey, of the falcon



kind, the tail of which is forked, and distinguishes it from all other British birds of prey.

**KITE.** A plaything among schoolboys, consisting of a slight wooden frame covered with paper, and constructed so as to rise in the air. By the help of a long string it may be allowed to fly at the pleasure of the person holding it.



**KNAPSACK.** A leathern bag in which soldiers carry their provisions, &c.

**KNEE.** That part which joins the leg and thigh together.

**KNEE-PAN.** A little round bone placed in the fore part of the knee.

**KNEES** (in Naval Architecture). Pieces of timber bowed like a knee, which bind the beams and futtocks together.

**KNELL.** A passing bell, anciently rung at the time when a person was about to expire.

**KNIGHT.** A title of honour, originally bestowed on every man of rank or honour, that he might be qualified to give challenges, and to perform feats of arms. It is now an order of gentlemen next to baronets, or a mere honorary distinction, which entitles the person on whom it is conferred to be styled Sir D. D., and his wife Lady D. D. A knight is now made by the king touching him with a sword as he kneels, and saying, 'Rise up, Sir D. D.'

**KNIGHTS BACHELORS.** A description of knights inferior to the knights bannerets.

**KNIGHTS BANNERETS.** Knights so called, that were created knights on the field for some valiant achievement.

**KNIGHTS OF THE SHIRE** (in Law). Two knights or gentlemen of estate, who are elected by the freeholders of every county, to represent them in Parliament. The qualification of a knight of the shire is to be possessed of £. 600 per annum in a freehold estate.

**KNITTING.** The process of weaving

without a loom, by the help of a needle; also the act of tying together certain quantities of yarn, and then warping them into hanks to be tarred.

**KNOT** (among Mariners). Any large knob formed on the extremity of a rope; also the division of the log line, answering to half a minute, as a mile does to an hour.

**KNOT** (in Ornithology). A fen-bird, the flesh of which is very delicious.

**KNOUT**. A Russian punishment, which consists in barbarous scourging, slitting the nostrils, and maimings of different kinds.

**KORAN**. The book of the Mahometan

doctrine, containing the revelations of their pretended prophet.

**KOUMISS**. A fermented liquor made by the Tartars, of mare's milk. Something similar is prepared in the Orkney and Shetland Isles.

**KREMLIN**. The palace at Moscow, standing in a central and elevated part of the city, which suffered but little in the conflagration that followed the entry of the French in 1812. It was built in the fifteenth century.

**KT**. An abbreviation for Knight.

**K. T.** An abbreviation for Knight of the Thistle.

## L.

**L**, the eleventh letter in the alphabet, denoting, as a numeral, 50, and with a line over it thus,  $\bar{L}$ , 50,000; as an abbreviation, it stands for libra, pound, and liber, book.

**LA** (in Music). The syllable by which Guido denoted the last sound of each hexachord.

**LABEL** (among Mechanics). A thin brass ruler, with sights, commonly used with a circumferentor, to take heights.

**LABEL** (in Heraldry). A figure supposed to represent ribands, which in coats of arms distinguish the eldest son of a family.



**LABEL** (in Law). A slip fastened to deeds or writings, or any paper joined by way of addition to a will.

**LABIAL LETTERS**. Letters requiring the use of the lips in pronunciation.

**LABORATORY**. A chymist's workshop; also a workhouse where fireworkers and bombardiers prepare their stores.

**LABOURER**. One who does day labour.

**LABYRINTH**. A maze, or place full of intricate windings. The labyrinth of Egypt, built by Psammiticus on the banks of the river Nile, contained, within the compass of one continued wall, one thousand houses and twelve royal palaces, all covered with marble; it had only one entrance, but innumerable turnings and windings, so that those who were in could not find their way out without a guide. This

labyrinth was reckoned one of the seven wonders of the world.

**LAC**. A substance well known in Europe under the different names of stick-lac, shell-lac, and seed-lac. Stick-lac is the lac in its natural state; seed-lac is the stick-lac separated from the twigs; shell-lac is that which has undergone the process of being purified. Lac was for some time supposed to be a gum, but improperly so, because it is inflammable, and not soluble in water. It is the product of the coccus lacca, which deposits its eggs on the branches of a tree in Thibet, and elsewhere in India, where lac is fashioned into rings, beads, and other trinkets. Sealing wax, varnishes, and lake for painters, are made from it, and it is also much used as a dye.

**LACCIC ACID** (in Chymistry). An acid procured from gumlac, the component parts of which are supposed to be carbon, hydrogen, and oxygen.

**LACE** (in Commerce). A work composed of many threads of gold, silver, or silk interwoven, and worked by means of spindles on a pillow, according to the pattern designed.

**LACHRYMAL**. An appellation given to several parts of the eye, from their serving to secrete or convey away the tears, as the lachrymal ducts, the lachrymal gland, the lachrymalia puncta, &c.

**LACING** (among Mariners). The rope or line used to confine the heads of sails to their yards.

**LACK** (in Commerce). The number of 100,000 rupees in India.

**LACKER**, or **LACQUER**. A sort of varnish applied to tin, brass, or other metals. The basis of lacker is a solution



of the resinous substance of seed-lac in spirit of wine. In order to give a golden colour to the solution, two parts of gamboge are added to one of anotto. When silver leaf or tin is to be lackered a larger quantity of the colouring materials is requisite than when the lacker is intended to be laid on brass.

**LACTEAL VESSELS** (in Anatomy). Tender transparent vessels which convey the chyle from the mesentery to the thoracic duct.

**LACTIC ACID.** An acid procured from sour milk by precipitating it with lime-water and separating the lime with oxalic acid. It is supposed to consist of acetic acid and muriate of potash, with a small portion of iron and an animal matter.

**LADDER.** A wooden frame made with steps for mounting.

**LADDER, SCALING** (in Fortification). A particular kind of ladder made of ropes or flat staves, with which the men scale the walls of a place that is to be taken by surprise.

**LADY-BIRD.** A small red insect with black spots.

**LADY'S SLIPPER.** A plant which grows wild, the flower of which is something in the shape of a shoe.

**LADY'S SMOCK.** A plant that grows wild, the flower of which consists of four leaves succeeded by narrow pods, which, when ripe, roll up and cast forth their seeds.

**LAIR** (among Sportsmen). The place where deer harbour by day.

**LAIRD.** The name of a lord of a manor in the highlands of Scotland.

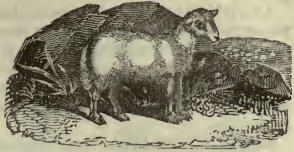
**LAITY.** The people, as distinguished from the clergy.

**LAKE** (in Geography). A collection of waters in an inland place of great extent and depth, as the Lake of Geneva, &c.

**LAKE** (in Painting). A fine crimson colour, between carmine and vermilion. It is formed by precipitation from the solution of the colouring matter with an earth or metallic oxide. Precipitates of different shades are obtained with alum, nitre, chalk, &c.

**LAMA** (in Theology), or the **GRAND LAMA OF THIBET.** The prince and high-priest of the country, who is supposed to be immortal, and on the dissolution of his mortal frame his soul enters into the body of a new born child. He is worshiped as a supernatural being by his subjects, and is never to be seen but in the secret recesses of his palace, where he sits cross-legged on a cushion.

**LAMB.** The young of sheep while under a year old.



**LAMINA.** A thin plate of any metal.

**LAMINÆ** (in Anatomy). Are the two thin plates or tables of the skull.

**LAMMAS DAY.** The first of August, formerly a day of thanksgiving.

**LAMP.** A light made of oil and a wick: also the vessel to receive the oil and the wick.

**LAMPBLACK.** A colour procured from the soot of a lamp mixed with gum water.

**LAMPERS.** A disease in the palate of a horse's mouth.

**LAMPREY.** A sort of fish which adheres firmly to rocks and other bodies by the mouth. It is in shape like an eel, and as slippery. Lampreys are esteemed as a delicacy, and are in season in the months of March, April, and May.

**LANCE.** An offensive weapon formerly used by knights in their tilts and tournaments.

**LANCERS** (in Military Affairs). A body of men in Poland armed with long lances and mounted on swift horses.

**LANCET** (in Surgery). An instrument used in bleeding, opening tumours, &c.

**LAND** (in Geography). One main division of the earth, as distinguished from water; in Law, land includes not only arable land, meadow, pasture, &c. but also messuages and houses, for in conveying the land the buildings pass with it.

**LAND FALL** (among Mariners). The first land discovered after a voyage.

**LAND FORCES** (in Military Affairs). Troops employed only on land.

**LANDGRAVE.** The governor of a district in Germany.

**LANDING.** Going on land out of a boat or vessel.

**LANDING** (in Architecture). The first part of a floor at the head of a flight of stairs.

**LANDLOCKED.** A sea term for a vessel when she is at anchor in a place not open to the sea.

**LANDLORD** (in Law). He of whom lands or tenements are held.

**LANDMAN.** One on board a ship who has never been before to sea.

**LANDMARK** (in Husbandry). A boundary set between the lands of different persons.

**LANDMARK** (among Mariners). Any mountain or other object which may serve to make the land distinguishable at sea.

**LANDSCAPE** (in Painting). A picture representing any part of a country, with the various objects of fields, trees, hedges, houses, &c.

**LAND TAX** (in Law). A tax imposed on lands and tenements, in lieu of the feudal services required of those who held of the king by knights service.

**LANGUAGE**. Human speech in general, or an assemblage of articulate sounds forming words and signs for the expression of the thoughts of the mind.

**LANGUAGE, HISTORY OF**. That all men at first spoke one language we know on the authority of Scripture, and that that language must have been the Hebrew, the Holy Language, as it is called by the Jews, in which God was pleased to reveal his word to man, is clearly deducible from Scripture. In giving the names of Adam and many of his posterity, the inspired penman expressly declares them to be of Hebrew origin, for of Adam he says that he was expressly so called from the Hebrew Adam, earth, because he was made out of the dust of the earth, and in a similar manner he explains the names of Cain, Abel, Abram, Isaac, Jacob, and others. When God thought proper to confound the tongues of men, he reserved the Hebrew tongue for his chosen people, who, in that tongue, were to keep and hand down his oracles to future ages.

Judging from the deviations which the earliest languages underwent, it does not appear that any new language was formed in the confusion of tongues at the tower of Babel, nor in fact that any other change took place than what was needful to answer the divine purpose of causing the dispersion of mankind. The Chaldeans or Babylonians being one of the first people formed after the flood, we find that their language, which has been handed down to us unchanged, differs the least of any from the Hebrew. The Syriac, which was spoken by the Canaanites, was in its primitive state so nearly allied to the Hebrew that Abraham understood their speech; and although the Syriac which is now extant, and which was spoken by the inhabitants of ancient Syria, underwent many changes by the intercourse of different people, yet it still retains many vestiges of its origin. In the time of Joseph, the

language of the Egyptians, which is still extant under the name of Coptic, was so different that the Israelites required an interpreter in order to be understood, but notwithstanding they retained in their letters and in many of their words marks of their affinity to the Hebrew. This great diversity in the language of the Egyptians, the descendants of Ham, within so short a period after the flood, is not surprising when we consider the peculiar character of this people for invention and device.

The Arabian is another language which from the antiquity of the people was probably formed at or very soon after the confusion of tongues. It is also very different from all the other tongues then existing, and surpassed them all in the number of its letters and the harmony and richness of its expression, but still it carries with it innumerable marks of its affinity to the Hebrew. The Æthiopian was in all probability a dialect of the Egyptian, at least in the names of its letters it is very similar to that language; but Ludolf observes that it bears a great affinity to the Hebrew and the Syriac, and a still greater to the Arabic, from which he supposes it to be derived. In fact, he maintains that competent knowledge of the Hebrew, or any other of the oriental languages, will enable a person to understand very much of the Ethiopic, there being several Hebrew roots and significations of Hebrew words in this language which are not to be found in any other.

As the Phœnicians, the descendants of the Canaanites, inhabited the maritime parts of the land of Canaan it is not surprising that their language should be supposed to have been nearly the same as the Hebrew. Some vestiges of this affinity are to be found in the proper names of the Carthaginians, their descendants, who spoke a dialect of the Phœnician called the Punic language; this latter language is also said to have had a tincture of the Chaldee and Syriac, which may be easily accounted for by the intercourse which these two trading nations held with all other people. A writer in modern times has also shown that the Maltese contains a number of Punic words, from which it is justly inferred that Malta was once in the possession of the Carthaginians.

The Persian, as it is now handed down to us, is confessedly posterior to the Arabic, to which it is nearly allied both in its primitive letters and whole construction, but it has been shown by writers that the Parthians or Persians were Scythians who

mingled with the Elemites or original inhabitants of Persia, and gave to the Persian language that Celtic tincture which brings it nearer in accordance with the northern language of Europe. In the language of India and Armenia there are strong marks of resemblance to the Persian; but as to

the Chinese it was probably one of the earliest tongues formed after the flood, as it bears few or no marks of affinity to any but the Hebrew.

In proof of what has been advanced on the oriental languages the following alphabets are given:—

HEBREW AND CHALDEE.	SYRIAC.	COPTIC.	ETHIOPIC.	ARABIC.	ARMENIAN.
Aleph	Olaf	Alpha	Alf	Elif	Ail
Beth	Beth	Bida or Bila	Bet	Be	Bien
Ghimel	Gomal	Gamma	Geml	Gain	Gim
Dhaaleth	Dolath	Dalda	Dant	Dal	Da
He	He	Ei	Haut	Dsal	Jetsch
Vau	Waw	Se	Waw	He	Sa
Zain	Zain	Zido	Zai	Waw	E
Cheth	Hbeth	Hida	Hharm	Gim	Jeth
Teth	Teth	Thila	Tail	Hha	Thue
Jod	Yud	Jauda	Jamen	Ta	Je
Chaph	Cof	Kappa	Caf	Ye	J
Lamed	Lomad	Lauda	Lawi	Caf	Luim
Mem	Mim	Mi	Mai	Lam	Chhe
Nun	Nun	Ni	Nahas	Mem	Dza
Samech	Samecth	Exi	Saat	Nun	Kien
Gnain	E	O	Ain	Sad	Hue
Phe	Pe	Pi	Af	Ain	Dsa
Tsadi	Sode	Ro	Tzadai	Fe	Ghat
Koph	Kof	Sima	Kof	Kaf	Tee
Resh	Rish	Tain	Rees	Ke	Mien
Schin	Shin	Upsilon	Saut	Sin	Hi
Thau	Tau	Phi	Tawi	Shin	Nue
		Chi		Te	Sche
		V			Ue
		Shei			Tsche
		Fei			Pe
		Kher			Dsche
		Hori			Rra
		Jauju			Se
		Shima			Wiev
		Dhei			Tuim
		Epsi			Re
					Tsue
					Hium
					Ppiur
					Khe
					Fe
					O.

As the abovementioned languages were spoken by the most ancient people, it is not surprising to find that they retained so many marks of their origin, but it is worthy of observation that those languages which sprung out of them underwent greater changes in their external form, so as to give them an air of originality which does not in reality belong to them. Thus it is that the Greek, from the inventive genius of the people, acquired a peculiar structure and a richness of expression which made it pass for a primitive tongue,

when in truth it is as much a derivative language as those which have since been formed. That it was indebted to the Egyptian for the names of its letters will be obvious to any one who should compare the Greek alphabet with the Coptic, given above; and antiquarians have made it clear that the roots of the Greek are to be traced either to the Egyptian, the Phœnician, or the Pelasgian, which was spoken by the Pelasgi, a Celtic people, who first took possession of Greece, or the Isles of Elisha as it is called in Scripture.

It has also been clearly shown that this Pelasgian had a common original with the Irish and Welsh, the primitive languages of Ireland and Britain, which were peopled by two kindred tribes, the descendants of Magog and Gomer, the sons of Japhet, who at a very early period proceeded from Scythia to Europe, and laid the foundation of all the modern European languages. Those people which inhabited the countries of Europe, except Greece, were afterwards called by the Greeks Keltæ or Gallatæ, and by the Romans Celti or Galli, Celts or Gauls.

The Latin was not formed until a colony of the Pelasgi or Greeks intruded themselves upon the Umbri or Gomerii, the aborigines of Italy, and so far prevailed over their language that they modelled the mixture of the two upon the plan of the Greek in the formation of cases, moods, and tenses, to which were afterwards added many words of Egyptian or Phœnician extraction, from the intercourse which took place between the Romans, Carthaginians, and Egyptians. As to the German, Danish, Swedish, and other northern languages, they all bear evident marks of their affinity not only to each other, but to that of the Latin, with which they had a common Celtic original. At the same time their ancestors before their second irruption into Europe under the name of Goths, Vandals, Huns, &c. had introduced such changes in the pronunciation and letters of their several languages as gave them an appearance of originality and peculiarity. Besides, it appears that the Hungarian, Slavonic, Dalmatian, and Russian assumed a Greek character by a mixture of the Greek and its several dialects.

The French retains many vestiges of its Celtic original, but in consequence of the Roman conquest the additions of the Latin prevailed, to all which the people gave it a peculiarity both in its pronunciation, orthography, and structure. The same remark applies to the Spanish, which also underwent some additional changes from

the incursions of the Moors, who ingrafted upon it many words of Arabian and Phœnician origin. The Italian is obviously a dialect of the Latin, modified by and assimilated to the French and Spanish, doubtless during the period when France, Spain, and Italy were governed by the emperors of the west.

The English, the last formed language in the world, is also remarkable for being compounded of a greater diversity of languages than any other. The ground work of the English is the Saxon, but there is not a language in Europe which has not contributed more or less to its formation. Many words were retained or borrowed by the Saxons from the language of the original natives, namely, the Welsh, which, as before observed, was one of the ancient Celtic dialects, of the same origin as the Saxon itself, but existed long prior to it. On the invasion and settlement of the Danes some changes as well as additions were made in the language, which underwent still greater changes at the Norman conquest, by the admission of Norman as well as French words, and the modelling of the language itself into a form more nearly allied to the French. From this source are derived a vast number of the Latin words and some few words of Greek origin, but the most numerous additions from these resources have since been made by the English themselves, who have also gradually given it a distinct form and pronunciation that entitle it as much to the name of original as any of the other European languages that are of more ancient date. To this diversity in the origin of the English, and its aptitude to naturalize every foreign term, it is indebted for a variety and richness of expression which is not equalled by any other language in the world.

The following list of the names of the ten first numbers among the European nations, taken from Parson's Remains of Japhet, will suffice to show the affinity of the languages abovementioned.

IRISH.	WELSH.	GREEK.	LATIN.	ITALIAN.	SPANISH.	FRENCH.
1. Aon	Un	ἕἷς	Unus	Uno	Uno	Un
2. Do	Duy	Δύω	Duo	Due	Dos	Deux
3. Tri	Tri	Τρεῖς	Tres	Tre	Tres	Trois
4. Ceathair	Pedwar	Τέσσαρες	Quatuor	Quattro	Quatro	Quatre
5. Cuiġ	Pymp	Πέντε	Quinque	Cinque	Cineo	Cinq
6. She	Chuech	ἕξ	Sex	Sei	Seys	Six
7. Sheagd	Saith	ἑπτὰ	Septem	Sette	Siete	Sept
8. Ocht	Uith	ὀκτώ	Octo	Otto	Ocho	Huit
9. Nyi	Naw	ἑννέα	Novem	Nove	Nueve	Neuf
10. Deic	Deg	δέκα	Decem	Dieci	Diez	Dix

GERMAN.	DUTCH.	SWEDISH.	DANISH.	SAXON.	ENGLISH.	POLISH.	RUSSIAN.	HUNGARIAN.
1. Ein	Een	En	Een	Æne, an	One	Jeden	Yedna	Egi
2. Zwei	Twee	Twa	Toe	Twa, twy	Two	Dwa	Twa	Ketto
3. Drei	Dru	Tre	Tre	Drie	Three	Trizi	Tree	Harum
4. Vier	Vier	Fyra	Fire	Feower	Four	Czterzti	Shatirz	Negy
5. Fiinf	Vyf	Faem	Fem	Fife	Five	Diecz	Pet	Et
6. Sechs	Zes	Sex	Sex	Six	Six	Szesez	Chest	Hat
7. Sieben	Zeven	Sju	Syv	Seofen	Seven	Sieden	Set	Het
8. Acht	Acht	Aotta	Otte	Eaht	Eight	Ism	Wossim	Kiolez
9. Neun	Neghen	Nio	Nie	Negen	Nine	Dziewree	Devit	Kilenez
10. Zehen	Tien	Tio	Tie	Tyn, tien	Ten	Dzeszicz	Disset	Tiz

**LANNER.** A sort of hawk, formerly much esteemed in falconry. It is next to the buzzard in size.

**LANTHORN FLY.** A remarkable insect of South America, that emits an extraordinary light from the hollow of its head.

**LANYARDS** (among Mariners). Short pieces of rope fastened to several parts of a ship.

**LAPIDARY** (in Commerce). One who polishes and engraves stones.

**LAPIS INFERNALIS.** A sort of caustic composition.

**LAPIS LAZULI** (in Painting). A stone of an azure or blue colour, of which the paint called ultramarine is made. It is a copper ore, very compact and hard, and is found in lumps of a beautiful blue colour, richly variegated with clouds of white and veins of shining gold colour.

**LAPSE** (in Law). An omission on the part of the patron to present to a benefice within six months after it is vacant, upon which default the ordinary has a right to collate to the said benefice.

**LAPSED LEGACY.** Fallen or lost by a lapse, as where the legatee dies before the testator, &c.

**LARBOARD.** A sea term for the left hand side of a ship, when looking towards the stem or head.

**LARCENY.** The felonious and fraudulent taking away the personal goods of another, which is petty larceny if the thing be of the value of twelve pence or under, and grand larceny if above that value.

**LARCH.** A lofty tree of the pine kind, bearing leaves like those of the pine, and a sort of mushroom for the fruit. The gum of this tree is called Venice turpentine. The leaves fall off in winter. The timber, which is remarkably durable, is used in building ships.

**LARDER.** The room where meat is kept and salted.

**LARES.** The domestic or household gods among the Romans, placed in some

private part of the house, which the family honoured as their protector.

**LARGE** (in Music). The greatest measure of musical quantities; one large containing two longs.

**LARGE.** A sea phrase for the wind when it crosses the line of a ship's course in a favourable direction.

**LARGESS** (in Husbandry). A gift to the labourers in the harvest season.

**LARGO** (in Music). A slow movement.

**LARK.** A well known singing bird, the most remarkable species of which is the skylark, that sings so beautifully as it is soaring in the air.

**LARKSPUR.** A plant cultivated in gardens, the flower of which consists of many dissimilar petals or leaves, some of which end in a tail or spur.

**LARVA.** The grub or caterpillar state of this insect, so called by Linnæus, but by others the eruca or caterpillar.

**LARUM.** A sort of clock that makes a noise or alarm at a certain hour.

**LARYNX** (in Anatomy). The top of the windpipe, below the root of the tongue.

**LAST.** A measure or weight, as a last of corn, &c. equal to ten quarters, and a last of cod fish, &c. equal to from twelve to twenty-four barrels.

**LATH** (in Carpentry). A long, thin, piece of wood, nailed to the rafters of a wall or roof to receive the plaster or covering. Laths are distinguished according to the wood of which they are made into hearts of oak, sap laths, and deal laths.

**LATHE** (in Turnery). The engine used in turning wood, &c.

**LATIN.** The language spoken by the ancient Romans, or the inhabitants of Latium, from which it derives its name.

**LATITAT.** A writ used in personal actions, where the party is to be arrested in any other county than Middlesex.

**LATITUDE** (in Geography). The distance of a place from the equator, which

is either northern or southern, according as the place is north or south. The latitude cannot exceed 90 degrees, the distance of the equator from the north or south pole.

**LATTEN.** Iron plates tinned over, of which tea canisters are made.

**LAVA.** The mineral substance which flows from Mount Etna, Vesuvius, and other volcanoes, is of a grayish colour, light, moderately hard, and brittle, and easily frangible: it generally attracts the magnetic needle, and is easily fusible into compact glass.

**LAUDANUM.** A soporific tincture, containing the finer and purer parts of opium, drawn in water and spirits of wine and then reduced to its due consistence.

**LAVENDER.** A plant with a shrubby stem, much branched with numerous hoary leaves. The flowers are produced in terminating spikes from the young shoots on long peduncles. The leaves, stalk, and flower yield a fragrant perfume, and from the latter are prepared an essential oil, a simple spirit, and a compound tincture.

**LAUNCE-FISH, or SAND LAUNCE.** A sea fish which buries itself on the recess of the tide a foot deep in the sand. It is generally used for baits.

**LAUNCH.** A particular kind of boat used in underunning the cables of different ships that are fastened across each other.

**LAUNCHING.** Putting a ship out of dock and conveying her into the water.

**LAUNDRESS.** One whose business it is to wash and get up linen.

**LAUREATE, or POET LAUREATE.** A title given to the king's poet.

**LAUREL.** An evergreen tree, having broad, thick, shining leaves. The flower consists of five petals or leaves, which expand in the form of a rose.

**LAURISTINUS.** The wild bay tree.

**LAW.** In its most extensive sense, the rule of conduct prescribed by the supreme power of a state. The laws of England comprehend the Common Law and the Statute Law, together with certain portions of the Civil Law and the Canon Law.

**LAWN.** A plain or level space covered with grass, in a pleasure ground.

**LAY (in Ecclesiastical Law).** An epithet for whatever belongs to the people at large, in distinction from those who are in holy orders.

**LAY (with Poets).** A kind of ancient poetry, consisting of short verses.

**LAY (in Husbandry).** Ground that lies fallow or untilled.

**LAY BROTHERS.** In the Romish church, such as performed the secular and servile offices in a convent.

**LAY CORPORATION.** A lay investiture of bishops, &c.

**LAYER (in Horticulture).** A young sprout bent down and covered with mould for raising fresh plants.

**LAYER (among Fishermen).** A channel or bed in a creek, where small oysters are thrown for breeding.

**LAY FEE.** Lands held in fee of a lay lord, as distinguished from those lands which belong to the church.

**LAY IMPROPRIATION.** The appropriating or employing the revenues of the church to the use of a layman.

**LAYMAN (in Ecclesiastical Law).** One who has not taken holy orders.

**LAYMAN (in Painting).** A statue of wood, whose joints are so made that it may be put into any posture.

**LAZARETTO.** An hospital for lazars or leprous persons.

**LAZULI.** See LAPIS.

**LAZULITE.** A mineral of the silicious order, of which lapis lazuli is the principal species. Its principal constituents are silica, aluminous, carbonate of lime, sulphate of lime, oxide of iron, &c.

**LEACH (among Miners).** A term signifying hard work.

**LEAD (in Mineralogy).** A bluish white metal, very soft and flexible, and easily beaten into thin plates by the hammer. In a strong heat it boils and emits flames, and if during that time it is exposed to the air, its oxidation proceeds very rapidly. It is very brittle at the time of congelation. Most of the acids attack lead, but it unites with most of the metals, particularly tin, which in union with lead forms the solder used by plumbers. The carbonate of lead, which is a powder, is better known by the name of white lead; the red oxide of lead is otherwise called red lead.

**LEAD, or SOUNDING LEAD.** A sea term for an instrument which is used to discover the depth of water at sea.

**LEAF (in Botany).** A membranaceous and sometimes succulent part of a plant, which arises from the stem. Leaves appear to assist the process of vegetation by communicating the air to the whole of the plant, which on that account is found to be exceedingly tender of its leaves, and to suffer much from any rough treatment which they may receive.

**LEAF.** A term applied to other objects resembling a leaf in shape or make, as the

leaf of a book; also leaf gold or silver, gold or silver beaten into plates of exceeding thinness.

**LEAGUE** (in Geography). A measure of length, containing a certain number of geographical paces, according to the usage or computation of different countries. A league at sea, where it is mostly used by us, is equal to three miles, or three thousand geometrical paces: the league in France contains three thousand five hundred paces. The Dutch or German league four geographical miles. Seventeen Spanish leagues are equal to a degree, or sixty-nine and a half statute miles.

**LEAGUE** (in Politics). A treaty of alliance between different states or parties.

**LEAK**. Any hole or chink in a vessel which admits the water, particularly applied to a ship at sea.

**LEAKAGE** (in Commerce). An allowance made to merchants for the leaking or running of vessels.

**LEAP** (in Commerce). A measure equal to half a bushel.

**LEAP YEAR** (in Chronology). Any year in which a day is added more than ordinary.

**LEASE** (in Law). A conveyance of lands, generally in consideration of rent or other annual recompense, for term of years, for life, or at will, provided it be for a shorter term than the lessor has in the premises.

**LEASH** (among Sportsmen). The number of three applied to partridges or other game which are killed.

**LEASING**. The same as gleanings, or picking up the ears of corn after the field is cleared.

**LEATHER**. The skin or hide of a beast tanned and dressed.

**LEATHER-DRESSER**. One who dresses leather.

**LEATHER-SELLER**. One who deals in leather. The company of leather-sellers was incorporated in 1382.

**LEAVEN**. A piece of sour dough put to ferment a mass of bread.

**LECTURER** (in Ecclesiastical Law). A minister who preaches in the afternoon, and is usually paid by the people.

**LEDGE** (in Geography). A long ridge of rocks near the surface of the sea.

**LEDGER**. The chief book used in merchants accounts, wherein every man's particular account is kept; and also all the goods bought and sold are distinctly placed each by themselves, as debtor on the left hand page, and creditor on the right hand.

**LEE**. A sea term for that part which the wind blows upon, or that is opposite to the wind, as the lee shore.

**LEECH**. A well known insect that lives in the water, and is commonly used in bleeding. The two principal species are the medicinal leech, which is employed to draw blood where the lancet is less safe; and the horse leech, which is larger, and applied to horses for the same purpose.

**LEECHES**. A sea term for the edges of a sail.

**LEEK**. A potherb having long cylindrical and coated roots. It has something of the flavour of the onion.

**LEES**. The dregs of wine.

**LEET**. A little court within a manor, having a criminal jurisdiction.

**LEG** (in Anatomy). A limb, and that part of the animal body which serves for walking.

**LEG** (among Artificers). Whatever serves for the support of a thing, as the leg of a stool, &c.

**LEG** (in Mathematics). The two sides of a triangle are called the legs.

**LEG**. A sea term for ropes put through the bolt ropes of the main and foresail.

**LEGACY** (in Law). A bequest or gift by testament of any personal effects; the person bequeathing is called the testator, and he to whom it is bequeathed the legatee.

**LEGATE**. A cardinal or bishop sent by the pope as his ambassador to sovereign princes.

**LEGEND**. A book used in the ancient Roman churches, containing the lessons that were to be read; also a chronicle or register of the lives of saints.

**LEGEND** (among Antiquarians). The inscription on the edge of a medal or coin.

**LEGERDEMAIN**, or **SLIGHT OF HAND**. Tricks which, from the dexterity of the performer, are made to deceive the observer.

**LEGION** (in the Roman army). A body of 6000 foot and 300 horse, or less.

**LEGUMEN**. All manner of pulse.

**LEGUMEN** (in Botany). That species of seed vessel vulgarly termed a pod, as the seed vessel of the pea, vetch, lupine, &c.

**LEMMA**. A proposition in mathematics, which serves to prepare the way for the demonstration of some theorem.

**LEMONADE**. A drink made of water, lemons, and sugar.

**LEMON TREE**. A variety of the citron tree, which grows in the south of Europe,

and yields the fruit that bears the same name.



**LEMUR.** A genus of quadrupeds somewhat resembling the monkey in the form of the feet, but widely different from that animal in its manners and temper.



**LENS.** A piece of glass or other transparent substance of the figure of a lentil, which either collects the rays of light into a point, in their passage through it, or disperses them according to their form and the laws of refraction. The convex lens converges the rays of light, and the concave disperses the rays. If only one side is convex and the other plane, it is called a plano-convex lens, such as A in the following figure; if convex on both sides, it is a double convex lens, as B. The concave lenses are also divided into the plano-concave, as C, concavo-concave, as D, and the meniscus, which is concave on one side and convex on the other, as E.



**LENT.** A time of fasting and abstinence for forty days before Easter.

**LENTILS.** A sort of pulse.

**LEO** (in Astronomy). A constellation, and one of the twelve signs of the zodiac, marked thus ♌.

**LEOPARD.** A beast of the feline kind that is all over covered with spots or streaks, and is supposed to be born of a panther and a lioness. It is chiefly found in Senegal. Its habits are those of the cat and the tiger, but it is not so fierce as the latter.



**LEPIDOPTERA.** An order of insects in the Linnæan system, which have their wings imbricated with scales, as the butterfly, moth, &c.

**LEPROSY** (in Medicine). A foul cutaneous disease, appearing in dry, white, thin, scurfy scabs.

**LEPUS** (in Astronomy). The Hare, a constellation in the southern hemisphere.

**LE ROY LE VEUT**, i. e. The king wills it. The form of words by which the king signifies his assent to the bills that have passed the two houses, after which they acquire the force of laws.

**LE ROY S'AVISERA**, i. e. The king will consider of it. The form of words by which he refuses his assent to any bills that are presented to him.

**LETHARGY.** A disease arising from cold, phlegmatic humours which oppress the brain, and cause an incessant drowsiness.

**LETHE.** A river in hell, which, according to the poets, caused all who drank of it to forget the past.

**LETTER** (in Grammar). A character in the alphabet, used to express the simple sounds of the voice, which in every language are collected into a series called the alphabet. Letters are composed of vowels and consonants, and form words.

**LETTER** (in Printing). The type or character which is used in composing.

**LETTER** (in Commerce). Any writing sent from one person to another.

**LETTER OF ADVICE.** A letter written by a merchant to his correspondent, ad-



vising or giving him notice of what bills he has drawn upon him.

**LETTER OF ATTORNEY** (in Law). A writing whereby a person constitutes another to do a lawful act in his stead, as to receive debts, &c.

**LETTER OF CREDIT** (among Merchants). A writing by one merchant to another, desiring him to credit the bearer with a certain sum of money.

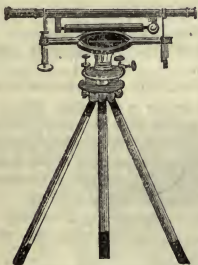
**LETTER OF MARQUE**. An extraordinary commission, granted under the king's seal, to merchants or others in the time of war, to make reprisals on the enemy.

**LETTUCE**. A garden herb much used as a salad.

**LEUCITE**. A stone of the garnet kind.

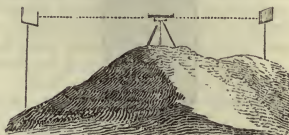
**LEVEE**. A company of the nobility, gentry, &c. who assemble to pay their respects to the king. It consists of gentlemen only, by which it is distinguished from a drawing room, where ladies as well as gentlemen attend.

**LEVEL**. An instrument used to make a line parallel to the horizon. The plumb level is that which shows the horizontal line by means of another line perpendicular to that described by a plummet or pendulum, which instrument consists of two legs or branches, joined together at right angles, whereof that which carries the thread and plummet is about a foot and a half long, the thread is hung towards the top of the branch. A telescope is placed on the horizontal branch of the instrument, having a hair placed horizontally across the focus of the object glass, which determines the point of the level. The telescope is fastened by a ball and socket.



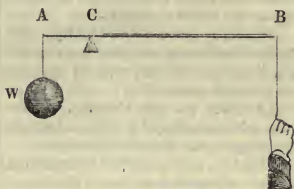
**LEVELLING**. The art of finding a line parallel to the horizon at one or more stations, in order to determine the height of one place in respect to another. The

subjoined figure shows the manner of finding the difference of the level of a place, where there is a level line and two sights level with each other, whereby the perpendicular distance between the surface of the ground and any point in the level line may be discovered. The art of levelling is particularly applied to the laying out grounds even, regulating descents, draining morasses, conducting water, &c.



**LEVELLING** (in Fortification). The reducing an uneven surface to that of a plane, so that the works may be of a corresponding height and figure.

**LEVER**. One of the six powers, which may consist of any instrument, as a straight bar of iron or wood, as A B, supported upon a fulcrum or prop, C, having a weight, W, at one end, a power, P, at the other. Then A C and B C are the arms of the lever. Of this kind are balances, scales, pincers, &c.



**LEVERET**. A young hare.

**LEVIGATION**. The mechanical process of grinding the parts of bodies to a fine paste, by rubbing the flat face of a stone called a muller upon another stone called the table or slab.

**LEVITE**. One of the tribe of Levi, or belonging to the priestly office.

**LEXICOGRAPHY**. The art of writing dictionaries.

**LEYDEN PHIAL**, or **LEYDEN JAR**. So called from M. Vankleigh, of Leyden, who first observed its properties. A glass jar, having the outside and the inside coated with tin foil, and a brass wire, the upper part of which terminates in a ball of the same metal, and the lower part in a chain that communicates with the inside. This jar admits of being charged so

as to produce the electrical shock and various other experiments illustrative of the power of electricity.



**LIBATION.** A sacrifice among the Greeks and Romans, which consisted in offering up some liquid to the gods.

**LIBEL (in Law).** An injurious reproach or accusation written or published against the government, a magistrate, or a private person.

**LIBEL (in the Civil Law).** The declaration or charge drawn up in writing, as is used in the ecclesiastical courts.

**LIBERAL ARTS.** Such as are fit for gentlemen and scholars.

**LIBERTY (in Law).** A privilege by which men enjoy some favour or benefit beyond the ordinary subject.

**LIBERTY OF CONSCIENCE.** The liberty of following any profession of religion which one pleases, without any control from government.

**LIBERTY (in the Manege).** A void space in the middle of a bitt of a bridle to give place to the tongue of a horse.

**LIBRA (in Astronomy).** A constellation, and one of the twelve signs of the zodiac, marked thus ( $\text{♎}$ ).

**LIBRARIAN.** One who has charge of a library.

**LIBRARY.** A large collection of books, also the place which contains them. The first library spoken of in history was that formed by Pisistratus, tyrant of Athens. Eumenes, king of Pergamus, also formed a library of 200,000 volumes; but the library of Alexandria, formed by Ptolemy Philadelphus, contained 700,000. Among the libraries of the moderns, that of the Bodleian, at Oxford, holds the first rank.

**LIBRATION (in Mechanics).** The swinging motion of a pendulum.

**LIBRATION OF THE MOON (in Astronomy).** An apparent irregularity in her motion.

**LIBRATION OF THE EARTH.** That motion of the earth by which it always

retains the parallelism of its axis in its orbit round the sun.

**LICENCE (in Law).** A power or authority given to a person to do some act that is not unlawful.

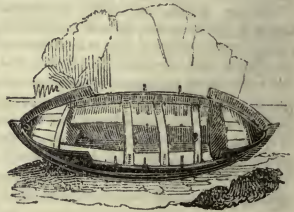
**LICHENS.** A kind of plant, otherwise called liverwort, which is of the natural order of the algae.

**LIEUTENANT (in Law).** One who supplies the place of another, as the lord lieutenant of Ireland, who is a viceroy, or the lord lieutenant of a county, &c.

**LIEUTENANT (in Military and Naval Affairs).** The officer next in rank and power to a captain; also one who commands in the absence of his superior officer, as the lieutenant-general, the officer next to the general, who in battle commands one of the wings, in a march a detachment, at a siege a quarter, when it is his day of duty; so likewise the lieutenant-general of the artillery, the lieutenant-colonel, &c. Lieutenants in ships of war are next in rank to the captain.

**LIFE ANNUITIES.** Annual payments depending on the life of another.

**LIFE BOAT.** A particular kind of boat used on the coast, to preserve persons from the wrecks of vessels.



**LIFE ESTATES.** Estates not of inheritance.

**LIFE GUARDS.** The body guard of the king.

**LIGAMENTS.** Substances in an animal body, between a cartilage and a membrane, harder than the latter and softer than the former, which serve to strengthen the juncture, particularly of the bones.

**LIGATURE (in Surgery).** The disposing of bandages for closing wounds.

**LIGATURE (among Printers).** Type consisting of two letters in one piece, as ff, &c.

**LIGHT (in Optics).** The sensation which arises from beholding any object, or the cause of that sensation. The nature and properties of light, and the changes which it undergoes in passing through bodies, form a principal part of the science of optics.

**LIGHT** (in Painting). That part of a piece which is illuminated.

**LIGHT** (in Architecture). Lights are the apertures in a house.

**LIGHT** (in Military Affairs). An epithet for soldiers lightly armed, as light horse, or light infantry.

**LIGHTER**. A large vessel for carrying goods.

**LIGHTERAGE**. Money paid for the carrying goods in a lighter.

**LIGHTERMAN**. One who conducts a lighter.

**LIGHTHOUSE**. A tower or lofty building on the seacoast, having a light in it, for the guidance of mariners at night. It is mostly erected upon a cape or promontory, or upon some rock in the sea, and is furnished with several lamps, for the purpose of giving a great light that may be seen at a distance, and prevent the mariners from running ashore or steering a wrong course.

**LIGHTNING**. A flash of light issuing from the clouds, that accompanies thunder. It is properly an electrical explosion, which sometimes bursts upon houses, trees, or other objects, and does much mischief.

**LIGNUM VITÆ**. A hard wood, the produce of a West Indian tree.

**LILAC**. A tree of the syringa tribe, which bears a pretty flower early in the spring. The flower is either white or crimson.

**LILY**. A plant with a bulbous and perennial root, the flower of which is six petalled and campanulated.

**LIMB**. A jointed or articulated part of an animal body.

**LIMB** (in Astronomy). The utmost edge or border of the body of the sun or moon.

**LIMB** (in Mathematics). The utmost edge or border of an instrument.

**LIME** (in Botany). A tree of the orange kind, that grows in warm climates.



**LIME**. A fruit like a lemon, the juice of which is a strong acid.

**LIME** (in Mineralogy). An earthy substance, which is found purest in lime stone, marble, and chalk, and is procured by burning in a white heat. It is of a white colour, and easily reduced to a powder. If water be poured on newly burnt lime, it swells and falls to a powder, in which state it is called slacked lime.

**LIME KILNS**. Furnaces in which lime stone is converted into lime by burning.

**LIME STONE**. The native carbonate of lime, which is generally rather blue, from the presence of iron.

**LIMIT** (in Mathematics). A determinate quantity, to which a variable one continually approaches.

**LIMITATION** (in Law). A certain time prescribed by statute, within which an action must be brought.

**LIMNING**. The art of painting in water colours.

**LINCH PIN**, or **LINS PIN**. An iron pin that keeps the wheel on the axle-tree.

**LINE** (in Geometry). A quantity extended in length only. Lines are either curves or right lines.

**LINE** (in Fortification). Whatever is drawn on the ground of the field, as a trench, or a row of gabions, &c.

**LINE** (in Military Affairs). Regular troops, in distinction from the militia, volunteers, &c.

**LINE**, or a **SHIP OF THE LINE** (in Naval Affairs). Is any vessel of war large enough to be drawn up in the line of battle.

**LINE** (in Geography). Another name for the equator, or equinoctial line.

**LINE OF BATTLE**. The disposition of an army for battle.

**LINEN**. A kind of cloth made of flax.

**LING**. A sort of cod fish.

**LINNÆAN SYSTEM**. A system of natural history, so called from Linnæus, the Swedish naturalist. It comprehends a scientific arrangement of all natural objects, as animals, plants, and minerals into three kingdoms, subdivided into classes, orders, genera, species, and varieties, with a description of their generic and specific characters.

**LINNET**. A small singing bird, of the finch kind.

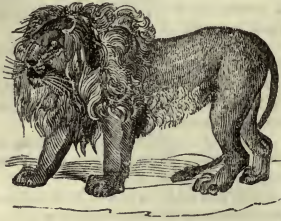
**LINSEED**. The seed of hemp or flax, from which an oil is extracted.

**LINT**. Linen scraped into a soft, woolly substance, fit for applying to wounds.

**LINTEL**. The upper part of a door or window frame.

**LION**. The fiercest and noblest of all

wild beasts, which is made to be the emblem of strength and valour, and is on that account the most frequently borne in coats of arms. It is a native of Africa and India, and being nearly allied to the cat tribe, is classed by Linnæus under the same genus.



**LIQUIDS** (in Chymistry). Fluids which are not elastic, nor diminish sensibly in bulk, in distinction from gases or elastic fluids.

**LIQUIDS** (in Grammar). The letters l, m, n, r, so called from their soft and melting sound.

**LIQUOR**. Any thing liquid that may be drank, particularly what is of a spirituous nature.

**LIQUORICE**. A shrub, the root of which is full of a sickly sweet juice.

**LIST**. A roll or catalogue of names.

**LIST, CIVIL** (in Law). The whole of the king's revenue.

**LIST** (among Mariners). An inclination to one side, applied to a ship.

**LIST** (among Clothiers). A border or edge of cloth.

**LIST, or LISTELL** (in Architecture). A small band or square moulding, serving to crown larger mouldings.

**LISTS**. A place enclosed with rails, within which tournaments or feats of arms were exhibited.

**LITANY**. A general supplication or prayer sung or said in churches, especially that in the Book of Common Prayer.

**LITERARY PROPERTY**. The right which authors have in their works.

**LITHARGE**. The scum or dross that arises in purifying silver with lead. It is an oxide of lead.

**LITHIC ACID**. An acid extracted from the urinary calculi.

**LITHOGRAPHIC**. An epithet for what pertains to engraving on stone, as lithographic impressions, those which are taken on paper from engravings on stone.

**LITHOGRAPHY**. The art of cutting

or engraving on stone, from which impressions are taken on paper.

**LITHOMARGE**. An earth of the clay kind, which is known by the name of fuller's earth and potter's clay.

**LITHOTOMY** (in Surgery). The operation of removing a calculus or stone from the bladder.

**LITMUS** (in Chymistry). A substance from which is formed a tincture that serves as a test of the presence of an acid or an alkali. All acids and salts change the natural violet of the litmus into red, and all alkalies restore it to its natural colour the violet.

**LITURGY**. A set form of prayer, or a formulary of public devotion, called by the Romanists the Mass, and in the English church the Common Prayer.

**LIVER** (in Anatomy). A very large viscus of a red colour, situated in the right hypochondrium, and divided into two lobes, which serves for the secretion of the bile.

**LIVERY** (in Domestic Economy). A dress of a certain form and colour, which gentlemen require their servants to wear by way of distinction.

**LIVERY, or LIVERY OF SEISIN** (in Law). Is a delivery of possession of lands, tenements, or other corporeal things.

**LIVERYMEN**. A certain number of persons chosen from among the freemen of each company in the city. Out of this body are chosen the common council, sheriff, and other superior officers of the city, and they alone have the privilege of voting at the election of members of parliament.

**LIVERY STABLES**. Public stables, where horses are let out to hire.

**LIVRE**. A money of account formerly used in France, equal to twenty sous, or ten pence sterling.

**LIXIVIUM**. A lye made of ashes.

**LIZARD**. An extensive tribe of animals, classed by Linnæus under the genus lacea, comprehending the crocodile, basilisk, chameleón, and salamander. The lizard, properly so called, is a little reptile of a green colour, and is frequently to be met with in gardens or under dunghills, &c.



**LLAMA** (in Natural History). An animal of the camel kind in Peru and Chili,

which has a bunch on the breast, long, soft hair, and a neighing voice.



LL. D. i. e. Legum Doctor, or Doctor of the Civil and Canon Laws.

**LOAD** (in Commerce). A certain quantity of hay or timber, about 2000 lbs. of hay, and of timber fifty feet.

**LOAD** (among Miners). A vein of ore, the leading vein of a mine.

**LOAD** (in Husbandry). A trench to drain fens.

**LOADING A GUN.** Charging a gun.

**LOADSMAN.** The pilot.

**LOADSTONE.** A sort of ore dug out of iron mines, on which the needle of the mariner's compass is touched, to give it a direction north or south. It is a peculiarly rich ore of iron, found in large masses in England, and most other places where there are mines of that metal. It is of a deep iron gray, and when fresh broken, it is often tinged with a brownish or reddish colour.

**LOAF.** A lump of bread of a certain weight, worked by the baker into a particular form, of quarterns or half quarterns; about eighty quarterns are made from a sack of flour.

**LOAF** (among Sugar-bakers). A lump of sugar of a conical form.

**LOAM,** or **LOME.** A particular kind of fat, unctuous, and tenacious earth, that is used much by gardeners in making compost.

**LOAN.** In general, any thing intrusted to another to be returned again; particularly money.

**LOAN** (in Political Economy). Sums of money borrowed from individuals or public bodies for the service of the state. This practice of borrowing money to defray the extraordinary expenses in time of war, which has been adopted in Great Britain during several of our late wars, has given rise to the national debt. All loans on the part of government are contracted for by

the Chancellor of the Exchequer, and afterwards confirmed by parliament. Loans used formerly to be granted by public bodies to our king in consideration of certain privileges that were secured to them, but now money is commonly advanced by individuals, in consideration of receiving interest.

**LOBBY** (in Architecture). A kind of passage, room, or gallery, as the lobby in a theatre.

**LOBBY** (in Naval Architecture). A small room near the bread room in a vessel of war, appropriated to the use of the surgeon.

**LOBE** (in Anatomy). A division in any body, as the lungs or liver.

**LOBE** (in Botany). A division in seeds, such as beans, peas, &c.

**LOBSTER.** A small crustaceous fish, having a cylindrical body, with a long tail and long antennæ. Lobsters are found on most of the rocky coasts of England.



**LOCAL** (in Law). Tied or joined to a place; thus real actions are local, because they must be brought in the country where the lands, &c. lie.

**LOCAL COLOURS** (in Painting). Such as are natural and proper for each particular object in a picture.

**LOCAL PROBLEM** (in Mathematics), That which admits of innumerable solutions.

**LOCK** (among Smiths). A piece of iron work, which is looked upon as a masterpiece in smithery, as much art and nicety is required in contriving and varying the springs, bolts, and different parts to the uses for which they are intended. Locks intended for outer doors are called stocklocks, those on chamber doors springlocks, besides which there are padlocks, trunklocks, &c. The principle on which all locks depend is the application of a lever, that is the key, to an interior bolt, by means of a communication from without; and the security of locks depends upon the impediments which may be interposed betwixt this lever and the bolt. These impediments have commonly been pro-

duced by means of the wards of the key so artfully contrived as to preclude the access of all other instruments besides the key to the bolt. As these contrivances have not, however, been always an effectual bar, Mr. Bramah has constructed a lock on such a principle that the office which in other locks is performed by the extreme point of the key is here assigned to a lever, which cannot approach the bolt until every part of the lock has undergone a change of position.

**LOCK, or WEIR** (in Inland Navigation). A name for all works of wood or stone which are made to confine or raise the water of a river or canal. In artificial navigations the lock consists of two gates, the upper one called the sluice gate, and the under one the flood gate.

**LOCK** (among Gunsmiths). That part of a musket by which fire is produced for the discharge of the piece.

**LOCKED JAW.** A spasmodic affection, which prevents the motion of the jaws.

**LOCKER** (among Mariners). A box or chest in which things are stowed.

**LOCKET.** A little lock of a gold chain; also a spring or catch to fasten a necklace.

**LOCK-UP-HOUSE.** A place where persons arrested for debt are immediately taken to by the sheriff's officers, before they are conducted to prison.

**LOCOMOTIVE FACULTY.** The power possessed by animals of changing their place, or moving from one place to another.

**LOCUM TENENS.** A deputy, or one acting in the place of another.

**LOCUS GEOMETRICUS.** A line by which a local or indeterminate problem is solved.

**LOCUST.** A voracious insect, like the grasshopper, which in some parts, particularly in Africa, fall like a cloud upon the country, and lay waste all before them. They are no less terrible dead than alive, for their putrified carcasses cause a pestilence where they happen to alight.



**LODE** (among Miners). See **LOAD**.

**LODEWORKS.** One of the works belonging to the tin mines in Cornwall.

**LODGE.** A cottage at a park gate.

**LODGEMENT** (in Fortification). A work raised by way of shelter for the besiegers; also a place of defence raised by the besiegers, when in an attack they have gained possession of a post.

**LOG** (in Husbandry). A piece of wood attached to a chain, for the confinement of cattle.

**LOG** (among Mariners). A flat piece of wood, with lead at one end and a line at the other, for measuring the rate of a ship's sailing.

**LOGARITHMS.** Numbers so contrived and adapted to other numbers, that the sums and differences of the former shall correspond to and show the products and quotients of the latter, or more properly a series of numbers in arithmetical progression answering to another series in geometrical progression, thus,

0, 1, 2, 3, 4, 5, &c. Indices or Logarithms  
1, 2, 4, 8, 16, 32, &c. Geomet. Progression.

Or,  
0, 1, 2, 3, 4, 5, &c. Indices or Logs.  
1, 3, 9, 27, 81, 243, &c. Geomet. Prog.

Or,  
0, 1, 2, 3, 4, &c. Indices or Log.  
1, 10, 100, 1000, 10,000, &c. Geom. Prog.

Where it is evident that the same numbers in arithmetical progression, which are the logarithms or indices, serve equally for any geometrical series, consequently there may be an endless variety of systems of logarithms to the same common numbers, by only changing the second term, 2, 3, 10, &c. of the geometrical series. If any two indices be added together their sum will be equal to the product of the two terms in geometrical progression with which those indices correspond, thus, 2 and 3 added together are equal to 5, and the numbers 4 and 8 corresponding with those indices being multiplied together are equal to 32, which is the number answering to the index 5. So if any index be subtracted from another, the difference will be the index of that number, which is equal to the quotient of the two terms to which those indices belong, thus the index  $6 - 4 = 2$ , then 64 divided by 16, the terms corresponding to these two indices leaves the quotient 4, which answers to the index 2. Logarithms being the exponents of ratios are on that account called indices, thus the logarithm 2 is the exponent or index of the several numbers in the geo-

metrical series over which it stands, as  $2^2$ , or the square of 2 equal to 4 in the first series,  $3^2$  or square of 3, that is 9, in the second series, and  $10^2$  or the square of 10, that is 100, in the third series; so likewise 3 is the index or exponent for the cube numbers 8, 27, 1000, &c. over which it stands.

**LOG-BOARD.** A table on which an account of the ship's way is marked.

**LOG-BOOK.** The book in which the account of the log is transcribed.

**LOGIC.** The art which teaches the right use of reason, and treats of the several operations of the mind which are employed in argumentation or reasoning.

**LOG LINE.** The line fastened to the log, which is divided into certain spaces fifty feet in length, by knots or pieces of knotted twine, unreeved between the strands of the line, which show, by means of a half-minute glass, how many of these spaces or knots are run out in half a minute, and as the distance of the knots bears the same proportion to a mile that half a minute does to an hour, whatever number of knots the ship runs in half a minute, the same number of miles she runs in an hour.

**LOGOGRAPHY.** A method of printing in which the types form whole words instead of letters. By this method the memory of the compositor is less burdened, and the business proceeds with more expedition and less liability to err. It is also said that the logographic method is not more expensive than the common method.

**LOGWOOD.** A sort of wood used by dyers, called also Campeche wood, because it was originally brought from Campechy, in New Spain. Logwood is very dense and firm in its texture, exceedingly heavy, so as to sink into water, of a deep red colour, and admits of a fine polish. It yields its colour both to spirituous and watery menstria, but alcohol extracts it more readily than water. Acids turn its dye to a yellow, alkalies deepen its colour, and give it a purple or violet hue.

**LOMENTACEÆ** (in Botany). The name of the thirty-third natural order in Linnaeus's Fragments, consisting of plants many of which furnish beautiful dyes, and the pericarpium of which is always a pod containing seeds that are carinaceous, or meally, like those of the bean, as the cassia, the wild senna, logwood, mimosa, or the sensitive plant, &c.

**LONDON PRIDE.** A plant bearing a small flower.

**LONG** (in Music). A note equal to two breves.

**LONG BOAT** (among Mariners). The strongest and longest boat belonging to a vessel of war.

**LONG BOW.** An ancient bow that was once much used.

**LONGIMETRY.** The measuring of lengths or distances, both accessible and inaccessible.

**LONGITUDE** (in Astronomy). An arc of the ecliptic intercepted between the beginning of Aries and the point of the ecliptic cut by the circle of longitude belonging to any star.

**LONGITUDE** (in Geography). The extent of the earth from east to west.

**LONGITUDE OF A PLACE.** An arc of the equator intercepted between some given point called the first meridian and the meridian passing through the proposed place. This may be either east or west, according as it is reckoned on the east or west side of the first meridian.

**LOOF.** A sea term for the after part of a ship's bow.

**LOOKINGGLASS.** A plain glass mirror, which being impervious to the light, reflects the images of things plac'd before it.

**LOOM** (among Weavers). A frame by which the process of weaving is performed.

**LOOM.** A sea term for a ship which when seen at distance appears big.

**LOOP** (in Gunnery). A small iron ring in the barrel of a gun.

**LOOP** (in the Iron Works). A part of a sow or block of cast iron, broken or melted off from the rest.

**LOOP.** A sea term for the noose in a rope.

**LOOPHOLES** (among Mariners). Holes in the coamings of the hatches of a ship for firing muskets through.

**LOOPHOLES** (in Fortification). Little holes in the walls of a castle or fortification, through which arrows were discharged.

**LORD** (in Law). Any peer of the realm; also a title of honour sometimes given to persons by virtue of their office, as the Lord Chancellor, the Lord Chief Justice, the Lord Mayor.

**LORD OF A MANOR.** A person that had a fee, and consequently the homage of the tenants within his manor, and also the privilege of holding a court baron. Lords of the manor still retain some of the old manorial rights.

**LORY.** A bird of the parrot kind.

**LOTE TREE.** A kind of tree which from its jagged leaves was called the nettle tree.

**LOTION.** The washing or cleansing of any medicine with water; also a wash for the skin.

**LOTTERY.** A game of chance in the nature of a bank, wherein are put tickets for sums of money or other things, called prizes, and others of no value, that are called blanks, these being all mixed together, the tickets are drawn at a venture, and each person has the value of the lot drawn to the number of his ticket. Lotteries were formerly employed by government as a means of increasing the revenue, but have since been abolished.

**LOVE APPLE.** The fruit of a tree in Spain, that is of a violet colour.

**LOUIS D'OR.** A French coin, first struck in the reign of Louis XIII. in 1640, equal in value to twenty shillings sterling. The modern Louis d'or is equal only to sixteen shillings and eight pence.

**LOUIS, ST., ORDER OF.** An order of knighthood instituted by Louis XIV. in 1693.

**LOUSE.** A disgusting insect, which lives by extracting animal juices; it infests man and brutes.

**LOUSY DISEASE.** A general corruption of humours, which breeds lice in every part of the body.

**LOZENGE (in Geometry).** A quadrilateral figure, having two angles acute and the two opposite ones obtuse.

**LOZENGE (in Pharmacy).** A medicine made to be held in the mouth, which was originally in the form of a lozenge.

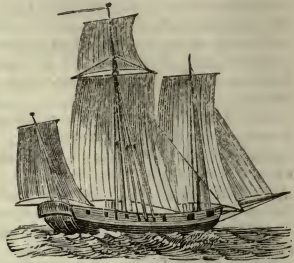
**LOZENGE (in Heraldry).** A figure which is used to contain the coats of arms of all maidens and widows.



**L. S.** An abbreviation for locus sigilli, the place of the seal.

**LUGGER.** A small vessel carrying either two or three masts, with a running bow-

sprit, upon which lugsails are set, and sometimes topsails adapted to them.



**LUMBAGO.** A rheumatic affection of the muscles about the loins.

**LUNACY.** A kind of madness, so called because supposed to be influenced by the moon.

**LUNAR.** Belonging to the moon, as a lunar eclipse, month, year, &c.

**LUNATICS.** Are properly such as have diseased imaginations, which deprive them of the use of their reasoning faculty, sometimes altogether and sometimes only on particular subjects.

**LUNATION,** otherwise called the SYNO-DICAL MONTH. A revolution of the moon, or the time between one new moon and another.

**LUNE (in Mathematics).** A geometrical figure in form of a crescent.

**LUNGS (in Anatomy).** A viscus in the animal body, composed of two lobes or divisions, which are spongy bodies, situated in the chest, and serving the purpose of respiration.

**LUPINE.** A sort of pulse, which bears a papilionaceous flower. There are several species of lupines cultivated in gardens, as the white lupine, the small blue lupine, and the great blue lupine, &c. which are all annuals except one species, called by distinction the perennial lupine.

**LUPUS.** The Wolf in Astronomy, a constellation in the southern hemisphere.

**LURIDÆ (in Botany).** A natural order of plants in the Linnæan system, which are poisonous, as the nightshade, digitalis, &c.

**LUSTRATION.** The ceremony of purification performed by the ancient Romans every five years; whence that space was called a lustrum.

**LUSTRE (in Mineralogy).** One character of mineral bodies, which in that respect are distinguished into splendid, shining, glistening, glimmering, and dull.



**LUTE.** A stringed instrument, containing at first only five rows of strings, to which were afterwards added six more. It was formerly much used.

**LUTE** (in Chymistry). A compound paste made of potter's clay, sand, and other materials, for the purpose of closing up the necks of retorts, receivers, &c. in different chymical experiments.

**LUTHERANISM.** The doctrines of Martin Luther, the German reformer, which form the creed of all the protestants in Germany who are not Calvinists.

**LYCOPODIUM**, or **CLUB MOSS.** A sort of moss, the seeds of which when ignited burn off like a flash of lightning. It is used in the London theatres.

**LYDIAN STONE.** A stone of a grayish black colour, which is found in Bohemia and other parts of Germany, and also in Scotland. When polished, it is used as a test stone for determining the purity of gold and silver. It was used for that purpose among the ancients, by whom it received this name, because it was found only in the Tmolus, a river of Lydia.

**LYE.** A composition of ashes and water for washing or scouring.

**LYMPH** (in Anatomy). A clear lymphic humour, secreted from the blood, which is carried by the lymphatic vessels into the thoracic duct, where it mixes with the chyle.

**LYMPHATICS.** The lymphatic vessels.

**LYNX.** A wild beast, of a tawny brown colour, with black spots, and very quick sighted, which in its habits resembles the wild cat.



**LYRA.** The lyre, a constellation in the northern hemisphere.

**LYRE.** A musical stringed instrument, much used by the ancients.

**LYRIC.** Pertaining to the harp, as lyric verse, poetry made for or set to the harp.

## M.

**M**, the twelfth letter of the alphabet, which as a numeral stands for mille, a thousand, and with a stroke over it, thus  $\bar{M}$ , it stood for 1,000,000. As an abbreviation **M. A.** stands for Master of Arts, **M. D.** Doctor of Medicine, **D. Mus.** Doctor of Music, **MS.** Manuscript, **MSS.** Manuscripts.

**MACADAMIZING.** A method of making roads, introduced by Mr. Mac Adam, which consists in breaking the stones so small that they may bind with the earth into a solid smooth mass.

**MACARONIC POEM.** A sort of burlesque poetry.

**MACAROON.** A sweetmeat made of almonds.

**MACCAW.** A kind of parrot.

**MACE** (in Botany). A sort of spice, the second coat of the kernel of the nutmeg, a thin membranaceous substance, of an oleaginous nature, a yellow colour, an extremely fragrant aromatic perfume, and a pleasant but acrid and oleaginous taste.

**MACE** (in State Etiquette). An ornamented staff, borne as an ensign of honour before a magistrate.

**MACERATION** (in Pharmacy). An infusion of ingredients in any liquid, in order to soften them.

**MACHINE.** An engine composed of several parts, put together by mechanical art and contrivance, for the purpose of raising bodies, assisting, regulating, or stopping their motions, &c. Simple machines comprehend the six mechanical powers. Compound machines are composed of the simple. Machines are likewise distinguished according to the purpose for which they are used into the architectural machine, electrical machine, hydraulic machine, &c.

**MACHINE INFERNAL.** A machine used in modern warfare, for the purpose of blowing up bridges, &c.

**MACKAREL.** A well known fish, that visits the shores of the ocean in the summer season in vast shoals.

**MACKEREL-GALE.** A strong breeze that is very favourable for mackerel fishing.

**MACULÆ** (in Astronomy). Dark spots appearing on the luminous surfaces of the sun and moon, and even some of the planets.

**MACULÆ** (in Medicine). Discolorations on the surface of the body.

**MADDER**. A substance used in dyeing, which is extracted from the root of a plant botanically distinguished by the name of rubia. The madder root grows in France and other countries of Europe, that of Zealand is the best of European growth, but that which comes from the Levant is still more esteemed.

**MADEIRA**. A rich wine made in the island of Madeira.

**MADRIGAL**. A short amorous poem.

**MAGAZINE** (in Commerce). A warehouse for all sorts of merchandise.

**MAGAZINE** (in Military Affairs). A storehouse for arms, &c.

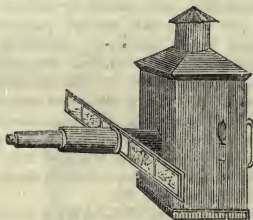
**MAGAZINE** (in Literature). A periodical work containing miscellaneous matter.

**MAGGOT**. The larva of flies, bees, &c.

**MAGI**. Astrologers and priests among the Persians and Asiatics.

**MAGIC**. The black art, or the pretended art of producing supernatural effects, derived from the Persian magi.

**MAGIC LANTERN**. An optical machine, by means of which are represented on an opposite wall in a dark room monstrous figures, magnified to any size at pleasure. This contrivance consists of a common lantern with a candle in it, as in the subjoined figure, to which is added a tube, and a lens that throws the light on the object, and another lens which magnifies the image on the wall. Then by contracting the tube, and bringing the glass nearer to the object, the image will be enlarged.



**MAGIC SQUARE** (in Arithmetic). Figures so disposed into parallel and equal

4	9	2
3	5	7
8	1	6

ranks as that the sums of each row, as well diagonally as laterally, shall be equal.

**MAGNA CHARTA**. Or the great charter of liberties first granted by King John in the seventeenth year of his reign, A. D. 1215. This was afterwards renewed, with some alterations, by his son and successor Henry III. and repeatedly confirmed both by this king and King Edward I. The Magna Charta which is the first statute given in our statute books, is the same as that granted by Henry III. in the ninth year of his reign.

**MAGNESIA**. A white, soft powder, and one of the primitive earths, having a metallic basis called magnesium. It is mostly extracted from talc, asbestos, boracite, and other stones.

**MAGNESIUM**. See **MANGANESE**.

**MAGNET**. See **LOADSTONE**.

**MAGNETIC** or **MAGNETICAL**. Pertaining to the magnet or loadstone, as magnetic attraction, magnetic needle, &c.

**MAGNETICAL MERIDIAN**. A great circle in the heavens, which intersects the horizon in the points to which the magnetical needle, when at rest, directs itself.

**MAGNETIC NEEDLE**. See **NEEDLE**.

**MAGNETISM**. The property of attracting and repelling iron, as the loadstone does, which was partially known to the ancients, but it does not appear that they knew any thing of its directive power, which has been so usefully employed by the moderns. The natural magnet has the power of communicating its properties to iron or steel, which then becomes a magnet itself, and is employed as such on most occasions.

**MAGNETISM, ANIMAL**. A pretended science, which professed to cure diseases, particularly nervous disorders, by communicating a sort of magnetical fluid or virtue from one body to another.

**MAGNIFYING** (in Philosophy). The making objects appear larger by the means of glasses than they do to the naked eye; convex glasses, which have this power, are called magnifying glasses, of which microscopes are made.

**MAGNITUDE**. The extension of any thing, whether it be in one direction, as a line; in two directions, as a surface; or in three directions, as a solid.

**MAGNOLIA**. A plant, of which the magnolia grandiflora, or the great magnolia, is the principal species. It is a native of Florida, and bears a beautiful milkwhite flower.

**MAGPIE**. A variegated bird of the crow kind.

**MAHOGANY** (in Botany). A beautiful wood, belonging to a tree that grows in America and the West Indies, known by the botanical name of the *swetenea mahogani*, or the mahogany tree.

**MAHOMETANS**. Believers in the doctrines and divine mission of the impostor Mahomet.

**MAIDEN-HAIR**. A plant, native of the south of France.

**MAJESTY**. A title given commonly to kings. It was first used in England in the reign of Henry VIII. instead of highness.

**MAIHEM**, or **MAYHEM**. A corporal wound or hurt, by which a man loses the use of any member. It originally applied to such corporal injuries as rendered a man less fit for war.

**MAIL**, or **MAIL BAG**. A leathern bag for the conveyance of letters.

**MAIL-COACH**. A coach of a particular construction for expeditions travelling, several of which are employed by government for the conveyance of letters to all parts of England. Mail coaches were first brought into use in 1784.

**MAINPRIZE** (in Law). Receiving a person into friendly custody who might otherwise be committed to prison, on security given for his forthcoming on a day appointed; a sort of bail.

**MAINTENANCE** (in Law). The wrongful upholding another in a cause.

**MAJOR** (in Military Affairs). An officer above a captain.

**MAJOR-GENERAL**. He who receives the general's order.

**MAJOR OF A BRIGADE**. The officer who receives the orders from the major-general.

**MAJOR OF A REGIMENT**. The officer next to the lieutenant-colonel.

**MAJOR, TOWN**. The third officer of a garrison.

**MAIZE**, or **INDIAN WHEAT**. A plant



which has altogether the appearance of a reed. In India the fruit or seed of this plant serves as food for the inhabitants.

**MALACHITE**. A mineral, the green carbonate of copper, found frequently crystallized in long slender needles. It consists of copper, carbonic acid, oxygen, and water.

**MALACOLITE**. A mineral found in the silver mines in Sweden, and also in Norway, consisting of silica, lime, magnesia, alumina, oxide of iron, &c.

**MALADMINISTRATION**. Bad management of public affairs, or a misdemeanour in public employments.

**MALAPROPOS**. Unseasonably, or at an improper time.

**MALATES**. Salts formed by the union of the malic acid with different bases. The malates of potash, soda, and ammonia are deliquescent.

**MALE**. One of the sexes of animals.

**MALE FLOWER**. A flower that bears stamens only, without pistils.

**MALE SCREW**. A screw that has the spiral thread on the outside of the cylinder.

**MALIC ACID**. An acid discovered by Scheele, about the year 1785. It is procured from the juices of many fruits, but particularly from that of apples. It is composed of oxygen, hydrogen, and carbon, and combines with alkalies, earths, and metallic oxides, so as to form malates.

**MALLEABILITY**. The property of metals of being capable of extension by beating with the hammer, and of being worked into different forms.

**MALLET**. A wooden hammer.



**MALLOW**. An herbaceous plant, most species of which grow wild in the field. The common mallow is an annual; but there are several species which are perennials and biennials.

**MALT**. Barley prepared by a particular process, so as to fit it for making into beer.

**MALT KILNS**. Are chambers full of holes in the floor, through which the heat ascends from the furnace below and dries the barley that is laid upon it.

**MAMALUKES**. The name of a dynasty that reigned in Egypt. They were originally Turkish or Circassian slaves that

were trained to arms, and being employed in the highest offices of the state, at length succeeded to the throne, but were subdued by sultan Selim. They are now a distinct body of soldiers.

**MAMMALIA.** The first class of animals in the Linnaean system, comprehending such as suckle their young by means of lactiferous teats, and are for the most part quadrupeds.

**MAN.** A sea term for a vessel, as a merchantman, that is, a vessel used in transporting merchants goods; a man of war, the largest kind of vessels used in war.

**MANDAMUS** (in Law). A writ granted by the king, so called from the first word, Mandamus, we command, commanding corporations and inferior courts, or other persons, to do some particular thing, as to admit any one to an office and the like.

**MANDARIN.** A Chinese magistrate.

**MANDATE.** A judicial command of the king.

**MANDIBLE.** The jaw of brutes; in Ornithology, the bill of birds.

**MANDRAKE.** A plant, whose divided root bears some resemblance to the legs and thighs of a man.

**MANDRIL, or MANDERIL.** A wooden pulley, part of a turner's lathe.

**MANEGE.** A riding school; also the art of horsemanship, or the management of both the horse and the rider.

**MANEQUIN** (in the Fine Arts). A little statue or model, usually made of wood or wax, and so contrived as to be put into posture at pleasure.

**MANGANESE.** A mineral which, when pure, is of a grayish white colour, and considerable brilliancy; it has neither taste nor smell, is of the hardness of iron, and very brittle, when reduced to powder it is attracted by the magnet. The ore of manganese is remarkable for its spontaneous inflammation with oil. It is much used by glass makers and potters, and is sometimes called soap of glass.

**MANGE.** A cutaneous disease incident to horses, dogs, and other domestic animals; it is attended with eruptions and loss of hair.

**MANGEL WURZEL.** A sort of beet root, that is in the shape of a carrot, but much larger; it is reckoned a good winter fodder for cows, and has been sometimes used in Germany as the food of man in times of scarcity, whence it derives its name, signifying literally root of scarcity.

**MANGER.** A trough out of which horses eat their corn or dry food.

**MANGER** (among Mariners). A place on the deck of a vessel for receiving the sea water.

**MANGROVE TREE.** A tree of Surinam, which, like the banium tree, sends forth numerous branches, that take root in the earth and form fresh trees, so as to make a wood out of one main stock.

**MANICHEES.** The followers of a Persian impostor in the third century, who taught that there were two independent principles or gods, one good and one evil.

**MANIFEST** (in Commerce). The draught of the cargo of a ship.

**MANIFESTO.** A public declaration made by a prince, explaining his reasons for going to war or adopting any hostile measure towards another country.

**MANILLE.** A large brass ring, like a bracelet, which was given by the Europeans in their traffic for slaves on the African coast.

**MANIS.** An Indian animal having no teeth, a body covered above with scales, and a round extensile tongue, with which it catches insects.



**MANNA.** The food sent from heaven for the support of the Israelites in the wilderness.

**MANNA** (in Botany). A sweet juice or gum which flows from many trees and plants in Syria, and also in Calabria, where it exudes from two species of the ash. Its smell is strong, its taste rather nauseously sweet, if exposed in hot coals it swells up, takes fire, and leaves a light coal, which affords a fixed alkali. It is dissolved by water, and affords by distillation water, acid, oil, and ammonia.

**MANOMETER, or MANOSCOPE.** An instrument for showing the alterations in the rarity and density of the air. It differs from the barometer, in as much as the latter only serves to measure the weight of the atmosphere, but the former the density of the air in which it is found.

**MANOR** (in Law). A noble sort of fee anciently granted by the king to some baron to dwell upon, and to exercise a jurisdiction greater or less within that circuit: this was in part let out to the lord's tenants, and part was reserved for the use

of his family, which latter was called terra dominicalis, or demesne. Some part was left uncultivated, which was called the lord's waste.

**MANSION** (in Law). The lord of the manor's chief dwelling house within his fee.

**MANSLAUGHTER** (in Law). The killing a man by misadventure without malice prepense.

**MANTELETS** (in Fortification). A kind of moveable parapets used in a siege.

**MANTIS**. A sort of insects, of which there are numerous species, distinguished by the difference and singularity of their shape. The chief species in Europe is the camel cricket, or praying mantis, so called because when sitting it holds up its two fore legs as if in the attitude of prayer. This is a rapacious insect, that attacks other insects with great fierceness.

**MANUAL**. Pertaining to the hand, as manual operation, an operation performed by the hand.

**MANUAL, SIGN** (in Law). The signing of a deed or writing under hand and seal.

**MANUAL** (in Literature). Any book small enough to be carried in the hand, which contains a compendium of science.

**MANUFACTURE**. Any commodity made by the hand, or any thing formed from the raw materials or natural productions of a country, as cloths from wool, and cotton or silk goods from the cotton and silk, &c.

**MANUFACTURER**. One who employs his capital in manufacturing goods.

**MANUMISSION** (in Law). The act of enfranchising or setting a slave or bondman free.

**MANURE**. Whatever serves to enrich the ground and fit it for husbandry purposes, as dung, loam, soap ashes, &c.

**MANUSCRIPT**, abbreviated MS. or in the plural MSS. A book or copy written with the hand, in opposition to a printed copy.

**MAP**. A plane figure representing the surface of the earth, or any part thereof, together with the several divisions of land and water, and the several countries, towns, and the like. It is called a universal map when it represents the whole surface of the earth, or the two hemispheres, and a particular map when it only represents particular regions or countries. A map is properly a representation of land, as distinguished from a chart, which only represents the sea or seacoast.

**MAPLE** (in Botany). A tree of which there are numerous species, classed by

Linnæus under the scientific name acer. The acer sacharinum, or sugar maple, in North America, is one of the most remarkable species, from which, by tapping the trees early in the spring, the Americans procure a vast quantity of sugar, a tree of an ordinary size yielding in a good season from twenty to thirty gallons of sap.

**MARBLE**. A sort of fossils composed chiefly of lime, moderately hard, fermenting with and soluble in acid menstrum, and calcining in a slight fire: as marbles admit of a fine polish, they are used much as ornaments in building. Marble is found in most of the mountainous parts of Europe. Derbyshire abounds in this article, as also the Isle of Anglesea, where there is a beautiful marble called Verde de Corsica, because it is found likewise in Corsica and in some parts of Italy.

**MARBLING**. The painting any thing with veins and clouds, so as to represent marble.

**MARCH** (in Chronology). The third month in the year, which was formerly the first month.

**MARCH** (in Military Affairs). The movement of a body of troops from one place to another; or the stepping of a soldier according to a certain form.

**MARCH** (in Music). Any piece adapted to a soldier's march.

**MARCHES**. Borders or confines, particularly the boundaries between England and Wales.

**MARIGOLD**. A plant cultivated in gardens, which bears a radiated, discous flower.

**MARINE**. A general name for the navy of a kingdom or state, comprehending also all that relates to naval affairs, as the building, rigging, arming, equipping, navigating, and employing ships, either for merchandise or war.

**MARINE**. Belonging to the sea, as marine stores, &c.; also the name of a body of soldiers raised for the sea service.

**MARINE REMAINS**. The shells of sea fishes and parts of crustaceans and other sea animals found in digging down great depths into the earth, particularly on the tops of mountains, which, as they prove that these places were once covered with water, are considered as vestiges and striking evidences of the general deluge.

**MARINER**. One accustomed to a sea life.

**MARINES**. Soldiers who serve on board a ship, and trained to fight either by sea or on land.

**MARITIME.** Bounded by the sea, as a maritime province or county, that is, one bounded by the sea; so likewise maritime countries, such as England or Holland.

**MARK, or MARC.** A weight used in several states of Europe; in France it is equal to eight ounces: also a money of account, equal to about 3s. 9d. sterling.

**MARKET.** A public place and time for selling provisions and other things: a market is held once or twice in the week, and is less than a fair.

**MARKET DAY.** The day on which the market is held.

**MARL.** A sort of fat earth, consisting of clay and the carbonate of lime, in which the latter prevails. Marles are particularly useful as manures in barren lands.

**MARLINS.** A sea term for lines of untwisted hemp well tarred, to keep the ends of the ropes, &c. from unravelling.

**MARMOTTE.** An animal betwixt a rabbit and a mouse, which abounds in the Alps.



**MARQUE.** See LETTERS OF MARQUE.

**MARQUETRY.** A curious kind of inlaid work, composed of several fine, hard pieces of wood, of various colours, fastened in thin slices on the ground, and sometimes enriched with silver, ivory, and other matters.

**MARQUIS.** A title of honour next to a duke, first given to those who governed the Marches of Wales, who were called Lords Marchers. The title of Marquis was first given in the reign of Richard II. The coronet of a marquis has flowers and pyramids with pearls on them intermixed.



**MARROW.** A fat and oleaginous substance in the bones of animals.

**MARS (in Astronomy).** One of the seven primary planets, distinguished by the red colour of his light, and usually marked by this character ♂. He performs his revolution in his orbit in 686 days 23 hours

30 minutes and 39 seconds, and his revolution on his axis in 24 hours 40 minutes.

**MARS (in the Heathen Mythology).** The son of Jupiter and Juno, and the god of war, whose common attributes are his helmet, spear, and sword.



**MARSHAL (in Law).** The chief officer of arms, as the Earl Marshal, a great officer of the crown, who takes cognizance of all matters of the law of arms; the name also of other officers, as the Knight Marshal or Marshal of the King's House, Marshal of the King's Bench, who has the custody of the King's Bench prison, and Marshal of the Exchequer, to whom the king's debtors are committed.

**MARSHAL, or FIELD MARSHAL (in Military Affairs).** The highest officer in the army.

**MARSHALLING (in Heraldry).** The disposing of the several coats of arms belonging to distinct families in one and the same escutcheon, together with their ornaments; one branch of the science of heraldry.

**MARSHALSEA.** A court originally instituted to hear and determine causes between the servants of the king's household and others within the verge of the court that is within twelve miles round Whitehall.

**MARTEN, or MARTLET.** A large kind of weasel, and one of the prettiest of the beasts of prey which is found in Great Britain. It has a small head, an agile body, and lively eyes. The fur of the marten is valuable.



**MARTEN.** A small species of the swal

low, that builds under the eaves of houses, but not in chimneys.

**MARTIAL LAW.** The law that has to do only with soldiers and seamen where the king's army is on foot. This law differs from the common law, in as much as it depends upon the pleasure of the king. In cases of riots and rebellions, Martial Law is sometimes proclaimed when the civil power is not strong enough to preserve the peace.

**MARTINGALE** (in the Manege). A thong of leather fastened at one end of the girths under the belly of the horse.

**MARTINGALE.** A sea term for a rope extending from the jib boom to the end of the bumkin.

**MASCULINE GENDER.** The gender of nouns that denote the male sex.

**MASH.** Bran scalded in hot water and given to a horse or cow, &c.

**MASHES OF A NET.** Holes formed by the strings of a net.

**MASHING.** The mixing the malt and hot water together in brewing.

**MASK.** A covering for the face.

**MASONRY.** The art of hewing, cutting, or squaring stones, and fitting them for the use of buildings; also of joining them together with mortar.

**MASONS, or WORKERS IN STONE.** Were incorporated about the year 1419.

**MASONS, FREE, or ACCEPTED MASONS.** A fraternity of great antiquity, so called probably because the first founders of that society were persons of that profession. They are bound by an oath of secrecy not to reveal any thing that passes within the society, and the members throughout the whole world are known to each other by certain secret signs.

**MASORITES.** The rabbies who, under Esdras the scribe, are supposed to have purged the Hebrew Bible of the errors that crept into it during the Babylonish captivity. They divided the canonical books into twenty-two, and these twenty-two books into chapters, and the chapters into verses.

**MASQUE** (in Architecture). Certain pieces of sculpture representing hideous forms, which serve to fill up vacant spaces.

**MASQUERADE.** An exhibition in which persons, having masks or vizards, meet together and represent different characters.

**MASS** (in Ecclesiastical Affairs). The ritual or service of the Romish church; when the prayers are simply rehearsed, without singing, it is called *Low Mass*; but when the prayers are sung by choris-

ters, and the service is performed by a deacon and subdeacon, it is called *High or Grand Mass*.

**MASSES** (in Painting). The parts of a picture containing great lights and shadows.

**MASSICOT.** A yellow oxide of lead.

**MASS-PRIEST.** The name for priests who are kept in chantries or at particular altars, to say so many masses for the souls of the deceased.

**MAST.** The upright beam or post on the deck of a vessel, to which the yards, sails, &c. are fixed. The mainmast is the largest mast in the ship; the foremast is the next in size, standing near the stem of the ship; the mizenmast, the smallest of the three, stands between the mainmast and the stern.

**MASTER** (in Law). The name of several officers who preside in their several departments, as Master of the Assay, Master of the Ceremonies, Master of the King's Household, &c.

**MASTER OF THE FACULTIES.** An officer under the Archbishop of Canterbury, who grants licenses and dispensations.

**MASTER OF THE HORSE.** A great officer of the crown, who orders all matters relating to the king's stables.

**MASTER OF THE ORDNANCE.** A great officer who has charge of all the king's ordnance and stores.

**MASTER OF THE ROLLS.** The chief assistant of the lord chancellor and lord keeper. He has the keeping of all the rolls and grants, &c.

**MASTER OF A SHIP.** An officer in a king's ship who inspects the provisions, stores, &c.

**MASTER AT ARMS.** In a king's ship, he who has charge of the small arms, and exercises the petty officers, &c.

**MASTER OF ARTS.** The second degree taken up at Cambridge and Oxford, to which candidates are not admitted until they are passed seven years standing. In the foreign and Scotch universities this is the first degree.

**MASTERS IN CHANCERY.** Assistants to the Lord Chancellor, of which there are twelve ordinary masters, who sit in court every day during term, taking affidavits and acknowledgments of deeds, &c. To them are referred all interlocutory orders and computing damages, &c. There are also Masters Extraordinary appointed to act in every county beyond ten miles distant from London.

**MASTICATORY.** A medicine that requires to be chewed, to promote the saliva.

**MASTICK**, or **MASTIC**. A resinous substance in the form of tears, of a very pale yellow colour, and farinaceous appearance, having little smell and a bitter astringent taste. It exudes mostly from a tree of the turpentine kind, called in botany *pistacia lentiscus*, which grows in Turkey.

**MASTICOT** (in Painting). A yellow colour, prepared from tin.

**MASTIFF**. A kind of dog with pendulous lips and a robust body.



**MATCH** (in Gunnery). A rope slightly twisted and prepared with inflammable ingredients, which will burn for a length of time without going out.

**MATCHLOCK**. A kind of harquebuss, which was fired with a match.

**MATE**. An assistant officer on board a vessel.

**MATER**. See **ALMA MATER**.

**MATERIALIST**. One who maintains that the soul is material.

**MATERIA MEDICA**. All that is used in the art of medicine for the prevention or cure of diseases, whether prepared from vegetables, minerals, or animals.

**MATHEMATICS**. The science which teaches or treats of whatever is capable of being numbered or measured, and is divided into arithmetic, or that branch which has numbers for its object, and geometry, which treats of magnitude. It is also distinguished into Pure Mathematics, which consider quantities abstractedly, and without any relation to matter, and Mixed Mathematics, which treat of the properties of quantity as applied to material or sensible objects, and interwoven with physical considerations, as astronomy, geography, navigation, mechanics, surveying, architecture, &c.

The following list of the writers who have distinguished themselves in the different branches of the mathematical science will furnish the best historical view of mathematics in general.

B. C.

722 Confucius, the Chinese philosopher.

600 Thales, a Greek astronomer.

Anaximander, an inventor of globes.

500 Cleostratus, an astronomer.

Anaxagoras, a philosopher.

Anaximenes, a diallist.

Pythagoras, an astronomer and geometer.

400 Plato, a mathematician.

Euctemon, an astronomer.

Meton, the inventor of the Metonic cycle.

Hippocrates, a mathematician.

Oenopides, a mathematician.

Zenodorus, a mathematician.

300 Aristotle, a philosopher.

Calippus, an astronomer, and inventor of the Calyppic period.

Dinocrates, an architect.

Theophrastus, a philosopher.

Xenocrates, a philosopher.

Eudoxus, an astronomer and mathematician.

Pytheas, an astronomer.

Archytas, a philosopher.

Aristæus, a mathematician.

Denostratus, a mathematician.

Menechmus, a mathematician.

200 Apollonius, a mathematician, author of the Conic Sections.

Archimedes, a mathematician, and inventor of machines.

Aristarchus, an astronomer.

Eratosthenes, a mathematician.

Euclid, a mathematician, author of the Elements.

Aratus, an astronomer and poet.

Aristillus, an astronomer.

Nicomedes, a mathematician, the inventor of the conchoid.

100 Hipparchus, an astronomer, numbered the stars.

Ctesibius invented water pumps.

Hero invented the clepsydra and a fountain.

A. D.

Cleomedes, a Roman astronomer.

Geminus, an astronomer of Rhodes.

Manilius, astronomer and poet.

Manilius, an astronomer.

Vitruvius, an architect.

Julius Cæsar, the reformer of the calendar.

Sosigenes, an Egyptian astronomer.

Menelaus, a writer on spherical trigonometry.

Possidonius, a mathematician.

Theodosius, a writer on spheres.

Jamblichus, a Syrian philosopher.

100 Nicomachus, a Greek mathematician.



- A. D.
- 100 Sextus Frontinus, an engineer.  
Ptolemy, an Egyptian astronomer and geographer, author of the *Almagist*.  
Hypsicles, a Greek mathematician.
- 200 Diophantus, a Greek algebraist.
- 300 Jamblichus, a Syrian philosopher.  
Pappus, a Greek commentator on Apollonius, &c.  
Theon, a Greek commentator on Ptolemy, &c.
- 400 Hypatia, daughter of Theon, a commentator on Diophantus.  
Proclus, a Greek commentator on Euclid.  
Diocles, a Greek geometrician, discoverer of the cissoid.  
Serenus, a Greek geometrician.
- 500 Marinus, a geometrician of Naples.  
Arithemius, an architect.  
Eutocius, a Greek geometrician.  
Isidorus, an architect.
- 600 The Venerable Bede, an English monk and philosopher.
- 700 Almansor the Victorious, an astronomer.  
Hero the Younger, a Greek geometrician.
- 800 Al Maimon the Caliph, an astronomer.  
Al Raschid, a Persian astronomer.  
Alfragan, an Arabian astronomer.  
Albategni, an Arabian astronomer.
- 900 Pope Silvester II. a mathematician.
- 1000 Ibn Ionis, an Arabian astronomer.  
Geber Ben Alpha, an Arabian commentator on Ptolemy's *Almagest*.
- 1100 Alhazen, an Arabian optician and astronomer.
- 1200 Leonard de Pisa, an Italian, and the first European algebraist.  
Nassir Eddin, a Persian astronomer.  
Alphonsus, king of Castile, an astronomer, and author of the *Alphonsine tables*.  
John Halifax, or Sacrobosco, an English mathematician.  
Jordanus Nemorarius, an arithmetician.  
Roger Bacon, an English philosopher.  
Campanus, an astronomer.  
Vitellio, an optician.
- 1300 Albano, an Italian mathematician.  
Ascoli, an Italian mathematician.  
John of Saxony, an astronomer.
- 1400 Bianchini, an Italian astronomer.  
Moschopulus, a modern Greek arithmetician.  
Purbach, an astronomer.  
Regiomontanus, or Muller, an astronomer of Vienna.

- A. D.
- 1400 Cardinal Cusa, an astronomer.  
Henry, son of John king of Portugal, the inventor of charts.  
Ulug Beg, a Persian astronomer.  
Lucas de Burgo, or Paccioli, a German algebraist.  
Bernard, an Italian astronomer.  
Dominic Novera, an Italian astronomer.
- 1500 Copernicus, a German astronomer, and the reviver of the solar system.  
Peter Apian, or Appian, a German astronomer.  
Cardan, an Italian algebraist.  
Commandine, an Italian commentator on Euclid and other ancient mathematicians.  
Ferreus, an Italian mathematician.  
Maurolycus, an Italian mathematician.  
Nonius, a Portuguese mathematician.  
Sturmius, a German arithmetician.  
Tartaglia, an Italian algebraist.  
Vieta, a French algebraist.  
Ferrari, an Italian algebraist.  
Stevinus, a Flemish mathematician.  
Mercator, a German geographer.  
Ramus, a French mathematician.  
Recorde, an English algebraist.  
Stifelius, a German algebraist.  
Ubaldo Guido, an Italian mathematician.  
Tycho Brahe, a Danish astronomer.  
Lord Bacon, an English philosopher.  
Galileo, an Italian philosopher.  
Bombelli, an Italian algebraist.  
Castelli, an Italian mathematician.  
Clavius, a German geometrician.  
Digges, an English philosopher.
- 1600 Briggs, an English arithmetician, the inventor of logarithms.  
Des Cartes, a French geometrician and algebraist, discovered the equation of curve lines.  
Kepler, a German astronomer, explained the laws of celestial motion.  
Napier, a Scotch arithmetician, improved the system of logarithms.  
Torricelli, an Italian philosopher and discoverer of the barometer.  
Bayer, a German astronomer.  
Gassendi, a French astronomer.  
Longomontanus, a Danish mathematician.  
Harriot, an English algebraist.  
Horrox, an English astronomer.  
Kircher, a German philosopher.  
Oughtred, an English geometrician and arithmetician.

A. D.

- 1600 Porta Baptista, the inventor of the camera obscura.  
 Cavalerius, a Milanese algebraist.  
 Brouncker, an Irish mathematician.  
 Fermat, a French arithmetician, wrote on the theory of numbers.  
 Pascal, a French philosopher, introduced the doctrine of chances.  
 Wallis, an English mathematician, first treated on the arithmetic of infinite quantities.  
 Bulialdus, a French astronomer.  
 Deschales, a French geometrician.  
 Girard, a French algebraist.  
 J. and D. Gregory, a Scotch family of mathematicians, the first of whom invented a telescope, &c. the second edited Euclid.  
 Hevelius, a Prussian astronomer.  
 Horrebow, a Danish astronomer.  
 Mersenne, a French geometrician.  
 Riccioli, an Italian astronomer, geometrician, and chronologist.  
 Roberval, a French mathematician.  
 Tacquet, a French mathematician.  
 Seth Ward, an English geometrician and arithmetician.  
 John de Witt, a Dutch mathematician.  
 James Bernoulli, a Swiss mathematician.  
 Barrow, an English mathematician.  
 Hooke, an English philosopher, made many discoveries in mechanics.  
 Huygens, a geometrician, diallist, and horologist, discovered the evolute of curves.  
 Leibnitz, a German geometrician and arithmetician, wrote on the differential calculus.  
 L'Hopital, a French mathematician.  
 Flamstead, an English astronomer.  
 Oldenburgh, an English mathematician and astronomer.  
 Boyle, an English philosopher.  
 Ozanam, a French mathematician.  
 Pell, an English algebraist.  
 Schooten, a Dutch mathematician.  
 Wren, an English architect.
- 1700 Newton, author of a new system of philosophy.  
 John Bernoulli, a Swiss mathematician.  
 Bradley, an English astronomer, discovered the aberration of the stars.  
 Cotes, an English geometrician.  
 Taylor, an English arithmetician and optician.  
 Cassini, D. and J., French astronomers.

A. D.

- 1700 Gravesande, a Dutch mathematician.  
 Keill, a Scotch astronomer.  
 La Hire, a French geometrician and astronomer.  
 Saunderson, an English mathematician.  
 Saurin, a French mathematician.  
 Wolfius, a German mathematician.  
 Clairaut, a French mathematician.  
 Maclaurin, a Scotch algebraist.  
 De Moivre, a French arithmetician.  
 Simpson, an English mathematician.  
 Bellidor, a French engineer.  
 Bernoulli, N. and D., Swiss philosophers.  
 La Caille, a French astronomer.  
 Collins, an English mathematician.  
 Dollond, an optician.  
 Maupertius, a French astronomer and geometrician.  
 Meyer, a German astronomer, and author of some tables.  
 Robins, an English mathematician and engineer.  
 Simson, a Scotch geometrician, translator and editor of Euclid's Elements.  
 D'Alembert, a French mathematician.  
 Euler, a German geometrician and algebraist.  
 Landen, an English algebraist, author of the Residual Analysis.  
 Lalande, a French astronomer.  
 Maskelyne, an English astronomer.  
 Waring, an English arithmetician.  
 Bailly, the French historian of astronomy.  
 Berkeley, an English philosopher.  
 Boscovitch, an Italian mathematician and philosopher.  
 Emerson, an English arithmetician and algebraist.  
 Montucla, a French mathematician, and the historian of mathematics.  
 Horsley, an English mathematician.
- MATINS. The first part of the daily service, particularly in the Romish church.
- MATRASS (in Chymistry). A long straight-necked chymical glass, made for digestion or distillation.
- MATRICE. A mould, or whatever gives form to any thing, as in Printing, the mould or form in which the type or letter is cast.
- MATRICE (in Coining). The piece of steel on which are engraved the figures, arms, &c. with which the coin is to be stamped.
- MATRICES (among Dyers). The first

simple colours, as black, white, blue, red, and sallow or root colour.

**MATRICULATION.** The admitting of any person to be a member of an English university.

**MATRIX.** The bed or mould of earth, &c. in which any mineral substance is found.

**MATRON.** An elderly respectable female who is employed as a nurse in hospitals.

**MATRON (in Law).** A married woman of experience, who is in certain cases empanelled upon juries.

**MATT.** Rope yarn, junk, &c. beaten flat and interwoven to save the yards, &c. from galling.

**MATTER.** That which is the object of our senses, and appears under the diverse forms of solids, fluids, and gases.

**MAUNDY THURSDAY.** The Thursday before Good Friday, in which the king is accustomed to give alms to the poor.

**MAUSOLEUM.** A stately sepulchre built by Artemisia, queen of Caria, for her husband Mausolus; also any pompous sepulchral monument.

**MAXIMUM (in Mathematics).** The greatest quantity attainable in any case.

**MAY.** The fifth month in the year.

**MEAD.** An agreeable drink, made of honey and water boiled and fermented.

**MEADOW.** Ground covered with grass, which is commonly left for hay.

**MEADOW SWEET.** A herb with crumpled leaves, something like those of the elm, growing in meadows. Its flower expands in the form of a rose.

**MEAL.** The edible part of corn, particularly of barley.

**MEAN (in Mathematics).** The middle between two extremes, as a mean motion, mean distance, arithmetical mean, geometrical mean, &c.

**MEAN ARITHMETICAL.** Half the sum of the extremes.

**MEAN GEOMETRICAL, or A MEAN PROPORTIONAL.** The square root of the product of the two extremes.

**MEAN HARMONICAL.** Double a fourth proportional to the sum of the extremes.

**MEAN TIME, or EQUAL TIME.** That which is measured by an equable motion, as a clock.

**MEASLES.** A disorder incident to children, consisting of a fever, attended with inflammation, cough, and difficulty of breathing.

**MEASURE.** Any given quantity by

which the quantity, length, breadth, thickness, and capacity of other things may be estimated.

**MEASURE (in Geometry).** Any certain quantity assumed as one, or unity, to which the ratio of other similar quantities is expressed, thus the measure of a line is the extension of a right line at pleasure, which is to be considered as unity, as an inch, a foot, or a yard.

**MEASURE (in Arithmetic).** A certain number or quantity, which being repeated a certain number of times is equal to another that is bigger, to which it has relation, as 6 is the measure of 36.

**MEASURE (in Music).** That note, as the semibreve, by which all the other notes are measured or adjusted to its value.

**MEASURE (in Poetry).** A certain number of syllables metrically measured.

**MEASURE (in Commerce).** Determinate quantities, by which all things that are bought and sold are measured as to their quantity, and estimated as to their rate: these are various in different countries.

**MECHANICAL.** Pertaining to mechanics.

**MECHANICAL AFFECTIONS (among Philosophers).** Such properties of matter or body as arise from its figure, bulk or motion.

**MECHANICAL PHILOSOPHY.** That which explains the phenomena or appearances of nature from mechanical principles, viz. from the motion, rest, size, figure, &c. of the small particles of matter. This is the same as the corpuscular philosophy.

**MECHANICAL POWERS.** The six simple machines to which all others, how complex soever, may be reduced, and of the assemblage whereof they are all compounded; these are the simple lever, the wheel and axis, the pulley, the inclined plane, the wedge, and the screw. These six might be reduced to two, for the pulley and wheel are only assemblages of levers, and the wedge and screw are inclined planes.

**MECHANICAL SOLUTION OF A PROBLEM (with Mathematicians).** Is a construction or proof not done in a strictly geometrical manner, but by the help of instruments.

**MECHANICS.** The science of motion, or that branch of mixed mathematics which treats of the effects of powers or moving forces, and applies them to machines and engines. Newton divides this science into practical and rational; the former of which relates to the mechanical

powers, namely, the lever, balance, wheel and axis, pulley, wedge, screw, inclined plane, &c. (see MECHANICAL POWERS); and the latter, that is, rational mechanics, relates to the theory of motion, showing when the forces and powers are given, how to determine the motion that will result from them; and conversely, when the circumstances of the motion are given, how to trace the forces or powers from which they arise.

As to the practical part of mechanics, this was doubtless one of the first branches of knowledge which necessity would lead men to acquire, it being impossible to pursue any of the mechanic arts successfully, without the aid of mechanical powers in raising weights or exerting forces. That all the mechanical powers were well known to the ancients is certain from the number and perfection of the machines which they had in use. The theoretical part of mechanics appears, however, not to have engaged their attention before the time of Archimedes, who particularly applied himself to this subject; and, in his book on *Equiponderants*, has given us the theory of the lever, the inclined plane, the pulley, and the screw. From his time to the sixteenth century, the theory of the mechanical science remained, with little or no addition or change. Stevinus, a Flemish mathematician, revived the subject by treating on the laws of equilibrium, of a body placed on an inclined plane, &c.; and Galileo afterwards, in his treatise on statics, extended his researches on the theory of the inclined plane, the screw, and all the mechanical powers, but more particularly on the theory of accelerated motion. Torricelli, a pupil of Galileo, added several propositions concerning projectiles; Huygens treated of the motion of bodies along given curves; and, in 1661, Huygens, Wallis, and Sir Christopher Wren all discovered the true laws of percussion, without any previous communication with each other. Henceforth the study of mechanics, like every other branch of the mathematical science, was illustrated and enlarged by different writers of great name: as by Newton, in his *Principia*; Leibnitz, in his *Resistentia Solidorum*; Deschales, in his *Treatise on Motion*; Parent, in his *Elements of Mechanics and Physics*; Oughtred, in his *Mechanical Institutions*; Keil, in his *Introduction to True Philosophy*; De la Hire, in his *Méchanique*; Ditton, in his *Laws of Motion*; Gravesande, in his *Physics*; Euler, in his *Tractatus de Motu*; Muschenbrock, in his

*Physics*; Bossu, in his *Méchaniques*; Lagrange, in his *Méchanique Analytique*; Atwood, in his *Treatise on Motion*; Gregory, in his *Mechanics, Theory, and Practice*, &c.

**MEDAL.** An ancient coin, or a piece of metal in the form of a coin, stamped to preserve the memory of some illustrious person, or of some distinguished event.

**MEDALLION.** A very large medal, supposed to be anciently struck by the emperors.

**MEDICINE.** The art of preserving health, curing diseases, and alleviating maladies. It is an art that assists nature in the preservation of health by the use of proper remedies.

**MEDIETAS LINGUÆ** (in Law). A jury consisting of half natives and half foreigners, which is impanelled in cases where the party to be tried is a foreigner.

**MEDIMNO.** A corn measure in the Levant, equal to nearly four English quarters.

**MEDIUM** (in Physics). That space or region through which a body in motion passes to any point; thus, ether is supposed to be the medium through which the heavenly bodies move; air is the medium through which bodies move near the earth; water the medium wherein fishes live and move.

**MEDIUM, ÆTHERIAL.** A subtle medium supposed by Newton to occupy every part of space, in which the planetary motions are performed without resistance, and by means of which light is reflected, inflected, and refracted, heat is propagated and increased, and, in short, all the great operations of nature are supposed to be carried on through the agency of this universal medium.

**MEDLAR.** The fruit of a tree called, in Botany, the *MESPILUS GERMANICA*, which in its leaf resembles a laurel. The fruit, which in shape resembles an apple, is not eatable until it is in a state of rotten ripeness.

**MEDULLA CEREBRI.** The soft substance of the brain, covered externally with a cortical substance of an ashy colour.

**MEDULLA OBLONGATA.** The beginning of the spinal marrow, or an extended portion of the brain.

**MEDUSA** (in Mythology). One of the three Gorgons, said to have been born with snakes on her head instead of locks of hair. Perseus cut off the head of Medusa, and placed it in the shield of Minerva.

**MEDUSA.** A sort of worms which,

causing when touched a slight tingling and redness, are denominated sea-nettles.

**MEERSHAUM.** A fine sort of Turkish clay, of which pipes are made in Germany of various forms. It assumes a beautiful brown colour after it has been used for smoking for some time.

**MELLITE, or HONEY-STONE.** A mineral found first in Thuringia, which is of a honey-yellow colour, and is usually crystallized in small octaedrons.

**MELLITIC ACID.** A substance procured from mellite.

**MELODY (in Music).** The agreeable sensation produced by a regular succession of different sounds.

**MELOE.** A sort of insects, of which the two principal species are the oil beetle, so called because on being handled, it exudes from its legs drops of a clear, deep yellow oil or fluid, of a very peculiar and penetrating smell; and the meloe vesicatorius, or Spanish fly, which is used in raising blisters.

**MELON.** A plant of the cucumber tribe, the flower of which consists of one bell-shaped leaf cut into several segments. The fruit is mostly of an oval shape, and filled with seeds.

**MEMBRANE (in Anatomy).** A broad, nervous, and fibrous substance, which serves as a covering for different parts of the body, particularly the brain and the viscera.

**MEMENTO,** A hint to awaken the memory.

**MEMOIRS.** Histories written by those who have been witnesses of the transactions and acquainted with the persons which they describe.

**MEMORANDUM.** A short note, for the better remembrance of a thing.

**MEMORIAL.** A monument, or whatever else serves to call a thing or person to remembrance.

**MEMORY, ARTIFICIAL.** A method of assisting the memory by some artificial contrivance, as that of forming certain words the letters of which shall signify the date or era to be remembered. Various devices of this kind have been hit upon at different times.

**MENDICANTS.** Monks so called, who go about begging alms.

**MENSTRUUM.** A liquid which serves to extract the virtues of any substance by infusion, decoction, &c. Water is the menstruum of all salts, oils of resins, acids of alkalies and the like.

**MENSURATION.** The art of measuring lines, superficies, and solids, which, in con-

sequence of its extensive application to the purposes of life, is considered as of the greatest importance.

Euclid treats of mensuration, as far as regards surfaces, only of the measuring of triangles; and in regard to curvilinear figures, he attempted the measurement of the circle and the sphere. Archimedes carried this subject to a much greater extent: he found the area of a parabola to be two-thirds of its circumscribing triangle; which, with the exception of the lunules of Hippocrates, was the first instance of the quadrature of a curvilinear space. He likewise determined the ratio of spheroids and conoids to their circumscribing cylinders, and has left us his attempt at the quadrature of the circle. He demonstrated that the area of a circle is equal to the area of a right-angled triangle, of which one of its sides about the right angle is equal to the radius, and the other to the circumference; and thus reduced the quadrature of the circle to the determining the ratio of the circumference to the diameter, a problem, in the solution of which he could only arrive at an approximation to the truth, showing that the ratio between the circumference and the diameter was less than that of 7 to 22. What Archimedes failed to effect in this respect has continued to this day unattainable, notwithstanding the efforts which have been made by subsequent mathematicians, particularly within the last three centuries, to arrive at a greater approximation. As all hopes of accurately squaring the circle and some other curves were at length given up, mathematicians applied themselves to the finding the most convenient series for approximating towards their true lengths and quadratures; and the science of mensuration has in consequence assumed a more consistent form, as may be clearly seen in the treatises of Hawney, Robertson, Hutton, and Bonnycastle.

**MEPHITIC.** Poisonous, like the Mephitic, or Damp, as it is called by the miners; as Mephitic Air, another name for nitrogen gas, on account of its noxious quality; and Mephitic Acid, carbonic acid, so called because it cannot be respired without causing death.

**MERCATOR'S CHART.** A sea chart, in which the parallels of latitude and the meridians are represented by straight lines.

**MERCER.** One who deals in wrought silks. The mercers' company was incorporated in 1393.

**MERCHANT.** One that exports and imports merchandise.

**MERCHANTMAN.** A vessel that is

employed in carrying merchandise to different countries.

**MERCURY** (in the Heathen Mythology). The son of Jupiter and Maia, the god of eloquence and commerce, and the messenger of the gods, whose common attributes are his caduceus, his winged hat, and his talaria or winged feet.



**MERCURY** (in Astronomy). The smallest of the planets, and the nearest the sun, marked by the character  $\zeta$ . The period of his revolution is 87 days 23 hours 15 minutes and 43 seconds.

**MERCURY**. A mineral or metallic fluid, vulgarly called quicksilver, and distinguished from all other metals by its extreme fusibility, which is such that it does not assume the solid state until cooled to the 39th degree below 0 on Fahrenheit's thermometer, and of course is always fluid in temperate climates. It is volatile, and rises in small portions at the common temperature of the air; it readily combines with gold, silver, lead, tin, bismuth, and zinc, and on that account is usefully employed in the silvering of looking-glasses, making barometers and thermometers, and for various other purposes.

**MERGANSER**. A water-fowl, which frequents the Hebrides during the winter season, very similar in size and appearance to a goose.



**MERIDIAN**. A great circle on the ter-

restrial sphere, passing through the poles of the world and the zenith or vertex of any place, exactly dividing the east from the west. The meridians are as numerous as the places on the earth; and the first meridian is that from which the reckoning commences, which is mostly fixed from the capital of each country.

**MESNE PROCESS** (in Law). An intermediate process, which issues pending the suit, upon some collateral matter; also all such process as intervenes between the beginning and end of a suit.

**MESSENGER**, or **KING'S MESSENGER** (in Law). An officer chiefly employed under the direction of the secretaries of state, to convey dispatches foreign and domestic.

**METALLURGY**. The art of working metals, so as to separate them from the ore. It may also comprehend the several operations by which they are rendered available to particular purposes, as assaying, gilding, refining, smelting, &c.

**METALS**. Compact bodies generated in the earth, which are heavy, hard, opaque, possessed of a remarkable lustre, fusible, and malleable in different degrees. There were originally reckoned but seven metals, namely, gold, silver, copper, tin, iron, lead, and quicksilver; but this number has since been increased to thirty, some of which have the metallic properties in a small degree. Of the primitive metals, gold is the heaviest; but platinum, one of the newly discovered metals, is found to be still heavier.

**METAMORPHOSIS** (in Entomology). The change which insects undergo in passing from one state to another.

**METAPHOR**. The application of a word in some other than its ordinary use, on account of some resemblance between the two objects: thus the king is, by a metaphor, said to be the head of his kingdom because the head is the chief part of the body.

**METAPHYSICS**. The science which considers beings as abstracted from all matter, as accidents, relations, and the like, but particularly beings in their nature purely spiritual, as God, angels, and the soul of man.

**METEMPSYCHOSIS**. The migration or passing of the soul out of one body into that of another, which is said to have been the doctrine maintained by Pythagoras, and is now held by the Brahmins in India.

**METEOR**. A general term for all the phenomena of the atmosphere, but particularly for such sudden and luminous appearances as are occasionally visible, such as

fireballs or luminous bodies of considerable magnitude, that are frequently to be seen in the tropical climates; shooting or falling stars, that are of common occurrence; and the ignis fatuus, seen in marshes.

**METEORIC STONES.** Heavy, stony bodies, that are supposed to fall from the fireballs after they have exploded. These stones, which are looked upon by some as concretions formed in the atmosphere, are by a chymical analysis found to contain silica, oxide of iron, magnesia, sulphur, lime, and oxide of nickel.

**METEOROLOGY.** The doctrine of meteors in general, or the study of the variable phenomena of the atmosphere. The changes to which the atmosphere is most subject are such as respect its temperature, weight, moisture, and electricity, which are marked and measured by the barometer, thermometer, hygrometer, and electrometer. The results of these changes are winds, rains, snow, heats, colds, dews, &c. The intensity of the winds is measured by the aerometer, and the quantity of rain is measured by the pluviometer or rain-gauge.

**METER, or COAL-METER.** A measurer of coals before they are delivered out to sale.

**METHODISTS.** A sect of physicians who flourished at Rome, and professed to follow the rules of Galen; also a sect of religionists who, in the seventeenth century, professed to defend the tenets of the Church of Rome against the Protestants; and in modern times, another sect, who profess to act by a rule of their own, as distinguished from the doctrine and discipline of the Church of England. The leaders of this latter sect were Wesley and Whitfield, the followers of whom are divided into two parties.

**METONYMY (in Rhetoric).** A figure of speech whereby one thing is put for another, as the cause for the effect, the part for the whole, and the like.

**METRE (in Poetry).** A system of feet composing a verse; as pentameter, a verse of five feet, hexameter, a verse of six feet, &c.

**METRE (in Commerce).** A French measure equal to rather more than thirty-nine inches.

**METROPOLIS.** The chief city of a kingdom or province.

**METROPOLITAN.** A bishop of the mother-church; an archbishop, who is bishop of the metropolis.

**MEZZOTINTO.** A particular kind of engraving, so called from its resemblance to drawings in India ink. This is per-

formed by punching the copper plates with the grounding tool, scraping them with the scraper, and then rubbing them with the burnisher or smooth piece of steel, to produce the effect desired.

**MIASMA.** The contagious effluvia of pestilential diseases.

**MICA, or MUSCOVY GLASS.** A stone which forms the essential part of many mountains. It consists of a number of thin laminae adhering to each other. It has long been used as a substitute for glass, particularly in Russia.

**MICROMETER.** An astronomical machine which serves to measure extremely small distances in the heavens, &c.

**MICROSCOPE.** An optical instrument which magnifies objects, so that the smallest may be distinctly seen and described. The invention of microscopes, like many other ingenious discoveries, has been claimed for different authors. Huygens informs us that Drebell, a Dutchman, constructed the first microscope in 1621; but Borelli states, in a letter to his brother, that when he was ambassador in England in 1619, Cornelius Drebell showed him a microscope, which he said was given him by the archduke Albert, and had been made by Jansen, whom he considers to have been the real inventor, although F. Fontana, a Neapolitan, claimed, in 1646, the honour of the invention to himself, and dated it from the year 1618.

**MIDRIFF, or DIAPHRAGM (in Anatomy).** A membrane which divides the trunk of the body into the thorax and abdomen, the upper and lower cavity.

**MIDSHIPMAN.** An officer in the navy, who assists on all occasions both in stowing and rummaging the hold, sailing the ship, &c.

**MIDSUMMER.** The summer solstice. The 24th of June is the Midsummer Day, which is also quarter day.

**MIDWIFERY.** The art of assisting women in childbirth.

**MILE.** A long measure, which, in England, contains 8 furlongs, or 1760 yards, or 5280 feet.

**MILIARY GLANDS.** The small and infinitely numerous glands, which secrete the perspiration.

**MILITARY.** A name for the whole body of soldiery, with their equipments, &c.

**MILITARY.** An epithet for what belongs to soldiers, as Military Architecture, Military Exercises, &c.

**MILITARY ARCHITECTURE.** See FORTIFICATION.

**MILITARY EXECUTION.** Ravaging

country that refuses to pay the contribution levied upon it; also the punishment inflicted by the sentence of a court-martial.

**MILITARY ROAD or WAY.** A road made for the passage of armies, like those constructed by the Romans in Britain.

**MILITIA.** A military force raised by ballot, for the permanent defence of a country.

**MILK.** A fluid which serves for the nourishment of young animals. It is secreted by particular glands in the female of all animals which suckle their young, which on that account are denominated mammalia. The constituent parts of cows' milk, procured by chymical analysis, are, aroma, an odorous, volatile principle; water, which forms a considerable part; bland oil, from which the cream is formed; curd, or animal gluten; sugar, or the serum of milk; and some neutral salts. Human milk is the thinnest of all, and next to that, asses' milk, which is prescribed for consumptive persons.

**MILK-THISTLE.** A biennial, the leaves of which are eaten as a salad.

**MILKY WAY, or VIA LACTEA** (in Astronomy). A broad track or path encompassing the whole heavens, which is easily discernible, from its milky white appearance.

**MILL.** A machine for grinding corn, &c. of which there are different kinds, according to the different methods of putting them in motion, as watermills, windmills, horse-mills, handmills, and also steammills. They are also distinguished according to the uses they serve, as cornmills, cottonmills, papermills, barkmills, &c. Corn is ground by two millstones placed one above the other without touching, the space between them being made greater or less, according as the miller would have the flour finer or coarser.

**MILLENNIUM.** A thousand years, generally taken for the thousand years of Christ's reign here on earth.

**MILLET.** A plant that bears an immense number of small grains.

**MILLING.** The same as fulling.

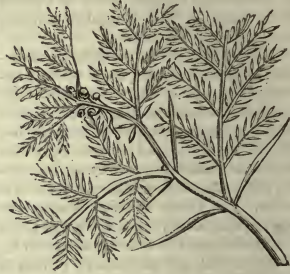
**MILLING.** The stamping of coin by means of a mill. This is one part of the process in coining.

**MILLION.** The number of ten hundred thousand.

**MILLREA.** A Portuguese gold coin, equal to five shillings and sevenpence halfpenny of our money.

**MIMOSA, or THE SENSITIVE PLANT,** so called on account of the sensibility of its leaves. It is a numerous tribe of plants, which are all natives of warm climates.

They have all the singular property that their leaves recede from the touch and run rapidly together; in some, the foot-stalks and all are affected. The humble sensitives instantly fall downward, as if fastened by hinges. These plants have all winged leaves, each wing consisting of many small pinnæ. From the *Mimos*, *Nilotica*, represented underneath, is procured the gum arabic.



**MINE.** A deep hollow, running underground, whence various minerals, particularly the metallic kind, are dug out. These mines are mostly dug through various strata or beds of substances, of which the interior of the earth is composed. In these strata are found innumerable fissures, called by the miners lodes, which contain the metal sought for. The passage or descent to the mine is by means of a pit called a shaft. The principal signs by which metallic veins are discovered are mineral waters, pieces of ore found on the surface of the ground, warm exhalations, metallic sands, &c.

**MINE** (in Fortification). A subterraneous passage dug under the wall or rampart of a fortification, for the purpose of blowing it up by gunpowder. The place where the powder is lodged is called the chamber.

**MINER.** One who digs mines or works in mines.

**MINERALOGY.** That science which treats of the solid and hard component parts of the earth. Minerals have been variously classed by different writers. The system of Werner comprehends them under the four classes of earths, salts, inflammables, and metals. To this Linnæus has added a fifth class of petrifications.

**MINERAL WATERS.** Springs impregnated with mineral substances.

**MINERVA.** The daughter of Jupiter, and goddess of wisdom and the fine arts. She is commonly represented with all the



emblems of war, as the helmet, spear, and shield.

**MINERVALIA.** Presents among the ancients, made by the boys to their masters before the feast of Minerva.

**MINIATURE.** A delicate kind of painting, consisting of little points or dots instead of lines, commonly done on ivory, and used in taking portraits; also the portrait itself.

**MINIM** (in Music). A measure of time marked thus, **q**, equal to two crotchets.

**MINIMUM** (in Mathematics). The least quantity attainable in a given case.

**MINISTER OF STATE.** One who conducts the affairs of state by an authority from the king.

**MINISTER, FOREIGN.** A person sent into a foreign country, to manage the affairs of the state by which he is sent.

**MINIUM, or RED LEAD.** An oxide of lead, procured by exposing this metal to a great heat and a free access of air.

**MINOR** (in Law). An heir male or female, within the age of twenty-one.

**MINORITY** (in Law). A state of nonage; also the smaller number of persons who give their votes on any questions, particularly in parliament.

**MINSTREL.** A player on any musical instrument; an itinerant performer.

**MINT** (in Botany). A pot-herb, which has a creeping root and a strong aromatic scent.

**MINT** (in Law). The place where the king's coin is made.

**MINUTE** (in Geometry, marked thus (')). The sixtieth part of the degree of a circle; also the sixtieth part of an hour.

**MIRACLES.** Works effected in a manner different from the ordinary course of nature, by the immediate power of the Almighty, for some particular purpose.

**MIRROR.** The surface of any opaque body polished, and adapted to reflect the rays of light which fall upon it, and to represent objects. Mirrors are either flat, as looking-glasses; concave, for the purpose of converging the rays of light; or convex, for the purpose of diverging the rays of light.

**MISADVENTURE** (in Law). A sort of homicide against the mind of the killer, partly by ignorance and partly by chance.

**MISCELLANÆ.** One of Linnæus's natural orders of plants, comprehending such as were not included in the other orders.

**MISCHIEF** (in Law). Damage or injury done to the property of another, not for gain, but with a malicious intent.

**MISDEMEANOUR.** An offence less than felony.

**MISLETOE.** A plant which always grows on trees, and was thought therefore to be an excrescence of the tree; but it has been found to be propagated by the seed or berry which is conveyed by the mistletoe thrush from one tree to another: this bird being fond of these seeds, it sometimes happens that the viscous part of the berry sticks to his beak, and in his attempts to disengage himself from it by striking his beak against the bark of the tree, the berry sticks to the latter; and if it happen to light on a smooth part, it will take root, and sprout out the next winter. This plant adheres most readily to the ash and other smooth-rinded trees, as the apple, &c.

**MISNAH.** The code or collection of the civil law of the Jews.

**MISNOMER** (in Law). The giving a person a wrong name.

**MISPRISION.** In general, a neglect, as misprision of treason, a neglect to reveal treason; which was formerly high treason.

**MISSAL.** The book of the Romish ceremonies.

**MISSILE.** Any weapon thrown or discharged from a machine, as stones from a sling.

**MISSIONARIES.** Ministers sent into any country to preach Christianity.

**MISTS.** Vapours hovering over the earth, which are either drawn upwards by the rays of the sun, or fall down by their own weight in the shape of dew, or, in cold weather, in that of hoar frost.

**MITE.** One of the smallest insects, that is scarcely visible to the naked eye, except by its motion. As seen through a microscope, it is found to have eight legs, two eyes, one on each side the head, and two jointed tentacula. It mostly lives in cheeses.



**MITE** (in Commerce). A small coin formerly current, equal to about one-third part of a farthing; also a weight among the Moneyers, equal to the twentieth part of a grain.

**MITRE** (among Carpenters). An angle just 45 degrees or half a right angle.

**MITRE.** A sacerdotal ornament worn

on the head by bishops on solemn occasions; it is a cap of a conical form.



**MIZEN.** See **MAST.**

**MNEMONICS.** Precepts, rules, and common places, to help the memory.

**MOAT** (in Fortification). A deep trench dug round the ramparts of a fortified place.

**MOCKING-BIRD.** A sort of American thrush, which has the faculty of imitating the notes of other birds.

**MODE** (in Music). A regular disposition of the tune in relation to certain principal sounds, which are called the essential chords of the bass.

**MODEL.** An original pattern, or the shape or design of any thing in miniature; particularly applied to an artificial pattern made in wood, stone, plaster, or other matter, with all its parts and proportions, in order to give a full idea of the work that is to be executed.

**MODERNS.** A name given generally to those who have distinguished themselves since the revival of learning, as compared with the ancients, and also with those of the middle ages.

**MODULE** (in Architecture). A certain measure by which the proportions of columns are regulated.

**MODUS DECIMANDI** (in Law). Something paid as a compensation for tithes, on the principle of a moderate equivalent.

**MOHAIR.** The hair of a kind of goat at Angora in Turkey, of which the natives make camblots.

**MOIDORE.** A Portuguese coin, equal to 27s. sterling.

**MOLASSES.** The gross fluid matter that remains of sugar after boiling; the scum of the sugarcane.

**MOLE** (among Mariners). A long pier or artificial bulwark of masonry, extending obliquely across a harbour.

**MOLE.** An animal that lives under ground, and on account of the smallness

of its eyes was formerly denied the power of seeing.



**MOLLUSCA.** An order of animals under the class vermes in the Linnæan system, comprehending naked simple animals not included in a shell, but furnished with limbs, as the snail, star-fish, cuttle-fish, sea urchin, &c.

**MOLTING.** The changing of feathers, hairs, or horns, in birds and beasts.

**MOLYBDATES.** Salts formed from molybdic acid in combination with earthy alkalies, &c.

**MOLYBDENUM.** A metal which exists, mineralized by sulphur, in the ore called the ore of Molybdena. Molybdenum has hitherto been obtained only in small globules.

**MOMENT.** The quantity of motion in a moving body.

**MONADELPHIA** (in Botany). One of the Linnæan classes, consisting of plants in which all the stamens are united below into one cylindrical body.



**MONANDRIA** (in Botany). One of the Linnæan classes, consisting of plants that have only one stamen.



**MONARCHY.** A government in which the supreme power is vested in one person.

**MONASTERY.** A college of monks or nuns; a house of religious retirement.

**MONDAY.** The second day of the week.

**MONEY.** Whatever is made the medium of trade for determining the value of commodities in buying or selling. It consists either of coins, or pieces of stamped metal, or of paper money or moneys of account. Paper money is called paper currency, to distinguish it from specie, metallic currency, or cash: it comprehends notes of hand, bills of exchange, bonds, mortgages, &c. Moneys of account are imaginary moneys, used only in keeping accounts; such was the English pound until sovereigns were coined.

**MONEYERS** (in Law). Officers in the king's mint, who make and coin the money.

**MONGREL.** Any creature of a mixed breed.

**MONK.** One of a religious community; one who dwells in a monastery, under a vow of observing the rules of the order he belongs to.

**MONKEY.** A well known animal with a long tail, cheeks pouched, and haunches naked, as represented underneath.



**MONKEY** (in Military Affairs). A machine used for driving large piles of wood.

**MONKSHOOD, or ACONITE.** A poisonous plant bearing a fine blue flower.

**MONOCEROS.** One of the new constellations in the northern hemisphere.

**MONOCHORD.** A musical instrument with one string.

**MONODY.** A funeral ditty.

**MONOECIA** (in Botany). One of the Linnæan classes, including plants that have male and female flowers on the same plant, as the plane-tree, hazel, chestnut, cucumber, &c.



**MONOGYNIA** (in Botany). An order in the Linnæan system, comprehending plants that have only one pistil or stigma in a flower.

**MONOLOGUE.** A soliloquy, or scene where one only speaks.

**MONOPETALOUS.** One-petalled, applied to flowers the corolla of which consists of one petal only.

**MONOPOLY** (in Law). A grant from the king to any person or persons for the sole trading in any commodity; also the unlawful engrossing to oneself any trade, or the sale of any commodity, in order to enhance the price.

**MONOSYLLABLE.** A word of one syllable.

**MONOTONY.** Sameness in the tone of the voice; a fault in elocution or delivery.

**MONSOONS, or TRADE-WINDS.** Periodical winds in the Indian sea, that blow one half the year one way, and the other half on the opposite points. These points and times of shifting are different in different parts of the ocean.

**MONTH** (in Chronology). The twelfth part of a year, otherwise called a calendar month, to distinguish it from the astronomical month, which is either solar or lunar. A solar month, or the time in which the sun passes through a whole sign of the zodiac, is 30 days 16 hours 29 minutes 5 seconds; a lunar month, or the period of one lunation, is 29 days 12 hours 44 minutes.

**MOOD** (in Grammar). The manner of forming a verb, or the manner of the verb's inflections, so as to express the different forms and manners of the action, or the different intentions of the speaker: as the indicative mood, which declares a thing; the imperative mood, by which one commands; the subjunctive mood, which implies a conditional action; the potential mood, which denotes the possibility of doing the thing; and the infinitive mood, which expresses the action indefinitely.

**MOON.** One of the secondary planets, and a satellite to the earth, marked thus ☾; is in diameter, 2144 miles, and fifty times less than the earth. The surface of the moon is diversified with mountains and valleys. Her sidereal or periodical motion on her own axis she performs in 27 days 7 hours 43 minutes and 11 seconds; her synodical motion, or her motion in her orbit round the earth, she performs in 29 days 12 hours 44 minutes 12 seconds: the former is called the periodical, and the latter the synodical month.

**MOONSTONE.** A pure kind of felspar, found in Ceylon and Switzerland.

**MOOR-COCK.** A bird of the grouse tribe, inhabiting the heaths of Scotland and the north of England.

**MOOR-HEN.** A water-fowl of the coot tribe.

**MOORING.** Laying out the anchors for the secure riding of the ship.

**MOOSE.** An animal of the deer kind, as large as a horse, the skin of which is so hard that it can almost resist a musket ball.

**MORAVIANS, or HERNHUTTERS.** A sect of professing Christians, who prevail in Germany, and are distinguished both by the singularity of their doctrine and their manners.

**MORDANTS (in Dyeing).** Substances combined with the vegetable or animal fibre, in order to fix the dye-stuff.

**MOROCCO.** A fine kind of leather prepared from the skin of an animal of the goat kind, and imported from the Levant.

**MOROXYLIC ACID.** An acid procured from the white mulberry.

**MORSE.** An amphibious animal, like a sea-ox in size, but like a lion in shape. It inhabits the ocean near the Arctic Pole.

**MORTALITY, BILLS OF.** See **BILLS.**

**MORTAR.** A thick short cannon, having a large bore, and mounted on a low strong carriage, which serves for throwing bombs, &c.

**MORTAR (with Apothecaries).** A strong vessel for pounding things in with a pestle.

**MORTAR (among Masons).** Lime, sand, and hair mixed together, so as to make a cement.

**MORTGAGE (in Law).** A dead pledge, or a pawn of lands and tenements or any thing immoveable, given on condition that it should be the creditor's for ever, if the money be not paid on the day appointed.

**MORTISE, or MORTOIS (among Carpenters).** A kind of joint consisting of a hole of a certain depth cut in a piece of timber so as to receive another piece called the tenon.

**MORTMAIN (in Law).** An alienation of lands and tenements to any guild, corporation, or fraternity, and their successors, which may not be done without the king's licence.

**MOSAIC, or MOSAIC WORK.** An assemblage of little pieces of glass, marble, precious stones, &c. of various colours, cut square and cemented on a ground of stucco in imitation of painting.

**MOSQUE.** A temple or place of reli-

gious worship among the Mahometans. The church of St. Sophia at Constantinople is converted into a Turkish mosque.

**MOSQUITO.** A large kind of gnat in warm climates, which inflicts deep wounds on those whom it attacks.

**MOSS.** A parasitic plant, something like down, that adheres to the trunks of trees, and was formerly supposed to be merely an excrescence, but is now found to be a perfect plant, having roots, flower, and seeds, yet cannot be propagated by seed. It is oftentimes very injurious to fruit trees, and ought to be scraped off in the spring season and in moist weather.



**MOTH.** An insect something similar to the butterfly, but not so large. It is very injurious to cloth and furniture.

**MOTHER.** The mouldy lees of wine, beer, &c.

**MOTHER OF PEARL.** The shell of pearl fish.

**MOTION (in Physiology).** A change of place, which is absolute if it be independent of any other body, and relative if it changes the relative place of a moving body, as in the case of two vessels sailing in the same or contrary directions with different velocities. Animal motion is that by which the situation, figure, magnitude of the parts of animals is changed, which takes place in the act of their growth.

**MOTION (in Law).** An application in court, either by the parties themselves or their counsel, in order to obtain some order or rule of court.

**MOTION (in Parliament or any other public Assembly).** The proposing of any matter for the consideration of those present.

**MOTTO.** A word or short sentence put to an emblem or device, or to a coat of arms in a scroll at the bottom of the escutcheon.

**MOVEABLES.** Personal goods.

**MOVEMENT** (in Military Affairs). The regular orderly motion of an army for some particular purpose.

**MOVEMENT** (in Music). The progress of sounds from grave to acute, or from acute to grave.

**MOVEMENT** (among Watchmakers). A name for the inner works of a watch, &c. that move.

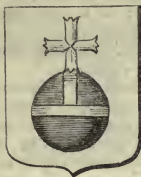
**MOULD** (in Horticulture). Earth mixed with dung, &c. fit for the reception of seeds.

**MOULD** (among Mechanics). A form or frame in which any thing is cast, as glaziers' moulds, tallowchandlers' moulds, and the like.

**MOULDINESS**. A term applied to bodies, as bread, &c. which are in a state of corruption, from the action of the damp or air. This shows itself by a white down, which, when seen through a microscope, appears, like the moss, to be a kind of plants, although some have imagined it to look like animalculæ.

**MOULDINGS** (in Architecture). Projectures beyond the naked wall, such as cornices, door-cases, &c. which are cut so as to be ornamental.

**MOUND** (among Antiquarians). A ball or globe with a cross upon it, which kings are represented as holding in their hands, to designate their sovereign majesty.



**MOUND** (in Fortification). Any thing raised, as a bank of earth, &c. to fortify or defend a place.

**MOUNT**. An artificial elevation of earth.

**MOUNTAIN ASH**. An ornamental tree, which in its leaf resembles the common ash, but it bears a clustered flower, that is succeeded by a beautiful red berry.

**MOUNTAINS**. Extraordinary elevations of the earth, such as the Alps and Pyrenees in Europe, the Caucasus and Uralian mountains in Asia, and the Andes in America. Mountains mostly consist of stone, the lower ones sometimes of copper and tin. Elevations of clay, sand, or gravel, are called hills.

**MOUNTING** (in Military Affairs). Going upon some arduous or specific duty,

as mounting a breach, that is, running up to it; mounting the trenches, going upon duty in the trenches, &c.; but mounting a cannon is setting it on its carriage.

**MOUSE**. A little animal that haunts houses and fields. It is nearly allied to the rat, and is classed with it under the name of Mus in the Linnæan system. Field mice are frequently white.



**MOUSE-EAR**. A plant very similar to chickweed, but the flower is larger, and the fruit shaped like an ox's horn, gaping at the top.

**MOUTH**. The aperture in the head of any animal at which the food is received, and by which the inspiration and expiration of the air is performed; also the aperture of many other things, so called from the similarity of situation or use, as the mouth of a cannon, where the powder and ball go in and out; the mouth of a river, where the water passes in and out; and the mouth of a vessel, &c.

**M. P.** An abbreviation for Member of Parliament.

**MS.** An abbreviation for manuscript.

**MSS.** An abbreviation for manuscripts.

**MUCILAGE**. A slimy substance of sufficient consistence to hold together, as a solution of gum or any tenacious liquid, or a viscous extraction from roots and other parts of vegetables.

**MUCUS**. A viscous fluid secreted by certain glands in the body.

**MUFFLE**. A small earthen oven used for cupellation.

**MUFTI**. The chief priest among the Mussulmen, appointed by the grand seignior himself. He is the oracle in all doubtful questions of their law.

**MULATTO**. Any one born of a black man and white woman, and vice versa.

**MULBERRY TREE**. A large spreading tree, the fruit of which resembles the raspberry in its seedy make, but is much larger. The white mulberry is cultivated in France and Italy for its leaves to feed silkworms, but the Persians make use of the common black mulberry for this purpose.

**MULE.** A mongrel kind of quadruped, generated between an ass and a mare, and sometimes between a horse and a she-ass. Mules are hardy, sure-footed animals, used much in mountainous countries, as about the Alps and Pyrenees; but they are incapable of propagating their species.



**MULE** (in Botany). Any flower or fruit produced from two sorts.

**MULETEER.** A driver of mules.

**MULLET.** A fish with a head almost square, and a silvery body.

**MULTIPLE.** A number which includes another a certain number of times, as 6, the multiple of 2.

**MULTIPLICATION.** One of the four simple rules of arithmetic, which consists in the increasing of any one number by another as often as there are units in that number by which the one is increased. The number multiplying is the multiplier; the number multiplied, the multiplicand; and the result of the operation is the product.

**MULTIPLYING-GLASS.** A glass otherwise called a polyhedron, being ground into several planes that make angles with each other, and cause objects to appear increased in number.

**MULTUM IN PARVO.** Much in a small compass.

**MUM.** A kind of liquor made of wheat, and brought from Brunswick in Germany.

**MUMMIES.** The name of dead bodies which have been preserved for ages from corruption in Egypt, by a particular method of embalming; also the liquor running from such mummies, which approaches more or less to a state of solidity.

**MUNDIC.** A sort of copper ore; a sulphuret of copper of a greenish yellow colour.

**MUNICIPAL** (in the Civil Law). An epithet signifying, 'invested with the civil rights of a citizen;' with us, it is an epithet for what belongs to a town or city,

as municipal laws, laws enjoyed by the inhabitants of a free town or city; and in an extended sense, municipal law is the law by which any particular state or country is governed.

**MURAL CROWN.** A crown among the Romans given to him who first scaled the walls of a city.



**MURDER** (in Law). The wilful and felonious killing a man with malice prepense.

**MUREX.** A shell-fish noted among the ancients for its purple dye; in the Linnæan system it is a genus of insects under the class vermes, the animal of which is a limax: the shell is univalve and spiral.

**MURIATES.** Salts formed from muriatic acid with certain bases, as the muriate of ammonia, of soda, &c.

**MURIATIC ACID** (otherwise called **SPIRIT OF SALT**). An acid procured from salt, consisting of hydrogen combined with chlorine gas. Its odour is pungent, and its taste acid and corrosive. If an inflamed taper be immersed in it, it is instantly extinguished: it is also destructive of human life.

**MURRAIN.** A wasting contagious disorder among cattle.

**MUS** (in Zoology). A generic term, in the Linnæan system, for a tribe of animals of the class mammalia, and order glires, distinguished principally by their teeth. The most remarkable species are the common rat and mouse, the musk rat, the Norway rat, &c.

**MUSCI.** Mosses; one of the families into which Linnæus has divided the vegetable kingdom. It is of the class cryptogamia, and comprehends a vast variety of species, as the earth-moss, bristle-moss, spring-moss, water-moss, &c.

**MUSCLE** (in Anatomy). A fleshy fibrous part of the body, consisting of a bundle of thin parallel plates, divided into a great number of fasciculi or little threads and fibres, so constructed as to admit of relaxation and contraction, and serving as the organ of motion. The extremities of the muscles are inserted into the bones.



**MUSES** (in the Heathen Mythology). Divinities supposed to preside over the arts and sciences. They were nine in number, namely, Clio, to whom they attributed the invention of history; Melpomene, the inventor of tragedy; Thalia, of comedy; Euterpe, of the use of the flute; Terpsichore, of the harp; Erato, of the lyre and lute; Calliope, of heroic verse; Urania, of astrology; Polyhymnia, of rhetoric. Herodotus divided his history into nine books, to each of which he gave the name of one of the muses.

**MUSEUM.** A collection of rare and interesting objects, particularly in the departments of Natural History; also the place where the collection is deposited. The term was originally applied to a study or a place set apart for learned men in the royal palace of Alexandria by Ptolemy Philadelphus, who founded a college, and gave salaries to the several members, adding also an extensive library, which was one of the most celebrated in the world.

**MUSHROOM.** A plant, the generic name of which, in the Linnæan system, is agaricus. It is a spongy substance, which grows up to its bulk on a sudden. The seeds of mushrooms have not long been discovered.



**MUSIC.** The science which treats of the number, time, division, succession, and combination of sounds, so as to produce harmony. It is divided into Theoretical Music, which inquires into the properties of concords and discords, and explains their combinations and proportions for the production of melody and harmony; and Practical Music, which is the art of applying the theory of music in the composition of all sorts of tunes and airs.

**MUSIC, HISTORY OF.** The first traces of music are to be found in Egypt, where musical instruments, capable of much variety and expression, existed at a time when other nations were in an uncivilized state. The invention of the lyre is by them ascribed to Hermes Trismegistus, the Mercury of the Egyptians, which is a proof

of its antiquity, but a still greater proof of the existence of musical instruments amongst them at a very early period is drawn from the figure of an instrument said to be represented on an obelisk, erected, as is supposed, by Sesostris at Heliopolis. This instrument, by means of its neck, was capable, with only two strings, if tuned fourths, of furnishing that series of sounds called by the ancients a heptachord; and if tuned fifths, of producing an octave. As Moses was skilled in all the learning of the Egyptians, it is probable that the Israelites, who interwove music in all their religious ceremonies, borrowed much from that people. That the Greeks took their first ideas of music from the Egyptians is clear from this: that they ascribed the invention of the lyre to Mercury, although they made Apollo to be the god of music, and gave him that instrument to play upon. In no country was music so much cultivated as in Greece. The muses, as well as Apollo, Bacchus, and other gods and demigods, practised or promoted it in some way or other. Their poets are supposed to have been like the Celtic and German bards, and the scalds of Iceland and Scandinavia, who went about singing their poems in the streets, and the palaces of princes. In this manner did Orphens, Homer, Hesiod, Sappho, and others recite their verses; and in after times, on the institution of the games, Simonides, Pindar, and other poets celebrated in public the exploits of the victors. The instruments known in the time of Homer were the lyre, flute, syrinx, and trumpet. The invention of notation and musical characters is ascribed to Terpander, a poet and musician, who flourished 671 years before Christ. We afterwards find philosophers, as well as poets, among the number of those who admired and cultivated music theoretically as well as practically, as Pythagoras, Plato, Aristotle, Aristoxenus, Euclid, and many others. Pythagoras is celebrated for his discoveries in this science; namely, for that of musical ratios, and the addition of an eighth string to the lyre. The former of these he is supposed to have derived from the Egyptians. He also explained the theory of sounds, and reduced it to a science. Aristoxenus is the most ancient writer on music of whose works there are any remains. Euclid followed up the idea of Pythagoras' ratios, which he reduced to mathematical demonstration. To this list of Greek writers may be added Nichomachus Gerasenus, Alypius, Gaudentius, Bacchius senior, Ptolemy the astronomer,

and Aristides Quintilian, whose works are still extant. These wrote under the Roman emperors, many of whom cultivated music and followed the theory of the Greeks. Among the Roman writers may be reckoned Vitruvius, who, in his architecture, touches lightly on this subject; also Martianus Capella and Boethius, who wrote on the decline of the empire. After them some centuries elapsed before the science of music met with any particular attention. Its introduction into the church service prevented it from falling, like other arts, into total neglect. Instrumental music was introduced into the public service of the church under Constantine the Great. The practice of chanting the psalms was begun in the western churches by St. Ambrose about 350 years after Christ; three hundred years after, the method of chanting was improved by St. Gregory the Great. It was probably introduced into England by St. Augustine, and greatly improved by St. Dunstan. The use of the organ probably commenced in the Greek church, where it was called hydraulicon, or the water-organ. The first organ known in Europe was sent as a present to King Pepin from the emperor Constantine Copronymus. It came into general use in France, Germany, and England, in the tenth century. Soon after this, music began again to be cultivated as a science, particularly in Italy, where Guido, a monk of Arezzo, first conceived the idea of counterpoint, or the division of music into parts by points set opposite to each other, and formed the scale afterwards known by the name of the gamut. This was followed by the invention of the time-table, and afterwards by regular compositions of music. But the exercise of the art was for a long time confined to sacred music, during which period secular music was followed by itinerant poets and musicians, after the manner of the ancients. Of this description were the troubadours in France, the Welsh bards or harpers in England, and the Scotch minstrels.

**MUSICIAN.** A professor of and practitioner in music; one who performs on any musical instrument. The musicians form one of the city companies, but they have no hall.

**MUSK.** An oily, friable, brownish substance, generated in the body of the musk, of the most powerful and penetrating smell, which is used as a perfume. It is partially soluble in water, which receives its smell, and also in alcohol, to which, however, it does not communicate its odour.

**MUSK.** A quadruped, in size and figure resembling a small roebuck. It is a native of Thibet and other parts of India, and is remarkable for having an oval bag in the lower part of its belly, containing the perfume called musk.



**MUSK-APPLE** and **MUSK-PEAR.** A sort of apple and pear having the perfume of musk; also other plants or flowers, so called from their having the same perfume, as the musk cranesbill, and the musk ochra, a West Indian plant.

**MUSKET.** A commodious sort of fire-arms used by soldiers. The regular length of a musket is 3 feet 8 inches from the muzzle to the pan.

**MUSKET-SHOT.** The distance that a musket will carry, which is about 120 fathoms.

**MUSK-RAT.** An animal of the beaver kind, which yields an oily fluid, having the perfume of musk.

**MUSK-ROSE.** A sort of rose from which a highly odorous oil is extracted at Tunis.

**MUSLIN.** A fine sort of cotton cloth.

**MUSQUETEERS.** Soldiers armed with muskets.

**MUSSEL.** A testaceous animal found lodged in limestone, or in deep beds under water.

**MUSSULMAN, or MOSLEM,** i. e. Faithful. The name assumed by Mahometans.

**MUST.** The newly pressed juice of the grape, which, by a chymical analysis, is found to contain water, sugar, jelly, gluten, and bitartrate of potash.

**MUSTER.** A review of soldiers under arms.

**MUSTER-ROLL.** A specific list of the officers and men in every regiment, troop, or company.

**MUTATIS MUTANDIS.** Things being changed as they ought to be.



**MUTE** (in Law). Not answering directly to the arraignment, on an indictment for felony. A prisoner is said to stand mute when he will not put himself upon the inquest.

**MUTE** (in Mineralogy). An epithet for minerals which do not ring when they are struck.

**MUTES** (in Grammar). Letters which cannot form a sound without a vowel after them, as b, c, d, g, k, p, q, t.

**MUTES** (in the Grand Seignior's Segraglio). Dumb officers, who are sent to strangle, with the bow-string, bashaws or other persons who fall under the sultan's displeasure.

**MUTES** (among Undertakers). Those men who are employed to stand at the door of the deceased, until the body is carried out.

**MUTINY**. A revolting from lawful authority, particularly among soldiers and sailors.

**MYRMELEON**. A genus of insects in the Linnæan system, one species of which

is remarkable on account of its larva, which has the property of preparing a sort of pitfall for the ensnaring of other insects.

**MYRRH**. A resinous concrete juice, procured from a tree growing in Arabia and Abyssinia. The sort of tree which yields this substance is not exactly known, but, according to Bruce, it is a sort of mimosa. Myrrh is in the form of tears, brittle, of an aromatic taste, not melting when heated, and burning with difficulty; yields oil by distillation, and forms a yellow solution with water.

**MYRTLE**. A fragrant shrub which, among the ancients, was sacred to Venus. The common myrtle is a native of Asia, Africa, and Europe.

**MYRTUS**. The generic name of the myrtle in the Linnæan system; includes also among its species the pimento or allspice tree.

**MYTHOLOGY**. The fabulous history of the heathen deities and heroes, and divine honours paid to them.

## N.

**N**, the thirteenth letter of the alphabet, stood as a numeral for 900, and, with a dash over it, thus,  $\bar{N}$ , 9000. **N**. or **No**. stands as an abbreviation for numero, number; also for north, note, noun, &c.

**NABOB**, or **NAVOUB**. An Indian word for a deputy; a title of dignity and power applied to those who act under the sonbahs or viceroys.

**NABONASSAR**. First king of Babylon, in whose reign, according to Ptolemy, astronomical observations were made; whence, an æra was formed from this king's reign, called the æra of Nabonassar, dated 747 years before Christ.

**NADIR** (in Astronomy). That point in the heavens opposite to the zenith, and directly under our feet, or a point in a right line, supposed to be drawn from our feet through the centre of the earth, and terminating in the lower hemisphere.

**NAIL** (in Anatomy). The horny lamina on the extremity of the fingers and toes.

**NAIL** (with Ironmongers). Spikes of iron and brass, having heads, and fitted for binding several pieces of wood together.

**NAIL** (in Commerce). A measure of length, containing the sixteenth part of a yard.

**NAKED**. A term in Architecture, applied either to a column or a wall, to

denote the face or plain surface from which the projections take their rise.

**NANKIN**. A well known stuff, so called from Nanking, the city in China.

**NAPE**. The hinder part of the neck.

**NAPHTHA**. A native combustible liquid, and one of the thinnest of the liquid bitumens issuing from the earth, and found on the borders of springs on the shores of the Caspian Sea. It feels greasy, has a bituminous smell, takes fire on the approach of flame, and is so light as to float on the water.

**NARCISSUS**. A genus of plants, which is cultivated in gardens on account of its sweet-smelling flowers, which are either yellow or white.

**NARCOTICS** (in Medicine). Soporiferous and stupifying medicines, as opium and its preparations.

**NARROW**. A small passage between two lands.

**NARVAL**. An animal of the whale tribe, remarkable for its single tooth standing out like the horn of the unicorn.



**NASTURTIUM.** A plant, which is cultivated in gardens, and bears a flower of a deep crimson colour. The seeds, when bruised, have a pungent smell that causes sneezing.

**NATIONAL DEBT.** Loans advanced to government, which constitute the funds or stocks, for which interest is paid from revenues set apart for the purpose.

**NATRON.** Native carbonate of soda.

**NATURAL HISTORY.** That branch of knowledge which treats of the characteristics or distinctive marks of each individual object, whether animal, vegetable, or mineral; as also of its peculiar habits, qualities, uses, &c.

**NATURALIZATION (in Law).** The admitting of an alien into the number of natural subjects.

**NATURAL ORDERS (in Botany).** A mode of classifying plants according to their natural or more obvious characteristics.

**NATURAL PHILOSOPHY.** That branch of science which treats of the powers of nature, the properties of natural bodies, and their actions on one another, comprehending under it the several divisions of astronomy, chymistry, electricity, galvanism, hydraulics or hydrostatics, magnetism, mechanics, optics, pneumatics, &c.

**NAVAL ARCHITECTURE.** The science of ship building, comprehending the theory of delineating marine vessels upon a plane surface, and the art of framing them upon the stocks according to the proportions exhibited in a regular design.

**NAVAL ARCHITECTURE, HISTORY OF.** The first example of any construction fitted to be borne up by the waters is recorded in Scripture in the case of the ark built by Noah under the divine assistance and commands. As this was built by more than human aid, it is not surprising that we hear of no farther attempts at building vessels of any kind until the nation of the Egyptians was formed, who doubtless profited by those arts and sciences which, as is generally admitted, were practised before the flood, and transmitted by Noah and his family to his posterity. The Egyptians, we are told, constructed the barks which they used on the Nile of planks cut out of the acacia, or Egyptian thorn; the planks were nearly square, measuring about three feet each way, and being lapped over each other like tiles, were fastened together with wooden pins. The joints and seams were carefully calked with the papyrus, and benches of the same material were formed for the rowers. As

the necessity of some impelling and directing force in aid of human labour was soon felt, a rudder and a sail were quickly added. The sail, which was made of the papyrus, was fastened to a pole serving as a mast, which was made of the acantha. As such vessels were incapable of stemming the current of the river when the wind was unfavourable, they used to be towed by persons on the bank, and when they went with the current, the Egyptians used to accelerate their motion by tying a hurdle of tamarisk to the prow of the vessel, and letting it down into the water, the stream acted on the hurdle more strongly than it would on the sides of the vessel, and thus increased the velocity of its motion very materially. In order to preserve a due balance between the head and the stern, which might otherwise have been destroyed by the action of the hurdle, they caused a stone of considerable magnitude, pierced through the middle, to be suspended by a rope from the stern, which enabled them to swim nearly with an even keel.

The first contrivance to supply the place of a commercial vessel is generally admitted to have been a kind of raft, or collection of trees fastened together with ropes, made from the bark. But as in a structure so rude they were altogether without the power of directing their course, they set about remedying this inconvenience, by putting a few thick planks to the depth of three or four feet in the water between the joists of the trees which composed the raft. These being raised or lowered at the pleasure of the pilot, served in some measure the purpose proposed. With no better contrivances than this, the Phœnicians are said to have visited the islands of Sicily, Corsica, and various other islands in the Mediterranean. It is also worthy of observation, that floats answering to the description of these were found in the south seas in the last century.

Although the Greeks were not remarkable for a spirit of commercial enterprise, yet the remains of antiquity furnish us with ample evidence of the advances which they made in the art of shipbuilding. They had vessels of different forms and sizes, distinguished, according to their use, into ships of passage, ships of burden, and ships of war. The latter were likewise designated triremes, quadremes, and quinquiremes, according to the number of banks of oars, which were raised in a sloping direction one above another. Those which had most banks were built highest, and rowed with the greatest strength. The

Greeks in all probability derived their knowledge of shipbuilding from the Carthaginians, a warlike and trading people descended from the Phœnicians, who were celebrated for their skill in the construction and management of vessels. In consequence of their contests with the Romans, the latter, after having suffered one or two defeats in naval engagements, acquired the art of building ships from their rivals, and successfully employed it to their overthrow.

The modern art of shipbuilding appears to have been derived from the northern tribes, among whom we find that trees hollowed out like canoes were first used. The crusades first gave the impulse to improvements in ship building, which notwithstanding continued for some time at a low ebb. Even in the reign of Edward the First ships were very insignificant in point of size, for it appears that forty men were deemed sufficient to man the largest vessels in England. The states of Venice and Genoa probably first increased the size of their ships, but they were soon surpassed by the Spaniards, who first employed cannon. The Hanse Towns made such advances in naval architecture, that in the fourteenth century it was usual for them to let their ships out to foreign princes. In the reign of Henry IV. ships of considerable size began to be built in England, and they continued to increase in magnitude until the reign of Henry VIII. when two very large ships were built, namely, the Regent, of 1000 tons burthen, and the Henry Grace Dieu, which was larger. From the reign of Charles II. the navy of Great Britain acquired great importance, and in consequence of the wars which have been since carried on in several subsequent reigns, it has risen to its present state.

In 1678 the British navy consisted of 83 ships, of which 58 were of the line, in 1689 there were 173 ships, and in 1791, above 430.

**NAVAL CROWN.** A crown among the Romans given to him who first boarded an enemy's ship; it was a circle of gold representing the beaks of ships.



**NAVE.** The body or main part of a church.

**NAVIGATION.** The art of conducting a vessel at sea from one port to another. This is navigation properly so called, to distinguish it from common navigation or coasting, that is, conducting vessels from one port to another lying on the same coast; and inland navigation, which is performed by small craft on canals. There is also a submarine navigation, that is, the art of sailing under water by means of the diving bell, &c. Navigation is divided into theoretical navigation, which treats of the difference of latitude, the difference of longitude, the reckoning or distance run, the course or rhumb run on, besides the different modes of sailing—plain sailing, in which the plane chart is made use of; Mercator's or globular sailing, in which Mercator's chart is used, &c. Practical navigation has respect to the places sailed to or the waters sailed over, and is either proper, common, inland, &c. as before explained.

**NAVIGATION, HISTORY OF.** Navigation and commerce without doubt took their rise together, for the desire of gain being one of the most powerful incentives to action, would naturally lead men to explore distant countries. Hence we find that the Phœnicians, particularly those of Tyre, who were the first trading people on record, were also the first to make fleets, and by the aid of astronomical observations to extend their voyages to some distance from their own shores. The Carthaginians followed the course of their ancestors the Tyrians, and addicted themselves so thoroughly to trade and navigation that they surpassed every other nation of antiquity in the cultivation of these two arts. They first made the quadremes, or four-oared galleys, and probably were the first who made cables for their large vessels of the shrub spatium. They likewise pushed their discoveries to a vast extent. They were perfectly acquainted with the Mediterranean and all the ports in it, and proceeded to the westward farther than any other nation. Britain and the Canaries were known to them, and in the opinion of some they even went as far as America. The formidable fleets they fitted out, the quantity of shipping they always kept in their employ, and the honour they so long enjoyed of being the masters of the sea, sufficiently attest the advances which they made in navigation. As the Greeks and Romans were more addicted to war than commerce, they employed their shipping principally in trans-

porting their men to the countries they were going to attack, or in engaging their enemies at sea. That the Athenians excelled all the other Greeks in their maritime warfare is evident from the victories which they gained over the Persians by sea. As to the Romans, they are said by Polybius to have been utter strangers to naval affairs, and quite ignorant of ship building, before the first Punic war, when a Carthaginian galley having accidentally stranded on the coast of Italy was taken by them, and served as a model for the construction of vessels. Of this they made so good a use as to raise a fleet of one hundred and twenty galleys, with which they were enabled to beat the Carthaginians on their own element. It does not appear, however, that either of these people went to any distance in their vessels, either for purposes of trade or curiosity. The only voyage of discovery we read of in antiquity was that made by Nearchus, under the auspices of Alexander. In all other countries navigation was encouraged solely for the purposes of commerce, as by the Egyptians and the Byzantines, and subsequently by the Venetians and Genoese until the time of the Crusades, when a spirit of adventure was excited throughout all Europe, and preparations were made for voyages to the Holy Land, which led to the improvement of navigation. The laws of Oleron, framed and established by our king Richard I., show that a system of maritime policy was now thought necessary. Of the progress of the English navy it suffices here to observe, that the first statutes respecting it were passed in the reign of Richard II. and that from that period to the present it has been the object of government to raise it to the highest pitch of perfection. As to the art of navigation generally, nothing contributed so much to its advancement as the invention of the mariner's compass, in the fourteenth century, which gave so great a facility to the exploring of unknown regions. From this time many considerable voyages were made, particularly by the Portuguese, under the auspices of Henry Duke of Visco, who was particularly skilled in cosmography, and employed a person from the island of Majorca to teach navigation and to make instruments and charts. In the subsequent reign of John II. one Martin de Bohemia, a Portuguese, native of the island of Fayal, a pupil of Regiomontanus, calculated, about 1485, for the use of navigators, tables of the sun's declination, and recommended the astro-

labe for taking observations at sea. About the same time Columbus conceived the idea of exploring a passage to India by sailing directly towards the west across the Atlantic ocean, and being furnished with a small armament of three ships by Ferdinand and Isabella of Spain, he set sail in August, 1492, and steered directly for the Canary Islands, thence holding his course due west, he stretched away into unfrequented and unknown seas. After encountering incredible difficulties and hardships from the elements, and a scarcity of provisions, but above all from the mutinous spirit of his crew, he arrived at Guanami, one of the large cluster of islands called the Lucaya, or Bahama Isles. He also discovered Cuba, Hispaniola, and several other small islands, and having left a colony in a fort at Hispaniola, returned to Spain in March, 1493. In September following he set out on his second voyage, and sailed by the Leeward Islands to Hispaniola; and in a third voyage, undertaken in 1498, he discovered the continent of America. In the same year Vasco de Gama returned to Lisbon from a voyage to the East Indies by the Cape of Good Hope. As from practice the art of navigation was thus materially improved, so likewise additional efforts were now made to advance it theoretically, and to extend its cultivation. The emperor Charles V. founded a lecture at Seville for the improvement of navigation, which derived much advantage from the discovery of the variation of the compass, and the use of the cross staff. The subject also now began to engage the pens of the learned. Two treatises, the first of the kind, containing a system of the art, were published in Spanish, the first by Pedro de Medina, at Valladolid, in 1545, called 'Arte de Navegar,' the other at Seville, in 1556, by Martin Cortes, under the title of 'Breve Compendio de la Sphera y de la Arte de Navegar, &c.' which was translated into English and passed through several impressions.

The finding of the longitude, which is still a desideratum in the art, had even early engaged the attention of writers, for we find that Pedro Nunez, or Nonius, published a treatise on this subject in 1537 in the Portuguese language, which was afterwards printed at Basil in Latin, under the title of 'De Arte et Ratione Navigandi.' In this work the problem of determining the latitude from two observations of the sun's altitude and the intermediate azimuth is resolved. In 1557, Bourne

published his 'Regiment for the Sea,' intended as a supplement to Cortes, and in 1581 Michael Coignet, a native of Antwerp, published his 'Instruction Nouvelle des Points plus excellens et necessaires touchant l'Art de Naviger,' intended as an improvement upon Medina. The discovery of the dipping-needle was explained by Robert Norman in his 'New Attractive,' a pamphlet, to which is commonly subjoined William Burrough's 'Discourse of the Variation of the Compass.' In 1594, Captain John Davis published a small treatise entitled the 'Seaman's Secrets,' which was much esteemed at that time.

As the errors of the plane chart had been much complained of by those who were conversant with the subject, Gerard Mercator was led to construct a universal map, for the purpose of obviating those objections, the use of which was afterwards fully illustrated by Mr. Edward Wright of Cambridge, who, in his 'Correction of certain Errors in Navigation,' printed in 1599, showed the true method of dividing the meridian from Cambridge, as also the manner of constructing the table, and its uses in navigation. The method of approximation by what is called the middle latitude is mentioned by Gunter in his works, printed in 1623, but was not brought into general use until some time after. The application of logarithms to navigation was also made by this author in a variety of ways; but Thomas Addison, in his 'Arithmetical Navigation,' is said to have been the first to apply logarithmic tables to the cases of sailing. From this time several writers in England and elsewhere contributed to the improvement of the science, as Gellibrand, in a 'Discourse Mathematical on the Variation of the Needle;' Norwood, in his 'Seaman's Practice;' John Baptist Riccioli, at Bologna, in 1661; Father Millet Dechals in 1674 and 1677; M. Bougier, in 1698; William Jones, in a 'New Compendium of the whole Art of Navigation;' Peter Bouque, in his 'Nouveau Traité de Navigation;' and Dr. Robertson's 'Elements of Navigation,' to which was added a valuable preface by Dr. James Wilson.

**NAVIGATOR.** One who follows the practical part of navigation; particularly one who goes on voyages of discovery.

**NAUMACHIA.** The representation of a sea fight, which among the Romans formed a part of the Circensian games.

**NAUTICAL.** An epithet for what belongs to the navy or navigation, as the Nautical Almanack, an almanack published

under the direction of the Board of Longitude, for the use of mariners.

**NAUTILUS.** A genus of testaceous worms, one species of which, called the sail shell, floats on the surface of the sea in its shell, by the help of a membrane which it extends, so as to make it serve the purpose of a sail.

**NAVY.** The whole naval establishment of any country, comprehending the ships, officers, men, stores, &c. &c. That part of the navy of England which is distinguished by the title of the Royal Navy comprehends all ships of war and their crews, &c.

**NAVY BOARD** (in the English Navy). Consists of a lord high admiral or lords commissioners, with a number of inferior officers.

**NAZARENES.** A term of reproach among the Jews for our Saviour and his disciples.

**NAZARITES.** A sect among the Jews affecting certain peculiarities.

**N. B. i. e. NOTA BENE.** Take notice.

**NEAPTIDES.** Tides in the second and last quarter of the moon, not so high as the spring tides.

**NEAT.** All kinds of beeves, as the ox, cow, &c.

**NEAT'S FOOT OIL.** An oil extracted from the feet of oxen.

**NEAT'S LEATHER.** Leather made of an ox or cow.

**NEAT WEIGHT.** The weight of a commodity without the bag, &c.

**NEBULÆ.** Spots in the heavens, some of which consist of clusters of exceedingly small stars, others appear like luminous spots of different forms.

**NECK.** That part between the head and the body.

**NECK.** Any thing long in the form of the neck, as the neck of a bottle, a violin, &c.

**NECROLOGY.** A register of the deaths of benefactors in a monastery; also a register of distinguished persons who die within a certain period.

**NECROMANCY.** A sort of magic practised by the Jews, Greeks, and Romans, by which they attempted to raise the dead or make them appear.

**NECTAR** (in Mythology). The drink of the gods, according to the poets.

**NECTAR** (in Medicine). A drink of a delightful taste, smell, and colour.

**NECTARINE.** A sort of peach, having a smooth rind and a firm flesh.

**NECTARY.** The melliferous part of a vegetable.

**NEEDLE.** An instrument of steel for sewing, having a sharp point for piercing and an eye to receive the thread; also an instrument for knitting, which is a simple steel wire.

**NEEDLE, or MAGNETICAL NEEDLE.** A needle touched with the loadstone, and suspended on a pivot, on which playing at liberty, it directs itself to the north and south of the horizon. Magnetical needles are called horizontal when balanced equally on both sides, and inclinatory or dipping when they are constructed so as to show the dip of the needle, or how far it points below the horizon.

**NEGATIVE.** An epithet for what implies negation.

**NEGATIVE ELECTRICITY.** That state of bodies in which they are deprived of some portion of the electricity which they naturally contain.

**NEGATIVE PREGNANT (in Law).** A negative which implies an affirmation, as when a person denies having done a thing in a certain manner or at a certain time, as stated in the declaration, which implies that he did it in some manner.

**NEGATIVE QUANTITIES (in Algebra).** Quantities having the negative sign set before them.

**NEGATIVE SIGN (in Algebra).** A sign marked thus —, to denote less than nothing.

**NEGOTIATION.** The conducting a treaty either in political or commercial matters.

**NEGROES.** The black inhabitants of Africa, having woolly hair and a peculiar complexion. They have hitherto been the objects of the inhuman traffic called the slave trade.

**NEM. CON.** An abbreviation for *nemine contradicente*, that is, no one opposing, applied to the decisions of parliament and other public assemblies.

**NEM. DISS.** An abbreviation for *nemine dissentiente*, no one dissenting, that is, with unanimous consent.

**NEPHRITE.** A sort of stone of the talc kind, of a dark leek-green colour, verging to blue. It is found in China, America, and Egypt, and is highly prized by the Hindoos and Chinese, by whom it is made into talismans.

**NEPHRITIC.** Relating to the kidneys.

**NE PLUS ULTRA, i. e.** no farther, the extremity, or utmost extent to which any thing can go.

**NEPTUNE.** The god of the sea, brother

of Jupiter in the heathen mythology, who is known by his trident.



**NERITA.** A sort of testaceous worms, whose shells are adorned with a beautiful painting in miniature.

**NERVES (in Anatomy).** Long white cords, the medullary prolongations of the brain which serve for sensation.

**NERVES (in Botany).** Long tough strings, which run lengthways in the leaf of a plant.

**NERVOUS.** An epithet for what relates to the nerves, as the nervous system, nervous disorders, &c.

**NEST.** The lodging prepared by birds for incubation and receiving their young.

**NET.** A device for catching either fish or fowl, formed by threads interlaced.

**NETTINGS.** Small ropes seized together gratewise with rope yarn, to stretch in different parts of a ship.

**NETTLE.** A stinging herb.

**NET WEIGHT.** See **NEAT WEIGHT.**

**NEUROPTERA.** An order of insects in the Linnæan system, including those which have the wings reticulate, as the dragon fly, the day fly, the lion ant, &c.

**NEUTRALIZATION (in Chymistry)** The process by which an acid and an alkali are so combined as to disguise each other's properties.

**NEUTRAL SALTS.** Salts which partake of the nature of both an acid and an alkali.

**NEWSPAPER.** A periodical publication, which appears once or oftener in the week, containing an account of the political and domestic occurrences of the time.

**NEW STYLE, abbreviated N. S.** The Gregorian method of reckoning the days of the year, so as to adjust the odd hours and minutes in the period of the sun's revolution.

**NEWT.** An animal of the lizard tribe.

**NEWTONIAN PHILOSOPHY.** The doctrine of the universe as explained by Sir Isaac Newton, respecting the properties, laws, affections, forces, motions, &c. of bodies, both celestial and terrestrial. The chief parts of the Newtonian philosophy are explained by the author in his *Principia*, or *Principles of Natural Philosophy*.

**NICENE CREED.** A particular creed formed at the first general council assembled at the city of Nice by Constantine the Great, A. D. 315. This creed has since been adopted by the church of England.

**NICKEL.** A metallic substance, mostly found in a metallic state, but sometimes in that of an oxide. Its ores have a coppery red colour.

**NICKEL KUPFER,** or the **SULPHURET** of **NICKEL.** Is a compound of nickel, arsenic, and a sulphuret of iron.

**NICTITANT MEMBRANE** (in Comparative Anatomy). A thin membrane chiefly found in birds and fishes, which covers the eyes of these animals, so as to shelter them from the dust and excess of light.

**NIGHT** (in Law). The period of darkness, when a man's face cannot be discerned.

**NIGHTINGALE.** A small brown bird that sings beautifully during the night.



**NIGHTMARE.** A heavy pressing sensation on the breast during the night, to which nervous persons are subject.

**NIGHTSHADE,** or **DEADLY NIGHTSHADE.** A poisonous plant, bearing a bell-shaped corolla, from the leaves of which painters extract a fine green.

**NIHIL DICIT** (in Law). A failure on the part of the defendant to put in an answer to the plaintiff's declaration, &c., by which omission judgment is of course had against him.

**NILGHAU,** or **NYLGHAU.** The Persian name for a species of antelope, the *antelope picta* of Linnaeus, having short

horns bent forward, and the upper and under parts of the neck maned.



**NIMBUS** (among Antiquarians). A circle observed on some medals, or round the head of some emperors, answering to the circles of light drawn around the images of saints.

**NISI PRIUS** (in Law). A commission directed to the judges of assize, empowering them to try all questions of fact issuing out of the courts of Westminster, that are then ready for trial; and as by the course of the court all causes are heard at Westminster, the clause is added in such writs, *Nisi prius justiciarii ad capiendas assisas venerint*; that is, Unless before the day fixed the justices come into the county in question, whence the writ, as well as the commission, have received the name.

**NITRATES.** Salts formed of nitric acid with salifiable bases, as the nitrate of potash, soda, &c.

**NITRE,** vulgarly called **SALTPETRE.** A neutral salt, being a crystallized, pellucid, and whitish substance, of an acrid and bitterish taste, impressing a strong sense of coldness on the tongue. It is found ready formed in the East Indies and in the southern parts of Europe, but by far the greater part of the nitre in common use is produced by the combination of substances in suitable situations, which tend to produce nitric acid, particularly where animal matter becomes decomposed by the air, such as slaughterhouses, drains, and the like.

**NITRIC ACID.** A heavy yellow liquid procured by the chymical combination of oxygen and nitrogen gas. Diluted with the sulphuric and muriatic acids it forms the well known liquid aquafortis.

**NITROGEN,** or **AZOTE.** The principle of nitre in its gaseous state, which constitutes four fifths of the volume of atmospheric air. It has neither smell nor taste,

and is not to be procured in a separate state; but is remarkable for the properties of extinguishing flame and animal life.

**NITRO MURIATIC ACID.** A compound of nitric and muriatic acids, formerly called aqua regia.

**NITROUS ACID.** An acid which has less of oxygen than the nitric acid.

**NITROUS OXIDE OF AZOTE.** A gaseous substance best procured from nitrate of ammonia, which if inhaled produces an exhilarating and intoxicating effect.

**NOBILITY.** Those who hold a rank above the degree of a knight, and are distinguished from the commonalty by titles and privileges.

**NOBLE.** A coin value 6s. 8d. which was struck in the reign of Edward III.



**NOCTANTER.** By night.

**NOCTURNAL.** An epithet for what belongs to the night, as a nocturnal arch, the arch described by the sun or a star in the night.

**NOCTURNAL, or NOCTURLABIUM.** An instrument used at sea for finding the latitude and hour of the night.

**NODDY.** A sea fowl of the tern kind.

**NODE (in Surgery).** A hard tumour rising out of a bone.

**NODE (in Dialling).** The axis or cock of a dial.

**NODES (in Astronomy).** Two points where the orbit of a planet intersects the ecliptic; the Northern or Ascending Node, called the dragon's head, is marked thus ☉, the Southern or Descending Node, the dragon's tail, marked thus ☊.

**NOLLE PROSEQUI.** An agreement on the part of the plaintiff not to prosecute his suit.

**NO MAN'S LAND.** A sea term for the space in midships, between the after part of the belfry and the fore part of a ship's boat, when she is stowed upon the boom.

**NOMENCLATURE.** A catalogue of the most useful and significant words in any language or in any particular science.

**NOMINATIVE (in Grammar).** The first case of a noun, or the name itself.

**NONAGESIMAL.** The ninetieth degree of the ecliptic.

**NONCHALANCE.** An affected indifference.

**NON COMPOS MENTIS (in Law).** Not of sound mind.

**NON CONDUCTORS (in Electricity)** Bodies which do not become electric by being placed in the neighbourhood of an excited body.

**NONCONFORMIST.** A person not conforming to the church of England.

**NON EST INVENTUS, i. e. literally,** He has not been found. The answer made by the sheriff in the return of the writ, when the defendant is not to be found in his bailiwick.

**NONPLUS.** A difficulty or embarrassment, when one cannot proceed any way.

**NON PROS. i. e. Non prosequitur,** he does not prosecute. A nonsuit, or the form of renouncing or letting fall a suit by the plaintiff.

**NONRESIDENCE (in Law).** The not residing on their benefices, as applied to spiritual persons.

**NONSUIT.** The letting fall or renouncing a suit.

**NORMAL.** A perpendicular.

**NORROY KING AT ARMS.** The third king at arms.

**NORTH POLE.** A point in the northern hemisphere, ninety degrees distant from the equator.

**NOSOLOGY.** A systematic arrangement and description of diseases.

**NOSTRUM, i. e. Ours.** The name given to the medicines offered by quacks as universal remedies.

**NOTARY (in Law).** A scrivener who takes notes and draughts of contracts.

**NOTARY PUBLIC (in Commerce).** A scrivener who witnesses deeds, in order to make them authentic in foreign courts.

**NOTATION (in Arithmetic and Algebra).** The method of expressing numbers or quantities by signs or characters appropriated for that purpose. The Jews, Greeks, and Romans expressed their numbers by the letters of their alphabet; the Arabians had particular characters called figures, which have been universally adopted in Europe in all arithmetical operations. The Roman mode of notation is also still in use in marking dates or numbering chapters, &c.

**NOTATION (in Music).** The manner of expressing sounds by characters.

**NOTE.** Any short writing or memorandum.



**NOTE** (in Music). A character to distinguish the pitch and time of a sound.

**NOTE OF HAND.** A writing under a man's hand, by which one person engages to pay another a sum of money on a certain day; this may either be in the form of a bill or of a promissory note.

**NOT GUILTY** (in Law). The general issue or plea of the defendant in a criminal action.

**NOTICE** (in Law). The making something known that a man was or might be ignorant of, and which it was proper he should be made acquainted with.

**NOV.** An abbreviation for November.

**NOVEL.** A narrative of fictitious events and characters. When the incidents and persons are not probable it is called a romance; and if only a short story, a novelette.

**NOVEMBER.** The eleventh month of the Julian year, and the first of the winter quarter, of thirty days. It was called November because it was the ninth of Romulus's year.

**NOVICE** (in the Romish Church). One who has entered his novitiate or year of probation, before he takes his vow; in a general sense, a learner in any profession, an unskilful person.

**N. S.** An abbreviation for new style, or the new mode of forming the calendar.

**NOUN** (in Grammar). A part of speech, the name of the thing itself, as horse, dog, &c.

**NUCLEUS.** The kernel of a nut, &c.

**NUCLEUS** (in Astronomy). The body of the comet, otherwise called the head.

**NUDE CONTRACT.** A bare naked contract, without a consideration, which is void in law.

**NUISANCE** (in Law). Any annoyance which tends to the hurt or inconvenience of another.

**NUMBER** (in Arithmetic). An assemblage of several units or of several things of the same kind. Whole numbers are otherwise called integers, as 1, 2, 3. Broken numbers are fractions, as  $\frac{1}{2}$ . Cardinal numbers express the number of things, as 1, 2, 3. Ordinal numbers denote the order of things, as 1st, 2d, 3d, &c. Even numbers are those which may be divided into two equal parts, without a fraction, as 6, 12, &c. Uneven numbers are such as leave a remainder after being divided, as 5, 13, &c. A square number is the product of any number multiplied by itself, as 4, the product of 2 multiplied by 2.

**NUMBER** (in Grammar). An inflection or change of ending in nouns and verbs,

to denote number. Numbers are singular to denote one, dual to denote two, or plural to denote more than one.

**NUMBERS** (in Poetry). Measures or cadences which render a verse agreeable to the ear.

**NUMERAL.** Any character which expresses a number, as 1, 2, 3.

**NUMERAL LETTERS.** The Roman letters I. II. III. IV. &c. which denote numbers.

**NUMERATION.** The art of expressing in figures any number proposed in words, or expressing in words any number proposed in figures.

**NUMERATOR.** The number in the upper line of a fraction, denoting the number of the given parts taken, as 3 in  $\frac{3}{4}$ , that is three out of the four parts of an integer.

**NUMERICAL.** Relating to numbers, as numerical algebra, that which is performed by the help of numbers.

**NUMISMATICS.** The science of medals and coins.

**NUNCIO.** The pope's ambassador.

**NUNCUPATIVE WILL.** A will made by word of mouth.

**NUNNERY** (in the Romish Church). A religious house for nuns, or females who have bound themselves by vow to a single life.

**NURSERY.** A chamber for young children.

**NURSERY.** A place set apart for young trees and shrubs.

**NUTATION** (in Astronomy). A tremulous motion of the earth's axis.

**NUTGALLS.** Excrescences on the leaf of the oak. The Aleppo galls are imported for the use of dyers, calico printers, &c.

**NUTMEG.** A spice, the fruit of a tree as big as a pear tree, growing on the island of Banda. The nutmeg is the kernel of the fruit, not unlike the peach, the rind or coat of which is called mace.



**NUX VOMICA.** A flat, compressed, round fruit, about the breadth of a shilling, brought from the East Indies; it is a certain poison for dogs, cats, &c., and is one of the ingredients unlawfully infused into beer, to give it a stupifying quality.

**NYMPHÆ.** The chrysalis, or third stage of insects, between the grub and the fly.

**NYMPHS.** The goddesses of the woods, according to the poets.

## O.

**O,** the fourteenth letter of the alphabet, used as a numeral for eleven, and with a stroke over it, thus  $\bar{O}$ , for eleven thousand.

**OAK.** A tree celebrated for its timber, which is so tough that the sharpest tools will scarcely penetrate it. It is also remarkable for its slowness of growth, bulk, and longevity. Oaks have been found to grow only from fourteen to twenty inches in diameter in the space of eighty years.

**OAKUM.** Old ropes untwisted and made into loose hemp for calking ships.

**OAR.** A long pole with a flat thin end, by which vessels are driven along in the water.

**OATH (in Law).** A solemn affirmation or denial of a thing, accompanied with an appeal to God.

**OATH OF ALLEGIANCE.** The oath which the subject takes when required to bear true allegiance to the king.

**OATH OF SUPREMACY.** The oath which establishes the supremacy of the king over every other power, temporal or spiritual, within these realms, whereby the supremacy of the pope was renounced at the Reformation.

**OATH OF ABJURATION.** An oath which expressly establishes the succession of the reigning family to the throne of England, to the exclusion of the Stuart family or any other.

**OATS.** A grain the peculiar food of horses, and in Scotland and the north of England also the food of man. Oatmeal, the flour of the oats, is also much used medicinally.

**OBELISK (in Architecture).** A square stone growing smaller from the base to the summit.

**OBELISK (among Printers).** A mark of reference, thus (+).

**OBJECT GLASS.** A glass in a telescope or microscope at the end of the tube next to the object.

**OBIT (in the Romish Church).** An annual service for the dead.

**OBITUARY.** A register of the deaths.

**OBLATE.** Flattened, an epithet for a sphere or spheroid.

**OBLATION.** What is laid on an altar or given at the altar by way of offering.

**OBLIGATION (in Law).** A bond containing a penalty on condition of not performing certain covenants annexed.

**OBLIQUE.** Deviating from a perpendicular line or direction, as an oblique angle, &c. that which is not a right one.

**OBLIQUE CASES (in Grammar).** The cases of nouns declined from the nominative.

**OBLIQUITY OF THE ECLIPTIC.** The angle which the ecliptic makes with the equator, being now estimated at something less than 23 degrees 28 minutes, as the ecliptic approaches nearer to a parallelism with the equator at the rate of about 42 seconds in 100 years.

**OBOLUS.** A small Grecian coin, equal to one penny farthing.

**OBSERVATION.** The observing the phenomena of the heavenly bodies by means of any instrument.

**OBSERVATORY.** A place erected in some lofty situation, and fitted up with telescopes, quadrants, &c. for the purpose of making astronomical observations, such as the observatory at Greenwich, Paris, Munich, and Palermo, which are the most celebrated among the modern observatories. The ancient Chaldeans had also similar places.

**OBSERVATORY EQUATORIAL, or PORTABLE.** An instrument for solving many problems in astronomy, as finding the meridian, pointing the telescope on a star, though not in the meridian, in full day light, &c.

**OBSIDIONAL CROWN.** A crown



made of the grass that grew in a besieged place, which the Romans gave to the general by whom the town was taken.

**OBT.** An abbreviation for obedient.

**OBTUSE ANGLE.** Any angle greater than a right angle, See **ANGLE**.

**OCCIDENT.** Westward, as the occident equinoctial, &c.

**OCCIPUT.** The back part of the head.

**OCCULTATION.** The obscuration of any star or planet by the interposition of any other body, as the moon, &c.

**OCCULTATION, CIRCLE OF.** An imaginary circle round the poles, which contain those stars that are not visible in our hemisphere.

**OCCULT DISEASES.** Diseases the causes and treatment of which are not understood.

**OCCULT QUALITIES.** Qualities in bodies which do not admit of any rational explanation.

**OCCUPATION (in Law).** The possession and use of lands or tenements.

**OCEAN.** A vast collection of salt and navigable waters, enclosing the continents or quarters of the globe, Europe, Asia, Africa, and America, and comprehended under the several divisions of the Atlantic, the Pacific, and the Indian Oceans.

**OCHRE.** A sort of earth consisting of alumina and red oxide of iron.

**OCTAGON.** A figure of eight sides and angles.



**OCTAHEDRON.** One of the five regular bodies, consisting of eight equal and equilateral triangles.

**OCTANDRIA (in Botany).** One of the Linnæan classes, consisting of plants having eight stamina to each flower.



**OCTANT.** An aspect of two planets when they are distant from each other 45 degrees, or the eighth part of a circle.

**OCTAVE (in Music).** The eighth interval in a scale of sounds.

**OCTAVO, i. e. in eight,** expressed by printers thus, 8vo. The form of a page by folding a sheet into eight leaves, so as to make it consist of sixteen pages.

**OCTOBER.** The eighth month in the year, containing thirty-one days.

**OCCULIST.** One who cures the disorders of the eyes.

**ODE.** A poem written to be sung to music.

**ODD.** An epithet for any number in the series of 1, 3, 5, 7, &c.

**ODOUR.** The scent or smell.

**OEDEMA.** Any tumour or swelling.

**OESOPHAGUS.** The gullet, a membranaceous canal, reaching from the fauces to the stomach.

**OFFENCE (in Law).** The violation of any law; this is capital if punished with death, and not capital if visited with any other punishment.

**OFFERINGS (in Law).** Church dues, payable by custom, as the Easter offerings, or the offerings at marriages, &c.

**OFFICE.** That function by virtue whereof a man hath some employment, either in the public affairs or those of a private individual.

**OFFICER (in Law).** One filling an office or post under government.

**OFFICER (in Military and Naval Affairs).** One acting under government in a military or naval capacity.

**OFFICERS, COMMISSIONED (in the Army).** Appointed by the king's commission.

**OFFICERS, COMMISSIONED (in the Navy).** Hold their commissions from the Lord High Admiral or Lords of the Admiralty.

**OFFICERS OF THE CROWN.** The great officers of the crown are the Lord High Chancellor, the Lord High Steward, the Lord High Treasurer, the Lord President of the Council, the Lord Privy Seal, the Lord Chamberlain, the Lord High Constable, and the Earl Marshal.

**OFFICIAL (in Law).** A deputy appointed by the archdeacon for the execution of his office.

**OFFICIAL.** An epithet for what is sold in shops, as official plants, herbs, medicines, &c.

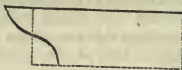
**OFFING.** The open sea, or that part of the sea at a distance from the shore, where there is deep water.

**OFFSETS (in Botany).** Young shoots that spring and grow from shoots.

**OFFSETS (in Surveying).** Perpen-

diculars let fall and measuring from the stationary lines to the hedge, fence, or extremity of an enclosure.

**OGEE** (in Architecture). A moulding formed like the letter S.



**OIL**. A fat, unctuous substance, which derives its name from *olea*, the olive, because it was at first principally known as the produce of the olive. Oils are distinguished by chymistry into volatile or essential oils, which have a strong acrid taste and a strong fragrant smell, being obtained from smelling plants; and fixed oils, which are thick and viscid, insoluble in water, and do not boil under 600 degrees, these latter oils are obtained from both animal and vegetable substances, as train oil, olive oil, linseed oil, &c.

**OIL GAS**. A gas extracted from fish oil, which is more expensive and not reckoned so good as that procured from coals.

**OLERACEÆ**. One of the Linnæan natural orders of plants, containing pot-herbs, as spinage, thyme, mint, &c.

**OLERON, LAWS OF**. A code of maritime law, so called because it was framed by king Richard I. on an island off the coast of France.

**OLFACTORY NERVES**. The nerves which give the sense of smelling.

**OLIGARCHY**. A form of government wherein the administration of affairs is lodged in the hands of a few persons.

**OLIVE TREE**. A tree, native of the southern parts of Europe, which rises with solid upright stems, and branches numerous on every side. The olive, which is the fruit of this tree, yields an oil that is of an emollient and solvent nature.



**OLYMPIAD**. The space of four years,

whereby the Greeks reckoned their time, from the circumstance of the Olympic games having been celebrated once in four years. The first Olympiad is dated, according to some, 774 years before Christ.

**OLYMPIC GAMES**. Solemn games among the Greeks, in honour of Jupiter Olympic, at which five kinds of exercises were exhibited, namely, leaping, running, wrestling, quoiting, and whirlbats.

**OMEGA**. The last letter of the Greek alphabet.

**ONENTUM**. A double netlike membrane spread over the entrails.

**OMER**. A Hebrew measure about three pints and a half English.

**OMNIUM**. A term among stockbrokers for all the kinds of stock, as 3 per cents, 4 per cents, &c. which are sold together as they were bought by the contractors from government.

**ONION**. A bulbous edible root, growing in gardens, and used for various culinary purposes.

**ONYX**. A precious stone, accounted a species of opaque agate. It is a semipellucid gem of different colours, but the bluish white kind is looked upon as the true onyx of the ancients.

**OPACITY**. That property in bodies by which they are rendered impervious to the rays of the sun, owing probably to the density of the parts.

**OPAL**. A precious stone of various colours, which comes under the class of pellucid gems. It is found in many parts of Europe, especially in Hungary. When first dug out of the earth it is soft, but it hardens and diminishes in bulk by exposure to the air. The substance in which it is found is a ferruginous sand stone.

**OPERA**. A dramatic composition set to music. It is sung on the stage, accompanied and interspersed with dialogue.

**OPERAGLASS**. A kind of glass constructed in a small wooden tube, so as to view a person in a theatre, and as the glass is made to point at a different object from that which is viewed, it may be used without any one knowing exactly who is observed.

**OPERATION** (in Surgery). Any exercise of the surgical art which is performed by the use of instruments.

**OPERATION** (in Chymistry). Any process that leads to a given result.

**OPERATION** (in Military Affairs). Any movement of an army for the attainment of a particular object.

**OPHTHALMIA**. An inflammation of the membranes of the eye, a disease which

particularly affected the English soldiers during their stay in Egypt.

**OPIATE.** A medicine made of opium.

**OPIUM.** An inspissated gummy juice obtained from the head of the poppy. It is imported in cakes from Persia, Arabia, and other warm climates; is of a reddish brown colour, and a nauseous bitter taste; and has a powerfully narcotic property.

**OPOBALSAMUM, BALM OF GILEAD.** A gummy juice of the balsam tree.

**OPOPONAX.** A gummy resinous juice obtained from the root of an umbelliferous plant growing in warm climates.

**OPOSSUM.** An animal chiefly found in America, that lives in holes and woody places. The female is remarkable for having two or three pouches, wherein the young conceal themselves in time of danger.



**OPPOSITION** (in Astronomy). One of the aspects of the planets, when they are 180 degrees distant from each other, that is, in a diametrically opposite relation to each other.

**OPTATIVE** (in Grammar). A mode or form of a verb by which is expressed the wish or desire to do a thing.

**OPTIC.** Pertaining to the sight; as Optic Glasses, glasses contrived for viewing objects which cannot otherwise be seen, as spectacles, telescopes, microscopes, &c.

**OPTICIAN.** A dealer in or maker of optical instruments.

**OPTIC NERVES.** The second pair of nerves of the brain, which perforate the bulb of the eye, and serve for the sense of sight.

**OPTIC PLACE OF A STAR.** That point of its orbit in which it appears to be to our eye.

**OPTIC PYRAMID.** A pyramid formed by rays drawn from the several points of the perimeter to the eye.

**OPTICS.** That branch of natural philosophy which treats of the nature of light

and colours, or of the general doctrine of vision. It is distinguished into three kinds; namely, optics, properly so called, which treats of direct vision; catoptrics, which treats of reflected vision, or that which is performed by means of rays reflected from speculums or mirrors; and dioptrics, which treats of refracted vision, or that which is performed by means of rays refracted or turned out of their course by passing through mediums of different densities, chiefly through glasses or lenses.

**OPTICS, HISTORY OF.** The properties of light naturally attracted, at an early period, the attention of philosophers who made nature their study. Empedocles, who flourished upwards of four hundred years before Christ, is said to have written a treatise on light; and the works of Aristotle present us with a number of questions and observations concerning optical appearances. This philosopher was aware that it is the reflection of the light from the atmosphere which prevents total darkness after the sun sets, and in those places where he does not shine in the daytime. He also considered that rainbows, halos, and mock suns were all occasioned by the reflection of the sunbeams in different circumstances, by which an imperfect image of his body was produced, the colour only, and not his proper figure, being exhibited. Euclid wrote a treatise on optics and catoptrics, in which he shows the chief properties of reflected rays in plane, convex, and concave surfaces, in a geometrical manner, beginning with that concerning the equality of the angles of incidence and reflection. He also takes some notice of dioptrics, and remarks on the effect of refraction in regard to an object at the bottom of a vessel, which, when water is poured in, is brought to view, that was not to be seen above the edge of the vessel before the water was poured in. As to the effect of burning glasses, both by reflection and refraction, this is noticed not only by Euclid, but by many other of the ancients; and, if we give credit to historians, the exploits performed by Archimedes in setting fire to the vessels of the Romans before Syracuse by means of burning mirrors, prove that his practical knowledge exceeded that of modern times. There is no doubt that he wrote a treatise on burning glasses, also concerning the appearance of a ring or circle under the water, which shows that this phenomenon had not escaped his notice. The ancients were also acquainted with the production of colours by means of refracted light. Seneca observes that

when the light of the sun shines through an angular piece of glass, it shows all the colours of the rainbow; also that the colours seen in a pigeon's neck, when it changes its position, are the effect of refraction, and on the same principle that a speculum, not having any colour of its own, will assume that of any other body.

Besides, the ancients were not unacquainted with the magnifying power of glass globes filled with water, for the ancient engravers used to employ such a glass globe, in order, as is supposed, to magnify the figures, that they might execute their work with more correctness. Ptolemy, who wrote a considerable treatise on optics, was well acquainted with the refraction of light, and determined the ratio of the angles of refraction, as compared with that of the angles of incidence, with such accuracy, that there is but a trifling difference between the results of his observations and those of Newton; not more than might arise from his having used glass and water of specific gravities something different from those employed by Newton. It appears also from this work of Ptolemy, as also from his *Almagest*, that he employed his knowledge of optics in his astronomical observations, for he was fully aware that refraction decreases from the horizon to the zenith, and that, by means of this refraction, the intervals between the stars appear less when near the horizon than in the meridian. He also accounts for the remarkably great apparent size of the sun and moon when seen near the horizon, by ascribing the appearance to the refraction of the rays by vapours, which actually enlarge the angle under which the luminaries appear, just as the angle is enlarged by which an object is seen from under water.

The next writer of any importance on the science of optics was Alhazen, an Arabian philosopher, who flourished in the twelfth century. He made many observations and experiments on the effects of refraction at the surface between air and water, air and glass, and water and glass, from which he deduced that atmospherical refraction increases the altitudes of all objects in the heavens. He also first observed that the stars are sometimes seen above the horizon by means of refraction, when they are really below it; an observation confirmed by Vitellio and other opticians. He likewise maintained that refraction contracts the diameters and distances of heavenly bodies, and that it is the cause of the twinkling of the stars. Besides,

Alhazen treats largely on the magnifying power of glasses, so that probably his observations led to the invention of spectacles. In the next century followed Vitellio, a Pole, who digested the contents of Alhazen's work, and made many additional observations on the power of refraction. He gave a table of the results of his experiments on the refracting power of air, water, and glass, corresponding to different angles of incidence. Roger Bacon, a contemporary with Vitellio, also wrote on this science, and is generally considered to be the inventor of the magic lantern. Maurolycus, who followed these two at the distance of nearly two centuries, explains, in his treatise *De Lumine et Umbrâ*, the process of vision, showing that the crystalline humour of the eye is a lens which collects the rays of light issuing from the objects, and throws them on the retina, where the focus of each pencil is formed. From this principle he discovered the reason why some people have a short sight and others a long one; also why the former are assisted by concave glasses, and the latter by convex ones. John Baptista Porta, his contemporary, discovered the camera obscura, and took the first public notice of the magic lantern, the original invention of which has been ascribed to Roger Bacon. Kircher, who followed Baptista, enlarged on his hints, and put them into execution. He also made many experiments with the camera obscura, by which he satisfied himself that vision is performed by the intromission of something into the eye, and not by visual rays proceeding from it, as had been formerly imagined. He considered the eye as a camera obscura, the pupil to be the hole in the window shutter, and the crystalline humour to correspond to the wall which receives the images; but in this latter point his idea has been proved, by closer observations, to be incorrect, for it is now known that this office is performed by the retina. The observations and experiments of this writer on the science of optics, and on the nature of vision, appear to have led the way to the discovery of telescopes, which was doubtless made very soon after his time. After this, the writers on optics became very numerous, and their labours contributed to the confirmation and improvement of those who had preceded them. Among the works entitled to particular notice are Barrow's *Optical Lectures*, Huygen's *Dioptrics*, Hartsoecker's *Essaie Dioptrique*, David Gregory's *Elements of Dioptrics and Catoptrics*, Dr. Smith's *Optics*, Wolfius's *Dioptrics and Catoptrics*,

Harris's Optics, but above all, Newton's Treatise on Optics, and his Optical Lectures.

**OPTIME.** A scholar in the first class of mathematics at Cambridge.

**OR** (in Heraldry). The yellow or gold colour, represented on the escutcheon by small dots.



**ORA.** A Saxon coin, equal to from 16*d.* to 20*d.*

**ORACLES** (among the Heathens). Ambiguous answers, which the priests pretended to deliver by the inspiration of their gods, such as the oracles of Apollo at Delphos, and those of Jupiter Ammon in Thebes.

**ORANG-OUTANG.** One of the tailless species of ape, which the most resembles man in its figure.



**ORANGE-TREE.** An evergreen, re-



sembling the laurel in its leaf. It is a native of warm climates, and yields a well known juicy fruit of the same name.

**ORATORY.** The same as **RHETORIC**.

**ORB.** A hollow sphere or space contained between two concentric spherical surfaces, as the orb of the heavens.

**ORBIT.** The path of a planet or a comet described by its centre in its proper motion in the heavens.

**ORBITS** (in Anatomy). The two large cavities in which the eyes are placed.

**ORCHARD.** A piece of ground planted with fruit trees.

**ORCHESTRA.** The stage or middle of the theatre among the Greeks, where the chorus used to dance, and the performers used to sit. It is now the place set apart for the musicians, as the front of the stage in a theatre, a gallery in an assembly-room, &c.

**ORCHEDEÆ.** One of Linnæus's natural orders of plants, containing the orchis and other flowers allied to it.

**ORDEAL.** A Saxon mode of trial, which consisted in trying the guilt or innocence of persons by appeals to Heaven, as in the ordeal by fire, when the party accused undertook to walk blindfold between nine red-hot ploughshares; and if he or she escaped unhurt, it was looked upon as a proof of innocence: so, in the ordeal by water, when a person was thrown bound into a river, or put his hands or feet into scalding water, and the like.

**ORDER** (in Military Affairs), as Order of Battle, the disposition of troops for battle; open order, close order, &c.; also in the sense of command, as the commander in chief's orders, which issue immediately from the commander in chief's office; so brigade orders, general orders, standing orders, &c.

**ORDER** (in Naval Affairs). Command, as sailing orders, &c.

**ORDER** (in Natural History). A particular division of animals, plants, or minerals, comprehended under a class in the Linnæan and other systems.

**ORDER** (in Architecture). The rule of proportion to be observed in the construction of any building, which is applied mostly to the column and the entablature, from the diversity in which have sprung the five several orders, namely, the Doric, Ionic, Corinthian, Tuscan, and Composite.

**ORDER** (in Geometry). A rank or situation in a series of curves, lines, &c.; thus the first order of curve lines is expressed by a simple equation, or the first power; those of the second order, by a

quadratic equation, or the second power; and so on.

**ORDERS** (in Law). Rules made by the court in causes there depending. These orders are made by different courts, as the Chancery, King's Bench, &c.; and also, on particular occasions, orders are made by magistrates at the Sessions.

**ORDERS** (in Ecclesiastical Affairs). Congregations or societies of religious persons, who bind themselves by a vow to live under a superior, according to certain rules prescribed to them by their founder, such as the monks and nuns in the Romish church; likewise the character and office by which ecclesiastics are distinguished, that are set apart for the ministry. Since the Reformation, there are three orders of the clergy acknowledged, namely, bishops, priests, and deacons; whence the phrase, 'to be in orders,' is the same as to be of the clerical order.

**ORDERS OF KNIGHTHOOD** (in Heraldry). Societies of knights instituted by princes, as marks of distinction for such as have distinguished themselves in war. The British orders are the order of the Garter, and the order of the Bath, belonging to England; the Irish order of St. Patrick; and the Scotch order of the Thistle.

**ORDINANCE**. A law or decree.

**ORDINARY** (in the Common Law). One who has ordinary, or exempt and immediate jurisdiction in causes ecclesiastical, as an archbishop or a bishop. The ordinary in Newgate is the clergyman who attends in ordinary upon condemned malefactors; also a term for the officers and servants of the king's household who attend on common occasions, as physicians in ordinary.

**ORDINARY** (in the Navy). The establishment of persons employed by government to take charge of the ships of war which are laid up in the harbours.

**ORDINARY** (in Heraldry). Any charge in coats of arms which is proper to the art, and in ordinary use therein; as the chief, pale, bend, fesse, bar, chevron, cross, and saltire, in distinction from the common charges, or such things as it has in common with the other arts, as animals, implements, crosses, &c.

**ORDINATES** (in Conic Sections). Geometrical lines drawn parallel to each other, and cutting the curve in a certain number of points.

**ORDINATION** (in Ecclesiastical Affairs). The act of ordaining, or putting into holy orders. The age of ordination

for a deacon is twenty-three, and for a priest twenty-four.

**ORDNANCE**. A general name for all sorts of great guns.

**ORDNANCE, OFFICE OF**. An office kept within the Tower of London, which superintends and disposes of all the arms and implements of war.

**ORE**. A general name for metals in an unrefined state, as they are dug out of the earth, where they are found in the four following states: namely, 1. Pure, that is, by themselves, in a pure metallic state, or as alloys, in combination with other metals. 2. As sulphurets, or in combination with sulphur. 3. As oxides, or in combination with oxygen: and 4. As salts, that is, in combination with acids.

**ORGAN** (in Physiology). An instrument by which any natural faculty in an animal body is exercised, as the ear, which is the organ of hearing; the eye, which is the organ of sight.

**ORGAN** (in Music). A wind instrument blown by bellows, and containing numerous pipes of various kinds and dimensions, which for its solemnity, grandeur, and rich volume of tone, is peculiarly fitted for the purposes for which it is commonly employed. Organs are sometimes of an immense size: the organ in the cathedral church at Ulm, in Germany, is said to be 93 feet high and 28 broad, its largest pipe being 13 inches in diameter, and it having sixteen pair of bellows.

**ORGANIC REMAINS**. A name applied to all those animal and vegetable substances which have been dug out of the earth in a mineralized state, and serve as strong evidences of the universal deluge, and the changes which ensued. See GEOLOGY.

**ORIENT**. The east or rising point.

**ORIFICE**. The mouth or entrance to any cavity in the animal body.

**ORIGINAL**. The first copy, or that from which any thing is first transcribed or translated.

**ORION**. A constellation in the southern hemisphere, containing from thirty-eight to seventy-eight stars, according to different writers.

**ORNAMENTS** (in Architecture). Leaves, roses, channellings, and the like, which ornament the different parts of a column.

**ORNITHOLOGY**. That branch of Natural History which treats of birds, and their natures, habits, form, economy, and uses. Birds, in the Linnæan system, are divided, under the class Aves, into six



orders, according to the form of their bills: as the Accipitres, including the eagle, vulture, hawk, &c.; Picæ, including the crow, jackdaw, parrot, &c.; Anseres, including the duck, goose, swan, gull, &c.; Grallæ, as the heron, woodcock, ostrich, &c.; Gallinæ, including the peacock, pheasant, turkey, domestic fowl, &c.; Passeres, including the sparrow, lark, swallow, &c.

**ORNITHOLOGY, HISTORY OF.** The only scientific writers on the subject of birds among the ancients were Aristotle and Pliny. The former of these writers speaks of the different kinds of food adapted to the different species, of which he gives an imperfect nomenclature, and adds some remarks on their various periods of building their nests. Pliny's remarks on birds are very desultory, and not very extended. The first writer among the moderns who has treated of birds methodically is Peter Belon, who has classed them principally according to their food and habitation. He has likewise added many observations on their external form and character. Conrad Gesner, his cotemporary, has displayed much learning in his work, having given alphabetical tables of the names of birds in Hebrew, Chaldee, Arabic, Greek, and Latin, and numerous references to the writers from whom he collected his materials. Aldrovandus, the celebrated naturalist, followed in the steps of Belon and Gesner, and added much to their store of learning and research; at the same time illustrating the subject with numerous wood cuts. The next ornithologist of any distinction, after these three, were Willoughby and Ray, the latter of whom published the works of the former, his friend, with many additions of his own, in 1678. In this work, the external and internal structure of birds are described. Jacob Theodore Klein, in his *History of Birds*, divides them into families, orders, and tribes; the families distinguished according to their feet, the orders by the form of the bill, and the tribes by the form of the head, &c. In the systematic arrangement of Moehring, the classes, orders, and genera of birds are distinguished by the form of the feet and bill. The system of Linnæus, which follows here in order of time, is dated from the year 1766. It is formed from the manners and habits of the birds, as well as their external form (see **ZOOLOGY**). Brisson, in his system of Ornithology, has distributed birds into twenty-six orders, from the form of the bill and feet, &c. including under these one hundred and fifteen genera, and thirteen hundred species. The work, which

is in six volumes 4to., is illustrated with more than two hundred and twenty excellent engravings. The work of Buffon, though popular, has but few claims to notice in a scientific point of view. Mr. Pennant, in his distribution of birds, prefers Ray to Linnæus; but Mr. Latham, in his *Synopsis of Birds*, adheres to the latter with very few exceptions, as does also Mr. Shaw, in his *General Zoology*.

Among the writers who have treated of the birds of particular places, the most distinguished are Juan Hernandez on the birds of Mexico, Marcgrave on the birds of Brazil, Sir Hans Sloane on the birds of Jamaica, Mr. Mark Catesby on the birds of Carolina, Florida, &c., Schwenckfel on those of Siberia, Brunnick on those of Denmark, Sonnerat on those of New Guinea, Frisch on those of Germany, Vaillant on those of the Cape, and Edwards on those of the West Indies.

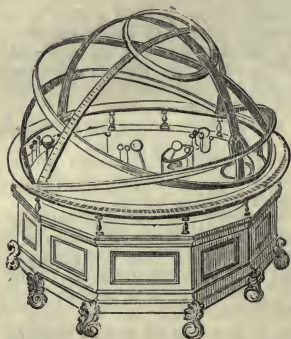
**ORNITHORUNCUS PARADOXUS.** A singular quadruped from New South Wales, not yet properly classed in the Linnæan system. Its great peculiarity is that the structure of its head, externally and internally, bears a greater resemblance to that of a duck than to that of any animal of the mammalia tribe.

**ORPHAN.** One bereaved of either father or mother, or of both parents.

**ORPIMENT.** A fine yellow powder; a mineral composed of sulphur and arsenic; one of the ores of arsenic.

**ORRERY.** An astronomical instrument for exhibiting the several motions of the heavenly bodies. The first machine of this kind was constructed by Mr. Graham, but it derives its name from the Earl of Orrery, for whom one was made by Mr. Rowley; and Sir Richard Steele supposing this to be the first ever constructed, he gave it the above name in honour of the earl. Orreries are constructed so as to be more or less complete. That given in the accompanying figure has all the planets represented upon it: that is to say, the sun, placed in the centre of the solar system; next to the sun is the orbit of Mercury; and next to that, the orbit of Venus. Next to the orbit of Venus, is the orbit of our earth, represented by a silver plate, on which the signs of the zodiac, the degrees of the ecliptic, and the days of each month are drawn; and the earth is represented by an ivory ball placed upon an axis, so as to make an angle with the plane of the horizon of 66 degrees and a half. About the ivory ball there is a silver circle, which is placed so as to incline to

the earth's orbit in an angle of 8 degrees; this represents the orbit of the moon, the moon itself being represented by a silver ball. The superior planets are Mars, Jupiter, and Saturn, in this order: Mars stands next without our earth; next to that, Jupiter; and outermost of all, Saturn. By the handle, the revolutions of these planets are represented. While the earth is carried round the sun by 365 turns and a quarter, of the handle, Mercury is carried round the sun in 88 turns, and Venus in 224; which represents that the length of the year in Mercury is 88 of our days, and the length of the year in Venus is equal to 224 of our days. Mars performs his revolution about the sun in 687 turns of the handle, Jupiter in 4332 turns, which answers to 4332 revolutions of our earth about its own axis; and last of all, Saturn, in 10759 turns, completes his revolution, which is the length of the Saturnian year, and is equal to about 30 of our years.



**ORTHODROMICS.** The art of sailing in the arc of a great circle.

**ORTHOEPY.** Correct enunciation.

**ORTHOGRAPHIC PROJECTION OF THE SPHERE.** That projection which is made upon a plane passing through the middle of the sphere, by an eye placed vertically at an infinite distance.

**ORTHOGRAPHY.** That part of grammar which teaches the nature and affections of letters, and the proper spelling or writing of words.

**ORTHOGRAPHY (in Geometry).** The art of drawing or delineating the fore right plan of any object, and of expressing the heights or elevations of each part, so called

from its determining things by perpendicular lines falling on the geometrical plan.

**ORTHOGRAPHY (in Architecture).** The elevation or representation of the front of a building.

**ORTOLAN.** A delicate bird of the bunting tribe, which visits England before the setting in of frost and snow.

**ORYCTOLOGY.** The science of organic remains.

**OSCILLATION.** The vibration of a clock.

**OSCULATION.** The contact between any curve and its osculatory circle.

**OSIER.** The red water-willow, of which wicker baskets are made.

**OSIRIS.** An Egyptian deity.

**OSPREY.** A bird of the eagle tribe, about the size of a turkey.



**OSSIFICATION.** The formation of bones, or the hardening into a bony state.

**OSTEOLOGY.** The description of the bones.

**OSTRACISM.** A mode of passing the sentence of banishment among the Athenians by means of tiles, on which the name of the person to be banished was written.

**OSTRACITIS.** A kind of crust sticking to furnaces where the brass ore is melted.

**OSTRICH.** The largest of all birds,



being usually seven feet high from the top of the head to the ground, but from the back only four. It is a native of Africa, and lays forty or fifty eggs, which are as large as the head of a child.

**OTTER.** A sagacious animal, that inhabits the banks of rivers, and feeds principally on fish. It has a tail half the length of its body, the fur of which is much esteemed. It is fierce and crafty when attacked, but may easily be tamed when young, and taught to catch fish. The sea otter, which inhabits the Arctic regions, is the largest of the species.



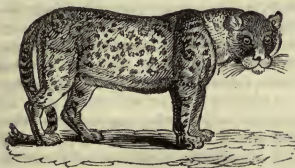
**OVAL.** An oblong curvilinear figure in the shape of an egg. The mathematical oval, which is a regular figure equally broad at each end, is called an ellipsis.

**OVERSEERS (in Law).** Parish officers who take charge of the poor that receive parish relief.

**OVERT ACT (in Law).** A plain and open matter of fact, serving to prove a design.

**OUNCE.** In Avoirdupois weight, the sixteenth part of a pound; in Troy weight, the twelfth part; in Apothecaries' weight, equal to eight drams.

**OUNCE (in Zoology).** An animal of the leopard kind, but smaller and milder than the other species.



**OVOLO (in Architecture).** A convex moulding, the section of which is usually the quarter of a circle.



**OUTLAWRY.** The being put out of the law or out of the king's protection. Outlaws were anciently called Friendless men, no one being permitted to take them in, or afford them any relief.

**OUTRE.** Extravagant, out of the way.

**OUTRIDERS.** Servants attached to any travelling equipage, who ride forward for the purpose of paying the tolls, &c.

**OUTWORKS.** Works made on the outside of the ditch in a fortress.

**OWL.** A bird which, on account of its weak sight, flies about in the dark, and lives principally on vermin. Some of the species have great horns, or long ears that look like horns.



**OX.** A well known domestic animal, of which there are several varieties, as the Abyssinian ox, having the horns pendulous, adhering only to the skin, and the African ox, having the body snowy, and hoofs black, &c.

**OXALIC ACID.** An acid extracted from wood-sorrel, and also from sugar combined with potash. It forms the juice sold under the name of Salt of Lemons, which is used for taking out ink spots. Oxalic acid is a violent poison, and has in some cases been taken by mistake for Epsom salts.

**OXIDATION, or OXYDIZEMENT.** The process of converting metals or other substances into oxides by combining with them a certain portion of oxygen.

**OXIDES, or OXYDES.** Substances combined with oxygen, without being in the state of an acid.

**OXYGEN.** One of the constituent and essential parts of atmospheric or common air, which is necessary to the support of life and combustion. In its gaseous state, it is a colourless and aerial fluid. Oxygen forms about a fifth of our atmosphere, and exists in most vegetable and animal products, acids, salts, and oxides.

**OXYMEL.** A sirup made of honey, vinegar, and water boiled together.

**OYER AND TERMINER** (in Law). A court by virtue of the king's commission, to hear and determine all treasons, felonies, and misdemeanours.

**O YES** (in Law). Corrupted from the French 'oyez, hear ye,' the expression used by the crier of a court, in order to enjoin silence when any proclamation is made.

**OYSTER.** A shell-fish, which abounds on the coast of England, and is much esteemed as a food. In the East Indies the oysters grow to an extraordinary size, some of the shells being two feet in width; and it is said that on the coast of Coromandel, an oyster will furnish a meal for several men. At the same time it is universally agreed, that this large sort falls very far short of the European oyster in delicacy of flavour.

## P.

**P**, the fifteenth letter of the alphabet, stands as an abbreviation, in Music, for piano; in Astronomy, for post, as P. M. Post Meridiem, after noon; among physicians, for partes, as P. Æ. Partes Æquales, &c.; in Law, for parliament, as M. P. Member of Parliament.

**PACE.** A measure of two feet and a half; with Geometricians, five feet.

**PACHA.** The chief admiral in the Turkish marine.

**PACIFICATION.** A negotiation for peace: an Edict of Pacification is a decree published by a prince for the pacifying all parties.

**PACK.** A horse's load, or seventeen stone and two pounds of wool.

**PACKERS** (in Law). Persons appointed and duly sworn to pack herrings, &c.

**PADDLE.** A sort of oar.

**PADDOCK.** A small enclosed meadow attached to a dwelling.

**PADLOCK.** A kind of lock to hang on the outside of a door.

**PAGANS.** Those who adhered to idolatry after the establishment of Christianity; idolaters, or the worshippers of false gods.

**PAGE.** A youth retained as an honourable attendant on a prince, to bear up trains, robes, &c.

**PAGODA.** A Chinese or Hindoo temple; also an Indian coin worth about eight shillings.

**PAINS AND PENALTIES** (in Law). An act of parliament to inflict pains and penalties beyond or contrary to the common law, in the particular cases of great public offenders.

**PAINTED LADY.** A beautifully variegated pea.

**PAINTER.** An artist who represents objects by colours, as a portrait painter; also an artisan who lays colours on wood

or stone, &c. as a house painter. The company of painters is of great antiquity, but was not incorporated before the reign of Elizabeth.

**PAINTER** (A Sea Term). A rope for hauling a boat on shore.

**PAINTER-STAINER.** A painter of coats of arms. They were incorporated with the painters.

**PAINTING.** The art of representing all objects of nature by lines and colours on a plain surface. In the exercise of this art, the powers of imagination, imitation, and invention, are required for making a choice of the subject, and of the several figures and subordinate parts of a picture which are comprehended under the name of design. In the execution of the work, there are likewise required a due regard to the effects of light and shade, and colours, which is termed composition; and also a nice choice of the colours to be employed, which is known by the name of colouring. Painting, as regards the subjects, is distinguished into historical painting, portrait painting, landscape painting, &c.; as regards the form and the materials, into painting in oil, water colours, fresco, miniature, distemper, mosaic, &c.

**PAINTING, HISTORY OF.** It is to be supposed that painting was among the earliest efforts of human ingenuity, for the love of imitation would naturally suggest the idea of representing the surrounding objects which engaged the attention and interested the affections. Thus it is that the savages painted their own bodies, by means of puncturing the skin, and infusing different colours into the punctures, and that they painted on their shields different figures according to the fancy of the bearer. So, likewise, we find that the Mexicans were in the habit of representing their

warlike exploits by means of picture-writing, which were something similar to the hieroglyphics of the Egyptians, that served to represent sacred objects for religious purposes. The first step beyond the rude outline was an attempt to complete the imitation by applying colours, which at first was effected by covering the different parts of the figure with different colours, after the manner of our coloured maps, as was done by the Egyptians, and is still practised by the Indians and Chinese.

Painting was partially cultivated by the Egyptians, but was not carried to any perfection, because they principally employed themselves in the representation of the monstrous objects of their worship, rather than in depicting natural or real objects: in consequence, their natural figures were very stiff and unseemly, the legs being drawn together, and the arms pasted to the sides, like the mummies which they copied. Their painters were likewise very much employed on earthen vessels or drinking cups, or in ornamenting barges, and covering with figures the chests of mummies. Pliny also informs us that the Egyptians painted the precious metals, which doubtless consisted in covering gold or silver with a single colour. The Persians, as well as the Arabians, had some idea of mosaic; but the art was cultivated by those people principally for domestic purposes. Among the Indians, painting is confined principally to the representation of their idols and monstrous objects of worship, but the painters of Thibet are remarkable for the delicacy of their strokes, in which they might vie with the Greeks, although deficient in every other particular. The Chinese are remarkable for the brightness of their colours, but this is the only perfection they can boast of. Their figures are as unlike nature as possible, devoid of expression and of proportion. The Etrurians were the first people who appear to have excelled in this art. Many specimens of Etruscan painting have been preserved, which consist of long painted frizes, and pilasters adorned with huge figures. The paintings are executed on a ground of thick mortar, and many of them are said to be in a high state of preservation. There are likewise many Campanian vases extant, which are wonderful proofs of the perfection of the art at a very early period among these people. As to the origin of painting among the Greeks, it is not easy to define the period of its commencement.

The Greeks themselves, according to Pliny, speak of Polygnote as their first painter of eminence, who flourished in the 90th Olympiad, or 424 years before Christ. That painting in dry colours existed in the time of Homer is certain from several descriptions to be found in his *Iliad* and *Odyssey*: from the same source we also learn that they were then acquainted with basso relievo, of which the buckler of Achilles was a specimen. Polygnote was followed by Xeuxis and Parrhasias, whose skill in imitation is said to have been such, that the first deceived the birds by painting cherries so exactly, and the latter deceived his rival, Apelles; Protogenes, and Euphranor contributed to raise the art to its highest perfection.

The Romans derived their skill in painting from Etruria, but the art remained very long neglected while the people were engaged in conquests, and struggles for liberty. From the building of the city to the time of the emperors, there is mention only of two who excelled in painting, namely, Fabius, surnamed Pictor, and Pacivius, the nephew of the tragic poet Ennius. In the time of the emperors, painting, as well as the other arts, flourished. A colossean figure, 120 feet long, was painted by order of the emperor Nero, which is the first painting on cloth mentioned among the ancients.

The artists who painted moveable pictures were superior to those who painted on ceilings, or compartments of buildings. They painted their moveable pictures on the wood of the fir, larch, or box; or on canvass, as above-mentioned. The old Greek and Roman paintings on walls are supposed to have been done in distemper or in fresco: they made use of oil in varnishing, for the preservation of their paintings, but they do not appear to have expressly used it in their colours.

After an interval during which all the arts languished, imperfect efforts were made to represent religious subjects, which paved the way for the revival of painting in the thirteenth century. A noble Florentine, named Cimabuc, first learned the art from a Greek, and cultivated it with success, so that he may be reckoned the founder of the Florentine school, of which Michael Angelo was the great ornament. Raphael was the founder of the Roman school; Titian, that of Venice. Corregio was the father and greatest ornament of the Lombard school, but the Caracci, Lewis, Augustin, and Hannibal, who were natives of Bologna, also formed a school,

which has been called the second Lombard school.

Among the French, miniature painting, and painting on glass, were cultivated at an early period; but other branches of the art were at a low ebb until the age of Louis XIII., when Poussin arrived at such eminence as to be called the Raphael of France; but he had no pupils, nor any influence in forming the French school, the honour of which was divided between Vouet, who laid the foundation, and Le Brun, who raised the edifice. The Germans have never cultivated painting so as to form a school, but Albert Durer and John Holbein have secured this nation from being forgotten in a history of painting. The Flemish school is remarkable for having introduced oil painting, which was first attempted, or at least brought into general practice, by John de Bruges; but the master of the art was Rubens, the founder of the Flemish school. The Dutch have distinguished themselves in miniature painting, of which Rembrandt was their great master, and also as history painters, among whom Lucas, of Leyden, holds the first rank, and may be considered as the founder of the Dutch school. The English school is comparatively of modern date, and owns Sir Joshua Reynolds as its founder. It is principally known by its correct observance of the great masters of the Italian and Flemish schools.

**PALACE.** A royal dwelling, so called from the Mount Palatine in Rome, where stood the royal mansion.

**PALÆOGRAPHY.** A description of ancient writings, inscriptions, characters, &c.

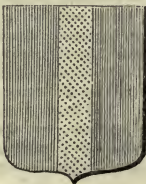
**PALÆSTRA.** A building where the Grecian youth exercised themselves in wrestling, running, quoits, &c.

**PALANQUIN.** An Indian covered chair, borne on men's shoulders.

**PALATE.** The roof of the mouth, and organ of taste.

**PALATINE.** Invested with regal prerogatives, as the counties palatine of Lancaster, Chester, and Durham, which have particular jurisdictions.

**PALE** (in Heraldry). One of the



honourable ordinaries in a coat of arms, resembling a palisado used in fortifications.

**PALE.** A flat pointed stake, which is used in making enclosures.

**PALISADE.** A finer kind of paling in gardens.

**PALISADOES, or PALISADES** (in Fortification). An enclosure of stakes, used to fortify the avenues of open forts, &c. They were sometimes so ordered that they would turn up and down as occasion required, and might be hidden from the view of the enemy until he came to the attack.

**PALLADIUM.** A sort of metal drawn from crude platina.

**PALLAS.** A small newly discovered planet, situated between the orbits of Mars and Jupiter.

**PALLET.** A painter's colour board.

**PALLET** (among Gilders). A tool for taking up the gold leaf.

**PALLET** (among Mariners). A partition in a hold.

**PALLET** (in Heraldry). The diminutive of the pale, being one half of its breadth.

**PALLET-BED.** A small low bed.

**PALLETS.** Levers in clocks and watches, connected with the pendulum or balance, which receive the immediate impulse of the wheel.

**PALL-MALL.** An ancient game, in which an iron ball was struck with a mallet through a ring or arch of iron, as was once practised in St. James's Park, and gave its name to the street called Pall-Mall, pronounced Pell-Mell.

**PALM.** A tree of different kinds, the branches of which were carried in token of victory.

**PALM** (in Commerce). A measure of three inches.

**PALM.** A sea term for the broad part of an anchor.

**PALM** (in Anatomy). The inner part of the hand.

**PALMÆ.** Palms; one of the seven families into which Linnæus divided the vegetable kingdom, including such trees and shrubs with simple stems as bear leaves resembling those of the ferns.

**PALMER.** A pilgrim bearing a staff.

**PALMISTRY.** A mode of telling fortunes by the lines of the hand.

**PALM SUNDAY.** The sixth Sunday in Lent, the next before Easter, commemorative of our Saviour's triumphal entrance into Jerusalem, when palm branches were strewed in the way.

**PALM WORM.** A poisonous insect of America. This insect is extremely swift in its motions.

**PALSY, or PARALYSIS.** A privation of motion or sense of feeling; a nervous disorder arising from an affection of the cerebellum.

**PAN.** The god of mountains, woods, and shepherds, who was said to be the son of Mercury, and the inventor of the Pandean pipes. He is represented as a monster, with horns on his head, and the legs and feet of a goat.



**PANACEA.** A universal remedy for the cure of all disorders.

**PANADA.** Bread pap.

**PANATHENÆA.** A festival celebrated at Athens in honour of Minerva.

**PANCRATIUM.** An exercise among the ancients, which consisted in wrestling, boxing, and kicking at the same time.

**PANCREAS (in Anatomy).** A flat glandular viscus of the abdomen; in animals called the sweetbread.

**PANCREATIC.** Belonging to the pancreas, as the pancreatic duct and juice.

**PANDECTS.** The name of a volume of the civil law, digested by order of the emperor Justinian.

**PANDORA.** The first woman according to the poets, made by Jupiter. She presented her husband Epimetheus with a box, the gift of Jupiter, and on his opening it there flew out all kinds of evils on the earth.

**PANE.** A square of glass.

**PANEGYRIC.** A set speech among the ancients in praise of any one; in the Greek Church, a book of praises of Jesus Christ and the saints.

**PANEL, or PANNEL.** A schedule or roll of parchment on which are written the names of the jurors returned by the sheriff.

**PANICLE (in Botany).** A sort of inflorescence or flowering, in which the flowers and fruits are scattered on peduncles variously subdivided, as in oats, and some grasses.



**PANNADE.** The curvetting or prancing of a mettlesome horse.

**PANNAGE.** The feeding of swine upon mast in woods.

**PANNEL (among Joiners).** A square piece of wood grooved in a larger or thicker piece, as in wainscots, &c.

**PANNEL (among Masons).** One of the faces of a hewn stone.

**PANNEL (in the Manege).** A saddle used in carrying burdens.

**PANNEL (in the Scotch Law).** The prisoner at the bar.

**PANNIER.** A basket for carrying bread on horseback.

**PANORAMA.** A circular picture on a large scale, fixed around a room particularly constructed for the purpose.

**PANOPLY.** Complete armour.

**PANTALOONS.** A garment consisting of breeches and stockings of the same stuff fastened together.

**PANTHEON.** A temple at Rome, dedicated to all the heathen deities; a book containing an account of all the heathen gods and goddesses, &c.

**PANTHER.** A fierce beast nearly allied to the tiger, a native of Africa. It is of a tawny yellow colour, marked with black spots.

**PANTOMIME (among the Ancients).** Antic dances and mimic gesture; among the Moderns, a sort of drama represented by gestures, actions, and various kinds of tricks performed by Harlequin and Columbine as the hero and heroine, assisted by Pantaloon and his clown.

**PANTRY.** A bread closet, or properly a small room in which the daily provisions of the table are kept.

**PAPAL CROWN.** The pope's tiara or crown, otherwise called the Triple Crown,

because it is a cap of silk environed with three crowns of gold, as in the subjoined figure.



**PAPER.** A vegetable substance manufactured so as to be fit for writing upon. The Egyptian paper was made of the rush papyrus, which gave its name to the substance. Paper is likewise made of bark or the inner rind of trees, of cotton and other materials, but more particularly of linen rags prepared by a particular process at the paper mills. Paper is distinguished as to its use into writing paper, printing paper, drawing paper, cartridge paper, copy, chancery, &c.; as to its size into pot, foolscap, crown, demy, medium, royal, imperial, &c.

**PAPER** (among Bankers). A name given to money of credit by means of any written paper, as bills of exchange, promissory notes, &c.

**PAPER CURRENCY, or PAPER MONEY.** A substitute for coin issued on the credit of government in the shape of Bank notes, of which there was as much as twenty-five millions in circulation at one time.

**PAPIER MACHE.** A substance made of paper boiled into a paste, of which toys are formed.

**PAPILIONACEÆ** (in Botany). One of Linnæus's natural orders of plants, consisting of such as have papilionaceous or butterfly shaped flowers, as the pea, &c.

**PAPIST** (in Law). One professing the Roman Catholic religion. Severe laws were made after the Reformation against the Papists, as they were technically termed, but they have since been repealed, as the necessity for them ceased.

**PAPYRUS.** An Egyptian reed grass, the leaves of which were made into paper. It grows in the marshes of Egypt or in the stagnant places of the Nile. Its roots are tortuous, and in thickness about four or

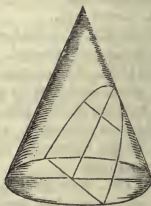
five inches; its stem, which is triangular and tapering, rises to the height of ten cubits, and carries a top or plume of small hairs.



**PAR.** An equality between the exchanges of different countries.

**PARABLE.** An allegorical instruction, founded on something real or apparent in nature or history, from which a moral is drawn.

**PARABOLA** (in Conic Sections). A curve made by cutting a cone by a plane parallel to one of its sides, or parallel to a plane that touches one side of the cone.



**PARACHUTE.** An instrument in the shape of an umbrella, which serves to break the fall in descending from an air balloon.

**PARADE.** The place where troops draw up to do duty and mount guard.

**PARADIGM** (in Grammar). An example of a Greek or Hebrew verb conjugated through all its moods and tenses.

**PARADISE.** The garden of Eden, where Adam and Eve dwelt in their state of innocence.

**PARADISE, BIRD OF.** A bird of a beautiful plumage, that chiefly inhabits New Guinea, and migrates to the neighbouring islands. Its feathers are much used as ornaments for the head among the



Japanese, Chinese, and Persians, by whom they are imported into Europe.



**PARADISE, GRAINS OF.** The hot berries or seeds of the cardamum.

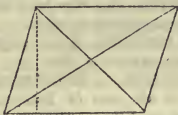
**PARADOX.** An opinion apparently absurd or contradictory, although sometimes true in fact.

**PARAGRAPH.** A collection of sentences comprehended between one break and another.

**PARALLAX.** A change in the apparent place of any heavenly body when seen from different points of view.

**PARALLEL (in Mathematics).** The name for lines, surfaces, or bodies every where at an equal distance from each other.

**PARALLELOGRAM.** A plane figure, bounded by four right lines, whereof the opposite are parallel and equal to one another.



**PARALLELS PHERE (in Astronomy).** The situation of the sphere when the equator coincides with the horizon, and the poles with the zenith and nadir.

**PARALYSIS.** The palsy.

**PARAPET.** A wall breast high that serves to hide the roof of a house.

**PARAPHRASE.** An explanation of any text in plainer and more ample terms.

**PARASANG.** A Persian measure equal to from 30 to 50 stadia or furlongs.

**PARASELENE.** A mock moon, or a meteor in the form of a luminous ring round the moon.

**PARASITE (among the Ancients).** A

guest invited by the priest to eat of the sacrifice; a trencher friend or hanger on at the tables of the great, who lives by flattery.

**PARASITICAL PLANTS.** Such as grow upon others, like the moss or misseltoe.

**PARASOL.** A little moveable machine or small umbrella fitted for keeping off the sun.

**PARCÆ, the FATES.** Three sisters among the heathens, who presided over or spun the lives of men; Clotho held the distaff and spun the thread, Lachesis turned the wheel, and Atropos cut the thread.

**PARCHMENT.** The skin of sheep or goats prepared for writing upon.

**PARDON (in Law).** The remitting the punishment for any felony committed against the king.

**PARENTHESIS (in Grammar).** A clause inserted in the middle of a sentence, and marked thus [ ], or thus ( ).

**PARHELION.** A mock sun.

**PARIAN MARBLE.** A sort of white marble, so called from the island of Paros, where it was first found.

**PARIS.** The son of Priam king of Troy, who, carrying away Helen the wife of Menelaus, was the author of the Trojan war.

**PARIS, PLASTER OF.** A composition of lime and sulphuric acid, used in making casts and moulds.

**PARISH (in Law).** A district or division of a city, hundred, &c. which has particular officers, and in ecclesiastical affairs is under a parson, that is either a rector or vicar, &c. In England there are about 9913 parishes.

**PARISH CLERK.** The lowest officer in the church acting under the parson of the parish.

**PARK (in Law).** An enclosure stocked with wild beasts of chase, which a man might have by prescription or the king's grant.

**PARK OF ARTILLERY.** A place in a camp appointed for the artillery, as the guns, powder, &c.

**PARK (among Fishermen).** A large net disposed on the bank of the sea.

**PARLIAMENT.** The great council of the nation, consisting of the King, Lords, and Commons, which forms the legislative branch of the English government or constitution. The parliament is assembled annually by summons from the crown, to make laws, impose taxes, and deliberate on other public affairs, either of domestic or foreign policy. The Parliament is also styled the High Court of Parliament, be-

cause the upper house assists in the administration as well as in the making of laws.

**PARMESAN.** A sort of cheese made at Parma in Italy.

**PARNASSUS.** A mountain of Phocis, on which stood the temple and town of Delphi. It was sacred to Apollo and the Muses.

**PARODY.** A poetical pleasantry which consists in applying the verses of some person by way of ridicule to another object, or in turning a serious work into burlesque by affecting to observe the same rhymes, words, and cadences.

**PAROL (in Law).** By word of mouth, as parol evidence.

**PAROLE (in Military Affairs).** Word of honour, a promise given by a prisoner of war, when suffered to be at large, that he will return at a time appointed.

**PARRICIDE.** A murderer of father or mother.

**PARROQUET.** A sort of parrot easily taught to speak.



**PARROT.** A noisy, imitative, gregarious kind of bird, native of the tropical climates, which is easily tamed.



**PARRYING (among Fencers).** The warding a push or blow from an adversary.

**PARSING (in Grammar).** Expounding words and sentences so as to apply the rules of grammar to them.

**PARSLEY.** A potherb, and a perennial, which grows in gardens.

**PARSNIP.** An edible root.

**PARSON (in Law).** The person holding the office of rector or vicar in a parish.

**PART (in Arithmetic).** A quantity contained in a whole.

**PART (in Music).** A piece of the score or partition, written by itself for the convenience of the musician.

**PART (in the Drama).** The character or portion of a piece assigned to a performer.

**PARTERRE.** An open part of a garden in the front of a house, commonly ornamented with flowers.

**PARTHENON.** A temple at Athens, sacred to Minerva.

**PARTICIPLE (in Grammar).** One of the parts of speech, so called because it partakes both of the noun and the verb.

**PARTICLE (in Physiology).** A minute part of any body which enters into its composition.

**PARTICLE (in Grammar).** Small indeclinable words that serve to unite or connect others together.

**PARTIES (in Law).** The persons named in a deed.

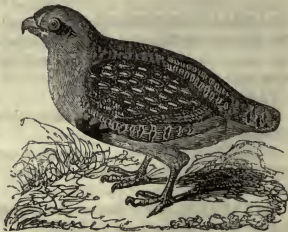
**PARTING.** Separating gold and silver by aquafortis.

**PARTITION (in Law).** Dividing lands or tenements among coheirs or parceners.

**PARTNER.** One who joins with another in some concern or affair.

**PART OWNERS.** Partners possessed of a certain share in a ship.

**PARTRIDGE.** A bird of game which abounds in all parts of Europe, and is highly esteemed for its flesh.



**PARTS OF SPEECH.** The grammatical divisions of words according to their connexion with or dependance upon each

other; they are commonly reckoned nine in number, namely, the article, noun, pronoun, verb, participle, adverb, conjunction, preposition, and interjection.

**PARTY** (in Military Affairs). A small detachment or number of men sent upon any particular duty, as a recruiting party, &c.

**PARTY** (in Public Affairs). Any number of men combining together to follow their own particular views, either in politics or religion.

**PARTY-WALLS**. Partitions of brick made between buildings separately occupied, to prevent the spreading of fire.

**PASQUINADE**. A short satirical libel that is generally stuck up to be read by the passers by.

**PASS** (in Military Affairs). A strait narrow passage, which renders the entrance into a country difficult for an army.

**PASS** (among Miners). A frame of tin boards set sloping for the ore to slide down.

**PASS** (in Fencing). A push or thrust at the adversary.

**PASSAGE** (in Music). A succession of sounds forming a member or phrase in a composition.

**PASSAGE** (in Military Affairs). The passing over bridges, mountains, &c.

**PASSAGE** (in Navigation). The course pursued at sea, particularly that which has been attempted to be taken by the north pole in going to India; this attempt has been made in two ways, namely, by coasting along the northern parts of Europe and Asia, called the north east passage; and another by sailing round the northern part of the American continent, called the north west passage, besides which an attempt has also been made to sail over the pole itself.

**PASSENGER**. Any one travelling by a coach, vessel, or other mode of conveyance; also any one passing by.

**PASSERES**. An order of birds in the Linnæan system, comprehending such as have the bill conic and pointed, as the pigeon, the lark, the thrush, &c.

**PASSION WEEK**. The week immediately before Easter.

**PASSIVE**. Suffering, an epithet for verbs which express the suffering or being acted upon, as 'to be loved.'

**PASSIVE PRINCIPLES** (in Chymistry). Earth and water, so called because their parts are not so swiftly moved as those of spirits, oil, and salt.

**PASSOVER**. A festival of the Jews, commemorative of the angels passing the

doors of the Israelites when they slew all the first born of the Egyptians.

**PASSPORT**, or **PASS**. A license or letter from a prince or governor granting liberty to a person to pass through the country.

**PASSPORT** (in Commerce). A license to export or import goods.

**PASS WORD**. A secret word or countersign which enables any person to go through military stations.

**PASTE** (in the Glass Trade). A kind of coloured glass made of calcined crystal, lead, and metallic preparations, so as to imitate gems.

**PASTEBOARD**. A thick kind of paper formed of several sheets pasted one over the other.

**PASTIL**. A sweet ball or perfumed composition.

**PASTIL** (among Painters). A roll of paste made up of various colours with gum, a crayon.

**PASTORAL**. A shepherd's song or poem, by way of dialogue between shepherds.

**PASTURE LAND**. Land reserved for the feeding of cattle.

**PATENTS**, or **LETTERS PATENT**. Writings sealed with the great seal, authorizing a man to do or enjoy that which he could not of himself.

**PATERNOSTER**. The Lord's prayer; also the repetition of the Lord's prayer in the Romish church.

**PATHOLOGY**. That branch of medicine which explains the symptoms of diseases.

**PATHOS**. The emotion which an orator displays in his speech or excites in his hearers.

**PATIENT**. One who is under the direction of a physician for the cure of any disorder.

**PATIENT** (in Physiology). That which receives impressions from any other thing called the agent.

**PATRIARCH**. The father or ruler of a family, such as Abraham and the patriarchs of old.

**PATRIARCH** (in Ecclesiastical Affairs). A bishop that is superior to an archbishop.

**PATRIMONY** (in Law). A right descended from ancestors.

**PATRIOT**. A father of his country.

**PATROL**. Any party going their rounds at stated hours, to see that the watchmen do their duty.

**PATRON** (in Law). A friend of interest or power; he who has the disposal of a benefice.

**PATRON.** A sea term for one who commands a ship in the Mediterranean.

**PATRONYMIC.** A name derived from one's father or ancestors.

**PAVEMENT.** A layer of stone or bricks, which serves to cover the ground and form a path or road. In London the pavement for coachways is principally a kind of granite from Scotland, for the footpath Yorkshire paving stone is used. Courts, stables, kitchens, halls, churches, are commonly paved with tiles, bricks, or freestone. In France they mostly use freestone, in Venice and Holland and other countries they use for the most part bricks.

**PAVILION.** A large tent raised on posts to lodge under in summer time.

**PAUPER.** One receiving parish relief.

**PAUPERIS IN FORMA.** See **FORMA.**

**PAUSE.** A stop or cessation of speaking, singing, playing, &c.

**PAUSE (in Music).** A character of time, denoting that the note must be drawn out to a greater length.

**PAWN (in Commerce).** A pledge given by way of security for the payment of a sum of money.

**PAWN (in Chess).** One of the common men.

**PAWNBROKER.** One who lends money upon goods left in pledge.

**PAY.** What is allowed to each individual in the army. Full pay is the full allowance; half pay, that which is allowed to officers on their retiring from the service.

**PAYING.** A sea term for anointing a mast, yard, &c. with tar, pitch, turpentine, &c.

**PAYING OFF.** A sea term for letting a ship's head fall to leeward of the point whither it was previously directed.

**PAYING OFF A SHIP.** Discharging the crew from actual service, that the ship may be laid up in ordinary.

**PAYMASTER.** He who has the charge of paying a regiment.

**PAYMENT.** The discharge of a debt; also the time and measure of paying. Prompt payment, the payment of a bill or debt before it becomes due.

**PEA.** A kind of pulse, that is either planted in gardens for the food of man, or in the fields as a food for cattle.

**PEACE (in Law).** A quiet and inoffensive behaviour towards the king and his subjects.

**PEACE ESTABLISHMENT.** The number of effective men required in the army and navy during peace.

**PEACE of GOD and the CHURCH.** The time of vacation between terms, when there is a cessation from lawsuits.

**PEACE OF THE KING.** That peace and security both for life and goods which the king affords to all his subjects.

**PEACE OF THE KING'S HIGHWAY.** The immunity that the king's highway has to be free from all molestation.

**PEACH.** A delicious juicy fruit that grows against garden walls.

**PEACOCK.** A well known domestic bird, remarkable for the beauty of its tail and the harshness of its cry.

**PEAK (in Geography).** A mountain or elevation with a sharp summit, as the Peak of Teneriffe.

**PEAK (among Mariners).** The upper corner of sails which are extended by a gaff or by a yard, which crosses the mast obliquely.

**PEAR.** A well known tree, which yields a great variety of fruit, as the musk, muscadelle, rose, bergamot, bury pear, &c.

**PEARL.** A concretion found in several shells, as in some species of the oyster and muscle. Pearls are of a silvery or blueish white colour, and very brilliant. They are supposed to be produced by a distemper in the animal, similar to the stone in man; they are formed, however, of the same matter as the inner shell, and consist of layers one over another, after the manner of an onion.

**PEARL, MOTHER OF.** The shell of another species of oyster, not the pearl oyster. It is extremely smooth, and as white as the pearl.

**PEARLASH.** Potash calcined or cleared of its impurities by fire.

**PEARL BARLEY.** The seed of common barley rubbed into small round grains like pearl, of which a cooling drink is made.

**PEAT.** A sort of fuel dug out of the earth. It is the remains of decayed vegetables, as leaves, stringy fibres, the wood of decayed trunks of trees, &c. It is found in low valleys and bogs in Great Britain and other parts of Europe.

**PEAT MOSS.** The bed in which peat is found, either on the surface of the soil or covered over with sand or earth to a short depth.

**PEBBLES.** A sort of fossils distinguished from flints by having a variety of colours.

**PECK.** A dry measure, the fourth part of a bushel.

**PECORA.** An order of animals in the Linnæan system, under the class mam-

malia, comprehending such as have the feet hoofed and cloven, and live on grass, and chew the cud, and have four stomachs, as the antelope, the camel, camelopard, stag, musk, sheep, ox, cow, &c.

**PECTORAL.** Relating to the breast, as pectoral medicines, medicines good for curing diseases in the breast.

**PECULIAR (in Law).** A church or parish having a jurisdiction within itself.

**PECULIARS, COURT OF.** A court belonging to the Archbishop of Canterbury, which takes cognizance of matters relating to parishes that have a peculiar jurisdiction.

**PEDANTRY.** A needless or ill timed display of learning.

**PEDESTAL.** The lowest part of a column.

**PEDIMENT.** A low pinnacle, serving to crown a frontispiece, &c.

**PEDOMETER.** See PERAMBULATOR.

**PEER (in Law).** An equal, or one of the same rank and condition, formerly applied to the vassals or tenants of the same lord; and now applied to those who are impanelled in an inquest upon a man accused of any offence, who by the criminal law ought to be peers or equals of the person accused.

**PEERESS.** The lady of a peer.

**PEERS OF THE REALM.** The nobility of the kingdom, who, though distinguished by the different titles of duke, marquis, earl, viscount, and baron, are nevertheless all peers or equals in their political character as lords of parliament.

**PEGASUS (in the Heathen Mythology).** A winged horse, on which Bellerophon is fabled to have ridden.

**PEGASUS (in Astronomy).** A constellation in the northern hemisphere, containing from 20 to 89 stars according to different writers.

**PELICAN.** A large bird inhabiting the Caspian and Black Seas, the bill of which is straight, except at the point. It has a



skin reaching down the neck, which forms a pouch capable of holding many quarts of water. The pelican has a peculiar tenderness for its young, and has been supposed to draw blood from its breast for their support.

**PELICANUS.** The generic term in the Linnæan system for the sort of birds of which the pelican is the principal species, it comprehends also the cormorant or corvorant, man of war bird, and the gannet.

**PELLICLE.** A thin film or fragment of a membrane.

**PELLITORY OF THE WALL.** A herb that is used in medicine.

**PELT.** The skin or hide of an animal.

**PELVIS (in Anatomy).** The lower part of the abdomen.

**PEN.** An instrument for writing.

**PEN (in Husbandry).** A fold or enclosure for sheep, &c.

**PENAL LAWS.** Laws made for the punishment of criminal offences.

**PENALTY (in Law).** A fine or forfeiture by way of punishment.

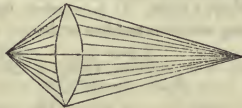
**PENANCE (in Ecclesiastical Law).** An infliction of some pain or bodily suffering as an exercise of repentance for some sin, either voluntary or imposed by the priest in the Romish church.

**PENATES.** The household gods of the Romans.

**PENCIL.** An instrument used in drawing and painting.



**PENCIL OF RAYS (in Optics).** A number of rays diverging from some luminous point, which after falling upon and passing through a lens, converge again on entering the eye.



**PENDANT.** A sea term for a narrow banner or streamer. The broad pendant is a flag that serves to distinguish the chief of a squadron.

**PENDULUM.** A heavy body so suspended that it may vibrate or swing backwards and forwards.

**PENDULUM CLOCKS.** Clocks that have their movements regulated by the vibration of a pendulum.

**PENDULUM ROYAL.** A clock whose pendulum sways seconds, and goes eight days without winding up.

**PENETRATION OF BODIES.** A term in physiology, denoting that the parts of one body occupy the interstices between the parts of the other.

**PENGUIN.** See *Auk*.

**PENINSULA.** A place almost surrounded with water, except where it is joined with the continent by a neck of land.

**PENITENTIARY.** The name of some prisons in England where felons are kept to hard labour.

**PENMAN.** One skilled in the use of the pen, particularly in fine kinds of writing.

**PENNY.** One of the earliest coins in this country, the twelfth part of a shilling, it was formerly a silver now a copper coin; it is marked by the letter *d* in accounts.

**PENNY POST.** A post formerly in London for conveying letters to different parts of the metropolis for a penny. The price being raised to twopence, it is now called the twopenny post.

**PENNYROYAL.** A herb used in medicine, something like the mint.

**PENNYWEIGHT.** An English troy weight, marked thus, dwt., containing 24 grains.

**PENSION (in Law).** An annual allowance made to a person by a prince without any equivalent in return.

**PENSIONER.** One who receives a pension; also one maintained at the charge of the king, or of any company or hospital.

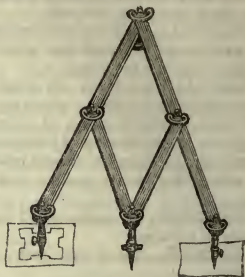
**PENSIONERS, GENTLEMEN, or KING'S PENSIONERS.** A band of gentlemen to the number of 40, first set on foot by King Henry VII. whose office it is to guard the king's person in his palace.

**PENTAGON.** A geometrical figure, having five sides and five angles.



**PENTAGRAPH.** A copying machine,

by which designs may be copied in any proportion by persons who are not skilled in drawing. It consists of four jointed levers, as in the subjoined figure.



**PENTAGYNIA (in Botany).** An order of plants in the Linnæan system, comprehending such as have five pistils in an hermaphrodite flower.

**PENTAMETER.** A sort of verse in Latin and Greek, consisting of five feet or metres.

**PENTANDRIA (in Botany).** One of the Linnæan classes, comprehending plants which have flowers with five stamens.



**PENTATEUCH.** The five books of Moses.

**PENTHOUSE.** A shed hanging forward.

**PENUMBRA (in Astronomy).** A partial shade observed between the perfect shadow and the full light in an eclipse.

**PEPPER.** An aromatic fruit or berry brought from India. It is of three kinds, namely, black, white, and long. The black is the fruit of a tree that grows in the Spice Islands.

**PER.** A Latin preposition, signifying by, used in many phrases, as per force, pr. or per annum, per cent. or per centum, &c.

**PERAMBULATOR.** An instrument for



measuring distances, otherwise called a pedometer, or surveying wheel.

**PER CENTUM**, or **PR. CENT.** Rate of interest, so much for each hundred, as five per cent. that is five pounds for every hundred pounds.

**PERCH.** A kind of fish with sharp incurvate teeth, that prey upon other fish: the flesh of this fish is very delicate.

**PERCH** (in Commerce). A measure of five yards and a half, or sixteen feet and a half.

**PER CHANCE.** Accidentally.

**PERCUSSION.** The impression a body makes in falling or striking upon another. It is either direct or oblique; direct when the impulse is made in the direction of a line perpendicular at the point of impact, and oblique when it is given in a line oblique to the place of impact, or that does not pass through the common centre of gravity of the two striking bodies.

**PEREMPTORY** (in Law). Absolute or determinate, as peremptory writ, &c.

**PERENNIAL.** A plant the root of which continues for more than two years.

**PERFORATION.** Boring or making a hole through.

**PER FORCE.** Against one's inclination.

**PERIANTH.** The calyx or cup of a flower when it is contiguous to the flower, in distinction from the calyx or outer covering of the flower.

**PERICARDIUM.** A double membrane which surrounds the whole compass of the heart.

**PERICARP.** A viscous bag with seeds, or a vessel producing seeds.

**PERICRANIUM.** A membrane which encloses the bones of the skull.

**PERIGEE** (in Ancient Astronomy). That point in the heaven in which the sun or any planet is least distant from the centre of the earth.

**PERIHELION** (in Modern Astronomy). That point of a planet's orbit in which it is nearest to the sun.

**PERIMETER.** The ambit or extent which bounds a figure or body, whether rectilinear or mixed.

**PERIOD** (in Astronomy). The entire revolution of a planet.

**PERIOD** (in Chronology). The revolution of a certain number of years, as the Julian period.

**PERIOD** (in Grammar). A full stop at the end of any sentence, marked thus (.)

**PERIOD** (in Arithmetic). A point or comma after every third place in a series of figures; also in the extraction of roots

to point off the figures into given numbers or parcels.

**PERIOD** (in Medicine). The interval between the coming of fits in intermitting disorders.

**PERIOECI** (in Geography). Inhabitants of the earth who live under the same parallel of latitude but opposite parallels of longitude.

**PERIPHERY.** The circumference of any circle or curve, &c.

**PERIPATETICS.** The followers of Aristotle, whose doctrines are distinguished by the name of the Peripatetic Philosophy. He also was called the Peripatetic because he delivered his lectures walking,

**PERIPHRAISIS.** Circumlocution, or expressing any thing by many words which might be expressed by a few.

**PERISCII.** Inhabitants of the earth whose shadow goes round them in a day.

**PERISTALTIC MOTION.** The motion of the intestines, which resembles the motion of a worm.

**PERISTYLE.** A piazza, as in the middle of the gymnasium at Athens.

**PERJURY.** Taking a false oath knowingly and wilfully.

**PERIWINKLE.** A kind of sea snail.

**PERMIT** (in Law). A license or warrant for persons to pass with or sell goods.

**PERMUTATION.** The same as combination.

**PERORATION.** The epilogue or concluding part of an oration.

**PERPENDER**, or **PERPEND STONE.** A stone fitted to the thickness of a wall.

**PERPENDICULAR** (in Geometry). A line which when it falls upon another line makes the angles on each side equal and right angles.

**PERPENDICULAR** (in Gunnery). A small instrument used for the finding the centre line of a piece in the operation of pointing it at any object.

**PERPETUAL CURATE.** A curate that is not removeable at the pleasure of any one.

**PERRY.** A drink made of the juice of pears.

**PER SALTEM.** At once, or at a leap.

**PER SE.** By or in itself; things considered per se, that is, in the abstract, or abstracted from all others.

**PERSECUTION.** The infliction of pain on another designedly and with force and violence, in violation of the laws either of God or man, such as the persecutions of the primitive Christian church: the first happened in the reign of Nero, and the last in that of Dioclesian.

**PERSEUS** (in Heathen Mythology). A hero, the son of Jupiter and Danae, who procured the Gorgon's head, and released Andromeda.

**PERSEUS** (in Astronomy). A constellation in the northern hemisphere.

**PERSIAN LILAC**. A handsome shrub, having a broader leaf and a finer flower than the common lilac.

**PERSIAN ORDER** (in Architecture). An order wherein the entablature is supported by the figures of men instead of columns. They were intended to represent the Persians taken captive by the Athenians.

**PERSIAN WHEEL**. An engine for watering lands.

**PERSON** (in Grammar). A term for nouns and pronouns which express the person of the speaker; also the inflection of verbs answering to the different persons. There are three persons, namely, the first, or the person speaking; the second, the person spoken to; and the third, the person spoken of.

**PERSONAL** (in Law). Belonging to the person and not to the thing, as personal goods, as opposed to real property or estates: personal action, an action against the person.

**PERSONAL VERB** (in Grammar). A verb that has inflections or endings to express the persons of the agent.

**PERSONALTY** (in Law). Any thing personal, in distinction from things real.

**PERSONATÆ** (in Botany). One of Linnæus's natural orders of plants, which have a labiate corolla or flower with the lips closed, as the aconite, &c.

**PERSONATING**. Representing any one by a fictitious or assumed character, so as to pass for the person represented.

**PERSONS**. The three persons or subsistences in the Holy Trinity; namely, the Father, Son, and Holy Ghost.

**PERSONS** (in Law) Are distinguished into natural persons whom God has formed, and artificial persons, or those formed by society, as corporations or bodies politic.

**PERSPECTIVE**. A branch of mixed mathematics, which shows how to represent objects on a plain surface, as naturally as they would appear to our sight if seen through that plane, supposing it were as transparent as glass. Perspective is divided into Aerial Perspective, which has principally a reference to the colouring and shading of distant objects; and Lineal Perspective, which relates to the position, form, magnitude, &c. of the several lines or contours of objects, &c.

**PERSPECTIVE, HISTORY OF**. Perspective, as a branch of optics, was known and practised at an early period. It was taught by Democritus and Anaxagoras, and treated of by Euclid in his Optics. Alhazen likewise, in his optical treatise, speaks of this art, and of its importance to the painter; but the first writers who professedly treated on perspective were Bartolemeo Bramantino, in his *Regole di Perspectiva*, &c. dated 1440, and Pietro del Borgo, who supposed objects to be placed beyond a transparent tablet, and so to trace the images which rays of light emitted from them would make upon it. Albert Durer constructed a machine upon the principles of Borgo, by which he could trace the perspective appearance of objects. Leon Battista Alberti, in his treatise *De Pictura*, speaks chiefly of perspective; and Balthazar Peruzzi, of Siena, who died in 1506, wrote a system of perspective, which appeared in 1540. He is said to have first recommended points of distance, to which are drawn all lines that make an angle of 45 degrees with the ground line. Guido Ubaldi, in his *Perspective* published in 1600, showed that all lines are parallel to one another, if they be inclined to the ground line, and converge to some point in the horizontal line; and that through this point also will pass a line drawn from the eye parallel to them. His work contained the first principles, which afterwards formed the groundwork of Dr. Taylor's. He was immediately followed by Giacomo Barozzi, of Vignola, whose *Two Rules of Perspective* were published, with a commentary by Ignatius Dante. Marolois' work was published at the Hague in 1615, and that of Sirigatti, which was an abstract of Vignola's, in 1625. But the most celebrated writer on this subject was Dr. Brooke Taylor, who, in his *Linear Perspective*, has laid down principles far more general than those of any of his predecessors. He does not confine his rules to the horizontal plane only, but he has made them applicable to every species of lines and planes. Likewise, by his method, which is exceedingly simple, the fewest lines imaginable are required to produce any perspective representation. As a proof of the excellence of his method, it suffices to add that it has been followed by all who have treated on this subject, and is universally adopted in practice. Mr. Hamilton published his *Stereography* in 2 vols. folio, after the manner of Dr. Taylor, besides which there are some good treatises on the subject from Ware, Cowley,



Ferguson, Emerson, &c.; but Mr. Kirby's system of perspective has been generally esteemed for its practical utility.

**PERSPECTIVE.** In gardens, or at the end of galleries, designed to deceive the eye by representing the continuation of an alley or a building, &c.

**PERSPECTIVE-GLASS.** The glass or other transparent surface supposed to be placed between the eye and the object, perpendicularly to the horizon.

**PERSPIRATION.** The evacuation of the juices of the body through the pores of the skin. This is either sensible, which is called sweating; or insensible, which is not perceptible to the senses.

**PERUVIAN BARK.** A drug, the bark of a tree growing in Peru.

**PESTLE.** An instrument for pounding in a mortar.

**PETAL.** The leaf of the corolla or flower.

**PETARD** (in Fortification). A hollow engine shaped like a sugar-loaf, made for breaking open gates, drawbridges, &c.

**PETIOLE** (in Botany). The leaf-stalk, or the stem which supports the leaf.

**PETITION** (in Law). A supplication in lieu of a writ, which is always made by a subject to the king when the latter is a party in the suit; also any supplication drawn up in form, and addressed either to the king or either of the two houses of parliament.

**PETITIO PRINCIPII** (among Logicians). Begging the question, or taking for granted that which is the matter in dispute.

**PETREL.** A sea-fowl, which has the faculty of spouting pure oil from its bill. It is a sure prognostic of a storm at sea, when it hovers about a ship.

**PETRIFACTIONS** (among Mineralogists). Stony matters incrustated within the cavities of organized bodies, as the incrustations of limestone or selenite in the form of stalactites or dropstones from the roofs of caverns.

**PETRIFICATION.** The conversion of wood, bones, or any other substance into stone; also that which is turned into stone.

**PETROLEUM.** Rock oil, a liquid bituminous substance which distils from rocks.

**PEWTER.** A compound metal, or an alloy of tin with copper, lead, zinc, bismuth, or antimony.

**PHALANX.** A Macedonian legion, formed into a square compact battalion of pikemen.

**PHANTASMAGORIA.** An optical exhibition very similar to the magic lantern.

**PHARAOH.** A name common to several kings of Egypt mentioned in Scripture. The fourth of this name was drowned in the Red Sea.

**PHARMACOPŒIA.** A book of medicines.

**PHARMACY.** The art of preparing, compounding, and preserving medicines.

**PHAROS.** A watch tower among the ancients.

**PHASES.** The various appearances of the moon at different ages, being first a crescent, then a semicircle, then gibbous, and lastly full, when she returns by the same gradation to the state of a new moon.



**PHEASANT.** A bird of game, highly esteemed for its flesh.



**PHEON.** A kind of missile weapon or dart with a barb, which is sometimes borne in coats of arms.

**PHIAL.** A little glass bottle, mostly used for medicine.

**PHILOLOGY.** An assemblage of sciences, consisting of grammar, rhetoric, poetry, antiquities, history, and criticism, called by the French, belles lettres; also the science of languages.

**PHILOSOPHER.** One who is versed in or addicts himself to the study of philosophy.

**PHILOSOPHER'S STONE.** The object of alchymy by a long sought for preparation, by which, as they pretended, the base metals might be converted into gold and silver.

**PHILOSOPHY.** Properly, the love of wisdom, a term applied either to the study of nature or morality, founded on reason and experience, or the systems which different men have devised of explaining the various phenomena in the natural and moral world, as the Pythagorean philosophy, which taught, among other things, the transmigrating of souls; the Aristotelian philosophy, or the doctrines of Aristotle, which are to be found in his works; the Socratic philosophy, which is to be found in the writings of Xenophon and Plato; Epicurean philosophy, a sceptical licentious scheme of morals ascribed to Epicurus; Stoic philosophy, the doctrines of Zeno the stoic, who maintained, among other things, that a man might be happy in the midst of the severest tortures; the Cynic philosophy, the followers of which affected a great contempt of riches and of all sciences except morality; and the Sceptical philosophy, broached by one Pyrrho, who affected to doubt every thing.

**PHLEBOTOMY.** The opening a vein for the purpose of discharging some of the blood.

**PHLEGM** (in Anatomy). A thick tenacious matter secreted in the lungs.

**PHLEGM** (in Chymistry). A watery distilled liquor, in distinction from a spirituous liquor.

**PHOSPHATES.** Salts formed by phosphoric acid, with the alkalies, earths, and metallic oxides.

**PHOSPHITES.** Salts formed with phosphorus united to the earths, alkalies, and metallic oxides.

**PHOSPHORIC ACID.** An acid formed by the combination of muriatic acid with oxygen.

**PHOSPHOROUS ACID.** An acid formed by the combination of phosphorus with oxygen. It contains less of the latter than phosphoric acid.

**PHOSPHORUS.** A yellow semitransparent substance, of the consistence of wax, but brittle during the frost. It is luminous in the common temperature of the air, of a rough disagreeable taste, and a smell like garlic.

**PHOSPHURET.** A substance formed

by the union of alkalies, earths, and metallic oxides with phosphorus.

**PHRENOLOGY.** A newly invented science, which professes to teach, from the conformation of the human skull, the particular characters and propensities of men, presuming that the faculties and operations of the human mind have their particular seat in the brain, and are to be traced by particular external marks.

**PHYLACTERY.** A charm or amulet among the ancients, which, being worn, was supposed to preserve people from certain evils, diseases, or dangers.

**PHYSICIAN.** One who professes medicine or the art of healing.

**PHYSICS, or NATURAL PHILOSOPHY.** The science which explains the doctrine of natural bodies, their phenomena, causes, and effects, with their various affections, motions, and operations.

**PHYSIOGNOMY.** The study of men's particular characters and ruling passions from the features of the face and the cast of the countenance.

**PHYSIOLOGY.** The same as Physics; also that branch of medicine which treats of the structure and constitution of the human body, and the functions of the various parts, with regard to the cure of diseases.

**PHYTOLOGY.** A treatise on the forms, properties, and kinds of plants.

**PIA MATER** (in Anatomy). The interior membrane enclosing the brain.

**PIANO FORTE.** A well known keyed instrument of German invention, which sends forth sounds both piano and forte, that is, soft and strong.

**PIAZZA.** A spacious place enclosed with columns.

**PICÆ.** An order of birds in the Linnæan system under the class Aves, comprehending such as have their bill compressed and convex, including the parrot, crow, raven, magpie, cuckoo, jay, bird of paradise, &c.

**PICKLE.** A brine or liquor usually composed of salt for seasoning meat, and also of spice and vinegar for preserving fruits; also the fruits preserved in pickle.

**PICQUET** (in Military Affairs). A certain number of men, horse or foot, who do duty as an outguard, to prevent surprises.

**PIE** (in Printing). The composed matter broken or thrown out of order.

**PIE-POWDER, or COURT OF PIE-POUDRE.** A court held in fairs.

**PIER.** A mole or rampart raised in a harbour to break the force of the sea.

**PIGEON.** A domestic bird, of which there are many varieties, as the rock pigeon, the carrier pigeon, the powter, shaker, tumbler, &c.

**PIGMENTS.** Artificial preparations in imitation of certain colours.

**PIG OF LEAD.** About two hundred and fifty pounds weight.

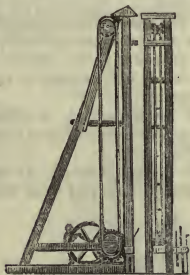
**PIKE** (in Ichthyology). A fish which abounds in most of the lakes of Europe. It is remarkable for its voracity, and also for its longevity.

**PIKE** (in Military Affairs). A long slender staff with a pike or spike at the end.

**PILASTER.** A square pillar.

**PILE** (in Artillery). A heap of shot or shells piled up into a wedgelike form.

**PILE-DRIVER.** A machine for driving piles or stakes in the beds of rivers, as a foundation on which a bridge is raised.



**PILGRIM.** One who travels into foreign lands for purposes of devotion.

**PILL.** A solid medicine made of several ingredients into the shape of a ball.

**PILLAR.** An irregular kind of column, as a butting pillar, raised to support a wall.

**PILLION.** A sort of soft saddle for a female to sit on horseback behind a horseman.

**PILLORY** (in Law). A wooden machine in which offenders are exposed to the gaze of the multitude.

**PILLOW.** A cushion on which the head rests.

**PILLOW** (among Mariners). A piece of timber on which the boltsprit rests.

**PILOT.** One who is employed to conduct ships into roads or harbours, over bars or sands, &c.

**PIMENTO.** See ALLSPICE.

**PIN.** A small sharp-pointed piece of wire with a head to it, used by women in fastening their clothes; also any thing in

the shape of a pin which serves to fasten, as the linchpin, which locks the wheel to the axle; also the screw of a musket barrel, and the like.

**PINCERS.** A sort of tool used by artificers in drawing nails.



**PINCHBECK.** An alloy, containing three parts of zinc and four of copper.

**PINEAL GLAND.** A small heartlike substance, about the size of a pea, situated at the basis of the brain.

**PINE-APPLE.** The fruit of an herbaceous plant which has leaves something similar to those of the aloe. The fruit resembles in shape the cone of the pine-tree, whence it has derived its name. Its botanical name was *Ananas*, and in the Linnæan system *Brumelia Ananas*.

**PINE-TREE.** A large tree, the leaves of which are longer than those of the fir-tree.

**PINION.** The joint of a bird's wing remotest from the body.

**PINION** (with Watchmakers).<sup>a</sup> The nut or lesser wheel of a watch.

**PINION** (with Mechanics). A lesser wheel which plays in the teeth of a larger.

**PINK.** A small fragrant flower, of divers rich colours. The superior sorts are named cloves and cinnamon.

**PINK** (among Painters). A faint red colour.

**PINK** (among Mariners). A small sailing ship.

**PINNACE.** A small vessel having sails and oars, and carrying three masts; also one of the boats belonging to a man of war.

**PINT.** An English beer measure, the half of a quart and eighth of a gallon.

**PINXIT**, abbreviated, **PINX.** Denotes, when placed at the bottom of a picture with the painter's name, that he painted it.

**PIONEERS** (in Military Tactics). Labourers who attend an army, in its march, to clear the way, by cutting down trees and levelling roads, as also to cast up trenches, make mines, and the like.

**PIONY.** A garden plant, bearing a large flower resembling a rose in shape.

**PIP.** A disease in young birds, which consists of a white skin or film under the tongue.

**PIPE.** A tube made of clay, which is used in smoking.

**PIPE (in Building).** A conduit for the conveyance of water and other fluids.

**PIPE (in Music).** A musical wind instrument, smaller than a flute. Pan-pipes are a range of short pipes bound together side by side.

**PIPE (in Anatomy).** The windpipe.

**PIPE (in Law).** A roll, otherwise called the Great Roll of the Exchequer.

**PIPE (in Commerce).** A measure of wine, containing 162 gallons.

**PIPE (among Miners).** The ore which runs endwise in a hole.

**PIPE-FISH.** A fish so called from the length and slenderness of its body.

**PIPER.** A player on the pipe.

**PIPING.** The slip of a pink.

**PIQUET.** A game of cards played by two persons with only thirty-two cards, rejecting all the deuces, threes, fours, fives, and sixes.

**PIRATE.** A sea robber; one who lives by plunder at sea.

**PISCES (in Ichthyology).** The third class into which Linnæus divided the animal kingdom, consisting of five orders, namely, the abdominales, apodes, cartilaginiæ, jugulares, and thoracici. See **ABDOMINALES, &c.**

**PISCES (in Astronomy).** The twelfth and last sign in the zodiac, marked thus (♓).

**PISCIS VOLANS.** A constellation in the southern hemisphere.

**PISTACHIO.** A nut of an aromatic smell, growing on a tree in Syria, from which an oil is extracted.

**PISTIL, or POINTAL (in Botany).** An organ adhering to the fruit for the reception of the pollen.

**PISTOL.** A sort of small firearms, the barrel of which is shorter and thicker than that of a common gun.

**PISTOLE.** A German coin, in value from 17s. to 19s. sterling.

**PISTON.** A sucker, or that part which acts as such in all pumps, &c.

**PITCH.** A tenacious oily substance, drawn chiefly from pines and firs.

**PITCH (in Architecture).** The angle to which a gable end, and consequently a whole building, is set.

**PITCH (in Husbandry).** An iron bar, with a pointed end.

**PITCH (in Music).** The acuteness or gravity of any particular sound.

**PITFALL.** A gin or snare to catch beasts.

**PITH.** The soft spongy substance in the stalk or stem of plants.

**PIVOT.** The pin on which any thing turns.

**PIX (in Law).** The box in the Mint in which the pieces of coin are kept that are selected for trial.

**PIX, TRIAL OF THE.** The trial of the coins, previous to their being issued, before a jury of twenty-four persons, twelve of whom are goldsmiths.

**PLACARD.** A proclamation in Holland, and in France a table wherein laws and orders were hung up; with us, vulgarly, any bill posted up against a wall or post.

**PLAID.** A sort of stuff worn by Highlanders.

**PLAGIARY.** A literary thief, who purloins the works of another, and publishes them in his own name.

**PLAGUE.** A contagious and malignant distemper.

**PLAICE.** A sort of flat fish, which has a delicate flesh.

**PLAN.** The representation of something drawn on a plane, as maps and charts, &c.; or, more particularly, the draught of a building, such as it is intended to appear on the ground.

**PLANE (in Geometry).** A plane or level surface, whose parts lie even between its extremities.

**PLANE (among Joiners).** An edged tool for paring and shaving wood smooth.



**PLANE TABLE.** A simple instrument whereby the draught of a field is taken on the spot.

**PLANETARIUM, or ORRERY.** An astronomical machine, made to represent the motions of the heavens. See **ORRERY.**

**PLANE-TREE.** A tall tree resembling a maple, which is a native of America.

**PLANETS.** Wandering bodies, or such stars as change their position, in distinction from the fixed stars. They are distinguished into primary and secondary. The primary are those which are supposed to revolve round the sun, as Jupiter, Mercury, Venus, &c.; and the secondary are those which revolve round a primary planet, as the Moon, the satellites of Jupiter, Saturn, and Uranus. The original number of planets was six, constituting, as was imagined, the whole planetary system. These were Mercury, Venus, the

Earth, Mars, Jupiter, and Saturn, which were distinguished by some mark or attribute of the deities of those names. Thus the mark of Mercury, ☿, represents his caduceus; that of Venus, a mirror, ♀, with a handle to it; that of Tellus, the earth, ⊕, to denote its form; that of Mars, the god of war, a spear, ♂; that of Jupiter, the first letter of his Greek name, ♃; and that of Saturn, a scythe, ♄. To the above six planets have been added five others, namely, the Georgium Sidus, or Uranus, ♅, Ceres, Pallas, Juno, and Vesta.

**PLANISPHERE.** A projection of the sphere, and its various circles on a plane, such as maps, &c.; but more particularly, a projection of the celestial sphere upon a plane, representing the stars, constellations, &c.

**PLANK.** A piece of timber sawed for carpenter's work.

**PLANTAIN.** A tree in the West Indies, which has a beautiful foliage, and bears an esculent fruit.



**PLANTATION (in Politics).** A colony or settlement of people in a foreign country.

**PLANTATION (in Horticulture).** Any place which is planted with shrubs and trees.

**PLANTER.** A proprietor of grounds in the West Indies.

**PLASHING HEDGES.** Bending the boughs and interweaving them, so as to thicken the hedge.

**PLASTER (in Medicine).** An external application to the body.

**PLASTER (in Masonry).** Mortar for laying on walls, &c.

**PLASTER OF PARIS.** A paste made of gypsum.

**PLASTERER.** One who plasters walls. The company of plasterers was incorporated in 1500.

**PLATE.** A broad flat utensil, as a plate for eating on, and a copper-plate for print-

ing on; any flat piece of metal in the same form or shape.

**PLATE (in Commerce).** Vessels or utensils made of gold or silver.

**PLATFORM (in Architecture).** A row of beams which support the timber work of a roof; also any erection consisting of boards raised above the ground for an exhibition or any other temporary purpose.

**PLATFORM (in Fortification).** An elevation of earth on which cannon is placed.

**PLATFORM (in a Ship of War).** A place on the lower deck; the mainmast.

**PLATING.** Covering baser metals with a thin plate of silver.

**PLATINUM.** A metal, so called from the Spanish plate-silver, because it resembles silver. It is reckoned by some to be the heaviest of all metals. It is malleable and ductile like gold.

**PLATOON.** A small square body of forty or fifty musqueteers, drawn out of a battalion of foot, and placed between the squadrons of horse to sustain them; also in ambuscades and narrow defiles, where there is not room for the whole battalion.

**PLATYPUS.** A newly discovered animal, the mouth of which is shaped like the bill of a duck, and the feet are webbed.

**PLEA (in Law).** That which either party alleges in support of his own cause.

**PLEADER.** A counsellor, or one who argues in a court of justice.

**PLEADING.** Putting in a plea in law; also the form of the pleading.

**PLEAS OF THE CROWN.** Suits in the king's name for offences committed against his crown and dignity.

**PLEBEIAN.** One of the plebs or common people among the Romans.

**PLEDGES (in Law).** Sureties which the plaintiff finds that he shall prosecute his suit.

**PLEIADES.** A cluster or assemblage of stars in the constellation Taurus.

**PLENIPOTENTIARY.** A commissioner or ambassador from a prince, invested with full power to conclude peace with another prince or state.

**PLENUM (in Physics).** A term denoting that every part of space or extension is full of matter, as is maintained by the Cartesians.

**PLEONASM.** A form of expression in which more words are used than are necessary.

**PLETHORA.** A preternatural fulness of blood.

**PLEURA.** A membrane covering the inside of the chest.

**PLEURISY.** An inflammation of the pleura.

**PLEXIS.** A net-work of vessels.

**PLICA POLONICA.** A disease among the Polanders, which causes the hair to be clotted together so that it cannot be separated.

**PLIERS.** An instrument by which any thing is laid hold of so as to bend it.



**PLOT** (in Dramatic Poetry). The fable of a tragedy, comedy, or any fictitious narrative.

**PLOT** (in Surveying). The plan or draught of a field or any piece of ground surveyed with an instrument, and laid down in the proper figure and dimensions.

**PLOTTING.** The describing or laying down on paper the several lines, angles, &c. of a piece of land.

**PLOVER.** A sort of bird which frequents the shores of England in spring, and migrates in autumn.

**PLOUGH** (in Agriculture). A machine for turning up the soil in preparation for receiving the seed. It consists of a wooden frame, with a handle; a share, or sharpened piece of iron, fixed on the bottom of the plough; and a coulter, another cutting iron, that stands upright in the plough.



**PLOUGH** (among Bookbinders). A machine for cutting the edges of books.

**PLOUGHSHARE.** The cutting iron fixed at the bottom of the wood-work of the plough, which forms the furrows.



**PLUM.** A fruit of different kinds, growing in England; also the dried raisin, that is imported.

**PLUMBAGO, or BLACK LEAD.** An ore of a shining black colour.

**PLUMBER.** A maker of leaden vessels, or worker in lead. The company of plumbers was incorporated in 1611.

**PLUMB-LINE** (among Artificers). A perpendicular to the horizon, formed by means of the plummet.

**PLUME.** A set of feathers for ornament, particularly ostrich feathers.

**PLUMMET.** A leaden weight attached to a string, by which depths are sounded perpendicularly, and perpendiculars are taken by carpenters, masons, &c.

**PLURALITY** (in Law). A term applied to any number of benefices more than one held by a clergyman.

**PLUS, i. e. MORE.** A term in algebra to denote addition, marked by the sign (+), as  $4+6=10$ , that is, 4 plus 6 equal to 10.

**PLUSH.** Cloth made either of silk, as velvet; or of hair, as shag.

**PNEUMATICS.** The science which treats of the mechanical properties of air and other compressible fluids. The principal mechanical properties of air which are treated of under this science are its fluidity, weight, and elasticity.

**PNEUMATICS, HISTORY OF.** Although the ancients did not investigate the properties of air with the same minuteness as the moderns have done, yet the subject evidently engaged the attention of Aristotle and other Grecian philosophers. Aristotle was aware of the gravity of the air, and observed that a bladder filled with air would weigh more than the same bladder when empty; and Empedocles ascribed the cause of respiration to the weight of the air, which, by its pressure, insinuates itself into the lungs. Its elasticity also, as well as its gravity, must have been known and made the subject of experiments, if it be true, as is related by historians, that Hero of Alexandria, and Ctesibius, his contemporary, invented air-guns. The subject was, however, for a long time neglected, or treated superficially; for the effects which are now known to arise from the gravity and elasticity of the air were for a long time attributed to the imaginary principle of a Fuga Vacui, or Nature's abhorrence of a vacuum, a principle which Galileo did not altogether discard, although he was fully aware of the gravity of the air, and pointed out two methods of demonstrating it by weighing the air in bottles; but the pressure of the atmosphere was first discovered by Torricelli, and clearly demonstrated by an experiment, which terminated in the invention of the barometer in 1643. It occurred to him, on observing that a column of water 34

feet high is sustained above its level in the tube of a common pump, that the same force, whatever that was, would sustain a column of any other fluid which weighed as much as that column of water on the same base; and hence he concluded that quicksilver, being about 14 times as heavy as water, would not be sustained at a greater height than 29 or 30 inches. Accordingly he took a glass tube of several feet in length, and having sealed it hermetically at one end, he filled it with quicksilver; then inverting it, he held it upright, and keeping his finger against the open or lower orifice, he immersed that end in a vessel of quicksilver, and on withdrawing his finger, he found that the quicksilver, according to his expectation, descended till the column of it was about 30 inches above that in the open vessel; whence he was led to infer that it could be no other than the weight of the atmosphere incumbent on the external surface of the quicksilver, which counterbalanced the fluid in the tube, and thus introduced the principle that the air had not only weight, but that its weight was the cause of the suspension of water in pumps, and of the quicksilver in the tube. This principle, after repeated experiments from the philosophers in France, England, and Germany, became established, and that of the vacuum was finally exploded.

From this time they proceeded to be more minute in their investigations, and Father Mersenne, who was the first philosopher in France that was apprized of Torricelli's experiment, set about determining the specific gravity of air, which he made to be as 1 to 400; but Mr. Boyle, by a more accurate experiment, came to a nearer result, and made it to be to that of water in the proportion of 1 to 938; and Mr. Hawksbee succeeded, after repeated experiments, in obtaining the proportion of 1 to 885. Experiments were made by others in the winter as well as the summer, and the medium of all is about 1 to 832.

As to the elasticity of the air, which also became the subject of experiment, it was shown that, with moderate pressure, it is always proportional to the density, and that the density is always as the compressing force; whence also the elasticity of air is as the force by which it is compressed.

In consequence of these investigations into the mechanical properties of the air, not only was the barometer invented, and

the air-gun revived, but other pneumatic machines were contrived, as the air-pump, air-balloon, thermometer, &c.; of which a more particular account will be found under their respective heads.

**POACHING** (in Law). Taking game by unlawful means, privately and without authority.

**POCKET**. A large sort of bag in which wool is packed. A pocket of wool usually contains 25 cwt. A pocket of hops is a small bag in which the best hops are commonly put.

**POCKET-BOOK**. A small book for holding papers and memorandums, which is carried in the pocket.

**POCKET-SHERIFF** (in Law). A sheriff appointed by the king himself, who is not one of the three nominated in the Exchequer.

**POETRY**. The art of writing poems, or fictitious compositions drawn out in measured language. As respects the subject, it is divided into pastorals, satires, elegies, epigrams, &c.; as respects the manner or form of representation, into epic, lyric, and dramatic poetry, &c.; as respects the verse, into blank verse and rhyme.

**POINT** (in Geometry). That which has neither length, breadth, nor thickness.

**POINT** (in Astronomy). The name for certain parts in the heavens, as the cardinal points, the solstitial points, &c.

**POINT** (among Artists). An iron or steel instrument used for tracing designs on copper, wood, stone, &c.; in Commerce, lace wrought with the needle.

**POINT-BLANK**. The shot of a gun levelled horizontally.

**POINTER**. A dog that points out the game.



**POINTERS** (in Astronomy). Two stars in Ursa Major, the hindermost of the wain, so called because they always point nearly in a direction towards the North Pole star.

**POINTING** (in Gunnery). The levelling a gun towards an object.

**POINTING** (in Grammar). Dividing a discourse by means of points.

**POINT OF SIGHT** (in Perspective). A point on a plane marked out by a right line drawn from the perpendicular to the plane.

**POINTS** (in Grammar). Hebrew characters, to express vowel sounds; also characters for separating words and sentences from each other, as the comma (,) the semicolon (;) the colon (:) period or full stop (.) note of admiration (!) note of interrogation (?).

**POINTS OF THE COMPASS.** Thirty-two divisions in the mariner's compass, each of which is 11 degrees and 15 minutes distant from each other.

**POISON.** Any substance which in a particular manner deranges the vital functions, and terminates mortally if not counteracted.

**POLARITY.** The property of pointing to the poles, which is the characteristic of the magnet.

**POLE.** A long bar of wood, cut and fitted for various purposes, as the pole of a carriage, &c.

**POLE** (in Surveying). A measure containing 16 feet and a half.

**POLE** (in Mathematics). A point ninety degrees distant from the plane of any circle.

**POLE** (in Astronomy). The extremity of the axis of the earth, an imaginary point on the earth's surface, of which there are two, namely, the Arctic or North Pole, and the Antarctic or South Pole. These are so encompassed with ice, that every attempt to approach them within a considerable distance has hitherto proved ineffectual.

**POLECAT.** An animal of the weasel tribe, which emits a most fetid vapour when pursued. It inhabits Europe and Asiatic Russia.



**POLEMICS.** Treatises concerning disputed points in theology.

**POLES** (in Magnetism). The two points of a magnet, corresponding to the poles of the world, the one pointing to the north and the other to the south.

**POLE STAR, or POLAR STAR.** A star of the second magnitude, the last in

the tail of Ursa Minor, which, owing to its proximity, never sets, and is therefore of great use to navigators in determining the latitudes, &c.

**POLICE.** The internal government of any town or country, as far as regards the preservation of peace.

**POLICY.** The art of government, principally as regards foreign affairs.

**POLICY OF INSURANCE.** An instrument or deed by which a contract of insurance is effected.

**POLITICAL ARITHMETIC.** The application of arithmetical calculations to political uses, as in estimating the revenues, resources, and population of a country.

**POLITICAL ECONOMY.** The art or theory of managing the affairs of any state.

**POLL, or DEED POLL** (in Law). A deed that is polled or shaved even.

**POLL** (in Elections). The register of those who give their vote, containing their name, place of residence, &c.

**POLLEN.** A prolific powder contained in the anther of flowers.

**POLLUX.** A star of the second magnitude in the constellation Gemini.

**POLY.** A prefix in many words, denoting a multitude or indefinite number as polysyllable, a word of many syllables polygon, a figure of many angles; polyadelphia, polyandria, &c.

**POLYADELPHIA** (in Botany). One of the Linnæan classes, including plants that have many stamens to each flower united by their filaments into three or more distinct bundles.



**POLYANDRIA** (in Botany). One of the Linnæan classes, including plants the flowers of which have many stamens.





**POLYANTHUS.** A plant with a perennial root, that yields many flowers. It is much cultivated in gardens, and greatly esteemed for the richness and diversity of its colours.

**POLYGAMIA** (in Botany). One of the Linnæan classes, including plants that have both male and female flowers, as the fig tree, date-tree, plantain-tree, &c.



**POLYGAMY.** The having more than one husband or one wife, either at the same time or in succession.

**POLYGAMY** (in Law). The having more than one husband or wife at the same time, which is felony.

**POLYGLOTT**, i. e. Many languages; as the Polyglott Bible, a Bible printed in many languages.

**POLYGON.** A figure of many sides and many angles.

**POLYGYNIA** (in Botany). One of the Linnæan orders, containing plants the flowers of which have many pistils.

**POLYPE.** An animal of the worm tribe, inhabiting the stagnant waters of Europe, which is remarkable for the property that if cut into ever so many parts, each part becomes a perfect animal.

**POLYPUS.** A sea-fish, resembling the cuttle-fish, so called because it has numerous feet.

**POLYPUS** (in Surgery). A fleshy tumour, commonly met with in the nose, that abounds in ramifications, from which it has its name.

**POLYSYLLABLE.** A word of many syllables.

**POLYTHEISM.** The doctrine that there are more gods than one.

**POMACEÆ** (in Botany). One of Linnæus's natural orders, containing plants that have a pulpy fruit, as the apple, pear, &c.

**POMATUM.** A sweet-scented ointment, originally made of the juice of the apple, called pomewater, but now of hog's lard, rose-water, &c.

**POME-APPLE.** A small apple, of a pleasant taste and grateful scent.

**POMEGRANATE.** A round fruit, of the pomegranate tree, full of kernels.

**POMONA.** A goddess among the Romans, worshiped as the patroness of fruits and flowers.



**POMPEII.** A town of Campania, at the foot of Mount Vesuvius, which was buried in an eruption that happened A. D. 79. The ruins were discovered in the middle of the eighteenth century.

**PONTIFEX.** The high priest among the Romans.

**PONTIFF.** The high or chief priest in the Romish and Greek churches, as the pope or patriarch.

**PONTIFICALIA.** The robes in which a bishop performs divine service.

**PONTONS.** A bridge made of pontoons, or boats fitted for the purpose of conveying soldiers.

**POOP.** The uppermost part of a ship's hull.

**POPE, or PAPA.** A title originally given to all bishops, as the fathers of the church: by order of Gregory VII. it became the peculiar title of the bishops of Rome, as heads of the Roman Catholic church.

**POPLAR.** A tall slender tree, of swift growth. The wood is soft, white, and stringy.

**POPULATION.** The aggregate number of people in any country, which, owing to the increase of births above that of the deaths, is continually increasing in most parts of the habitable world.

**PORCELAIN.** A sort of earth or clay, the finest kind of which is found in China; also the ware made of porcelain or any fine earths. In China this earth, being beaten, and steeped in water, affords a cream at the top, and a grosser substance at the bottom, the former of which is used for the finest kind of ware, or china; and the latter, for the coarser sort.

**PORCUPINE.** An animal, native of Africa and warm climates, resembling a

hedgehog, but considerably larger. Its body is furnished with bristles or spines, which it erects when it is frightened.



**PORES.** Cavities in the skin, which serve as passages for the perspiration; also small interstices between the particles of matter which compose bodies.

**PORPHYRY.** A compound rock, consisting most commonly of felspar and quartz.

**PORPOISE.** A sort of dolphin, having a broad back and a bluntish snout.



**PORT.** A harbour or place of shelter, where ships arrive with their freights, and customs from goods are taken; also the wine that comes from Oporto.

**PORTCULLIS** (in Fortification). A machine like a harrow, hung over the gates of a city, to be let down to keep out the enemy.

**PORTER.** One who carries goods for hire, and also one who attends at a gate.

**PORTER.** A kind of malt liquor made of high-dried malt.

**PORTHOLES.** Holes in the sides of the vessels, through which guns are put.

**PORTMANTEAU.** A cloak-bag, to carry the necessary clothing on a journey.

**POSITION** (in Arithmetic). A rule in which any supposed number is taken at pleasure, to work the question by.

**POSITIVE DEGREE.** The first degree of any quality expressed by the word itself.

**POSITIVE ELECTRICITY.** A term applied to bodies supposed to contain more than their natural quantity of electricity.

**POSSE COMITATUS** (in Law). The armed power of the county, or the attendance of all persons charged by the sheriff to assist him in the suppression of riots, &c.

**POSSESSIVE CASE** (in Grammar). Any ending of nouns which denotes possession.

**POST** (in Military Affairs). Any spot of ground that is marked out to be occupied by soldiers.

**POST** (in Commerce). A conveyance for letters and despatches.

**POST** (in Grammar). A prefix to many words, implying after, as postdiluvian, after the deluge.

**POSTHUMOUS CHILD** (in Law). One born after his father's death.

**POSTMAN.** One who delivers the letters from the post-office to the persons to whom they are addressed.

**POSTMASTER.** He who has the charge of the letters received in and delivered from the post-office.

**POSTMASTER GENERAL.** He who presides over the whole business of conveying letters by the post-office.

**POST OBIT.** After death.

**POST-OFFICE.** The office where the business of receiving and forwarding letters is conducted. In London there is the General Post-Office, which takes charge of all letters to be conveyed to the different parts of the world; and the Twopenny Post-Office, which takes charge of letters to be conveyed to different parts of the metropolis and its environs.

**POSTSCRIPT.** What is added in a letter after it has been signed by the writer.

**POSTULATE.** Any fundamental principle in a science that is taken for granted.

**POTASH.** An impure fixed alkaline salt, procured by burning vegetables. It is a brittle corrosive substance, of a white colour and acrid taste.

**POTASSIUM.** A metallic substance, which is supposed to be the basis of potash.

**POTATOE.** An edible root, first brought from America.

**POTSTONE.** A mineral of a greenish-gray colour, found abundantly near the lake Como in Lombardy.

**POTTERY.** The manufacture of earthen pots, or earthenware in general, but particularly of the coarser sort.

**POUNCE.** The powder of gum sandarach sifted very fine.

**POUND.** A weight containing 12 ounces Troy, and 16 avoirdupois weight.

**POUND** (in Law). Any enclosed place for the keeping of beasts in, particularly such as are distrained.

**POUNDER.** The name of a great gun, from the weight of the ball it carries, as a six, twelve, and twenty-four pounder, &c.

**POWDER.** Any thing as fine as dust, as gunpowder, hairpowder, &c.

**POWDER-CHESTS.** Triangular chests on board a vessel for holding the gunpowder, &c.

**POWDER-HORN.** A horn in which gunpowder is kept.

**POWDER-MILL.** A mill in which the ingredients for gunpowder are ground and mingled.

**POWER (in Mechanics).** Any force which, applied to a machine, sets it in motion. There are six simple machines, which are particularly denominated the six mechanical powers, namely, the lever, the balance, the screw, the wheel and axle, the wedge, and the pulley.

**POWER (in Arithmetic).** The produce of any quantity multiplied by itself any number of times, as the square, cube, biquadrate, &c.

**POWER (in Law).** The authority which one man gives another to act for him.

**POWER-LOOM.** A loom worked by steam or water.

**POWER OF ATTORNEY (in Law).** An instrument or deed whereby a person is empowered to act for another.

**POWER OF A GLASS (in Optics).** The distance between the convexity and the focus.

**POWTER.** A sort of pigeon, which swells up its neck when it is displeased.

**PRACTICE (in Arithmetic).** An easy and expeditious method of resolving questions in the Rule of Three, as applied to the daily business of a tradesman.

**PRACTICE (in Law).** Any fraudulent, underhand mode of proceeding.

**PRACTICE OF THE COURTS (in Law).** The form and manner of conducting and carrying on suits at law or in equity.

**PRÆMUNIRE.** See **PREMUNIRE.**

**PRÆTOR.** A chief magistrate among the Romans, instituted for the administration of justice in the absence of the consuls.

**PRAWN.** A small sea-fish of the crab kind, larger than a shrimp.

**PREAMBLE (in Law).** The introductory matter to a statute, which contains the reasons for making such an enactment.

**PREBENDARY.** An ecclesiastic who enjoys a prebend.

**PRECARIOUS (in Law).** An epithet for what is granted to one upon entreaty, to use so long as the party thinks fit.

**PRECEDENCE (in Heraldry).** The right of taking place before another, which

is determined by authority, and followed exactly on all public occasions of processions and the like.

**PRECEDENT (in Law).** An original writing or deed to draw others by.

**PRECEPT (in Law).** A command in writing, sent out by a magistrate for the bringing a person or a record before him.

**PRECESSION OF THE EQUINOXES.** A slow motion of the equinoctial points, by which they change their place, going from east to west or backward, in antecedentia as it is called, that is, contrary to the order of the signs.

**PRECIPITATE (in Chymistry).** Any substance in a solution which separates and falls to the bottom, particularly a corrosive medicine made by precipitating mercury.

**PRECIPITATION.** The falling or causing to descend the particles of any metallic or mineral body, which are kept in the menstruum that dissolved it by putting in some alkali, &c.

**PREDICATE (in Logic).** That which is predicated, that is, affirmed or denied of a thing, as 'snow is white, ink is not white;' whiteness is here predicated of the snow and the ink.

**PREFECT.** The governor of a place.

**PRELATE.** An epithet applied to a dignified clergyman, as a bishop and archbishop.

**PREMISES (in Logic).** The two first propositions of a syllogism, which are previously supposed to be proved.

**PREMISES (in Law).** Things spoken of or rehearsed before, as lands, tenements, &c. before mentioned in a lease.

**PREMIUM.** The sum of money given for the insuring of houses, goods, ships, &c.

**PREMUNIRE (in Law).** A writ originally directed against those offences which affected the king or his government, which were committed under the sanction of the pope. It was afterwards extended to all such offences, from whatever cause they were committed; also the offence itself, which subjected the offender to be put out of the king's protection.

**PRESBYTERIANS.** A sect of professing Christians, so called from their admitting lay elders into their church government.

**PRESCRIPTION (in Medicine).** That which is prescribed by a physician to be taken by the patient.

**PRESCRIPTION (in Law).** A right and title to a thing grounded upon a continued possession of it beyond the memory of man.

**PRESENTATION** (in Law). The offering a clerk to the bishop by his patron, to be instituted.

**PRESENTMENT** (in Law). A declaration or report made by jurors or others of any offence to be inquired of in the court to which it is presented.

**PRESERVE**. A small enclosed place in gentlemen's grounds, where game is preserved.

**PRESS**. A machine by which things are compressed. It acts by means of the screw, and serves for different purposes, as for pressing the juice out of grapes and other fruits for making wine, the pressing of the curd in making cheeses, &c.

**PRESS**. The printing machine, and also printing itself, as the liberty of the press, that is, the liberty of printing whatever one pleases without any restriction from the government.

**PRESS, or PRESSGANG**. A number of men headed by an officer, and appointed to impress seamen in time of war.

**PRESUMPTIVE EVIDENCE** (in Law). That which amounts almost to full proof.

**PRESUMPTIVE HEIR**. One who, if the ancestor should die immediately, would under present circumstances be his heir, as distinguished from the heir apparent.

**PREVENTIVE SERVICE**. A number of men employed on the coast, to keep watch and prevent smuggling.

**PRIMA FACIE**. On the first view of any question.

**PRIMARY PLANETS**. Those which revolve round the sun as a centre, as Mercury, Venus, the Earth, Mars, Jupiter, Saturn, and Herschel.

**PRIMATE**. The first or chief archbishop.

**PRIMATE** (in Zoology). The first order in the Linnæan class of mammalia, including man, the ape, baboon, monkey, &c.

**PRIME FIGURE**. That which cannot be divided by any figure but itself.

**PRIME OF A GUN**. The powder put into the touchhole.

**PRIMITIVE** (in Grammar). The root or original word in a language, from which others are derived.

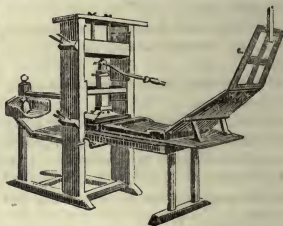
**PRINCE'S METAL**. A mixture of copper and zinc.

**PRINT**. The impression taken from a copper-plate.

**PRINTING**. The art of taking impressions from characters or figures, moveable or immoveable, on paper, linen, silk, &c. Printing is of four kinds, namely, one for books, from moveable letters composed

and set in a form, and another for books, from solid pages; a third for pictures, from copper-plates; a fourth for printing calicoes, linens, &c. from blocks, on which are represented different figures. The first of these is printing, properly so called; the second is stereotype printing; the third, rolling-press printing, or copper-plate printing; and the fourth, calico-printing. Printing was first introduced in the fifteenth century at Mentz and Haerlem, when, instead of the present moveable types or letters, blocks of wood were carved, and the impressions were taken only on one side.

**PRINTING-PRESS**. The principal machine employed in the art of printing, by which impressions are taken from the type after it has been composed, and put into the form of a sheet.



**PRISM** (in Geometry). An oblong solid contained under more than four planes, whose bases are equal, parallel, and alike situated.



**PRISM** (in Dioptrics). A solid glass in the form of a prism, much used in experiments on the nature of light and colours.

**PRIVATEERS**. Vessels fitted out by private persons, with the licence of the prince or state, for the purpose of making prizes of the enemy's ships or goods.

**PRIVET**. A shrub much used for hedges.

**PRIVY** (in Law). One who is partaker of or has an interest in any action, as privies in blood, that is, heirs to the ancestor; privies in representation, as executors or administrators to the deceased.

**PRIVY COUNCIL**. The principal council belonging to the king.

**PRIVY SEAL**. The king's seal, which is first set to such grants as pass the Great Seal of England.

**PRIZE** (in Naval Affairs). A vessel taken from the enemy.

**PROBATE** (in Law). The proving of wills in the spiritual court.

**PROBATION.** The trial of a student who is to take his degrees.

**PROBATIONER.** A scholar who undergoes a probation at the university.

**PROBE.** A surgeon's instrument, for searching the depth, &c. of a wound.

**PROBLEM** (in Geometry). A proposition in which something is proposed to be done.

**PRO BONO PUBLICO.** For the public good.

**PROBOSCIS.** An elephant's trunk.

**PROCEEDS.** What proceeds or arises from any mercantile transaction, as the net proceeds of a sale.

**PROCTOR.** An advocate in the civil law.

**PRODUCE.** What any country yields from labour and national growth, which may serve either for the use of the inhabitants, or be exported to foreign countries. The crops of grain, &c. are the produce of the fields.

**PRODUCING** (in Geometry). The continuing a line.

**PRODUCT.** The number or quantity produced by multiplying two or more numbers together, as  $5 \times 4 = 20$ , the product required.

**PRODUCTION.** A work either of nature or art, as the productions of the field, or the productions of the press.

**PROFESSOR.** A lecturer or reader on any art or science; one who publicly teaches any art.

**PROFILE** (in Architecture). The draught of a building, fortifications, &c.

**PROFILE** (in Sculpture and Painting). A head or portrait when represented sideways, or in a side view.

**PROFIT.** What is gained by any mercantile transaction.

**PROFIT AND LOSS** (in Commerce). The profit or loss arising from goods bought and sold; the former of which, in book-keeping, is placed on the creditor's side, the latter on the debtor's side.

**PRO FORMA.** By way of form.

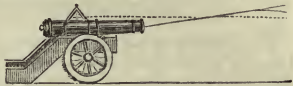
**PROGRAMMA.** A bill or advertisement containing the notice of any exhibition or ceremony.

**PROGRESSION** (in Arithmetic and Geometry). A series of quantities, keeping a certain ratio among themselves; when they decrease or increase with equal differences, it is called arithmetical progression, as 1, 3, 5, 7, 9; when they increase by a common multiplier, or decrease

by a common divisor, it is called geometrical progression, as 1, 2, 4, 8, 16; which increase by the common multiplier, 2.

**PROHIBITED GOODS** (in Law). Such as are prohibited to be carried out of or brought into any country.

**PROJECTILES.** Bodies which are thrown forward with any violent force, as a stone cast from a sling, or a bullet shot from a gun. The curve line represents the path of a projectile or ball shot from the cannon.



**PROJECTION.** The representation of an object on the perspective plane.

**PROJECTION** (in Architecture). The out-jutting or prominence of columns, &c. beyond the naked of the wall.

**PROLEGOMENA.** An introduction or preliminary discourse.

**PROMISSORY NOTE.** A note of hand, promising the payment of a certain sum at a certain time.

**PROMONTORY.** Any high ground running out into the sea.

**PROMPTER.** One who dictates to the actors during the performance.

**PRONOUN** (in Grammar). A word standing in the place of a noun, and marking the different persons. They are personal when they simply denote the person, as 'I, thou, he,' &c.; possessive, when they also denote possession, as 'my, thine, his,' &c.; relative, when they express a relation to something going before, as 'which, what;' interrogative, when they serve to ask a question; demonstrative, when they point out things precisely, as 'this, that;' indefinite, when they point out things indefinitely, as 'any, some.'

**PROOF** (in Printing). An impression from a copper-plate, to show the state of the engraving.

**PROOF OF A GUN.** The trial to ascertain that it is well cast.

**PROOF SHEET.** The sheet of a book taken off to be corrected.

**PROOF SPIRITS.** Spirits which, on proof or trial, are found to be of good quality.

**PROPER NAME.** The name of a particular person or thing.

**PROPERTY** (in Law). The highest right a man has to any thing.

**PROPERTY** (in Physics). Any attri-

bute of a thing which is not essential to its existence.

**PROPORTION.** The equality or similitude of ratios, thus the four numbers, 4, 8, 15, 30 are proportionals, or in proportion, because the ratio of 4 to 8 is equal or similar to that of 15 to 30, it being in both cases as 1 to 2. Between proportion and ratio there is this difference, that the proportion consists always of four terms and the ratio only of two.

**PROPOSITION** (in Mathematics). A thing proposed to be demonstrated or provided.

**PROPOSITION** (in Logic). Any sentence or speech which affirms or denies any thing; consisting of the subject, or that of which any affirmation or denial is made; the predicate, or that which is affirmed or denied of the subject; and the copula, which unites the two.

**PROROGATION** (in Law). The interruption or putting off a sessions of parliament to a certain time appointed by the king.

**PROSECUTION** (in Law). The commencing a suit against any one in a court of law.

**PROSODY.** That branch of grammar which teaches the pronunciation of words according to a certain rule or measure.

**PRO TEMPORE.** For the time being.

**PROTEST** (in Law). The declaration of any peer in parliament stating his dissent from the vote of the house, and his reasons for such dissent, which he has a right of entering on the journals of the house; also a declaration against the proceedings of a court.

**PROTEST** (in Commerce). The act of the master on his arrival with his ship from parts beyond the seas, to save him and his owners harmless and indemnified from damage sustained during a storm; also the declaration made by the holder of a bill of exchange that the same is dishonoured.

**PROTESTANT.** The name first given to the followers of Luther, who protested at the diet of Spire against a decree of Charles V.; a name since given to all members of the reformed churches.

**PROTEUS.** A sea deity, who was said to assume various shapes.

**PROTHONOTARY.** A chief clerk of the king's bench and common pleas.

**PROTOCOL.** The first draught of a deed, contract, or instrument.

**PROTOMARTYR.** The first martyr or witness that suffered death in testimony

of the truth; a title given to Saint Stephen.

**PROTOTYPE.** The first pattern or model of a thing, the original of a copy.

**PROTRACTOR** (in Surgery). An instrument for drawing out extraneous bodies from a wound.

**PROTRACTOR** (in Surveying). An instrument for laying down on paper the angles in a field. The protractor is a small semicircle of brass or other material, the limb or circumference of which is nicely divided into one hundred and eighty degrees.

**PROV.** An abbreviation for Proverbs.

**PROVISO** (in Law). A condition inserted in a deed.

**PROVOST.** The mayor or chief magistrate in Scotch cities and towns.

**PROVOST-MARSHAL.** An officer in the army, whose concern it is to apprehend deserters; and in the navy to take charge of the prisoners, &c.

**PROW.** The head or fore part of a ship.

**PROXY.** One who acts or stands for another in his absence.

**PROXY** (in the House of Lords). The peer who is deputed by another to vote for him in his absence.

**PRUNELLA.** A preparation of purified saltpetre.

**PRUNING.** Lopping off superfluous branches of trees, in order to make them bear fruit the better, an important part of gardening which can be learned only by practice and experience.

**PRUSSIAN BLUE.** A pigment of a dark blue colour, now procured from bullock's blood, carbonate of potash, vitriol of iron, alum, and muriatic acid.

**PRUSSIC ACID.** An acid procured from Prussian blue, which is one of the most violent poisons.

**PSEUDO**, i. e. FALSE. A prefix used to many words, as pseudo martyr, a counterfeit martyr.

**PTOLEMAIC SYSTEM.** The system of astronomy laid down by Ptolemy, the celebrated astronomer and mathematician of Pelusium in Egypt. This system is founded on the hypothesis that the earth is immoveably fixed in the centre, not of the world only but also of the universe, round which the sun, moon, planets, and stars all move from east to west once in 24 hours.

**PUBLICAN.** A taxgatherer, or farmer of the public revenues among the Romans; now the keeper of a public house or common place of entertainment.

**PUBLICATION** (in Law). The giving out copies of depositions in the Court of Chancery.

**PUBLICATION** (in Literature). The editing and printing a book; also any book or pamphlet offered to the public.

**PUBLISHER**. One who puts forth any printed book to the world, particularly he who prints and publishes the manuscript copies of authors.

**PUDDING STONE**. A mineral aggregate, consisting of flint pebbles imbedded in a silicious cement.

**PUFFIN**. A sort of auk or sea-gull.

**PULLET**. A young hen.

**PULLEY**. One of the six mechanical powers, consisting of a small wheel, having a groove around it, and turning on an axis, as in the subjoined cut.



**PULLEYS, SYSTEM OF, or POLYSPAC-TON**. An assemblage of several pulleys combined together, some of which are in a block or case, which is fixed, and others in a moveable block that rises and falls with the weight.



**PULP**. The soft part of fruits, roots, &c.

**PULPIT**. A stage among the Romans, on which the actors performed their parts.

**PULPIT** (in the Christian Church). An elevated desk where the sermon is delivered.

**PULSATION**. The beating of the pulse; also a morbid sensation in the body like the beating of the pulse.

**PULSE** (in Anatomy). The beating of the arteries, or their alternate contraction and dilatation, by which the blood is impelled forward to all parts of the body.

**PULSE** (in Physics). The stroke with which any medium is effected by the motion of light, sound, &c.

**PULSE** (in Botany). All sorts of grain contained in husks or shells.

**PULVERIZATION**. The reducing any solid substance to powder; or in regard to the soil, reducing it to a state of fineness fit for the reception of the seed, an important part of husbandry.

**PUMICE STONE**. A spongy, light, crumbling stone, which is cast out from volcanic mountains, and is also procured in melting glasses.

**PUMP**. A machine for drawing water or any other fluid, the invention of which is ascribed to Ctesibius: pumps may either be forcing pumps or lifting and sucking pumps, which latter are in most general use.



**PUMPKIN**. A plant of the cucumber kind, as represented underneath, very similar to the gourd.



**PUN**. A playing with words which agree in sound but differ in sense, as if any one should play upon the word for the name of a man and the name of an animal.

**PUNCH**. A liquor made with water, sugar, and the juice of lemons or oranges;

also an instrument of iron or steel used in piercing holes.

**PUNCHEON.** A block or piece of steel having figures engraven on it, from which impressions are taken, it is used by goldsmiths, cutlers, pewterers, &c.

**PUNCTUATION.** That branch of grammar which teaches the right method of dividing sentences by means of points or stops. See **POINTS**.

**PUNCTUATION (in Surgery).** The operation of making punctures or small wounds in the skin with a needle, for relief in certain disorders, as rheumatism.

**PUNT.** A sort of flat-bottomed boat.

**PUPA.** The chrysalis or quiescent state of an insect.

**PUPIL (in Anatomy).** The round aperture in the middle of the iris, the ball or apple of the eye, through which the light passes.

**PUPIL (in the Civil Law).** One under the care of a tutor.

**PURGATION.** The clearing oneself of a crime; a mode of trying persons accused of any crime, which was formerly in practice.

**PURGATORY.** A place where, according to the Roman Catholics, the souls of the faithful are purified by fire from the sins which they carry with them out of this life, before they are admitted to a state of perfect bliss.

**PURITAN.** A name given in derision to dissenters, who professed to have a purer doctrine and discipline than others.

**PURPLE.** A mixed colour of red and blue.

**PURSER.** An officer on board a man of war, who takes charge of the provisions.

**PUS.** The corrupt matter issuing from a sore, which usually precedes the healing, and in such cases is termed healthy or good conditioned pus.

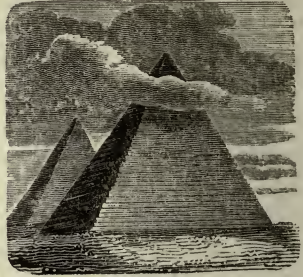
**PUTREFACTION.** The spontaneous decomposition of animal and vegetable matter, accompanied mostly with a fetid smell. Water and atmospheric air are active agents in this process of nature.

**PUTTY.** Whiting and linseed oil pounded together into a paste, which is used by glaziers in fastening the panes of glass, and also by painters in stopping crevices.

**PUZZULANA.** A gray kind of earth used in Italy for building under water.

**PYRAMID (in Geometry).** A solid standing on a triangular, square, or polygonal basis, and terminating in a vertex or point at the top.

**PYRAMID (in Architecture).** A solid massy edifice, constructed in the figure of a pyramid, as above described. Of these edifices the Egyptians have left some specimens as wonderful monuments of human skill. The largest pyramid, or the great pyramid as it is called, is situated with others near Memphis.



**PYRITES.** A mineral composed of iron and sulphur.

**PYROLIGNEOUS ACID.** An acid obtained from beech and other woods, which is a liquid of the colour of white wine, of a strong acid and slightly astringent taste. It is an antiseptic, and serves instead of wood smoke, of which it is the principle, for preserving animal substances.

**PYROMETER.** An instrument for measuring high temperatures, particularly the one invented by Mr. Wedgwood for determining the expansion of solid bodies by heat. This instrument is founded on the principle that clay progressively contracts in its dimensions in proportion as it is exposed to higher degrees of heat.

**PYROPHORUS.** A preparation from alum by calcination, which takes fire on exposure to the air.

**PYROTECHNY.** The science which teaches the management and application of fire in several operations, particularly in the construction of artificial fireworks.

**PYTHAGOREAN SYSTEM.** The system of astronomy taught by Pythagoras, which was founded on the hypothesis that the sun was a moveable sphere situated in the centre, round which the other planets revolved. This is now called the Copernican system, because it was revived by Copernicus.

**PYTHIAN GAMES.** Games celebrated in Greece every five years in honour of the Pythian Apollo at Delphi.



## Q.

**Q**, the sixteenth letter of the alphabet, as a numeral stood for 500, with a dash over it, thus  $\overline{Q}$ , for 5000; as an abbreviation among the Romans for Quintus, &c., among Mathematicians, **Q. E. D.** Quod erat demonstrandum, i. e. which was to be demonstrated, &c.; among Physicians, **Q. S.** Quantum sufficit, as much as was necessary.

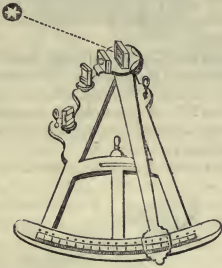
**QUACK.** A medical impostor.

**QUADRANGLE** (in Geometry). A figure consisting of four sides and four angles.

**QUADRANGLE** (in Architecture). Any range of houses or buildings with four sides in the form of a square.

**QUADRANT** (in Geometry). An arc of a circle, containing the fourth part, or ninety degrees.

**QUADRANT** (in Astronomy and Navigation). An instrument for taking the altitudes of the sun and stars. Quadrants are of different forms, but the most esteemed is Hadley's quadrant, as represented underneath. This consists of an octant, or the eighth part of a circle, the index, the speculum, two horizontal glasses, two screens, and two sight vanes.



**QUADRATES** (in Printing). Square pieces of metal for filling up void spaces between letters, words, &c.

**QUADRATIC EQUATION** (in Algebra). An equation in which the unknown quantity is a square.

**QUADRATURE.** The finding a square equal to the area of any figure given.

**QUADRATURE OF THE CIRCLE.** The finding some other right lined figure equal to the area of a circle, or a right line equal to its circumference, a problem which has employed the mathematicians

of all ages, but as yet in vain. It depends upon the ratio of the diameter to the periphery, which was never yet determined in precise numbers. Archimedes showed that the diameter of a circle is to the circumference as 7 to 22, and the area of a circle to the square of the diameter as 11 to 14 nearly.

**QUADRATURE OF CURVES.** The finding a rectilineal space equal to a proposed curvilineal one.

**QUADRILATERAL.** Four sided; an epithet for a square, parallelogram, and other figures having four sides.

**QUADRILLE.** A game at cards played by four persons.

**QUADRUPED.** Any four-footed animal.

**QUADRUPLE.** Fourfold.

**QUÆSTOR.** An officer among the Romans, who had the charge of the public revenues.

**QUAIL.** A bird of game, about half the size of a partridge.



**QUAKERS.** A religious sect of professing Christians, remarkable for their singular neatness of dress, and many other peculiarities. They are also denominated Friends, because they address all persons by the style of friend.

**QUALITY** (in Physics). The property of any body which affects our senses in such manner as that they may be distinguished.

**QUANTITY** (in Physics). Any thing capable of estimation or mensuration, which being compared with another thing of the same nature, may be said to be greater or less, equal or unequal to it. Natural quantity is that which nature furnishes us with in matter and its extensions.

**QUANTITY** (in Grammar). An affection of a syllable, or that which determines a syllable to be long or short.

**QUANTUM SUFFICIT**, or **Q. S.** That which is necessary.

**QUANTUM VALEBANT.** As much as they were worth, applied to goods.

**QUARANTINE.** The space of forty days, the time which every ship suspected of infection is obliged to remain in some appointed place, without holding any intercourse with the shore.

**QUARREL OF GLASS.** A square of glass.

**QUARRY.** A place underground, out of which are got marble, freestone, slate, limestone, &c.

**QUARTAN.** A fever or ague that comes every fourth day.

**QUARTER** (in Arithmetic). The fourth part of any thing.

**QUARTER** (in Commerce). A corn measure, containing eight bushels.

**QUARTER** (in Carpentry). A piece of timber four inches square.

**QUARTER** (in Naval Architecture). That part of a ship's hull which lies from the steerage to the transum.

**QUARTER** (in Geography). A name for the four divisions of the globe.

**QUARTER** (in Military Affairs). The sparing of men's lives, and giving good treatment to a vanquished enemy.

**QUARTER DAYS.** The days which begin the four quarters of the year, namely, the 25th of March, or Lady Day; the 24th of June, or Midsummer Day; the 29th of September, or Michaelmas Day; and the 25th of December, or Christmas Day.

**QUARTERING** (in Law). The dividing the body of a traitor into four parts after it is beheaded.

**QUARTERINGS.** The partitions in an escutcheon, according to the number of coats of arms that are to be upon it.

**QUARTER-MASTER.** An officer whose duty it is to provide quarters or lodgings for the soldiers.

**QUARTER SESSIONS.** A court held every quarter by the magistrates of the county to hear and determine causes both civil and criminal: an appeal lies from these sessions to a superior court.

**QUARTETTO.** A piece of music for four voices.

**QUARTO** (in Printing). The form of a book the sheets of which are divided into four parts or leaves, making a square; it is mostly abbreviated in this manner, 4to.

**QUARTZ.** A sort of siliceous earth, consisting of silica, with a small portion of alumina and carbonate of lime. It is not fusible per se, but with soda it runs into a hard pellucid glass; when broken it becomes sand.

**QUASSIA.** A sort of plant which is

sometimes used by brewers in the stead of hops.

**QUEEN CONSORT.** The wife of the king, who though a subject has nevertheless several prerogatives above other women.

**QUICK.** The young plants of the hawthorn, with which hedges are first made.

**QUICKLIME.** Unslacked lime.

**QUICKSANDS.** Sands that move and shake, into which those who pass over them are apt to sink.

**QUICKSET HEDGE.** Any live hedge, in distinction from that made of dead wood, but particularly that which is set with quick.

**QUICKSILVER.** The vulgar name for mercury.

**QUIDNUNC.** A curious person always asking after news.

**QUID PRO QUO.** An equivalent or return for any thing given.

**QUILL.** The feather of a goose or a crow, &c., particularly that of which, when cured, pens are made.

**QUINCE.** A sort of apple with a rough acid taste.

**QUINTESENCE.** A preparation of the essential oil of some vegetable substance incorporated with the spirit of wine.

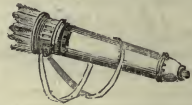
**QUIRK.** An odd piece in a ground plot which remains after the square has been formed.

**QUI TAM.** A sort of popular action brought at the suit of the king as well as the party.

**QUITRENT.** A small rent payable by the tenants of most manors, whereby they go quit and free from all other services.

**QUOITS.** A game which consisted in throwing a quoit or round iron to a certain distance.

**QUIVER.** A case for arrows.



**QUORUM.** Justices of the peace so named, because in the commission they are said to be those before whom all matters of importance are transacted.

**QUOTIENT.** What results from the division of one number by another, as  $6 \div 2 = 3$  the quotient.

**QUO WARRANTO.** A writ to inquire by what authority, right, or title any person or corporation holds a franchise, exercises an office, and the like.

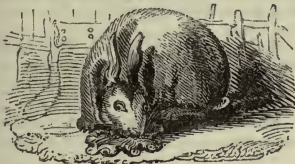
R.

**R**, the seventeenth letter of the alphabet, as a numeral stood for 80, with a dash over it,  $\bar{R}$ , for 80,000; as an abbreviation, R. for Roma, Rex, and Royal; R. C. for Romana Civitas, &c.

**RABBETING.** The cutting of channels or grooves in a board.

**RABBI.** A doctor in the Jewish law.

**RABBIT.** An animal of the hare kind, but much smaller. There are two sorts, the tame and the wild rabbit.

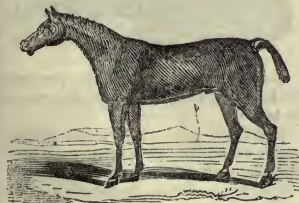


**RACCOON.** An animal of the badger tribe, which lives in hollow trees.



**RACE.** A sport which consists in running on foot, or with horses, as a trial of skill and for a certain premium or reward. Races, by which, absolutely taken, are meant horseraces, are carried on at Newmarket, Epsom, and many other parts of England at certain seasons of the year.

**RACEHORSE, or RACER.** A particular breed of horses which are trained for the purpose of running races.



**RACK.** An engine of torture formerly used in this country occasionally, and on the continent very commonly, for the purpose of extorting confession.

**RACKRENT.** The full value of the land let by lease.

**RADIANT POINT.** Any point from which rays proceed.

**RADICAL.** The distinguishing part of an acid, that which unites with oxygen, and is common to all acids.

**RADIUS (in Geometry).** The semi-diameter of a circle, or a right line drawn from the centre to the circumference.

**RADIUS (in Anatomy).** The bone of the fore arm.

**RAFT.** A sort of float consisting of boards fastened together side by side, a mode of conveying timber by water.

**RAFTERS.** The pieces of timber which standing by pairs on the raising piece, meet in an angle at the top, and form the roof of a building.

**RAG-ROWLEY, or RAGSTONE.** A sort of stone of the siliceous or flint class.

**RAIL.** A migratory bird, which inhabits the sedgy places of Europe.

**RAILS.** A wooden fence for enclosing a place.

**RAILWAY.** A species of road or carriage way, in which the track of the carriage wheels being laid with bars or rails of wood, stone, or metal, the carriage runs with so much greater facility that one horse will perform the work of many. In some railways in England the waggons are driven along by steam instead of horses.

**RAIN.** A vapour drawn up by the sun, that, after being condensed by the cold, falls to the earth in drops from the clouds. It is supposed that rain is in almost every instance immediately occasioned by the electrical action of the clouds upon one another.

**RAINBOW.** A meteor in form of a party coloured arc, exhibited in a rainy sky, opposite the sun, by the refraction and reflection of his rays in the drops of falling rain.

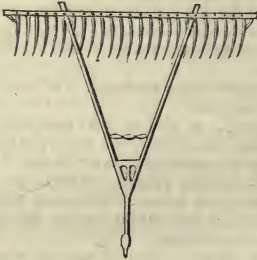
**RAINBOW, MARINE.** A phænomenon sometimes observed in an agitated sea, when the wind carrying the tops of the waves aloft, and the sun's rays falling upon them, they are refracted.

**RAIN GAGE.** An instrument for measuring the quantity of rain that falls.

**RAISIN.** The grape perfectly ripe and dried either in an oven or by the heat of the sun: in this latter case they are richer and sweeter than when dried in an oven. The finest sort are imported in jars, and thence called jar raisins.

**RAISING A SIEGE.** Giving over the attack of the place.

**RAKE.** An implement of husbandry provided with teeth, for making the earth light and smooth. The corn rake, a large kind of iron rake used in Suffolk and Norfolk, for raking barley stubbles, is represented underneath.



**RAKE (among Mariners).** So much of the hull as hangs over both ends of her keel.

**RAM.** The male of the sheep.

**RAMADAN.** The Mahomedan fast.

**RAMIFICATION.** Any small branch issuing from a large one, particularly the very minute branches issuing from the larger arteries.

**RAMMER.** An instrument for driving stones or piles into the ground.

**RAMPANT (in Heraldry).** An epithet for a beast standing directly upright on his hinder legs.

**RAMPART (in Fortification).** A massy bank of earth raised round a fortress, to cover it from the fire of the enemy.

**RAM'S HEAD.** An iron lever to heave up great stones with.

**RAM'S HEAD (among Mariners).** A great block or pulley into which the ropes called halliards are put.

**RANA.** The generic name for that class of animals in the Linnæan system of which the frog and the toad are the principal species.

**RANCIDITY.** The change which oils undergo, both in smell and taste, by exposure to the air.

**RANDOM.** The shot made from a piece not designed to shoot directly forward.

**RANGE (in Gunnery).** The line which a shot describes from the mouth of a piece to the point where it lodges.

**RANGE (among Mariners).** A sufficient length of the cable drawn upon the deck before the anchor is cast loose from the bow.

**RANGER.** An officer whose duty it was to walk through the forest and present all trespasses at the next forest court: as the forest laws are now but little in use, the duty of the ranger is not of the same importance as formerly.

**RANK (in Domestic Policy).** The situation which one man holds in respect to another, this is particularly defined in regard to the nobility, as also in all offices of state, as also in the officers of the army and navy.

**RANK (in Military Tactics).** The straight line which the soldiers of a battalion or squadron make as they stand side by side.

**RANSOM.** Money paid for the redeeming a captive or the liberty of a prisoner of war.

**RANUNCULUS.** A perennial much cultivated in gardens, bearing a flower of a globular shape; also the botanical name of a genus of plants of which the globe ranunculus, the crowfoot, and the spearwort are the principal species.

**RAREFACTION (in Physics).** The act whereby a body is brought to possess more room, or appear under a larger bulk, without the accession of any new matter.

**RASH.** An eruption on the skin.

**RASP.** A steel instrument with sharp teeth, used in rubbing things smooth.

**RAT.** A fierce and voracious animal that infests houses, barns, corn stacks, &c. The common rat is a native of England, as is also the water rat, which has the faculty of swimming, and lives on the banks of rivers or ditches.



**RATAFIA.** A delicious liquor, made of the kernels of apricots, cherries, &c. steeped in brandy.

**RATE (in Law).** A valuation of every man's estate, for determining the proportion that each is to pay to any tax.

**RATE (in Naval Architecture).** The

class or degree by which vessels are distinguished, as regards their force, burden, &c.

**RATIEN.** A thick woollen stuff.

**RATIFICATION** (in Law). The confirmation of a clerk formerly given him by the bishop; also the confirmation of a treaty.

**RATIO.** The mutual habitude or relation of two magnitudes of the same kind in respect to quantity, thus the ratio of 2 to 1 is double, of 3 to 1 triple, &c.

**RATION.** The share or proportion of meat, drink, forage, &c. given to soldiers or seamen.

**RATIONALE.** The account or solution of any phenomenon or hypothesis, explaining the principles on which it depends, and every other circumstance.

**RATLINES** (among Mariners called Ratlins). Lines which make the ladder steps for going up the shrouds and futtocks.

**RATTLESNAKE.** An animal of the serpent kind, having a tail furnished with a rattle, which it shakes when angry. It inhabits the woods of North and South America, and although its bite is poisonous yet it does not attack any one unless provoked.



**RAVELINS.** Works raised on the counterscarp before the curtain of a place.

**RAVEN.** A bird of the crow kind that feeds on carrion, is long lived, and has an exquisite sense of smell.



**RAY.** A beam of light, propagated from a radiant point, said to be direct when it comes direct from the point, reflected if it first strike upon any body and is thence transmitted to the eye. Rays are also distinguished into parallel, converging, diverging, &c.

**RAY.** A genus of fishes of the class amphibia in the Linnæan system, the principal species of which are the skate, the thorn-back, the sturgeon, the ray, and the torpedo.

**RAZOR.** An instrument for shaving.

**REACTION** (in Physics). The resistance made by all bodies to the action or impulse of others that endeavour to change its state, whether of motion or rest.

**READINGS.** The different manner of reading the text of authors, particularly that of classical writers.

**READINGS** (in Law). Commentaries or glosses on the law text.

**REAGENT.** The name given by chymists to such bodies as serve to detect the component parts of others; thus the infusion of galls is a reagent which detects iron by a dark purple precipitate.

**REALGAR, or RED ORPIMENT.** A metallic substance, the sulphuret of arsenic, which is either native, and dug out of the earth in China, or it is factitious, procured by boiling orpiment in subliming vessels.

**REAM.** Twenty quires of paper.

**REAPING MACHINE.** An implement of husbandry for cutting down corn, instead of reaping with a sickle.



**REAR.** A military term for behind, as rear-guard, a body of men that follows an army in its march to pick up stragglers and the like.

**REAR.** A naval term applied to the squadron which is hindermost.

**REBATE AND DISCOUNT.** A rule in arithmetic by which discounts upon ready money payments are calculated.

**REC. or RECEIPT.** An acknowledgment in writing of money received.

**RECEIVER** (in Law). One who receives stolen goods; also the name of some officers appointed to receive money, as the receiver of rents, or receiver of fines, &c.

**RECEIVER** (in Pneumatics). The

receiver of the airpump, a glass vessel placed on the top of the apparatus out of which the air is to be exhausted.

**RECEIVER** (in Chymistry). A vessel for receiving any distilled liquor.

**RECIPE**. Directions for preparing any mixture or compound, as a physician's recipe, a cook's recipe, and the like.

**RECIPROCAL**. An epithet for what acts by alternation.

**RECIPROCAL TERMS** (in Logic). Terms which having the same signification are convertible, as man and rational animal; for man is a rational animal, and a rational animal is man.

**RECIPROCAL PROPORTION** (in Arithmetic). Is when in four numbers the fourth is less than the second by so much as the third is less than the first, and the contrary.

**RECIPROCAL VERBS** (in Grammar). Such as reflect the action on the agent himself, as I love myself, thou lovest thy self, &c.

**RECITATIVE**. The rehearsal of any thing on a stage in musical cadence.

**RECKONING, or SHIP'S RECKONING**. The account kept of a ship's way, by which it may be known at any time where she is; the account taken from the logbook is called the dead reckoning.

**RECOGNIZANCE**. A bond or obligation acknowledged in some court, or before some judge.

**RECORD**. A public act enrolled and preserved in courts of record.

**RECORDER**. An officer associated with the mayor of a town for the administration of justice according to the forms of law.

**RECOVERY** (in Law). The obtaining of any thing by judgment or trial at law.

**RECTANGLE**. A figure having right angles, as a square, &c.

**RECTIFICATION** (in Astronomy). The setting the globes in such position as to fit them for the performance of problems.

**RECTIFICATION** (in Geometry). The finding a right line equal in length to a curve.

**RECTIFICATION** (in Chymistry). The repeating a distillation or sublimation several times, in order to render the substance purer and finer.

**RECTOR**. The parson of the parish church, who has the cure or charge of the parish, and receives all the tithes, glebes, and other profits.

**RECTUM**. The last portion of the large intestines.

**RECUSANTS** (in Law). A name for-

merly given to the Roman Catholics who refused to conform to the church of England.

**RED**. One of the simple or primary colours of bodies, which is distinguished into different shades, as scarlet, vermilion, crimson, &c.

**RED BOOK OF THE EXCHEQUER**. An ancient manuscript or record in the keeping of the king's remembrancer, which contains many things relating to the times before and after the Conquest.

**REDEMPTION** (in Law). The right of reentering upon lands, &c. that have been assigned or sold, upon reimbursing the purchase money. This right is sometimes termed the equity of redemption.

**REDOUBT** (in Fortification). A small square fort, without defence but in front.

**REDPOLE**. A finch with a red spot on the crown.

**REDSHANK**. A bird of the curlew tribe.

**REDSTREAK**. A sort of apple.

**REDUCTION** (in Arithmetic). A rule by which money, weights, or measures are reduced to their least or greatest parts.

**REDUCTION OF EQUATIONS** (in Algebra). The reducing them to the simplest state, or clearing them of all superfluous quantities.

**REDUCTION** (in Surgery). An operation whereby a dislocated bone is restored to its proper place.

**REDUCTION OF A DESIGN OR DRAUGHT, &c.** The making a copy thereof, either larger or smaller than the original.

**REED**. A kind of long, hollow, knotted grass that grows in fens and watery places.

**REEFING**. A sea term for the rolling or taking up a sail in a great gale of wind.

**REEL**. A machine turning round on an axis, on which lines of different kinds are wound.

**REENTRY** (in Law). The resuming or retaking possession of lands lately lost.

**REFERENCE** (in Law). Referring a matter in dispute to the decision of an arbitrator; also in the Court of Chancery referring a matter to a master.

**REFERENCE** (in Printing). A mark in the text of a work referring to a similar one in the side or at the bottom of the page; also the authorities referred to under such marks.

**REFINING**. The art of purifying any thing, but particularly the assaying or re-

fining gold and silver by separating all other bodies from them.

**REFLECTION OF THE RAYS OF LIGHT.** A motion of the rays, whereby after impinging on the solid parts of bodies they recede or are driven therefrom.

**REFORM IN PARLIAMENT.** A change in the representative part of the English constitution by an extension of the elective franchise to modern large towns, such as Manchester, Birmingham, &c. which have heretofore sent no members to parliament, and by taking away their franchise from reduced places, such as Old Sarum and others, which at present consist of only a few houses.

**REFORMATION.** The change from the Roman Catholic to the Protestant religion, which was first set on foot in Germany by Luther, but had been previously begun in England by Wickliffe, and completed by Henry VIII. who assumed the title of Head of the Church.

**REFRACTION.** The deviation of a ray of light from that right line in which it would have continued if not prevented by the thickness of the medium through which it passes. Thus the light in passing through the atmosphere is refracted or bent down, which causes the heavenly bodies to appear higher than they really are.

**REFUGE FOR THE DESTITUTE.** A charitable institution for the temporary relief of those who are houseless and destitute.

**RÉGALIA** (in Law). The rights and prerogatives of a king; also the ensigns of royalty, the crown, sceptre, &c. worn by our kings at the coronation.

**REGENT** (in Law). One who governs during the minority of a king, or while he is incapable of reigning.

**REGIMEN** (in Medicine). A rule of living as to diet, &c. prescribed for a patient.

**REGIMEN** (in Grammar). The government of one word by another, as nouns by verbs, &c.

**REGIMENT.** A body of soldiers consisting of several companies.

**REGISTER** (in Law). A book of public records.

**REGISTER** (in a Parish Church). A book in which marriages, baptisms, and burials are registered.

**REGISTER** (in Chymistry). A contrivance in furnaces for increasing or diminishing the intensity of the heat.

**REGISTER** (among Letterfounders). One of the inner parts of the mould in

which the printing types are cast. Its use is to direct the joining the mould justly together again after opening it to take out the new cast letter.

**REGISTER** (among Printers). Disposing the forms on the press so that the lines and pages printed on one side of the sheet fall exactly on those of the other.

**REGLET** (in Architecture). A little, flat, narrow moulding in pannels, &c.

**REGRATOR** (in Law). One who buys and sells in the same market or fair, or within five miles thereof.

**REGULAR.** Agreeable to the rules of art.

**REGULAR** (in Geometry). A regular figure, one whose sides and angles are all equal.

**REGULAR** (in Grammar). A regular verb, one that is conjugated by some rule.

**REGULARS.** Soldiers regularly disciplined and at the entire disposal of the government.

**REGULARS** (in the Romish Church). Clergy that live under some rule of obedience.

**REGULATOR OF A WATCH.** A small spring belonging to the balance.

**REGULUS.** A star of the first magnitude in the constellation Leo.

**REGULUS** (in Chymistry). An imperfect or impure metallic substance.

**REIN-DEER.** An animal of the deer kind that inhabits the northern regions, chiefly in Norway, Lapland, and Greenland; it is five feet in height, horns long and slender, besides a pair of brow antlers. It is used by the natives in drawing their sledges and for other purposes.



**REJOINDER** (in Law). The defendant's answer to the plaintiff's reply.

**RELATIVE** (in Grammar). A sort of pronoun which relates to some noun going before, as which and who.

**RELEASE** (in Law). An instrument

in writing by which estates, rights, &c. are extinguished.

**RELIEVO, or RELIEF** (in Sculpture). The projection or standing out of a figure above the ground or plane whereon it is formed. There are three kinds of relievo, namely, the alto, which projects as much as life; the basso relievo, when the work is raised but a little; and demi-relievo when one half of the figure rises.

**RELIGIOUS HOUSES.** Convents, monasteries, nunneries, and the like in the Romish Church, where persons live under certain rules, and are bound by their vows to lead a religious life: at the Reformation these religious houses were dissolved, and their wealth seized by Henry VIII.

**REMAINDER** (in Law). An estate in lands, tenements, &c. limited to be enjoyed after the expiration of another estate.

**REMAINDER** (in Arithmetic). The difference, or that which is left after subtracting one quantity from another.

**REMEMBRANCER.** An officer in the exchequer.

**REMITTANCE.** A sum of money sent from a distance to discharge a debt.

**REMORA.** The generic name for the sucking-fish.

**RENDEZVOUS.** An appointed place of meeting, particularly for soldiers.

**RENNET.** The gastric juice and contents of the stomach of a calf, used in turning milk to curds.

**RENT.** A profit issuing yearly out of lands or tenements.

**RENTAL, or RENTROLL.** A roll in which the rents of a manor are set down; the collective amount of rents from any man's estates.

**RENT CHARGE.** A charge of rent upon land, with a clause of distress in case of non-payment.

**REPEATER.** A kind of watch which by means of a spring repeats or strikes the hour.

**REPELLANTS.** Medicines which drive the humours from the part where they have settled.

**REPERTORY.** A place where things are deposited; also a book in which things are methodically entered.

**REPLEVIN** (in Law). A release of cattle or goods that are distrained.

**REPLICATION** (in Law). The plaintiff's reply to the defendant's answer.

**REPORT** (in Law). A relation of cases judicially debated and decided upon.

**REPRESENTATION** (in Law). The

personating another, as in the case of an heir by representation.

**REPRESENTATIVE** (in Law). One who represents the person of another, as a member of parliament.

**REPRESENTATIVE GOVERNMENT.** A government having national councils consisting of persons chosen by the people to represent their persons and consult their interests, such as the parliament of England, the chambers of France, the congress of the United States, &c.

**REPRIEVE** (in Law). A warrant for suspending the execution of a malefactor.

**REPRINT.** A book printed again.

**REPRISALS.** The seizing the vessels or goods of merchant strangers as an equivalent for some loss sustained from the nation of which they are subjects.

**REPRODUCTION.** The power in some bodies of being restored by a process of nature after having been destroyed, as the reproduction of a tree from a slip, but more particularly the reproduction of animals which have been cut into pieces, as the polype and some other worms; also the limbs of crabs, lobsters, &c. are reproduced when broken off.

**REPTILES.** The first order of animals under the class amphibia in the Linnæan system, comprehending the toad, the frog, the dragon, the lizard, crocodile, &c.

**REPUGNANCE** (in Law). A contradiction of what has been said before, as in deeds, grants, &c., which makes them void.

**REPULSION** (in Physics). A power in bodies of opposing the approach of other bodies, as oil and water, which for a time refuse to be incorporated; it is opposed to attraction.

**REQUESTS, COURT OF.** A court for the recovery of small debts.

**RESCUE** (in Law). The violent taking away or causing to escape one that is taken by lawful authority.

**RESERVE.** A body of men kept apart in the day of battle for some particular service as occasion may require.

**RESIANT** (in Law). One residing in a certain place.

**RESIDENCE** (in Law). The continuance of a parson or vicar on his benefice.

**RESIDENT.** A minister of state sent to reside at any court.

**RESIDUARY LEGATEE.** He to whom the residue of a personal estate is given by will.

**RESIDUUM.** The residue, or what is left after any chymical process.

**RESIN, or ROSIN.** A solid inflammable



substance exuding from trees, as the common resin, or turpentine, from the pine; mastich from the pistacea; sandarach from the thuya; ladanum from the cystus, &c. Pure resins are soluble in alcohol, but the impure resins are not soluble.

**RESISTANCE, or RESISTING FORCE.** Any power which acts in an opposite direction to another.

**RESOLUTION (in Mathematics).** A method by which the truth or falsehood of a proposition is discovered.

**RESOLUTION (in Chymistry).** The reducing a body to its component parts.

**RESOLUTION (in Surgery).** The dispersing of tumours.

**RESOLUTION OF FORCES (in Mechanics).** The dividing any force or motion into several others in other directions, but which taken together shall have the same effect as the single one.

**RESPIRATION.** An important function of the animal body, which consists in the alternate inhalation and exhalation of air, by which the lungs and chest are alternately dilated and contracted.

**RETAINER.** An adherent or dependant.

**RETAINING FEE.** A fee given to a barrister to keep him from pleading for the other side.

**RETALIATION.** The act of returning like for like.

**RETARDATION (in Physics).** The act of diminishing the velocity of a moving body.

**RETE MUCOSUM.** A mucous membrane between the epidermis and the cutis, which is one part of the integument of the skin.

**RETICULA.** A contrivance among astronomers for measuring the quantity of eclipses.

**RETINA.** The third or innermost membrane of the eye, which is the most important part of the organ of vision.

**RETORT.** A chymical vessel of a round figure, with a hollow peak or tube curved downward.



**RETREAT.** The retrograde movement of any army or body of men.

**RETRENCHMENT.** Any work raised to cover a post.

**RETRO.** Backward; a prefix to many words, as retrocession, retrogradation, &c.

**RETROCESSION OF THE EQUINOXES.** The going backwards of the equinoctial points of the signs Aries and Taurus.

**RETROGRADATION.** A moving backwards.

**RETURN.** A certificate from sheriffs and bailiffs of what is done in the execution of a writ.

**RETURN DAYS (in Law).** Certain days in term time for the return of writs.

**RETURNS (in Commerce).** That which is returned, whether in goods or specie, for merchandise sent abroad; also the return of money laid out in the way of trade.

**RETURNS OF A MINE (in Fortification).** The windings and turnings of a gallery leading to a mine.

**REVELATION.** The miraculous communications made by God of his will to man, which are contained in the Bible.

**REVENUE (in Law).** The yearly profit that accrues to a man from his lands or possessions. The revenue of the crown is that which peculiarly accrues by way of profit to the king; in an extended sense, the public revenue, or the yearly income derived from the taxes and other sources for the support of the government.

**REVERBERATORY.** A very strong furnace used for calcining minerals, &c.

**REVERSAL OF JUDGMENT.** The making it void.

**REVERSE OF A MEDAL.** The back side, or that which does not contain the principal figure.

**REVERSION (in Law).** Is when the possession of an estate which was parted with for a time returns to the donor or his heirs.

**REVIEW (in Military Affairs).** The display of a body of men before the general, that he may judge of their condition.

**REVIEW, BILL OF (in Law).** A bill in Chancery for the reexamination of a cause.

**REVIEW (in Literature).** A periodical publication which professes to give a criticism of publications as they appear.

**REVISE.** A second proof sheet of a work, for the revisal or reexamination of the errors corrected.

**REVOCAION.** The recalling or making void any grant.

**REVOLUTION (in Astronomy).** The motion of any heavenly body in a circular line until it returns to the same point again.

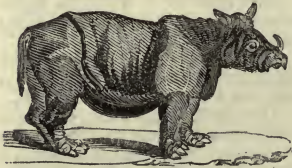
**REVOLUTIONIST.** A favourer of political revolutions.

**RHETORIC.** The art of speaking on any subject with propriety and the force of persuasion.

**RHEUM.** A thin serous humour that oozes occasionally from the glands about the throat and mouth.

**RHEUMATISM.** Wandering pains in the body, accompanied with heaviness, difficulty of motion, and sometimes a fever.

**RHINOCEROS.** A large beast in India, and the largest of all quadrupeds except the elephant, having a horn in his front, and a skin full of wrinkles, which is so hard that it can scarcely be pierced by a sword.

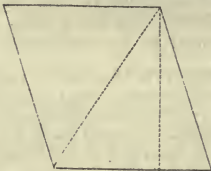


**RHODODENDRON.** A shrub bearing a very fine flower.

**RHOMBOID.** A quadrilateral figure, whose opposite sides and angles are equal, but it is neither equilateral nor rectangular.



**RHOMBUS.** A quadrilateral figure which is equilateral but not rectangular.



**RHUBARB.** A perennial, the root of which is much used in medicine, particularly what comes from Turkey; the stalk of the European rhubarb is also much esteemed in tarts.

**RHUMB.** A vertical circle of any place, or the intersection of part of such circle with the horizon.

**RHYME.** A sort of verse which terminates with words of the same sound.

**RIB (in Anatomy).** A side bone of the body.

**RIB (in Carpentry).** Any piece of timber that strengthens the side.

**RIB (in Shipbuilding).** The timber of the futtocks, when the planks are off, which resemble the ribs of the body.

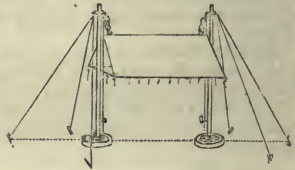
**RIBBON.** A narrow sort of silk, chiefly used for head ornaments.

**RICKETS.** A disease in the back bone incident to children.

**RICE.** A sort of esculent grain cultivated in the eastern countries, which grows in husks of an oval figure.



**RICK-CLOTH.** A tarpawling which is set up by stacks or ricks of hay or corn while it is stacking. It is worked with pulleys, as represented underneath.



**RIDER.** A leaf inserted in or attached to other leaves.

**RIDER (in Commerce).** One who travels for a trading or mercantile house to collect orders.

**RIDER (in Gunnery).** A piece of wood equal to the length of the body of the axletree of the gun carriage.

**RIDER-ROLL (in Law).** A schedule or small piece of parchment added to some part of a roll or record.

**RIDERS** (in Shipbuilding). Timbers bolted upon others to strengthen them.

**RIDGE**. The top of a house that rises to an acute angle; also the top of the vertebra of the back.

**RIDGE** (in Husbandry). The highest part of a land between two furrows.

**RIDING**. A division of a county, as the east and west riding of York.

**RIDING-CLERK**. One of the six clerks in chancery, who in his turn keeps the comptrolment book of all grants that pass the great seal.

**RIDING SCHOOL**. A public place where persons are taught to sit gracefully on a horse, and use the bridle with propriety.

**RIFLE**. A gun having spiral channels in the barrel.

**RIFLEMEN**. Soldiers armed with rifles, and employed as marksmen to fire behind hedges.

**RIGGING**. All the cordage or ropes belonging to the different parts of a ship.

**RIGHT** (in Law). Any title or claim by virtue of a condition, mortgage, &c.

**RIGHT** (in Geometry). Straight, as a right line.

**RIGHT ANGLE**. The angle formed by one line falling perpendicularly upon another.

**RIGHT SPHERE** (in Astronomy). That position of a sphere by which its poles are in the horizon.

**RIGLET** (in Architecture). A flat, thin piece of wood, like what is designed for the frames of small pictures before they are moulded.

**RIGLET** (in Printing). A thin slip of wood used in making up a form, for tightening the pages, &c.

**RIND**. The skin of any fruit.

**RINGDOVE**. A variety of the common pigeon.

**RINGHEAD**. An instrument for stretching woollen cloth with.

**RINGLEADER**. The head of a party or faction.

**RINGWORM**. A cutaneous disorder that comes on the skin in rings, and is contagious.

**RIOT** (in Law). The forcible doing an unlawful thing by three or more persons assembled together for that purpose.

**RIOT ACT**. An act of parliament prohibiting riotous or tumultuous assemblies, which being read by a magistrate or peace officer to the mob, obliges all persons to disperse within an hour, on pain of being apprehended as rioters.

**RISING**. The appearance of any star

or planet above the horizon, which before was hid beneath it.

**RITUAL**. A book directing the order and manner to be observed in celebrating religious ceremonies, and performing divine service in the church.

**RIVER**. A stream or current of fresh water flowing in a bed or channel, as the River Amazon in South America, the Mississippi and Saint Lawrence in North America, the Nile in Egypt, the Euphrates and Ganges in India, the Rhine and Danube in Germany, the Rhone and Seine in France, the Tiber in Italy, the Tagus in Portugal, the Thames in Great Britain, &c.

**RIVET**. A metal pin clinched at both ends.

**RIX DOLLAR**. A coin in Germany, worth from three to four shillings sterling.

**ROACH**. A fish of the carp kind.

**ROAD**. A highway, or a way prepared for travellers; it is either a carriage road, where carriages may pass, or a foot road or path for foot passengers. Military roads were formerly constructed by the Romans for the passage of their armies, of which there are still vestiges in England. Roads are now principally made by small stones bound together with the earth, which is called Macadamizing.

**ROAD**. A sea term for any place fit for anchorage at some distance from the shore.

**ROADSTER**. A horse accustomed to travelling on the road.

**ROBIN**, or **ROBIN RED BREAST**. A pretty little bird with a red breast, which is very tame, and in winter time comes into the house.

**ROCHE ALUM**, or **ROCK ALUM**. A mineral salt of a very binding quality.

**ROCK**. A stony mass of which mountains are for the most part formed. Rocks are however to be met with in immensely large separate masses.

**ROCKET**. A sort of fireworks which when let off go to a very great height in the air before they burst.

**ROCKBIL**. A bituminous substance found in rocks.

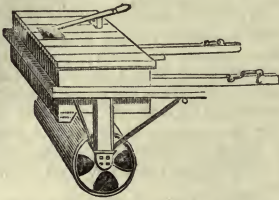
**ROE**. An animal of the deer kind: also the spawn of the fish; that of the males is called soft roe or melt, that of the females hard roe or spawn.

**ROGATION WEEK**. The week preceding Whitsuntide.

**ROLL** (in Law). A schedule or parchment which may be rolled up.

**ROLLER** (in Husbandry and Garden-

ing). A wooden or iron instrument of a circular shape, and fitted for rolling along the ground to level grass land, break the clods of arable land, and to bind the gravel in gravel walks.



**ROLLER (in Surgery).** A long broad ligature for keeping the parts of the body in their places.

**ROLLER (in Ornithology).** A sort of bird the size of a jay.

**ROLLING MILL.** A machine for working metals into plates or bars. This sort of mill is chiefly used for drawing out the iron bars after they have been manufactured into bar iron by the forge hammer.

**ROMAN CATHOLICS.** Those who hold the doctrines and submit to the discipline of the Romish church.

**ROOD.** The fourth part of an acre.

**ROOF.** The covering of a building.

**ROOK.** A sociable bird of the crow kind.

**ROOT (in Arithmetic).** A number or quantity which multiplied by itself produces a higher power, as 2, the square root of 4 or the cube root of 8.

**ROOT (in Botany).** That part of a plant which is under ground, and by which the plant derives its nourishment from the earth.

**ROOT (in Grammar).** The original words from which others are formed.

**ROPE.** The larger kind of cordage, formed by the twisting of several strings of yarn together; the smallest sort of rope is called cord, and the larger kinds cable, which is used for the rigging of ships.

**ROPEMAKING.** The process of twisting yarn into ropes by means of a wheel.

**ROPEYARN.** The rope of any yarn untwisted.

**ROSE.** A shrub equally celebrated and admired by both ancients and moderns for its sweetness and its beauty. The most esteemed species of this favourite shrub are the hundred leaved rose, damask rose, Provence rose, white rose, moss rose, &c.

**ROSE ACACIA.** A prickly shrub, the flower of which resembles the rose in form.

**ROSEMARY.** A medicinal and fragrant plant.

**ROSEWATER.** Water distilled from roses.

**ROSIN.** See **RESIN.**

**ROSTRUM.** A place in Rome where orations were made and pleadings carried on: it was so called from rostrum, the beak of a ship, because it was made of the beaks of the ships taken at Antium.

**ROT.** A disease among sheep, in which their lungs are wasted and their throats swollen.

**ROTACEÆ.** One of Linnæus's natural order of plants, consisting of such as have one wheel-shaped petal without a tube.

**ROTATION (in Geometry).** The circumvolution of a surface round an immovable line, by which solids are conceived to be generated.

**ROTTEN STONE.** A mineral found in Derbyshire, which is used for all sorts of finer grinding and polishing, and some times for cutting of stones.

**ROTUNDA, or ROTUNDO.** A circular building at Rome, which was anciently called the Pantheon; also any circular building.

**ROTUNDITY OF THE EARTH.** Roundness of form ascribed to the earth from various appearances which serve to prove it, as for instance, that the masts of a vessel come in sight before the hull is visible.

**ROUCE.** A red paint extracted from the plant called by botanists the carthamus tinctorius.

**ROUGH-CASTING.** A kind of mortar used as a covering for external walls, which is thrown on roughly instead of being plastered on.

**ROUGH RIDER.** A noncommissioned officer in the cavalry, who assists the riding master.

**ROUNDHOUSE.** A temporary prison in a parish, where those who are apprehended by the constable are confined.

**ROUNDHOUSE (among Mariners).** The uppermost room or cabin in the stern of a ship, where the master lies.

**ROUNDS.** A watch commanded by an officer who goes in the night time round a fortress.

**ROUND ROBIN.** A paper containing a statement of grievances on the part of any number of discontented persons in the army or navy, who sign their names in a

circular manner, that it may not be seen who signed first.

**ROWEL.** The pointed wheel in a spur.

**ROYAL ASSENT.** The assent given by the king to bills that have passed the two houses of parliament; it is given to a public bill in the words 'Le roi le veut,' and to a private bill, 'Soit fait comme il est désiré.' The king refuses his assent by writing the words 'Le roi s'avisera,' i. e. The king will think of it or be advised.

**ROYAL SOCIETY.** A society incorporated by Charles II. under the name of 'The President, Council, and Fellows of the Royal Society, for the Improvement of Natural Philosophy.'

**R. S.** An abbreviation for Royal Society.

**RUBLE.** A Russian coin; those of 1764, value 3s. 3d., and those of 1801, value 2s. 9½d. sterling.

**RÚBRIC.** The directions given in the Book of Common Prayer.

**RUBY.** A precious stone, next to the diamond in value. Its constituent parts are alumina, silica, carbonate of lime, and oxide of iron.

**RUDDER.** A piece of timber hung on hinges at the stern posts of a ship, which by being turned either way directs the course of the vessel.

**RUDIMENTS.** The first elements or principles of any art or science.

**RUDOLPHINE TABLES.** A celebrated set of astronomical tables, published by Kepler, and thus entitled in honour of the emperor Rudolph or Rudolphus.

**RULE OF THREE** (in Arithmetic). A rule which teaches by means of three numbers to find a fourth.

**RULE, or RULER.** An instrument of wood or metal, marked off so as to be of use in mensuration.

**RULE, SLIDING.** A mathematical instrument serving to perform computations in gauging, measuring, &c. without the

use of compasses, merely by the sliding of the parts of the instrument one by another.

**RULES OF COURT.** Certain orders made from time to time in the courts of law, for regulating the practice of the court.

**RUM.** A spirituous liquor distilled from sugar canes.

**RUMEN** (in Comparative Anatomy). The paunch or first stomach of such animals as chew the cud.

**RUMINATING.** Chewing the cud, as cows, sheep, and some other animals do.

**RUN.** The uppermost part of a ship's bottom.

**RUNDLET.** A cask for liquors.

**RUNNER** (in Law). One who runs or goes about to give intelligence to the police of what is passing.

**RUNNER** (in Commerce). A rope with a pulley for hoisting up goods.

**RUNNET.** See **RENNET.**

**RUPEE.** An Indian coin equal to two shillings.

**RUSPONO.** A coin of Tuscany, value £1. 8s. 6d. sterling.

**RUSH.** A kind of coarse grass that grows in watery lands. The flowering rush is a perennial, and the sweet rush a tuberoso plant, both of which are cultivated in gardens.

**RUST.** A crustaceous substance growing on iron, which is considered as a carbonate of iron.

**RUSTIC.** An epithet for a mode of building that imitates simple nature.

**RYDER.** A Dutch coin, value £1. 4s. 11d. sterling.

**RYE.** A kind of grain that in its growth resembles wheat; it is mostly cultivated as food for cattle, but in the north of England it is made into bread, which is much coarser than that made of wheat flour.

## S.

**S,** the eighteenth letter of our alphabet, as a numeral stood for seven; in Music, as an abbreviation, stands for solo, in navigation for south, S. E. for south east, S. W. for south west, S. S. E. for south south east, S. S. W. for south south west.

**SABBATH.** The seventh day, observed

by the Jews as a festival or day of rest, in commemoration of God's resting on the seventh day after the work of the creation. The Jewish sabbath commences at sunset on the Friday and ends at sunset on the Saturday. The term Sabbath is sometimes applied by Christians to the Lord's Day,

vulgarly called Sunday, which has been substituted for the Jewish Sabbath.

**SABLE** (in Zoology). An animal of the weasel tribe, having a dark tawny or snowy white body. It inhabits the northern regions, and is much esteemed for its fur.



**SABLE** (in Heraldry). The tincture of black represented in engraving by perpendicular and horizontal lines.



**SABRE**. A sword with a broad heavy blade, worn by the heavy cavalry.

**SACCHARINE**. Of the nature of sugar.

**SACCHARINE ACID**. An acid extracted from sugar by distillation.

**SACK OF WOOL**. A quantity of wool containing twenty-two stones, each stone fourteen pounds.

**SACKBUT**. A sort of trumpet fit for playing bass.

**SACLACTIC ACID**. A powder procured from the sugar of milk.

**SACRAMENT**. A sign of a holy thing containing a divine mystery.

**SADDLE**. A seat for a horseman fitted to a horse's back. It is supposed that saddles did not come into use till about the time of Constantine the Great, in the fourth century.

**SADDLER**. One who makes and sells saddles. The company of saddlers is of great antiquity, having been incorporated as early as the reign of Edward I.

**SADDUCEES**. A sect among the Jews, which were esteemed as deists and free-thinkers.

**SAFE CONDUCT**. A security given by the king under his great seal to any person for his quiet coming into or passage out of his realm.

**SAFEGUARD**. A protection given by a prince or his general to an enemy's country to protect it from being ravaged by an army.

**SAFETY-LAMP**. A lamp invented by Sir Humphrey Davy for the use of miners in the coal mines, to prevent the fatal explosions which have arisen from the use of common lamps. The safety lamp transmits its light through a cylinder of iron or copper wire gauze, the apertures in which are not above one-twentieth of an inch square. As the fire damp is not ignited by heated wire, the thickness of the wire is of no importance. The principal parts of this lamp are a brass cistern containing the oil, the rim on which the wire gauze cover is fixed, an aperture for supplying oil, a central aperture for the wick, and the wire gauze cylinder.



**SAFFRON**. A bulbous root; also the flower of the crocus; also a substance formed from the stigmata of the crocus officinalis dried on a kiln and pressed into cakes.

**SAGITTA**. A constellation in the northern hemisphere.

**SAGITTARIUS**. The ninth sign of the zodiac, marked thus (♐).

**SAGO**. A simple produced from the pith of a kind of palm growing in the East Indies, called by botanists the cycas circinalis.

**SAIL**. A large piece of canvass composed of several breadths sewed together, which when extended by means of lines on masts, catches the wind and drives the vessel along.

**SAILING**. The conducting a vessel from one port to another, which is the practical part of navigation.

**SALAMANDER**. A sort of lizard, which exudes from its pores a milky liquor, by which it is enabled for a time to resist the action of fire. From this

virtue it was formerly supposed capable of living in fire.

**SAL AMMONIAC.** A fossil salt which was said to be dug out of the sands of Ammonia in Libya, from which it took its name. There is no native salt of this name known to the moderns, but a factitious salt composed of a volatile alkaline and the acid of sea salt, whence it is called the muriate of ammonia.

**SALARY.** The stipend or remuneration made to a man for his services, in distinction from wages, which is for day labour, and pay, which is for military service.

**SALE (in Law).** Transferring the property of goods from one to another upon a valuable consideration.

**SALESMAN.** One who sells clothes or other commodities.

**SALIENT ANGLE (in Fortification).** An angle projecting outwards.

**SALIVA.** An excretion from certain glands of the mouth, which serves to moisten the food before it is swallowed.

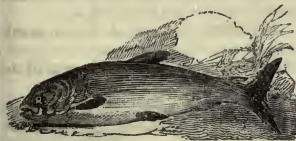
**SALIVATION.** A drawing humours out of the mouth by mercurial preparations; also a preternatural increase of saliva.

**SALLOW.** A sort of willow.

**SALLY.** The issuing of the besieged from their fort and tower and falling on the besiegers to cut them off.

**SALLY PORTS.** Doorways on each quarter of a fire ship, out of which the men make their escape into the boats as soon as the train is laid.

**SALMON.** A fish that lives in either fresh or salt water, but shuns that which is foul. It is esteemed for its flesh.



**SALMON TROUT.** A species of the salmon, having a body spotted with black.

**SALOON.** A spacious room much used in Italy as a state room for the reception of ambassadors.

**SALOP.** A substance brought from Persia, and prepared, as is supposed, from a species of the plant botanically called orchis.

**SALT.** A name given by modern chymists to three sorts of substances, namely, acids, alkalies, and the compounds formed by acids in union with alkalies, earths,

and metallic oxides. These latter are salts properly so called, and are sometimes distinguished from the two others by the name of neutral salts, as Epsom salts, nitre, &c. Salts are likewise distinguished according to the process by which they are prepared. Common salt, or bay salt, a muriate of soda, being a compound of muriatic acid and soda, is procured by evaporation from sea water. Essential salts are drawn from the juices of plants by crystallization. Fixed salts are made by calcining or reducing the matter to ashes, then boiling it in water, straining off the liquor, and evaporating all the moisture, when the salt will remain in the form of a powder. Volatile salts are procured principally from animal substances or the fermented parts of plants.

**SALTER.** A dealer in salt or salt fish. The company of salters were incorporated in the reign of Henry VIII.

**SALTPETRE, or NITRE.** A nitrate of potash.

**SALTS, or SALTCELLARS.** A name for the vessel that holds the salt when it is brought to the table.

**SALVAGE.** A recompense allowed to such persons as have assisted in saving merchandises, ships, &c. from shipwrecks.

**SALUTE (in Military Etiquette).** A discharge of artillery, or presenting of arms as a mark of honour or respect to some person of distinction.

**SALUTE (in the Navy).** The discharge of ordnance, striking of colours, and the like, as testimonies of respect to the ships of an admiral or superior.

**SAMARITANS.** A sect among the Jews who rejected all the scriptures except the five books of Moses.

**SANCTUARY (in Law).** A privileged place, whither anciently offenders were allowed to fly and to remain for some time under protection.

**SANDAL.** A sort of slipper worn by the Greek and Roman ladies.

**SANDAL WOOD.** The wood of an Indian tree remarkable for its fragrance.

**SANDARACH.** A resinous substance exuding from a tree that grows in Barbary.

**SANDBAGS.** Bags fitted for holding sand or earth, and used in repairing breaches in fortifications, &c.

**SANDIVER, or GLASS GALL.** A saline matter which rises as a scum in the crucibles in which glass is made.

**SANDPIPER.** A sort of heath bird.

**SANDSTONE.** A soft compound stone, consisting of grains of sand, &c. cemented

together. The principal pieces are the grindstone and the filtering stone.

**SANGLAC.** The governor of a Turkish province.

**SANHEDRIM.** The supreme council or court of judicature among the Jews.

**SAP.** The juice or fluid part of a tree, which is a mucilaginous liquid, oftentimes strongly saccharine, so as to yield a large quantity of sugar, and also to furnish a strong fermented liquor.

**SAPPERS.** Soldiers attached to the engineers, and employed to assist in the labour of sapping.

**SAPPHIRE.** A hard and precious stone of a beautiful azure or sky-blue colour, nearly as transparent and glittering as the diamond.

**SAPPING.** A working underground to gain the descent of a ditch, counterscarp, &c.

**SARCOCOL.** A gum resin brought from Persia and Arabia in small grains, and supposed to be the product of a tree called by botanists the *penæa sarcocolla*.

**SARCOPHAGUS.** A sort of stone coffins, which consumed the bodies placed in them in the space of forty days. It was used by the ancients sometimes instead of burning the bodies by fire.

**SARDONYX.** A precious stone, consisting of a mixture of chalcedony and cornelian stone.

**SARMENTOSÆ** (in Botany). One of Linnæus's natural orders, consisting of plants which have climbing stems and branches, like the vine.

**SARSAPARILLA.** The root of the rough smilax, a plant growing in Peru. It has a bitterish taste, and is much used in medicine.

**SASH** (among Carpenters). A frame of wood with panes of glass for a window.

**SASH.** A girdle round the waist, which in the army is worn by the officers.

**SASSAFRAS.** A yellow odoriferous wood of an aromatic scent, brought from an American tree of the laurel tribe.

**SATELLITE.** A secondary planet moving round another, as the moon does round the earth, so called because it attends the primary planet from rising to setting, after the manner of the satellites who attended on the eastern princes as a guard. Jupiter has four such satellites, Saturn seven, and Herschel six.

**SATIN.** A glossy kind of silk stuff.

**SATIRE.** A biting sort of poetry, written to expose the follies of men.

**SATURATION.** An impregnation of a fluid with as much of any solid substance as

it can dissolve. Thus water will dissolve about one third of its weight of common salt, and when it holds thus much in solution it is said to be saturated with it, because if more be added it will remain solid.

**SATURDAY.** The last day in the week, so called from Saturn.

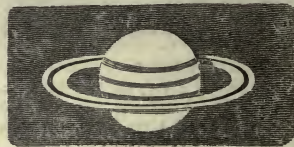
**SATURN** (in Heathen Mythology). A son of Cælus and Terra, and the god of time, commonly represented with a sickle, to denote the destroying power of time; sometimes with wings, to denote the swiftness of time, and with shackles, to denote the slow révolution and motion of the planet Saturn.



**SATURN.** One of the primary planets, the tenth in order of distance from the sun, which is thirty years in performing his sidereal revolution. He is marked by this character ♄.

**SATURNALIA.** A festival at Rome, in commemoration of the golden age, or the age of Saturn, when all men enjoyed their liberty, as the poets tell us.

**SATURN'S RING.** A broad, opaque, circular arc, which encompasses the planet, like the wooden horizon of an artificial globe.



**SAVOY.** A sort of winter cabbage with a crumpled leaf, which is greatly improved in flavour by being exposed to frost.

**SAWYER.** A mechanic employed in sawing timber. There are two sawyers to one piece, one of whom is in the pit, or below, and the other stands on the timber.



**SAXIFRAGE.** A creeping perennial, so called because it affects rocky or stony places.

**SAXON ARCH.** A semicircular arch which characterizes the Saxon style.



**SAXON STYLE.** A mode of building first used by the Saxons in this country. See **ARCHITECTURE**.

**SCABIOUS.** A plant cultivated in gardens, which bears a handsome brown flower.

**SCABRIDÆ.** One of Linnæus's natural orders, including plants with rough leaves, as hemp, fig, &c.

**SCAFFOLD.** A temporary erection either for workmen or for spectators.

**SCALE (in Mathematics).** The degrees of any arch of a circle or of right lines drawn or engraven on a rule.

**SCALE (in Music).** A series of sounds rising or falling towards acuteness or gravity; in Geography, a scale of miles on a map, for measuring the distances of places; in Arithmetic, scale of notation, the order of progression on which any system of arithmetic is founded, as the decennary scale, which computes by tens.

**SCALENE TRIANGLE.** A triangle whose sides and angles are all unequal.

**SCALES.** Two wooden bowls suspended at the ends of a balance, one for receiving the weights and the other the things to be weighed.



**SCALLOP.** A sort of oysters.

**SCALP.** The skin that covers the skull bone.

**SCAMMONY.** A concreted resinous juice, light and friable, of a grayish brown colour and disagreeable smell.

**SCANNING.** Measuring Latin verses by the syllables and feet.

**SCANTLING.** The measure, size, or standard by which the dimensions of any thing, particularly timber, is determined.

**SCAPEMENT (in Clock Work).** The manner of communicating the impulse of the wheels to the pendulum. Common scapements consist of the swing wheel and pallets only.

**SCAPULA.** The shoulder blade.

**SCARF.** A sort of sash worn by officers in the army, and also by divines, as well as females, over the left shoulder and down the right side.

**SCARF SKIN.** The first and outermost of the three lamina of which the skin is composed.

**SCARIFICATION.** Incisions made in the skin, as in cupping.

**SCARP.** The slope on that side of a ditch which is next to a fortified place, and looks towards the field.

**SCAVENGER.** A parish officer chosen annually, to see that the streets be cleansed from filth and dirt.

**SCENOGRAPHY.** The perspective representation of a body on a plane.

**SCHEDULE (in Law).** A scroll of paper or parchment appended to a will or any other deed; also an inventory of goods, &c.

**SCHIST.** A name given to different kinds of stones, but particularly those of the argillaceous kind.

**SCHOLIUM.** A note or annotation on an ancient author.

**SCHOOL.** A place set apart for the instruction of youth.

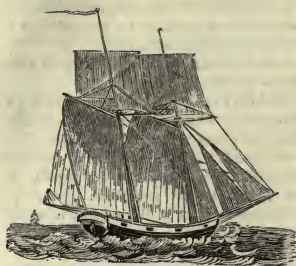
**SCHOOL (in Philosophy).** A system of doctrine as delivered by particular teachers, as the Platonic school, the school of Aristotle, &c.

**SCHOOL (in Theology).** The age of the church and the form of divinity that succeeded the fathers.

**SCHOOL (among Painters).** The style and manner of painting among the great masters of the art at any particular period, as the Italian, Flemish, Dutch, Spanish, and English schools.

**SCHOONER.** A small fast sailing vessel with two masts, whose main and fore-sails are suspended by gaffs, reaching from the mast to the stern. It is employed in

trade by those whose speculations require dispatch.



**SCIAGRAPHY.** The art of finding out the hour of the day or the night by the shadow of the sun or the moon.

**SCION.** A graft or young shoot of a tree.

**SCIOPTIC.** A sphere or globe of wood, with a hole in which is placed a lens, so constructed that it may be turned round every way, and used in making experiments in a darkened room.

**SCIRE FACIAS.** A writ of execution which lies a year and a day after judgment given.

**SCIRRHUS.** A hard tumour of some gland.

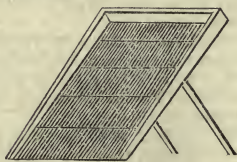
**SCITAMINEÆ.** One of Linnæus's natural orders, comprehending ginger, cardamon, spices, and other aromatic plants.

**SCORING (in Music).** Collecting and arranging the several detached parts of a piece into a certain order.

**SCORPIO.** One of the twelve signs of the zodiac, marked thus ♏.

**SCORPION.** An insect having eight legs, which resembles the crab, but much smaller. It is armed with a pungent sting, the puncture of which in hot climates is very dangerous.

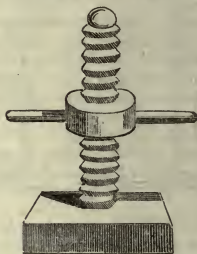
**SCREEN.** An implement in husbandry which consists of a frame and wire work, with which corn is cleared of the dust and the dross grain.



**SCOUTS,** Horsemen sent out some dis

tance before the army, in order to discover the movements of the enemy.

**SCREW.** One of the six mechanical powers, consisting of a spiral thread or groove cut round a cylinder; when the thread is on the outside it is a male or convex screw; but when it is cut along the inner surface of the cylinder it is a female screw, otherwise called a nut.



**SCRIBE.** A doctor in the Jewish law, whose business it was to write and interpret the scripture.

**SCRIBING (among Carpenters).** Fitting the edge of a board to the side of another.

**SCRIP.** A bag formerly carried by pilgrims.

**SCRIP (in Commerce).** That part of any loan which remains unpaid for by the subscribers.

**SCRIVENER.** One who draws up and engrosses writings. The company of scriveners was incorporated in 1616.

**SCROFULA.** A disease consisting of hard swellings in the glandules of the neck and ears.

**SCRUPLE.** A small weight equal to twenty grains.

**SCRUPLES ECLIPSED.** That part of the diameter of the moon which enters the shadow.

**SCRUTINY (in Law).** An examination of suffrages or votes at an election, for the purpose of ascertaining whether they are good or not.

**SCULPSIT, or SCULP.** Annexed to an engraver's name denotes that he engraved or carved the piece.

**SCULPTURE.** An art which comprehends not only carving in wood, stone, or marble, but also enchasing, engraving in all its kinds, and casting in bronze, lead, wax, &c.

**SCULL.** A little oar for rowing a boat with.

**SCULLER.** A boat rowed with sculls.

**SCUM.** That which rises to the top of any liquor.

**SCURF.** A scaly swelling raised in the skin of the head.

**SCURVY.** A disease the symptoms of which are yellow spots on the hands and feet, weakness in the legs, a foul breath, &c. It arises from eating too much salt provisions.

**SCUTTLES.** Square holes cut in the deck of a ship, large enough to admit a man.

**SCYLLA.** A rock in the sea between Sicily and Italy, which was very formidable to the mariners among the ancients. It was opposite to the whirlpool Charybdis.

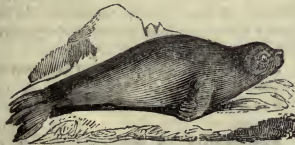
**SCYTHE.** An instrument for mowing. It consists of a thin steel blade attached at right angles to a handle of six or eight feet long. For cutting corn there is frequently the addition of what is called a cradle.



**SEA.** A large tract of water which washes the coast of one or more countries, as the Irish Sea, the Mediterranean Sea, the Red Sea, the Sea of Marmora or the Black Sea, and the Baltic. A sea is less than an ocean.

**SEA COW.** See **MORSE.**

**SEAL, or SEA CALF** (in Zoology). A harmless and sagacious animal inhabiting the shores of Kamtschatka and the neighbouring islands.



**SEAL.** A piece of metal having coats of arms or some other device engraven upon it; also the print in wax made by the seal.

**SEAL** (in Law). The impression or de-

vice printed on wax which is put to any deed by way of ratification. The great seal is the seal used for the united kingdom of England and Scotland, and sometimes of Ireland. The privy seal is that which the king uses to such grants, &c. as pass the great seal.

**SEALER.** An officer in Chancery who seals the writs and instruments there made.

**SEALINGWAX.** A hard wax made of gum lac, resin, &c. which is used in sealing letters, &c.

**SEALSKIN.** The skin of the seal, used in making watches, &c.

**SEAMEN.** Men brought up to the sea life.

**SEARCHERS.** Women appointed to examine all persons immediately after their decease.

**SEASONS.** The four portions of the year, namely, Spring, when the sun enters Aries; Summer, when he enters Cancer; Autumn, when he enters Libra; and Winter, when he enters Capricorn.

**SEA-STAR, or STARFISH.** An animal inhabiting the sea, which adheres to the bottoms of ships, and renews any of its parts which it loses.



**SEA-URCHIN.** An animal inhabiting the sea, which is armed with five sharp teeth.

**SEAWEEEDS.** A sort of herbs found floating on the surface of the sea, which are botanically called algæ.

**SEAWORTHY.** An epithet for a ship fit for a voyage.

**SECOND.** Any right angle that cuts another, whether a right line or a curve.

**SECOND** (in Geometry and Horology). The sixtieth part of a minute, marked thus (").

**SECONDARY** (in Law). The second man in any place, who is next to any chief officer.

**SECONDARY CIRCLES.** Circles which intersect the six greater circles of the sphere at right angles.

**SECONDARY PLANETS.** Those

which revolve as satellites round the primary planets.

**SECRETARY.** One who is employed in writing letters, &c. for a person.

**SECRETION.** The separation of some fluid from another in an animal or vegetable substance by means of glands.

**SECT.** A religious party.

**SECTION.** The cutting of one plane by another.

**SECTOR.** A mathematical instrument used in measuring proportional quantities.

**SECTOR OF A CIRCLE.** That portion of a circle comprehended between two radii and an arch.

**SECUNDUM ARTEM.** By the rules of art.

**SECULAR GAMES.** Games among the Romans, so called because they were celebrated but once in a seculum or age.

**SECULAR PRIEST.** One who has not taken monastic vows.

**SEDAN.** A close chair in which persons are carried by men.

**SEDIMENT.** Whatever settles or sinks to the bottom of a fluid.

**SEED.** The essence of the fruit of every vegetable, containing the rudiments of the new vegetable.

**SEGMENT.** Any part of a line in a triangle or other figure cut off by a perpendicular let fall upon it.

**SEGMENT OF A CIRCLE.** A part cut off by a chord, or that portion comprehended between an arc and a chord.

**SEIGNIOR, GRAND.** The sultan or emperor of the Turks.

**SEIGNORY.** The jurisdiction and power of a lord.

**SEIZING.** A sea term for binding two ropes together.

**SEIZURE (in Law).** An arrest of merchandise that is prohibited or otherwise forfeited.

**SELENIUM, or SELENITE.** The sulphate of lime.

**SELENOGRAPHY.** A description of the face of the moon.

**SELLING OUT (among Stockbrokers).** A transfer of one's share of stock from one person to another, in distinction from buying in, which is the purchase of the stock held by another.

**SELLING OUT (among Military Men).** The selling one's commission.

**SEMI.** A prefix to many words, signifying half, as semicircle, half a circle; semicolon, half a colon, &c.

**SEMIMETALS.** Fossil bodies not malleable, yet in some measure to be fixed by fire.

**SENIORITY.** Priority of birth.

**SENIORITY (among Military Men).** Priority in the time since the raising of any regiment, or an officer's receiving his commission, &c.

**SENSE.** That faculty of the soul whereby it perceives external objects by means of impressions made on particular parts of the body called the organs of sense, and then conveyed to the sensory; the senses are five, namely, seeing, hearing, smelling, taste, and feeling.

**SENSIBLE HORIZON.** See **HORIZON.**

**SENSITIVE PLANTS.** Plants of the mimosa tribe, which have the extraordinary property of closing on being touched.

**SENTICOSÆ.** One of Linnæus's natural orders of plants, including the rose, briar, hawthorn, &c.

**SENTINEL.** A private soldier placed to watch at some post.

**SEPIARIÆ.** One of Linnæus's natural order of plants, including such as grow wild in hedges or are used for hedges, as the briar, privet, &c.

**SEPOYS.** Natives who serve in the army in India.

**SEPTEMBER.** The ninth month of the year, so called because it was Septimus Mensis, the seventh month of Romulus's year.

**SEPTENNIAL.** Every seven years, as septennial parliaments, i. e. new parliaments chosen every seven years, as they are at present appointed.

**SEPTUAGESIMA.** The first Sunday in Lent.

**SEPTUAGINT.** The Greek translation of the Bible from the Hebrew into the Greek by seventy-two Jewish interpreters, by order of Ptolemy Philadelphus, king of Egypt.

**SEQUESTRATION (in Law).** The separating a thing in controversy from the possession of both parties till the right be determined by course of law.

**SEQUESTRATION (in the Civil Law).** The act of the ordinary disposing of the goods and chattels of a person deceased, whose estate no one will meddle with.

**SERAGLIO.** The palace of the grand seignor.

**SERGE.** A woollen stuff manufactured in a loom.

**SERGEANT, or SERGEANT AT LAW.** The highest degree taken in the common law, answering to that of doctor in the civil law.

**SERGEANT (in Military Affairs).** An inferior officer appointed to teach the soldiers their exercise.

**SERGEANTS AT ARMS.** Officers appointed to attend the king, arrest offenders, and the like.

**SERIATIM.** Successively, in order.

**SERIES.** A rank or progression of quantities proceeding by some rule, as in arithmetical progression by addition, 1, 3, 5, &c.; and in geometrical progression by multiplication, as 2, 4, 8, 16, &c.

**SERIES, INFINITE.** A series consisting of an infinite number of terms, to the end of which it is impossible to come.

**SERPENTES.** An order in the Linnæan system under the class amphibia, including animals which have no feet, fins, nor ears, and are cast naked on the earth without limbs, but frequently armed with a deadly poison. Under this order are the seven genera, namely, the boa constrictor, the rattlesnake, the viper, the snake, the acrochordus, amphisbæna, and coecilia.

**SERVICE-TREE.** A tree, the fruit of which is highly astringent; it is used in making brandy and cider.

**SERVITOR.** A poor scholar at Oxford, answering to a sizer at Cambridge, who attends on other students for his maintenance.

**SERUM.** A thin transparent liquor which forms a part of the blood, and also of milk.

**SESSION.** A sitting of justices in court upon their commission, as the session of oyer and terminer, &c.

**SESSIONS, or QUARTER SESSIONS.** Sessions held every quarter by two or more justices, whereof one is of the quorum.

**SET OFF (in Law).** When the defendant acknowledges the plaintiff's demand, but sets up a demand of his own, to set off or counterbalance the debt either wholly or in part.

**SETON.** A sort of issue in the neck, formed by means of horsehair or fine thread drawn through the skin.

**SETS (among Gardeners).** The young plants of white thorn or other shrubs, which are raised as quick for hedges.

**SETTING.** The sinking below the horizon, applied to any star or planet.

**SETTING DOG, or SETTER.** A sporting dog who catches fowls.



**SEWER.** A passage or gutter made to carry water away into the sea.

**SEXAGENARY.** One who has lived sixty years.

**SEXAGESIMAL ARITHMETIC.** A mode of computing by sixtieths, such as the division of a degree into sixty minutes, a minute into sixty seconds.

**SEXAGESIMA SUNDAY.** The sixtieth day before Easter.

**SEXTANT.** The sixth part of a circle, or an arc comprehending sixty degrees; also an astronomical instrument like a quadrant, except that its limb only comprehends sixty degrees.

**SEXTON.** An officer who digs the graves, and assists the minister at funerals.

**SEXUAL SYSTEM (in Botany).** The system of classifying plants, invented by Linnæus, and formed from the parts of fructification, as the stamens and the pistils. From the number of stamens are formed the classes monandria, diandria, triandria, &c. for such plants as have one, two, three, or more stamens; from the number of pistils are formed the several orders under these classes, as monogynia, digynia, trigynia, &c. for such plants under each class as have one, two, three, or more pistils.

**SHACKLES.** A sort of fetters for malefactors, which confine the legs; also for animals that go astray.

**SHADDOCK.** A shrub, the fruit of which resembles a lemon.

**SHADOW (in Optics).** A privation or diminution of light, by the interposition of an opaque body.

**SHADOWING (in Painting).** The art of duly representing light and shade in a picture.

**SHAFT.** The body of a column.

**SHAFT (among Miners).** A hole like a well, which miners make to free the works from the springs that are in them.

**SHAGREEN.** A kind of rough-grained leather, prepared from the skin of the hound-fish, and used for watchcases, &c.

**SHAMMY, or CHAMOIS.** A soft leather prepared from the skin of the chamois goat.

**SHAMROCK.** A name in Ireland for the trefoil.

**SHANK.** That part of the fore leg of a horse that is between the knee and the second joint next the foot; also the long and cylindrical part of different things, as the shank of a candlestick, &c.

**SHARE.** The cutting part of a plough.

**SHARK.** A voracious animal, that in-

habits the sea only, and grows to an enormous size.



**SHARP.** A half note, signifying an elevation, marked thus



**SHEARS.** A tool made in the form of scissors, for clipping hedges, &c.

**SHEATH.** A case for a knife or sword.

**SHEATH-BILL.** A bird inhabiting the South Sea islands, which has the upper mandible of its bill covered with a sheath.

**SHEATHING.** The covering nailed on a ship's bottom, to protect the planks from worms.

**SHEEP.** A domestic animal, much valued both for its flesh and its wool. Of the different breeds of this animal, the South Downs, Leicester, and Norfolk are the most esteemed. It is one of the most profitable part of the live stock of a farm, where the lands are dry.

**SHEEP-SHEARING.** The spring season, when the fleeces of the sheep are sheared or cut off.

**SHEET.** A large linen cloth laid on a bed.

**SHEET.** A breadth of paper, that admits of being folded into a given form.

**SHEET** (among Mariners). A rope fastened to the corner of a sail.

**SHEET-ANCHOR.** The largest anchor in a ship.

**SHEICK.** The chief of a tribe among the Arabs.

**SHEKEL.** A Jewish silver coin, worth about half-a-crown sterling.

**SHELF** (among Miners). A hard coat of earth, which lies under the mould.

**SHELL.** A crustaceous covering of fishes or fruits.

**SHELL-FISH.** Fish invested with a hard covering, either testaceous, as oysters, or crustaceous, as lobsters.

**SHERIFF, or SHIRE-REEVE.** A reeve or officer of the shire, who, as keeper of the king's peace, is the first man in the county. He is appointed by the king for every county except Middlesex, where he is elected, according to ancient usage, by the livery of London.

**SHIELD.** A weapon of defence, borne on the arm, to turn off lances; also another name for an escutcheon, by which it is represented.

**SHIP.** A general name for all large vessels which navigate the seas, particularly those equipped with three masts and a bowsprit, the masts being composed of a lower mast, topmast, and topgallant mast, each of which is provided with yards, sails, &c.

**SHIP-BUILDING.** The practical branch of naval architecture, or the art of constructing vessels according to certain draughts.

**SHIP-MONEY.** An imposition formerly charged upon the ports, cities, towns, &c. of this realm.

**SHIPPING.** A general term for whatever relates to ships.

**SHIPS OF WAR,** commonly called **MEN OF WAR.** Vessels properly equipped with artillery, ammunition, and all the implements of war necessary for attack and defence. Ships of the first rate or class mount from 100 to 110 guns and upwards; of the second, from 90 to 98 guns; third rate, from 64 to 74 guns; fourth rate, from 50 to 60 guns; fifth rate, from 32 to 44 guns; and sixth rate, from 20 to 28. Vessels carrying fewer than 20 guns are denominated sloops, cutters, fireships, and bombs.

**SHIP-WORM.** A testaceous animal, the teredo of Linnaeus, that adheres to the bottom of vessels coming from India, and does much damage.

**SHIPWRIGHT.** One who follows the art of building ships. The company of shipwrights was incorporated in the reign of James I.

**SHIRE.** The Saxon name for a county.

**SHOAL.** A shallow piece of water, or a shallow part of the sea near the coast.

**SHOARS.** Props set up obliquely against a house.

**SHOE.** A covering for the foot, made of leather; also the piece of iron nailed to a horse's foot, or under a sledge, &c.

**SHOE** (among Mariners). A small block of wood on the back of an anchor.

**SHORE.** A tract of land near the sea.

**SHORL.** A mineral of a black colour.

**SHORTHAND,** otherwise called **STENO-**

**NOGRAPHY.** An abbreviated form of writing.

**SHOT.** A general name for all sorts of balls used in firearms.

**SHREW.** An animal of the mouse kind, but from the structure of its teeth it is presumed to be carnivorous.



**SHRIKE.** A fierce kind of bird, that preys on lesser birds, and, tearing them to pieces, leaves them sticking on the hedges.

**SHRIMP.** A small sea-fish, resembling a lobster.

**SHROUDS.** A sea term for great ropes that come down both sides the masts.

**SHROVE-TIDE.** The time just before Lent.

**SHRUB.** A small low tree, between a bush and a tree. It is mostly an ornamental plant, bearing beautiful flowers, as the acacia, lilac, &c.

**SIBYLS.** Prophetesses, or such as professed to be so, among the Romans and Greeks. The Romans preserved their books with great care, and consulted them only on great occasions.

**SIDEREAL.** Pertaining to any star or planet, as a sidereal day, the time in which any star appears to revolve from the meridian to the meridian again, which is 23 hours 56 minutes 4 seconds and 6''' of mean solar time, there being 366 sidereal days in a year, or in the time of the 365 diurnal revolutions of the sun.

**SIEGE.** The encampment of an army before a fortified place, with a design to take it.

**SIENITE.** A compound granular aggregated rock, composed of felspar and hornblende, with a portion sometimes of quartz and black mica.

**SIEVE.** An instrument for separating the fine from the coarser parts of powders, liquors, grain, &c.

**SIGHTS OF A QUADRANT, &c.** Thin pieces of brass raised perpendicularly on its side.

**SIGN (in Arithmetic and Algebra).** Any mark used in operation, as + for addition, — for subtraction, × for multiplication, ÷ for division, = for equality.

**SIGN (in Astronomy).** The twelfth part of the zodiac.

**SIGNALS.** Notices given to a distant

observer, for the purpose of communicating intelligence.

**SIGNATURE.** The signing any paper, or putting any mark under a writing.

**SIGNATURE (among Printers).** A letter of the alphabet, put at the bottom of the page in each sheet.

**SIGNET.** A seal set in a ring; also the king's seal, wherewith his private letters are signed.

**SIGN-MANUAL (in Law).** The signature to any bill or instrument in the king's own handwriting.

**SILICA.** One of the primitive earths, which forms one of the constituent parts of all stones, and is found in greatest abundance in agates, jasper, flints, quartz, and rock crystal. In the latter, it exists nearly in a state of purity.

**SILIQUEA.** A pod, like that of the pea.

**SILIKUOSÆ.** One of the Linnæan natural orders of plants, including those which have siliquæ or pods for their seed vessels, like the pea, bean, lupin, &c.

**SILK.** The production of different species of the caterpillar, particularly the one called by the generic name of the bombyx mori, or silkworm by distinction, which is commonly used in Europe. The silk is found enclosed in two small bags, from which it is drawn in fine threads, to serve the insect as a covering while it lies in the chrysalis state. The balls of silk which the worm spins are called cocoons, which are sold to persons whose business it is to reel them off. A single cocoon is never reeled off separately, it being too weak for that purpose; but in the reeling, the ends of several cocoons are joined and reeled together out of warm water, into which they are put for the purpose of softening their natural gum, and making them stick.

**SILK-THROWER, or SILK-THROWSTER.** One who throws or spins silk so as to fit it for weaving. The company of silk-throwers was incorporated in 1629.

**SILKWORM.** The worm from which silk is most commonly procured.



MALE.

## SILKWORM, FEMALE.



**SILVAN.** Pertaining to woods, as the silvan nymphs, &c.

**SILVER.** The whitest of all metals, is considerably harder than gold, but not quite so ductile or malleable. It ignites before it melts, and requires a strong heat to fuse it; it is chiefly found in South America.

**SILVERING.** The art of covering the surfaces of substances with a thin coating of silver. It is of particular use for culinary utensils, as it resists the corroding power of vinegar, &c.

**SIMILAR** (in Mathematics). An epithet mostly applied to figures, angles, &c. which have the same disposition and conformation of the parts.

**SIMONY.** The corrupt presentation of any one to an ecclesiastical benefice, for money, gift, reward, or benefit.

**SIMPLE** (in Medicine). What is not mixed with any other thing, as opposed to a compound.

**SIMPLE** (in Pharmacy). A general name for all herbs which have any particular medicinal virtue.

**SIMPLER.** One who gathers simples for the druggists.

**SIMULTANEOUSLY.** At one and the same moment.

**SINECURE.** An office to which little or no personal service is attached.

**SINE DIE**, i. e. **WITHOUT DAY.** A term in law for a defendant who is dismissed court without trial.

**SINE OF AN ARC.** A right line drawn from one end of an arc perpendicular to the radius drawn to the other end.

**SINE QUA NON.** What cannot be dispensed with.

**SINEW.** The ligament which joins two bones.

**SINGULAR NUMBER** (in Grammar). A noun which denotes a single thing.

**SINKING FUND.** A portion of the public revenue set apart to be applied to the reduction or diminution of the national debt. This measure of appropriating a part

of the revenue of the country for the discharge of the public debt was adopted in Holland in 1655, and in the Ecclesiastical States in 1685. But the particular fund so called in England was first adopted by Mr. Pitt.

**SIPHON.** See **SYPHON.**

**SIR.** A title of address to baronets and knights, coupled with their Christian name, as Sir William or Sir John, &c.; also a general complimentary form of address.

**SIRIUS**, the **DOGSTAR.** A very bright star of the first magnitude in Canis Major.

**SIROCCO.** A periodical wind in Italy, which prevails about Easter.

**SIZE.** A sort of glue made of the shreds and parings of leather, parchment, or vellum boiled in water, and strained. It is used by painters, printers, &c.

**SIZER.** A poor scholar at Cambridge.

**SKAIN.** Any quantity of thread after it is taken off the reel.

**SKELETON.** An assemblage of the bones of any animal, cleaned, dried, and preserved in their natural position.



**SKETCH.** The outline of any object, taken in pencil or otherwise.

**SKIFF.** A small light boat.

**SKIN.** One of the principal integuments of the body, consisting of three laminae, namely, the skarf skin, which is the outermost; the rete mucosum, the second; and the cutis vera, or real skin, the third.

**SKINNER.** One who deals in hides or skins. The company of skimmers was incorporated in 1325.

**SKIRMISH.** A loose desultory engagement between small parties detached from the armies.

**SKULL.** The bony part of the head,



fashioned in the form of a globe, and consisting of three divisions, namely, the sin-ciput, or fore part; the occiput, or hind part; and the vertex, or crown.

**SKY.** The blue expanse of the heavens, or the region which surrounds the earth beyond the atmosphere. Sir Isaac Newton attributes the azure colour of the sky to vapours beginning to condense there, and acquiring a sufficient consistence to reflect the most reflexible rays.

**SLAB** (among Carpenters). An outside plank cut from a tree, which is generally rough and uneven; also a table of marble for hearths, &c.

**SLATE.** A bluish fossil stone, which is so soft that it can be cut into squares, and used either for the roofs of houses or other purposes.

**SLEDGE.** A carriage without wheels, used for carrying ploughs or other implements from place to place; also a carriage in Russia, fitted for going along the snow. In Lapland the sledges are drawn by reindeer.

**SLEEPERS.** Timbers lying next to the ground, or under the boarding of the floor.

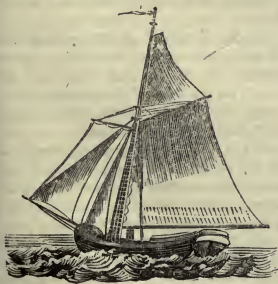
**SLEIGHT OF HAND, or SLIGHT OF HAND.** The tricks of jugglers performed with such dexterity as to deceive the quickest eye.

**SLIDING-RULE.** A mathematical instrument, to be used without compasses in gauging.

**SLING.** A leathern strap, on which a soldier's musket is slung.

**SLING** (in Surgery). A bandage for supporting a wounded limb.

**SLOOP.** A small vessel with one mast. In the navy, sloops are tenders carrying ten or twelve guns and about thirty men.



**SLOTH.** An animal remarkable for its

slow motion in walking. It climbs quicker than it walks.



**SLUG.** A variety of the snail tribe, that has no shell. It is very destructive in gardens.

**SLUG.** A cylindrical or cubical piece of metal shot from a gun.

**SLUICE.** A frame of wood set in a river, &c. to raise the water or to let it pass off, as occasion may require.

**SMACK.** A small vessel used in the fishing trade.

**SMALL ARMS.** A general name for muskets, fusils, carabines, &c.

**SMALL CRAFT.** All manner of small sea vessels, as catches, hoys, &c.

**SMALL-POX.** A cutaneous disorder, to which persons are mostly subject once in their lives. If taken by infection, it is often dangerous, but if taken by inoculation, it mostly passes off without any ill consequence. Vaccination, or inoculation with the cow-pox, is milder, but not so certain a remedy against future infection.

**SMALT.** A sort of blue colour used in painting.

**SMELL, or SMELLING.** One of the five senses, performed by a vascular porous membrane which lines the internal cavity of the nostrils. This is effected by the odorous particles which proceed from external substances.

**SMELT.** A fish of the salmon tribe, which ascends rivers in vast shoals in the spawning season.

**SMELTING** (in Metallurgy). The fusion or melting of ores, in order to separate the metallic from the earthy or stony parts. The art of fusing ores after washing is one of the most important operations in metallurgy.

**SMITH.** One who works in iron. The company of blacksmiths was incorporated in the sixteenth century.

**SMITHERY.** The art of working iron into particular shapes as occasion requires.

**SMOKE.** A humid matter, exhaled in the form of a vapour, which ascends from the fire.

**SMOKE-JACK.** See JACK.

**SMUGGLERS** (in Law). Those who

get prohibited goods clandestinely and fraudulently imported.

**SMUT.** A disease in corn, which consumes the germ and substance of the grain. It is a sort of fungus.

**SNAIL.** A sort of testaceous animal, of which there are numerous species, that vary mostly in regard to their shells. Snails without shells are called slugs.

**SNAKE.** An amphibious animal, which resembles an eel in its cylindrical body.

**SNEEZING.** A convulsive contraction of the chest.

**SNIBE.** A heath bird, nearly allied to the woodcock.

**SNOW.** A well known meteor, formed by the freezing of the vapour in the atmosphere.

**SNUFF.** A narcotic powder prepared from the leaves of the tobacco plant.

**SOAP.** A composition of oil or fat, and potashes, or any other alkali. The soft soap is made of potash, and oil or tallow; the Spanish or Castile soap, of oil of olives, and soda or barilla: black soap is a composition of train oil and an alkali.

**SOCIETY.** A name given to any association of persons uniting together, and co-operating to effect some particular object, as the societies or academies for promoting the cause of literature; charitable societies, for purposes of public charity; missionary societies, for sending missionaries abroad; and the like.

**SODA.** A mineral alkali, sometimes found in a native state, as in the lakes in Egypt, which, being dried by the heat of the sun, leave beds of soda, or natron, as it is there called. Soda is however, for the most part, procured from a plant, botanically called the *salsola* soda, which grows among the cliffs on the coast, and also from other plants on the seashore; but, in this case, it is more or less pure, according to the nature of the plant from which it is procured. Soda resembles potash very much, but it is rather more fusible; and when it comes into the air, it crumbles into powder instead of liquefying, as potash does.

**SODA WATER.** Water impregnated with carbonic acid gas.

**SOI-DISANT.** Self-styled.

**SOIL.** The ground in a state for cultivation, or for the growth of plants.

**SOLAR SYSTEM.** That system of astronomy which is founded on the hypothesis that the sun is the immoveable centre of the universe, round which all the other planets revolve at different distances, and in different spaces of time.

**SOLDER.** A metallic composition used by plumbers and other artificers, for the purpose of uniting metallic bodies more firmly together. Iron is generally soldered with copper; copper and brass, with tin.

**SOLECISM.** An impropriety of speech contrary to the rules of grammar.

**SOLICITOR.** A person who is employed in conducting suits in courts of equity.

**SOLID (in Geometry).** A magnitude which has length, breadth, and thickness.

**SOLID (in Physics).** A body whose minute parts are so connected together as not to yield readily to the impression of external force, in distinction from a fluid.

**SOLIDITY.** That property of matter by which it excludes every other body from the place which it occupies.

**SOLITARY CONFINEMENT.** The confinement of prisoners by themselves in cells.

**SOLO (in Music Books).** A name for any part that is performed by one single person.

**SOLSTICE.** The time when the sun is at the greatest distance from the equator, namely,  $23^{\circ} 28'$ ; which happens about the 21st of June, when he enters the tropic of Cancer, or the summer solstice; and about the 21st of December, when he enters the tropic of Capricorn, which is the winter solstice.

**SOLSTITIAL POINTS.** The two points in the ecliptic, namely, the first of Cancer, and the first of Capricorn, when the solstices happen.

**SOLVENT.** Any menstruum or corrosive liquor which will dissolve bodies.

**SOLUTION.** The intimate mixture or perfect union of solid bodies with fluids, so as seemingly to form one homogeneous liquor.

**SOMNAMBULISM.** Walking in one's sleep.

**SOOT.** A volatile matter arising from the smoke of wood or other fuel; or more properly, the smoke itself dried and condensed on the sides of the chimney.

**SOPHISM.** A specious but false argument, that serves to mislead.

**SOUND.** That effect or impression on the ear supposed to be occasioned by the tremulous motion of the air acting on that organ. If this motion be uniform, then it produces a musical note or sound.

**SOUND (in Geography).** Any great inlet of the sea between two capes or headlands where there is no passage through, as Plymouth Sound, or that part of the Baltic called by distinction the Sound.

**SOUNDBOARD (in an Organ).** A re-

servoir into which the wind is conducted, and thence distributed to the pipes.

**SOUNDING** (in Navigation). Trying the depth of the water, and the quality of the bottom, by a line with a plummet at the end.

**SOUP**. A strong decoction of flesh or other substances.

**SOW** (in the Iron Works). A block or lump of metal worked at once in the furnace.

**SPA**. A mineral spring.

**SPACE** (in Geometry). The area of any figure.

**SPACE** (among Printers). A slip of wood or metal for making a space between words or lines.

**SPAN**. An English measure of nine inches.

**SPANIEL**. A sort of dog, with a long shaggy coat and pendulous ears.



**SPANISH FLY**. An insect which is used in raising blisters.

**SPAR**. Any sort of earth which breaks easily into cubical or laminated fragments with polished surfaces.

**SPARROW**. A bird so nearly allied to the finch, that they are classed by Linnæus under the generic name of fringilla. But the sparrow differs in its habits essentially from the finch. It is a mischievous, cunning, spiteful bird, that is very destructive in corn-fields, and in the roofs of houses where it builds.

**SPARROW-HAWK**. A kind of short-winged hawk.

**SPASM**. An involuntary contraction of the muscular fibres.

**SPATHACEÆ**. One of the Linnæan natural orders, comprehending plants very similar to the liliaceous plants, as the narcissus, &c.

**SPATULA**. An instrument for spreading salves or plasters.

**SPAVIN**. A disease in the feet of horses, which causes them to swell.

**SPEAKER OF THE HOUSE OF**

**COMMONS**. A member chosen by the house, and approved by the king, who regulates all their proceedings, and speaks in the name of the whole on all public occasions.

**SPEAKING-TRUMPET**. A sort of trumpet used at sea, by the help of which persons may hear at a great distance.



**SPEAR**. A sort of lance with a sharp point.

**SPECIAL JURY** (in Law). A jury of a higher order of persons, sworn to try a particular cause.

**SPECIALTY** (in Law). A bond, bill, or similar instrument.

**SPECIE**. Gold or coin, in distinction from paper money.

**SPECIES**. Any particular plant, animal, or mineral, contained under a genus.

**SPECIFIC**. A medicine having a particular efficacy.

**SPECIFIC GRAVITY**. The relative proportion of the weight of bodies of the same bulk, which is determined by immersing them in any fluid.

**SPECTRUM**. A luminous spot formed by a ray of light on a white surface when admitted through a small hole.

**SPECULUM**. Any polished body impervious to the rays of light, such as polished metals, looking-glasses, &c.

**SPERMACEÏ**. An oily substance found in the head of the physeter macrocephalus, a species of whale.

**SPHERE** (in Geometry). A solid contained under one uniform round surface, such as would be formed by the revolution of a circle about a diameter thereof, as an axis.

**SPHERE** (in Astronomy). The concave orb or expanse which invests our globe, and in which the heavenly bodies appear to be fixed, at an equal distance from the eye.

**SPHERICS**. The doctrine of the sphere, particularly of the several circles described on its surface, with the method of projecting the same on a plane.

**SPHEROID**. A solid body approaching to the figure of a sphere.

**SPHINX**. A fabulous monster of Thebes, said to have put forth riddles, and to have killed those who could not expound them;

also an Egyptian statue, with the head of a woman and the body of a lion.

**SPIDER.** An insect which is remarkable for its ingenuity in forming its web, which it effects by means of papillæ or teats at the bottom of its belly. It uses its web as a snare for flies and other insects, whom it seizes and kills with great ferocity.



**SPIDER-WORT.** A perennial and a flowering plant, cultivated in gardens.

**SPINAGE.** A pot-herb.

**SPINE (in Anatomy).** The bony column, which consists of the twenty-four vertebræ of the back.

**SPINET.** A musical instrument something similar to a harpsichord.

**SPINNING.** The act of drawing silk, flax, or wool, into threads, which is performed either by means of a wheel, or by machines particularly constructed for the purpose.

**SPINSTER (in Law).** An addition usually given to unmarried women, from a viscount's daughter downwards.

**SPIRACULA.** Holes or pores in the abdomen of insects, through which they breathe.

**SPIRAL.** A curve line, which in its progress always recedes more and more from its centre.

**SPIRE.** A steeple that rises tapering by degrees, and ends in a point.

**SPIRITS.** A general name for all volatile substances collected by distillation, now confined by chymists to alcohol.

**SPLEEN (in Anatomy).** A spongy viscus, of a livid colour, lying on the left side of the body.

**SPLICING.** Joining one rope to another.

**SPLINTER.** A small shiver of wood or bone suddenly and violently broken off.

**SPOKES.** The bars in the wheel of a carriage.

**SPONDEE.** A foot of two syllables.

**SPONGE.** A substance which, at one time, was supposed to be a sea-moss growing on rocks, but now discovered to be a sort of zoophyte, that is torpid, and clothed with a gelatinous porous flesh, by which it absorbs or rejects water at pleasure.

**SPOONBILL.** A bird so called from its flat orbicular beak, which is in the shape of a spoon.



**SPONTANEOUS.** An epithet for things that act of themselves, without any apparent external agency, as the spontaneous combustion of vegetable substances, which when highly dried, and closely heaped, will burst into a flame; so the spontaneous generation of the limbs or parts of animals which have been cut off or destroyed.

**SPOTS ON THE SUN, &c.** Dark places observed on the sun, moon, and planets, of the nature of which little is known at present.

**SPRAT.** A fish very similar to a herring, but smaller. It is a species of the same genus, under the generic name of clupea.

**SPRAY.** The sprinkling of the sea driven from the top of a wave in stormy weather.

**SPRING (in Astronomy).** One of the seasons, commencing in the northern hemisphere when the sun enters Aries, about the 21st of March.

**SPRING.** A fountain or source of water rising out of the ground.

**SPRING (among Mechanics).** A piece of tempered steel, fitted to give an elastic power to any machine, as the spring of a watch, represented underneath.



**SPRING-TIDES.** Tides at new and full moon.

**SPRIT.** A small boom or pole crossing the sail of a boat diagonally.

**SPRUCE.** A fluid extracted by decoction from the spruce fir.

**SPRUCE-BEER.** A cheap and whole-

some liquor, made of treacle or molasses, and the essence of spruce, well boiled in water, to which yeast is afterwards added to assist the fermentation.

**SPRUCE-FIR.** A kind of Scotch or Norway fir.

**SPUNGE.** See **SPONGE.**

**SPUNGING-HOUSE.** A victualling house, or place of temporary confinement, for persons arrested for debt.

**SPUNK.** A substance growing on the sides of trees, which serves as tinder.

**SPUN YARN.** The yarn of untwisted ropes, the ends of which are scraped and beaten thin, to be let into the ends of other ropes.

**SPUR.** A piece of metal made to fit the heel of the horseman, and armed with a rowel, which is used for urging a horse on.

**SPY.** A person hired to watch the motions of another, particularly what passes in an enemy's camp.

**SQUADRON** (in the Navy). A detachment of ships employed in any expedition.

**SQUADRON** (in the Army). A body of horse, from one to two hundred.

**SQUARE** (in Geometry). A quadrilateral figure, whose angles are right angles, and sides equal.

**SQUARE** (in Arithmetic). The product of any number multiplied by itself; also the squares of lineal measures, as a square foot, a square yard.

**SQUARE** (among Carpenters). An instrument for squaring their work or reducing it to a square.

**SQUARE** (in Military Affairs). A body of soldiers formed into a square.

**SQUARE-ROOT.** A number which, multiplied in itself, produces the square number; thus, 2 is the square-root of 4.

**SQUIRREL.** An agile animal, that climbs dexterously, and leaps nimbly from tree to tree. It lives mostly on seeds and fruit.



**STACK, or RICK.** A structure of hay or corn, so formed that it may be thatched

by way of defence from the wet. The stem or body of the stack should be about two-thirds, and the roof one-third, of the whole stack. A funnel or chimney, called the well, is frequently left in circular stacks, to prevent their heating too strongly. As a preservative against the wet, while the hay or corn is stacking, rick-cloths are fixed up.

**STADIUM.** A Greek long measure, equal to our furlong; also the race-course among the Greeks.

**STAFF.** An ensign of office.

**STAFF** (in the Army). A specified number of officers acting together.

**STAFF** (among Mariners). A light pole erected in a ship, on which the colours are hoisted.

**STAFF-OFFICERS.** Those officers who constitute the staff.

**STAG.** An elegant animal, the male of which has branching and recurvate horns. The branches of a well grown stag are at least six or seven.



**STAG-BEETLE.** An insect which lives in the decayed trunks of trees.

**STAGE.** The elevated place in the area of a theatre, where the actors perform their parts; also any elevated place for the purpose of exhibiting any thing, or of carrying on any work in building.

**STAGE-COACH.** A public vehicle, so called because the horses go only a certain distance at a time, which is called a stage.

**STALACTITES.** A sort of calcareous earths, consisting of carbonate of lime, carbonic acid, and water. It is found suspended from vaults or the roofs of caverns in calcareous mountains.

**STALK, CAULIS** (in Botany). That part

of a plant which receives the nourishment from the root, and distributes it to the other parts.

**STALL.** A particular seat in a cathedral; also a partition in a stable; and an open shop in a market or fair.

**STAMEN** (in Botany). One of the principal parts of fructification in plants, on which Linnæus's sexual system is founded.

**STAMINA.** The simple original parts of an animal body, which existed in the embryo.

**STAMP.** Any instrument with which an impression is made; also paper bearing a particular mark or impression, which is used for receipts, deeds, and other instruments, and for which a tax is paid.

**STANDARD.** An original weight or measure, by which other measures are regulated. These measures are committed to the keeping of a magistrate, or deposited in some public place, as the Exchequer.

**STANDARD** (in Military Affairs). A flag or banner borne as a signal for the forming of troops into a body. The royal standard is a flag in which the imperial arms of England, Scotland, and Ireland are quartered, with those of Hanover.

**STANNERIES.** Tin mines or works.

**STAPLE.** A town where there were public storehouses for merchandises.

**STAPLE COMMODITIES.** Articles such as wool, cloth, lead, &c. which might be laid up in the staples or storehouses without damage.

**STAR.** A general name for the heavenly bodies, but more particularly for what are otherwise denominated fixed stars, as distinguished from planets, comets, satellites, &c. The stars were distinguished by the ancients into different collections, included within imaginary figures called constellations. The particular stars in each constellation have been moreover distinguished, by the moderns, by the letters of the Greek, and also according to their magnitude, from the first or largest to the sixth or the smallest that are visible to the naked eye.

**STARBOARD.** The right hand of a ship, when looking towards the head or fore part.

**STARCH.** A powder drawn from wheat flour, and used in stiffening linen.

**STAR-CHAMBER.** A court where anciently the Lord Chancellor, assisted by others, used to sit to punish riots, forgeries, and other great offences.

**STARLING.** A bird about nine inches long, that is very docile, and may be easily taught to speak.

**STATICS.** That branch of the science of mechanics which teaches the properties of bodies in respect to their weight, equilibrium, &c. when in a state of rest. See **MECHANICS**.

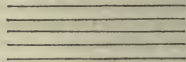
**STATIONER.** A dealer in paper, pens, and all writing utensils, &c. The stationers form one of the city companies.

**STATUARY.** A branch of sculpture employed in the making of statues.

**STATUES.** Figures of men or other objects formed, with the chisel, of marble or stone, &c., or carved in wood, and cast in plaster of Paris or in different kinds of metals.

**STATUTES.** Acts of parliament made by the three estates of the realm, which are either public or private. The courts of Westminster must take cognizance of the public statutes without their being specially pleaded, but not so of private statutes.

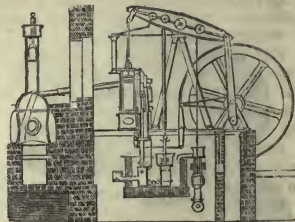
**STAVE** (in Music). The five horizontal and parallel lines on and between which the notes are placed.



**STEALING** (in Law). The fraudulent taking away of another man's goods with an intent to steal them against or without the will of him to whom they belong.

**STEAM.** The vapour which arises from the application of heat to water or any other fluid.

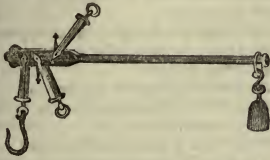
**STEAM-ENGINE.** An engine first constructed by Mr. James Watt, a native of Greenock, for raising water by means of the expansive force of steam. It has since undergone many improvements, and been made applicable to every sort of work which requires an extraordinary moving power.



**STEEL.** Iron refined and purified by fire. It is chymically described as a car-

buret of iron, or iron combined with a small portion of carbon.

**STEEL-YARDS.** A balance for weighing things.



**STEERAGE.** An apartment before the bulk-head of the great cabin, where the steersman stands and lodges in ships of war.

**STEERSMAN.** The person at the helm employed to regulate the ship's course.

**STELLATÆ.** One of the Linnæan natural orders of plants, comprehending those which have their leaves disposed round the stem in the form of a star.

**STEM (in Botany).** That part of a plant which sustains the root, leaves, and flower.

**STEM (in Shipbuilding).** The circular piece of timber into which the two sides of the ship are united at the fore end; the fore part of the ship, as opposed to the stern.

**STENOGRAPHY, or SHORT-HAND.** The art of writing in short characters instead of words.

**STEPPE.** Barren tracts in Russia.

**STEREOGRAPHY.** The art of representing solids on a plane.

**STEREOMETRY.** The science which teaches the measuring of solids.

**STEREOTYPE.** One entire solid piece of type cast from an impression in gypsum of a page composed with moveable types.

**STERLING MONEY.** The lawful money of Great Britain.

**STERN.** The hindermost part of a ship.

**STEWARD (in Law).** A term applied to several officers of distinction, particularly the Lord High Steward, who presides at the trial of a peer or the coronation of the king, &c.

**STEWARD (in Commerce).** One who manages the affairs of another, particularly in the management of estates.

**STIGMA (in Botany).** The top of the pistil.

**STILL.** The apparatus used in the distillation of ardent spirits. See **DISTILLATION**.

**STILTS.** A set of piles driven into the ground plot for the intended pier of a bridge.

**STIMULANTS.** Medicines which tend to excite the animal energy.

**STING.** A weapon in the form of a barbed spear, with which some insects are armed.

**STIRRUP.** The step of a saddle.

**STIRRUP (in Shipbuilding).** A piece of timber put under the keel when some part of it is lost; also the name of some short ropes.

**STIVER.** A Dutch coin, equal to about a penny.

**STOAT.** A sort of weasel, a variety of the ermine.

**STOCK.** The wooden part of many instruments, as the stock of an anchor, the stock of a gun, &c.

**STOCK (in the Army).** Part of a soldier's dress worn round the neck instead of a neckcloth.

**STOCK (in Commerce).** Any fund consisting of money or goods employed by a person in trade, particularly the sum of money raised by a company for carrying on any trading concern.

**STOCK-BROKER.** One who deals in the public funds for others.

**STOCK-EXCHANGE.** The place where stock is bought and sold.

**STOCK-JOBBER.** A speculator or dealer in the public stocks or funds.

**STOCKING.** A covering for the legs, made either of silk, wool, cotton, or thread, &c. knit with the hands or wove in a frame.

**STOCKS. (in Domestic Policy).** The public funds or government securities, which bear an interest, and are regularly bought and sold.

**STOCKS (in Law).** A mode of confining the legs of disorderly persons by way of punishment, which was ordained by statute.

**STOCKS (in Shipbuilding).** A frame of timber for building pinnaces, ketches, and other small craft; also sometimes small frigates.

**STOICS.** A sect of philosophers among the ancients, who maintained that pain was no evil, and many other paradoxes of a similar nature.

**STOLE, GROOM OF THE.** The head officer in the bedchamber of a king or prince.

**STOMACH.** The membranous, oblong receptacle in the lower region, destined to receive the food and convert it into chyle.

**STONE.** A hard mineral, that may be used in various ways in building. The

principal component parts of stones are silica, alumina, zircona, glucina, lime, and magnesia: sometimes the oxides of iron, manganese, nickel, chromium, and copper are also found to enter into their composition.

**STONE-FRUIT.** Fruit having its seed enclosed in a stony substance.

**STONEHENGE.** A pile of huge stones on Salisbury Plain, six miles distant from that city, which is generally admitted by antiquaries to have been a British temple. It consists of the remains of four ranks of rough stones ranged one within another, and sustaining others that are laid across and fastened by mortices.

**STONE-WARE.** A general name for every thing which is manufactured of earth or clay, particularly the coarser sorts of earthen-ware.

**STOP (in Music).** The pressure of the strings by performers on the violin and violoncello, by which they are brought into contact with the finger-board.

**STOP OF AN ORGAN.** A collection of pipes similar in tone and quality, which run through the whole or a great part of the compass of an instrument.

**STORAX.** The gum benzoin.

**STORES, or NAVAL STORES.** The materials laid up in store for the use of the king's navy, such as ordnance, ammunition, masts, sails, cordage, &c.

**STORK.** A bird nearly allied to the heron and the crane, with which it is classed by Linnæus under the generic name of ardea. It is a white bird, having the orbits of the eye naked. This bird is a native of Europe, Asia, and Africa, and feeds upon amphibious animals. In Holland and Germany the storks are much favoured, and are to be seen on the tops of the houses, and even in the public streets.



**STRAIT, or STRAITS.** A narrow arm

of the sea shut in by land on both sides, as the Straits of Gibraltar, &c.

**STRATUM.** A bed or layer, and **STRATA**, the beds or layers, of different earths or mineral substances of which the whole earth is composed.

**STREAMER.** A flag or pendant in a ship.

**STRIKE.** A measure of capacity, containing four bushels.

**STRONTIA.** A sort of ponderous earths.

**STROUDS.** The several twists at the end of a cable.

**STRUMA.** A scrofulous swelling.

**STUCCO.** A composition of white marble pulverized and mixed with plaster of lime. It is used on walls, or in making ornamental figures.

**STUD.** A stock of breeding mares, particularly those of the finer sort.

**STUDDING SAILS.** Light sails extended beyond the skirts of the principal sails.

**STUDENT.** One studying for his degrees at the university; also a member of the inns of court who is preparing himself for the bar.

**STUFF.** Any sort of thin cloth made of wool or other matter.

**STUM.** Wine revived by a new fermentation.

**STURGEON.** A large kind of fish, which inhabits the sea, but ascends the rivers annually. The flesh of all the species is remarkably delicious.

**STYLE.** A sort of bodkin with which the ancients wrote on wax or on lead, now used for writing on ivory, leaves, and paper particularly prepared for the purpose.

**STYLE (in Dialling).** The pin which, by its shadow, points out the hour.

**STYLE (in Botany).** The columnar portion of the pistil.

**STYLE.** A name which, in several sciences, denotes a particular rule or method, as in rhetoric and grammar, the manner of expressing one's sentiments.

**STYLE (in Chronology).** The manner of computing time, which is either old style or new style. By the old style the year consisted of 365 days and 6 hours; but the new or Gregorian style was made to correspond more nearly with the period of the sun's revolution, reckoning the year to be 365 days 5 hours 49 minutes 20 seconds, by retrenching 11 days from the old style. The new style was introduced into Germany in 1700, and in 1752 into England by act of parliament, whereby the 2d of September in that year was reckoned the 14th.



**STYLE** (in Architecture). A particular mode of erecting buildings, as the Gothic style, Saxon style, &c.

**STYPTICS**. Substances which have a binding quality, and are used to stop bleeding, &c.

**SUB**. A prefix which denotes inferiority of rank or defect of quality, as subaltern, subordinate.

**SUBALTERN**. An inferior officer, acting under the immediate direction of another, as cornets, ensigns, &c.

**SUBDIVISION**. A division or part under another or greater division.

**SUBJUNCTIVE MOOD**. A mood of verbs which imply a condition annexed to an affirmation.

**SUBLIMATE**. Any substance procured by the process of sublimation, particularly the sublimate of mercury, an extremely acrid and violently poisonous preparation.

**SUBLIMATION**. A process by which volatile substances are raised by heat, and again condensed in the solid form.

**SUBMARINE**. An epithet for what is or happens under the sea or water, as a submarine explosion or submarine navigation, &c.

**SUBMULTIPLE**. A number or quantity contained in another number or quantity a certain number of times exactly, as 4, which is the submultiple of 24.

**SUBORNATION**. A hiring or getting persons to swear falsely.

**SUBPENA** (in Law). A writ for summoning witnesses.

**SUBSCRIPTION**. The signing or setting one's hand to a paper; also the giving a sum of money, or engaging to give it, for the furtherance of some common object in which several are interested, as subscriptions in support of charitable institutions, and the like.

**SUBSCRIPTION** (among Booksellers). The engaging to take a certain number of copies of any new work from the publisher.

**SUBSCRIPTION TO THE THIRTY-NINE ARTICLES**. The solemn testifying one's assent to the thirty-nine articles of the Church of England, by taking an oath and signing one's name thereto, as occasion requires.

**SUBSIDIARY TROOPS**. Troopshired to serve for a given sum.

**SUBSIDY**. An aid or tax granted by act of parliament to the king upon any urgent occasion; also money given to a foreign power.

**SUBSTANTIVE**. Another name for a noun.

**SUBSTITUTE** (in Law). One delegated to act for another.

**SUBSTITUTE** (in the Militia). One engaged to serve in the room of another.

**SUBSTRATUM**. A stratum underneath.

**SUBTENSE OF AN ARC**. A right line opposite to an angle, supposed to be drawn between the two extremities of the arc.

**SUBTERRANEAN**. Underground, or within the bowels of the earth, as subterranean caverns or subterranean fires.

**SUBTRACTION**. The taking of one number or quantity from another, expressed by this character —; as  $5-3=2$ .

**SUBTRAHEND**. The quantity to be subtracted.

**SUCCEDANEUM**. A medicine substituted for another.

**SUCCINIC ACID**. An acid drawn from amber.

**SUCCOTRINE ALOES**. A sort of aloes obtained from a species of the aloe, namely, the aloe perfoliata of Linnæus.

**SUCCULENTÆ**. One of the Linnæan natural orders of plants, including the juicy evergreens, as the mesymbrianthemum, &c.

**SUCKER**. The piston of a pump; also a piece of leather laid wet upon a stone, which, owing to the pressure of the atmosphere, adheres very closely, and is not to be pulled off without great force.

**SUCKER** (in Botany). A young twig shooting from the stock.

**SUCKER** (in Ichthyology). A sort of fish, that adheres so firmly that it cannot be removed without great difficulty.

**SUCKING FISH**. A fish having a fat naked head and a naked body, which adheres very firmly to the bottom and sides of vessels. It was called by the ancients remora, and in the Linnæan system echi-neis remora.



**SUFFERANCE**. A term in law, applied to tenants. A tenant at sufferance is one that continues after his estate is ended, and wrongfully holdeth against another.

**SUFFRAGAN**. A bishop that is subordinate to an archbishop.

**SUFFRAGE**. A vote at an election in favour of a person.

**SUGAR**. A sweet substance procured from many plants or parts of plants, as

from the stem of the maple, birch, &c.; the root of the carrot, beet, &c.; the leaf of the ash, the grain of wheat, &c.; but particularly from the sugar-cane in the West Indies, by boiling the expressed juice with quick lime or vegetable alkali.

**SUGAR-BAKING.** The process of refining the raw sugar after it comes from the sugar plantations in the colonies.

**SUGAR-CANE.** A plant growing in the West Indies, which consists of a knotted reed, that rises sometimes to the height of twenty feet, but reeds of a more moderate size are preferred, that are full of juice.

**SUGAR OF LEAD.** Acetate of lead.

**SUI GENERIS.** Of its own nature or kind.

**SUIT.** An action at law.

**SULPHATES.** Salts formed by the union of sulphuric acid with different bases, as the sulphate of soda, called Glauber's salts; the sulphate of magnesia, called Epsom salts; so the sulphate of copper, the sulphate of zinc.

**SULPHITES.** Salts formed by the union of sulphurous acid with the different bases.

**SULPHUR.** A simple combustible substance, vulgarly called brimstone, which is found pure in great abundance. In combination with metals it forms the ores called pyrites. It is a nonconductor of electricity, and becomes electric negatively by friction. Its specific gravity is 1.990, &c.

**SULPHUR, FLOWERS OF.** A powder procured from sulphur when it is heated to the point of 170 degrees.

**SULPHURETS.** Compounds of sulphur with different alkaline earths and metallic bases, as the sulphuret of lime, of potash, &c.

**SULPHURIC ACID.** An acid containing sulphur (its basis), and oxygen. Concentrated sulphuric acid is called oil of vitriol.

**SULPHUROUS ACID.** An acid formed by the combination of sulphur with a less degree of oxygen than is requisite to form sulphuric acid.

**SULTAN.** The title of the emperor of the Turks.

**SUMACH.** A shrub which grows naturally in Syria, Palestine, Spain, and Portugal. From its roots, when dried and ground at the mill, is procured a powder used in tanning and dyeing.

**SUMMER.** One of the four seasons of the year, beginning, in the northern hemisphere, when the sun enters Cancer, about the 21st of June.

**SUMMER** (in Architecture). A main piece of timber that supports a building.

**SUMMONS** (in Law). A citation by virtue of which any man is called to appear before a magistrate or judge.

**SUMPTUARY LAWS.** Laws regulating dress and domestic diet.

**SUN.** The great luminary supposed, according to the Copernican system, to be the immoveable centre of the universe, having all the planets revolving around him at different distances, and in different periods of time. He is marked thus, ☉

**SUNDAY.** The sabbath or Lord's Day.

**SUN-FLOWER.** A plant, the yellow flower of which expands like the rays of the sun.

**SUPER.** A prefix signifying excess, as superabundant, superannuated, &c.

**SUPERANNUATED.** Past the fixed or stated time. Soldiers are superannuated who are too old for active service: boys are superannuated when they are too old to be admitted into any institution.

**SUPERCARGO.** One who takes charge of a cargo or lading.

**SUPERFICIES.** A magnitude bounded by lines.

**SUPERLATIVE.** The highest degree of comparison expressed by adjectives.

**SUPERNATURAL.** Beyond or out of the course of nature.

**SUPERNUMERARY.** Above the fixed or stated number, as soldiers attached to a regiment which has already its complete number.

**SUPERScription.** A writing on the outside of a paper or any other object.

**SUPERSEDING** (in Law). Setting aside a bankruptcy.

**SUPERSEDING** (in the Army and Navy). Taking the place of another by special appointment.

**SUPPLIES.** Extraordinary grants to government by parliament.

**SUPPORTERS** (in Heraldry). Ornaments without the escutcheon, which, as in the annexed figure, seem to bear it up or support it.



**SUPPORTERS** (in Architecture).

Images which serve to bear up any part of a building in the place of a column.

**SUPPRESSION.** The stoppage of any fluid.

**SUPPURATION.** The gathering of pus or matter in a boil or wound.

**SUPREMACY** (in Law). The supreme and undivided authority of the king over all persons and things in this realm, whether spiritual or temporal, which is denied to him by the members of the Romish church according to the tenets of their religion.

**SURCHARGE.** Any extra charge made by assessors upon such as neglect to make due returns of the taxes to which they are liable.

**SURCINGLE.** The girdle with which clergymen bind their cassocks; also a girth for horses.

**SURD.** A number or quantity that is incommensurable to unity, as the square root of 2 or the cube root of 10.

**SURETY.** One that gives security for another.

**SURF.** The swell of the sea breaking upon the shore.

**SURGE.** A large wave rising above the waters of the sea.

**SURGEON.** One who cures by manual operation or external applications.

**SURGERY.** The art of curing or alleviating diseases by local and external applications, or operations by means of the hand or of instruments.

**SURRENDER.** A deed or instrument testifying that the tenant yields up the estate to him that hath the immediate estate in remainder or reversion.

**SURRENDER OF A BANKRUPT.** The surrendering or giving up all his property into the hands of his creditors or their assignees.

**SURVEYING.** The art of measuring the area or superficial contents of lands, grounds, fields, &c. by the help of proper instruments.

**SURVEYOR.** One who follows the art or business of surveying.

**SURVEYOR** (in Law). One who surveys or superintends any business, as the surveyor of the highways, a parochial officer who sees that they are kept in repair, &c.

**SURVIVOR** (in Law). The longer liver of two tenants.

**SUSPENSION, or POINTS OF SUSPENSION.** Those points in the axis or beam of a balance wherein the weights are applied, or from which they are suspended.

**SUTLER.** A victualler that follows a camp.

**SUTURE.** The union of bones by means of dentiform margins.

**SWALLOW.** A bird that builds its nest of plaster in the corners of houses, and flies so near the surface of the water that it catches insects as it flies. The swallow is the harbinger of spring.



**SWAN.** A noble bird, nearly allied to the goose, with which it is classed by Linnæus under the generic name of the anas.



**SWARD.** The coat of grass on a meadow.

**SWARTH.** The row of grass as it falls from the scythe of the mower.

**SWEEPS.** Large oars used on board ships of war.

**SWEEPSTAKES.** The different stakes laid down by several persons, which all go by a sweep to one.

**SWEET PEA.** An annual which bears a beautiful sweet-smelling flower.

**SWIFT.** A sort of lizard which moves very swiftly; also a sort of bird.

**SWIMMING.** The act of sustaining the body in water, and moving in it as fishes and other animals do naturally, and as man also, by an acquired art, may do.

**SWINE-STONE.** A sort of calcareous earth.

**SWIVEL.** A small piece of artillery, that may be turned on a pivot in any direction.

**SWORD.** A weapon of offence, worn by a soldier's side.

**SWORD-BEARER.** An officer who carries the sword of state before a magistrate.

**SWORD-CUTLER.** One who prepares swords for use.

**SWORD-FISH.** A fish furnished with a swordlike snout, with which it attacks other fish.



**SYCAMORE.** A large tree like a fig-tree, that grows very fast, and is used in plantations and pleasure-grounds.

**SYCOPHANT.** An informer among the Athenians, who gave information of those that exported figs contrary to law; now taken for a cringing, sneaking flatterer.

**SYLLABLE.** An articulate sound formed by a vowel alone, or a vowel and consonant.

**SYLLABUS.** A list of the chief heads of a book.

**SYLLOGISM.** A logical argument consisting of three propositions, called the major and minor, which are the premises; and the question which, after it is drawn from the other two, is called the consequence or conclusion: thus, 'every animal has life; man has life; therefore man is an animal.'

**SYMBOL.** The emblem or representation of some moral quality by some animal or thing supposed to possess the same quality: as, a lion is the symbol of courage; two hands joined together, a symbol of union. These symbols were much used by the ancients in representing their deities, as the eagle, attributed to Jupiter is the symbol of his power.

**SYMMETRY.** A due proportion of all the parts to one another and to the whole.

**SYMPATHETIC INK.** A kind of ink which, when written with, is invisible until it is held to the fire. It is made from the solution of lead, bismuth, gold, and green vitriol.

**SYMPATHETIC POWDER.** A powder prepared from green or blue vitriol.

**SYMPHONY.** A consonance or concert of several sounds agreeable to the ear, whether vocal or instrumental.

**SYMPTOM.** A sign or mark by which the nature of the disorder is discovered.

**SYNALOEPHA.** A contraction of two vowels into one.

**SYNCHRONOUS.** Happening at the same time.

**SYNCOPE** (in Medicine). A fainting or swooning.

**SYNCOPE** (in Grammar). Taking a letter out of a word.

**SYNCOPE** (in Rhetoric). A concise form of speech.

**SYNCOPE** (in Music). The division of a note.

**SYNDIC.** A magistrate in Germany.

**SYNGENESIA** (in Botany). One of the Linnæan classes, containing plants the stamina of which form a cylinder.



**SYNOD.** An assembly of the clergy.

**SYNOD** (in Astronomy). A conjunction of heavenly bodies, or concurrence of two planets in the same optical place of the heavens.

**SYNODICAL MONTH.** The period wherein the moon departing from the sun, returns to a conjunction with him again; this is twenty-nine days, twelve hours, forty-eight minutes, twenty-eight seconds.

**SYNONYMES.** Words of the same or similar signification, which serve to amplify a subject.

**SYNOPSIS.** A general view of a subject.

**SYNOVIA.** An unctuous fluid secreted within the capsular ligaments of the joints, which serves to lubricate them and facilitate their motion.

**SYNTAX.** That part of grammar which treats of concord and government.

**SYNTHESIS** (in Mathematics). A method of composition, as opposed to analysis.

**SYPHON, or SIPHON.** A bent tube used in drawing off wine, liquors, and other fluids out of a vessel.

**SYRINGA.** A flowering shrub planted in gardens.

**SYRINGE.** An instrument that admits of any fluid and expels it again at pleasure.

**SYRUP.** A thick composition, formed from the juices of herbs and fruits boiled with sugar.

**SYSTEM.** An assemblage or chain of principles, the several parts of which de-

pend upon or are connected with each other. Systems vary in different sciences, according to the hypothesis on which they are founded, as in astronomy, the Copernican or Ptolemaic system; in botany, the system of Tournefort, Ray, Linnæus, &c.

**SYSTEM** (in Music). An interval compounded or supposed to be compounded of several lesser intervals.

**SYZIGY** (in Astronomy). The conjunction or opposition of any planet in regard to the sun.

## T.

**T**, the nineteenth letter of the alphabet, stands as an abbreviation amongst the Roman writers for Titus, Tiberius, &c.

**TABBY**. A rich kind of silk that has undergone the process of being tabbied.

**TABBYING**. The passing any silk or stuff through a calender, the rollers of which are variously engraven, so as to give the surface a wavy appearance.

**TABLE**. A level surface raised above the ground, of various forms, and used for meals and various other purposes.

**TABLE** (in Perspective). The transparent or perspective plane.

**TABLE** (in Arithmetic). Any series of numbers formed so as to expedite calculations, as the tables of weights and measures.

**TABLE** (in Astronomy). Computations of the motions and other phenomena of the heavenly bodies.

**TABRET**. A small drum.

**TACIT**. Not expressed, as a tacit confession, one that may be inferred sometimes from a person's silence.

**TACKING**. Changing the course.

**TACKLE**, or **TACKLING**. The general furniture of a ship, particularly the ropes and the assemblage of blocks by which heavy bodies are moved.

**TACTICS**. The science of disposing either an army or a fleet of ships, and regulating their movements for the more effectual attainment of the ends proposed.

**TADPOLE**. A frog in its unformed state.

**TAFFETY**. A fine sort of silk remarkably glossy.

**TALC**. A soft kind of earth, soapy to the touch, and composed of magnesia, alumine, and silica.

**TALENT**. A money of account among the Jews and Greeks. The Jewish talent of silver was equal to about 342*l.* and that of the Greeks to 193*l.* 15*s.* The Jewish talent of gold was equal to 4574*l.*

**TALENT**. A weight among the Jews, containing one hundred and eighty-nine pounds eight ounces fifteen pennyweights and seventeen grains. The talent among

the Egyptians and Greeks did not weigh so much.

**TALES** (in Law). Jurors added to make up the number wanted.

**TALLOWCHANDLER**. A maker and vender of tallow candles, as distinguished from a waxchandler. The company of tallowchandlers was incorporated in 1461.

**TALLOW TREE**. A tree in China which produces an unctuous juice, of which candles are made.

**TALLY**. A cleft piece of wood on which an account is scored.

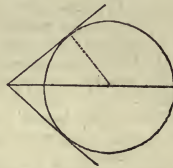
**TALMUD**. The book of the oral law of the Jews, containing their laws, customs, and traditions.

**TAMARIND**. The fruit of an Indian tree, which has an agreeable acidity combined with sweetness. It is used very much in medicine.

**TAMBOUR** (in Fortification). A kind of work formed of pallsades.

**TAN**. The bark of the oak or other tree ground or chopped, and used in tanning leather.

**TANGENT**. A line touching a circle or other curve without cutting it.



**TANNIN**. The substance procured from tan, by macerating it in cold water; this has the property of forming with animal gelatine a tough insoluble matter, and is therefore used in converting skins into leather by the process of tanning.

**TANNING**. The process of preparing leather from the skins of animals, which, after being cleared of the hair, wool, and fleshy parts by the help of lime, scraping, and other means, are macerated in an astringent liquor formed from the bark of

the oak tree. This is usually done by putting into the tan pit layers of ground oak-bark and skins alternately, with the addition of a small quantity of water.

**TANTALUS.** A sort of birds.

**TAPESTRY.** Cloth woven in figures.

**TAPEWORM.** A kind of worms resembling a tape in its form, which infests the intestines of the human body, and causes many disorders.

**TAPIOCA.** The starch of the cassava root.

**TAPIR.** A genus of animals of the class mammalia, order belluinae, that inhabits America.

**TAR.** A thick, black, unctuous substance, obtained from old pines and fir trees.

**TARANTULA.** The largest of all European spiders, the bite of which was formerly supposed to be venomous.

**TARE.** An allowance to the buyer for the outside package in the weighing of goods.

**TARES.** A sort of vetches much used as spring fodder for cattle.

**TARGET.** A kind of shield anciently used by the Scotch; a mark set up to be fired at.

**TARGUM.** The Chaldee paraphrase of the Old Testament.

**TARIFF.** A table of the rates or duties agreed upon between two states to be paid upon the goods of their respective countries.

**TARPAULIN.** A canvass cloth to keep off the rain.

**TARTAN.** A small coasting vessel in the Levant, having one mast and a bowsprit.

**TARTAR.** The concreted substance formed on the sides of wine casks.

**TARTAR, CREAM OF.** A powder compounded of tartaric acid and potash.

**TARTARIC ACID.** An acid procured by the solution, filtration, and crystallization of the tartar.

**TARTRATES.** Salts formed by the combination of tartaric acid with different bases.

**TATTOOING.** Puncturing the skin and rubbing in a dye, which is practised among the natives of the South Sea Islands.

**TASTE.** One of the five senses, by which the savour or relish of any thing is perceived. This resides principally in the papillae of the tongue and palate.

**TAURUS.** The second sign of the zodiac, marked thus ♉; it contains among other stars the two clusters called the Pleiades and Hyades.

**TAUTOLOGY.** Useless repetition.

**TAXES.** Impositions laid upon the subject by act of parliament.

**TEA.** The leaf of a Chinese tree, from which a useful beverage of the same name has been made ever since its first introduction into Europe in the seventeenth century. The tea plant is a native of China, Japan, and Tonquin, and has not been found growing spontaneously in any other part of the world. It affects valleys, the sloping sides of mountains, and the banks of rivers exposed to the southern rays of the sun. There are two principal sorts of tea, namely, the Green and the Bohea, or black; these are distinguished into different species, according to the nature of the leaf, as of the Greens, the Imperial, Hyson, and Singlo; of the Boheas, the Souchong, Camho, Congo, Pekoe, and Common Bohea.



**TEAK TREE.** The Indian oak, not equal in durability to the British oak.

**TEARS (in Anatomy).** The limpid fluid secreted by the lachrymal glands.

**TEARS (in Chymistry).** Any fluid falling in drops, as gums or resins exuding in the form of tears.

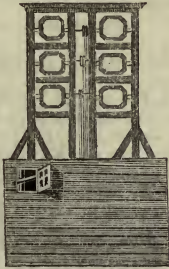
**TECHNICAL.** Pertaining to arts and sciences, as technical terms, terms of art.

**TEETH.** The hardest and smoothest bones of the body, fixed in the alveoli or sockets of the two jaws, which begin to appear about the seventh or eighth month after the birth, first the dentes incisuri or incisores, the four front teeth of the upper and lower jaw; then the canini, or eye teeth, one on each side the incisores in each jaw; and then the molares, or grinders, mostly ten in each jaw, making altogether thirty-two, although the number varies in different subjects. In the seventh year new teeth are formed, and in the twenty-first the two last of the molares mostly spring up, called the dentes sapientiae.

**TEGUMENTS** (in Anatomy). Coverings of the body, as the cuticle, rete mucosum, skin, and adipose membrane.

**TEINT.** An artificial colour.

**TELEGRAPH.** A machine, as represented underneath, which serves to convey intelligence by means of motions employed as the signs of words. That such a means of quick communication at a distance was early in use is clear from the scene in the Greek play, in which a watchman descends from a tower in Greece and gives the information that Troy was taken, adding 'I have been looking out these ten years to see when that would happen, and this night it is done.'



**TELESCOPE.** An optical instrument composed of lenses, so situated as to bring remote objects near to the view. To whom we are indebted for the discovery of the powers of this instrument is not precisely known. Wolfius infers from a passage in the 'Magia Naturalis' of John Baptista Porta, that he was the first who made a telescope, and this inference is the more probable as Baptista Porta had particularly directed his attention to optical instruments; but no certain mention is made of any telescope before 1590, thirty years afterwards, when a telescope sixteen inches long was made and presented to Prince Maurice of Nassau, by a spectacle maker of Middleburg, whose name is not exactly known, being called Luppertsheim, Jansen, and also Hansen. No advances were, however, made in the construction of telescopes before the time of Galileo, who while at Venice accidentally heard that a sort of optic glass was made in Holland, which brought distant objects nearer, and considering how this thing might be, he set to work and ground two pieces of glass into a form, as well he could, and fitted

them to the two ends of an organ pipe, with which he produced an effect that delighted and astonished all beholders. After exhibiting the wonders of this invention to the Venetians on the top of the tower of St. Mark, he devoted himself wholly to the improving and perfecting the telescope, in which he was so successful that it has been usual to give him the honour of being the inventor. An anecdote mentioned by F. Mabillon in his Travels, of having met, in a monastery of his own order, with a manuscript copy of the works of Commestor, written by one Conradus in the thirteenth century, and containing a portrait of Ptolemy looking through a tube at the stars, would seem to justify the supposition that this contrivance of facilitating the view of distant objects was of earlier date than is generally considered; but we are not informed whether the tube was furnished with glasses, and very probably tubes were then used to defend and direct the sight, and render the object more distinct by singling it from all other objects in the vicinity. It must not, however, be denied that the optical principles upon which the effect of telescopes is founded are as old as Euclid at least, and wanted nothing but accident or reflection to lead to this mode of applying them.

Telescopes are either refracting or reflecting; the former consist of different lenses through which the objects are seen by rays refracted by them to the eye, and the latter consist of specula from which the rays are reflected and passed to the eye. The lens or glass turned to the object is called the object glass, and that next to the eye the eye glass, and when the telescope consists of more than two lenses all but that immediately next the object are called eye glasses. Great improvements have been made in the construction of telescopes, both reflecting and refracting. That constructed under Dr. Herschel's direction is the largest instrument of the kind, and possesses the highest magnifying power of any that was ever made. The tube of this telescope is thirty-nine feet four inches, it measures four feet ten inches, and every part of it is of iron that is rolled, or sheet iron, joined together by a kind of seaming, like the iron funnel of a stove. In order to command every altitude, the point of support is moveable, and its motion is effected by the help of pullies, so that it may be moved backward or forward and set to any altitude up to the very zenith. The tube is also made to rest with the

point of support in a pivot, which permits it to be turned sidewise.



**TELLERS.** Those who reckon the votes in the parliament.

**TELLERS (in Law).** Officers of the exchequer, who receive all moneys due to the crown.

**TELLURIUM.** A kind of metal of a blue white colour, soft, brittle, and easily reducible to powder. It melts in a heat something above the fusing point of lead.

**TELLUS (in Heathen Mythology).** The goddess of the earth; the earth itself.

**TEMPERAMENT (in Music).** The accommodation or adjustment of imperfect sounds.

**TEMPERATURE.** The constitution of the air according to the diversity of the seasons, or the different situations of climate and other circumstances.

**TEMPERING (in Iron Works).** Making iron and steel of a suitable degree of hardness or softness.

**TEMPERING (among Brickmakers).** The duly mixing the materials of which bricks are made, that they may be more easily cut and reduced to the proper shape.

**TEMPLARS, or KNIGHTS TEMPLARS.** An ancient order of knighthood, which was abolished at the beginning of the fourteenth century.

**TEMPLE.** A place appropriated for the performance of public worship.

**TEMPLE (in Anatomy).** The upper part on each side of the head, where the pulse is felt.

**TEMPORAL.** Not spiritual; as the temporal revenues of the church, called the temporals, or temporalities.

**TEMPORAL (in Anatomy).** Pertaining to the temples, as the temporal arteries, &c.

**TENACITY.** The degree of force with which the particles of bodies cohere or are held together; a term applied particularly to metals which may be drawn into wire, as gold and silver.

**TENAILLE.** An outwork of a fortress.

**TENANT (in Law).** One who holds lands by any right, particularly one who occupies lands or tenements at a yearly rent, for life, years, or will.

**TENCH.** A fish with a golden body and transparent fins, that inhabits rivers and ponds.

**TENDER (in the Navy).** A small ship that attends a larger.

**TENDER (in Law).** The offering of money in payment of a debt.

**TENDON ACHILLES.** That which connects the calf of the leg with the heel.

**TENDONS.** The extremities of the muscles.

**TENDRIL.** The curling part of plants, as in the vine, with which they lay hold of any thing for support.

**TENEMENT (in Law).** Any thing which may be holden, particularly houses or any other buildings.

**TENNIS.** A game with a ball, driven by a racket.

**TENNIS-COURT.** The place where the game of tennis is played.

**TENON.** The square end of a piece of timber.

**TENOR (in Music).** The middle part between.

**TENSE.** That part of a verb which denotes time, as the present tense, denoting the time that now is; the preterite or past, the time that was; and the future, the time that will be. Some tenses likewise denote the state of the action, as to its completeness or otherwise, in a certain degree or time, as the imperfect tense, which denotes an unfinished action at a certain time; the perfect, a finished action at any time; and the pluperfect, a finished action before a certain time.

**TENSION.** The act of stretching or being stretched, as the tension of the muscles when the body is in motion.

**TENTER (in the Cloth Manufacture).** A railing constructed to stretch cloths upon.

**TENTERHOOK.** A particular hook on which things are hung that are to be stretched.

**TENURE (in Law).** The conditions on which lands and tenements are held.

**TERCE.** A wine vessel containing forty-two gallons.

**TERM (in Geometry).** The extremity or bound of a magnitude.

**TERM (in Law).** A fixed and limited time within which courts of judicature are open, as Michaelmas Term, Hilary Term, Easter Term, and Trinity Term.

**TERM (in the Universities).** The fixed periods within which students are obliged to reside for the prosecution of their studies, which are named, as in the law, Hilary, Easter, Trinity, and Michaelmas Term.

**TERMES.** The white ant, a genus of insects, inhabitants of the East Indies, Africa, and South America, which are



said to exceed the common ant, the bee, and the beaver in their skill, ingenuity, and good government. They build pyramidal structures ten or twelve feet high, that resemble villages in extent, and divide them off into several apartments, as magazines, chambers, galleries, &c. They are no less dexterous and remarkable in their manner of providing themselves with food, for they destroy food, furniture, books, and timber with such rapidity that a beam will be eaten by them to a mere shell in a few hours.



**TERMINI.** Figures used by the Romans for the support of entablatures, in the place of columns; the upper part consisted of the head and breast of a human body, and the lower of the inverted frustum of a cone. They were so called because they were principally used as boundary marks, and represented their god Terminus.

**TERMS OF AN EQUATION.** The members of which it is composed.

**TERRACE.** A platform or bank of earth raised and breasted, particularly in fortifications; also a raised walk.

**TERRA FIRMA.** Main land; the name particularly given to a country of South America, extending from the Atlantic to the Pacific Ocean to the extent of 1300 miles.

**TERRA JAPONICA.** Japan earth, the inspissated juice of a species of acacia.

**TERRAR, or TERRIER.** A land roll, containing the quantity of acres, tenants' names, and the like.

**TERRESTRIAL GLOBE.** An artificial representation of the earth's surface, by the help of which many problems in astronomy and geography are worked.

**TERRIER.** A kind of dog that hunts underground.



**TEST (in Law).** An oath prescribed by act of parliament for renouncing the pope's supremacy, &c.; also the Sacramental Test, which was formerly required as the qualification of taking an office, but is now abolished.

**TEST (in Chymistry).** A term applied to any substance which serves to detect the presence of a poisonous ingredient in a composition; also a cupel or pot for separating base metals from gold or silver.

**TESTACEA.** Testaceous animals, or shell fish; the third order of animals under the class vermes, in the Linnæan system.

**TEST ACT.** An act of parliament which required all persons to take the sacrament according to the rites of the church of England, on their acceptance of a public office. This act is so far repealed as relates to the sacramental test, for which a declaration is substituted, signifying that the party will do nothing to the injury of the established religion of England.

**TESTAMENT (in Law).** The solemn act whereby a man declares his last will as to the disposal of his estate after his death.

**TESTAMENT (in Theology).** Each of the volumes of the Holy Scriptures, that is the Old and the New Testament.

**TESTATOR.** A man who makes his will.

**TESTATRIX.** A female who makes her will.

**TESTUDO.** A machine among the ancients, which served to screen the soldiers when they approached the walls to mine.

**TESTUDO (in Zoology).** A genus of animals, including the marine turtle, the river turtle, and the land tortoise.

**TETANUS.** A locked jaw.

**TETRADYNAMIA.** One of the Linnæan classes of plants, including those plants the flowers of which have six stamens, four of them longer than the other two, as candy-tuft, wallflower, cabbage, &c.



**TETRAGYNIA.** An order of plants

under several classes, in the Linnæan system, the flowers of which have four pistils.

**TETRANDRIA.** One of the Linnæan classes, comprehending plants the flowers of which have four stamens, as the scabious, holly, plantain, &c.



**TETRARCH.** The governor of the fourth part of a province.

**TEXT.** The original part of an author's work, as distinguished from any note or commentary.

**TEXT.** A passage of scripture chosen as the subject of a sermon.

**TEXT** (in Printing or Writing). A particular kind of handwriting or form of letters used by lawyers and others.

**THANE.** A baron among the Saxons.

**THAUMATURGUS.** A worker of miracles; a title given by the Roman Catholics to some of their saints.

**THEATRE.** A building constructed for dramatic exhibitions, with a stage for the performers, and pit, boxes, and galleries for the audience.

**THEOCRACY.** A government whereof God himself is the king, as that of the Jews before they were governed by king Saul.

**THEODOLITE.** An instrument used in surveying, for taking angles, &c. This instrument is supported on three staffs, screwed into bell metal joints that are moveable, having a limb, or a strong bell metal ring, upon which are three moveable indexes, a bell metal double sextant, within which is a spiral level, and over it a telescope, all suitably adjusted with screws.

**THEOLOGY.** The study of religion, or the science which instructs in the knowledge of God and divine things.

**THEOREM.** A position laid down as truth.

**THEORY.** A doctrine which confines itself to the speculative parts of a subject, without regard to its practical application or illustration.

**THERAPEUTICS.** The healing art.

**THERMÆ.** Hot baths.

**THERMOMETER.** An instrument for measuring the temperature of the air, as

respects heat and cold, founded on the principle that the expansions of matter are proportional to the augmentations of the temperature. The invention of the thermometer has been ascribed to different authors, to Cornelius Drebbet of Almaar by his countrymen Boerhaave and Muschinbroeck; to Father Paul, by his biographer Fulgenzio; to Galileo by Vincenzo Viviani; but Sanctorino assumes the invention to himself, and his claim is fully admitted by Malpighi and Borelli. The first form of this invention was the air thermometer, consisting of a glass tube connected at one end with a large glass ball, and at the other end immersed in an open vessel or terminating in a ball with a narrow bottom. The vessel was filled with a coloured liquor that would not easily freeze, as aquafortis tinged with a solution of vitriol or copperas. The ball at the top being then moderately warmed, the air contained in it was in part expelled, and then the liquor pressed by the external air entered at the lower ball and rose to a certain height in the tube, according to the temperature. The air being found not so fit for measuring with accuracy the variations of heat and cold according to this form of the thermometer, which was first adopted, alcohol, or spirit of wine, was used by the Florentine academy, enclosed in a very fine cylindrical glass tube, having a hollow ball at one end, and hermetically sealed at the other. To the tube is applied a scale, divided from the middle into one hundred parts, upwards and downwards. As spirit of wine is capable of a very considerable degree of rarefaction and condensation by heat and cold, when the heat of the atmosphere increases the spirit dilates, and consequently rises in the tube; and when the heat decreases the spirit descends. As inconveniences were found to attend each of these thermometers, as also that of M. Reaumur, which was constructed in a similar manner, Mr. Fahrenheit first employed mercury for this purpose, which has since been universally adopted. The method of constructing his thermometer, of which a representation is here given, is as follows, a small ball is blown at the end of a glass tube, of an uniform width throughout. The ball and part of the tube are then to be filled with quicksilver which has been previously boiled to expel the air, the open end of the tube then being hermetically sealed, a scale is constructed by taking the two fixed points, namely,  $32^{\circ}$  for the freezing point and  $212^{\circ}$  for the boiling point, and divid-

ing the intermediate space into equal parts, or 180°.



**THISTLE.** A prickly weed that infests corn fields.

**THORACIC.** An order of fishes in the Linnæan system, which have the ventral fins placed directly under the thorax.

**THORAX.** The chest, situated between the neck and the abdomen.

**THOROUGH BASS** (in Music). That which includes the fundamental rules in composition.

**THRAVE, or THREAVE OF CORN.** Twenty-four sheaves, or four shocks of six sheaves.

**THREAD.** A small line made of a few fibres of silk, cotton, or hemp, from which it derives its names of silk, cotton, or thread properly so called.

**THRESHING.** The beating the grain out of the ears of corn with a flail.

**THRESHING MACHINE.** A machine for threshing corn, instead of the old practice of threshing with a flail.

**THRUSH** (in Ornithology). A genus of birds, the *turdus* of Linnæus, of which the principal species are the missel thrush, the throstle or song thrush, in England, the fieldfare, and the black bird. The thrush or throstle, properly so called, is one of the finest singing birds in this country. Its song, which is rich and varied, commences early in the season, and continues for nine months.

**THRUSH** (in Medicine). A distemper in the mouths of children.

**THUNDER.** The noise occasioned by the explosion of electrical clouds.

**THUNNY.** A kind of mackerel.

**THURSDAY.** The fifth day of the week, so called from Thor, the god of the Saxons and other northern tribes.

**THYME.** A fragrant herb.

**TIARA, or PAPAL CROWN.** An ornamental cap formerly worn by the Persians, and since adopted by the Pope. See **PAPAL CROWN.**

**TIBIA.** The largest bone of the leg.

**TIC DOLOUREUX.** A painful affection of the nerves.

**TICK.** A little insect, one species of which, called the dog-tick, infests dogs.

**TIDE.** The regular periodical current of water, which when it rises is called the flux, and when it goes back is the ebb or reflux. This is ascribed by Newton to the attraction of the sun and moon, but particularly to the latter, owing to its proximity to the earth.

**TIDE WAITER.** A customhouse officer who sees to the goods landed on the quay.

**TIER.** A range of cannon mounted on one side of a deck.

**TIERCE.** A measure of liquids containing forty-two gallons.

**TIGER.** A large ferocious beast, of the cat tribe, classed by Linnæus with the cat, under the generic name *felis*. It is a native of the hot climates of Asia, where it is considered as a scourge. It is of so fierce and sanguinary a nature that it is not to be tamed.



**TILE.** A thin piece of clay in a flat form, dried and baked so as to fit it for covering the roofs of houses.

**TILLAGE.** The art and practice of cultivating the ground, by ploughing, harrowing, rolling, and other works of husbandry.

**TILLER OF A SHIP.** A piece of wood fastened in the head of the rudder, by which it is moved. In small ships and boats it is called the helm.

**TIMBER.** The wood of trees felled and seasoned for the use of the carpenter, as the wood of the oak, fir, elm, ash, beech, chestnut, walnut, lime, sycamore, and birch; of these, however, the oak, ash, and elm are properly denominated timber trees. Felling of timber commences about the end of April in England.

**TIME.** A certain measure or portion of eternity distinguished by the motion of the heavenly bodies.

**TIME** (in Music). The measure of sounds in regard to their continuance or duration.

**TIMEKEEPER.** An instrument for measuring time.

**TIN.** A metal which is very rarely found native. It is one of the lightest metals, its specific gravity when hammered being no more than 7.299, but it is so fusible as to melt at about 442° of Fahrenheit.

**TINCTURE.** A solution of any substance in spirit of wine.

**TINMAN.** A manufacturer of tin.

**TINNING.** The art of covering iron or copper with a coat of tin, by immersing the plates into melted tin. This is one of the most useful purposes for which tin is employed, as it renders iron fit for various uses which, on account of its tendency to rust, would otherwise be unavailable.

**TIN PLATE,** otherwise called **WHITE IRON.** Iron covered with tin.

**TIPSTAFFS** (in Law). Officers that attend upon the judges of the King's Bench, and also take persons into custody.

**TIRE.** The iron brace that goes round a wheel.

**TISSUE.** Stuff made of silk and silver.

**TITANIUM.** A newly discovered metal of an orange red colour. It is very brittle, but so refractory that it can scarcely be reduced.

**TITHE** (in Law). The tenth part of all fruits, which is due to the parson of the parish. The great tithes are chiefly corn, hay, and wood: other things of less value are comprehended under the name of small tithes.

**TITHING.** A community of ten men, into which all England was divided in the time of the Saxons.

**TITLE** (in Law). Any right which a person has to the possession, or an authentic instrument whereby he can prove his right.

**TITMOUSE.** A small bird which feeds on the brains of other birds, which it attacks with great ferocity.



**TOAD.** A reptile of unsightly appearance, which was formerly accounted venom-

ous, but now considered as harmless. It is nearly allied to the frog, with which it is classed by Linnæus under the generic name rana. The frog leaps, but the toad, which has a thick heavy body, crawls.



**TOBACCO.** An herbaccons plant, remarkable for its narcotic properties, which is used either in the leaf, when it is chewed, or cut, when it is smoked. It originally came from the island of Tobago, and was introduced into England by Sir Walter Raleigh.



**TODDY.** A compound spirituous liquor.

**TOGA.** The mantle worn by Roman citizens.

**TOLERATION ACT.** An act passed in the reign of William and Mary in favour of Dissenters.

**TOLL.** A payment in towns, markets, and fairs for goods and cattle bought and sold; also on passing through a turnpike gate.

**TOLUFERA.** A balsam of the tolu tree, less healing and stimulating than the balm of Gilead.

**TOMBAC.** A metal composed of copper and arsenic.

**TON.** Twenty hundred weight.

**TONE.** The degree of elevation which any sound has, so as to determine its acuteness or gravity.

**TONGUE.** A soft fleshy viscus, which is the organ of taste and speech in man.

**TONIC.** A medicine which braces the nerves.

**TONNAGE.** A duty paid at a certain rate for every ton of goods exported or imported.

**TONSURE.** The act of cutting off the hair.

**TO NTINE.** A sort of increasing annuity, or a loan given by a number of persons with the benefit of survivorship.

**TOPAZ.** A precious stone of the colour of gold.

**TOPICS.** Common places, or the heads of a discourse.

**TOPOGRAPHY.** A description or draught of some particular place or tract of land, as of any particular county, city, town, castle, &c.

**TORNADO.** A sudden and vehement gust of wind from all parts of the compass, frequent on the coast of Guinea. It commences very suddenly, several clouds being previously drawn together, when a gust of wind rushing from them strikes the ground in a round spot of a few perches diameter, and thus proceeds for the distance of a mile or more, not in a straight line, but in all directions, tearing up all before it.

**TORPEDO.** A fish which is endowed with a strong electric power.



**TORPEDO,** otherwise called the **INFERNAL MACHINE** (in Naval Affairs). An invention contrived by an American for the purpose of blowing up the British vessels by a submarine explosion.

**TORRID ZONE.** That region at the distance of twenty-three and a half degrees from the equator, where the heat of the sun is most violent.

**TORTOISE.** An amphibious animal that is covered with a hard shell; there

are tortoises both on the land and in the water.



**TORTOISESHELL.** The shell which covers the tortoise is used in inlaying and for various ornamental purposes.

**TORY.** A name given to those who hold high principles of government.

**TOUCAN.** A bird of South America that is very impatient of cold.



**TOUCH, or FEELING.** One of the five senses, which is formed by the nervous papillæ of the skin. The sensations acquired by the sense of feeling are those of heat, hardness, solidity, roughness, dryness, motion, distance, figures, &c.

**TOUCH** (in Coining). A trial of gold and silver in the Mint.

**TOUCHHOLE.** The vent through which the fire is conveyed to the powder in a gun.

**TOUCH-NEEDLE** (among Assayers and Refiners). Little bars of gold, silver, and copper combined together in all the different proportions and degrees of mixture. These are used in the trial called the touch, to discover the purity of any piece of gold or silver by comparing the mark it leaves on the touchstone with those of the bars.

**TOUCHSTONE.** A siliceous sort of stone used in trying metals.

**TOUCHWOOD.** A sort of agaric that is used as tinder.

**TOURNAMENTS.** Military sports, where knights used to display their gallantry by encountering each other on horseback with spears or lances.

**TOURNEQUET.** An instrument for stopping the flow of blood after an amputation.

**TOWER.** A fortress or citadel, as the Tower of London.

**TOXICOLOGY.** The doctrine of poisons.

**TRACHEA.** The windpipe, a cartilaginous and membranous canal, through which the air passes into the lungs.

**TRADE WINDS.** The monsoons.

**TRAGACANTH.** A gum which exudes from a prickly bush, the astragalus tragacantha of Linnæus, which grows wild in warm climates. The tragacanth is mostly brought from Turkey in lumps.

**TRAGEDY.** A drama representing some grand and serious action, and mostly terminating in some fatal event.

**TRAJECTORY.** The path described by any moving body, as a comet describing a curve.

**TRAIN.** A line of gunpowder forming a communication with any body that is to be set on fire.

**TRAMMEL.** A drag net, or large fishing net; also a long net for catching birds.

**TRAMMELS.** An instrument for drawing ovals on a board; also a kind of shackles for a horse.

**TRANSCRIPT.** The copy of any original writing.

**TRANSFER.** The making over stock, &c. from the seller to the buyer.

**TRANSFER DAYS.** Particular days appointed for the transfer of particular stocks.

**TRANSFORMATION.** The change out of one form into another, as applied to insects.

**TRANSIT.** The passage of any planet just by or over a fixed star or the sun's disk, particularly the transit of Mercury and Venus, which are interesting phenomena.

**TRANSITIVE VERB.** A verb which in its meaning passes over to an object, as to love or hate.

**TRANSMIGRATION.** The passing of the human soul out of one body into another, a doctrine which is ascribed to Pythagoras.

**TRANSMUTATION.** A supposed power of changing the base metals into gold, which alchemists pretended to possess.

**TRANSMUTATION (in Chymistry).** Any operation by which the properties of mixed bodies are changed.

**TRANSPARENCY.** The property of

some bodies of giving passage to the rays of light, as distinguished from opacity.

**TRANSPARENCY (among Painters).** Any painting illuminated behind, so as to render it perfectly visible at night.

**TRANSPORT.** A vessel in which soldiers are conveyed by sea.

**TRANSPORTATION (in Law).** Sending away criminals into a distant country, either for a term of years or for life.

**TRANSPORTATION (in Commerce).** The carrying of goods by land to a distance.

**TRANSPOSITION (in Music).** The change made in a composition by which the whole is removed into a higher or lower key.

**TRANSPOSITION (in Algebra).** The bringing any term of an equation over to the other side.

**TRANSUBSTANTIATION.** The conversion of the bread and wine according to the doctrine of the Romish church into the actual body and blood of Christ, which is supposed to be miraculously wrought by the consecration of the priest.

**TRANSVERSE.** A cross, as a transverse axis in conic sections.

**TRAP.** A sort of mountain rock, composed of horizontal strata.

**TRAPEZIUM.** An irregular quadrilateral figure.

**TRAVERSE (in Law).** That which the defendant pleads in bar to avoid the plaintiff's bill.

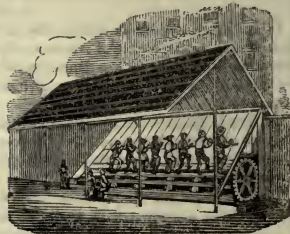
**TRAVERSE (in Fortification).** A trench made quite across the mote of a place.

**TRAVERSE (in Navigation).** The variation or alteration of a ship's course.

**TRAVESTIE.** The burlesque imitation of an author's style and composition.

**TREACLE.** The scum of sugar.

**TREADMILL.** A mill for grinding corn, which is moved by persons stationed on the main wheel. It has been introduced into prisons as a sort of punishment.



**TREASON** (in Law). Is divided into High Treason and Petty Treason. High Treason is an offence against the king or his government, whether it be by imagination, word, or deed. Petty Treason is the crime of a wife killing her husband, or a servant his master.

**TREASURER** (in Law). An officer to whose care the treasure of the king or of any company is committed. The Lord High Treasurer of England has the charge of all the king's money, &c. in the Exchequer.

**TREASURE-TROVE** (in Law). Money or any other treasure found hidden under the earth, which belongs to the king or some other who claims by the king's grant or by prescription.

**TREASURY**. The place where the king's money is deposited.

**TREBLE** (in Music). The acutest or highest note adapted to the voice of females or boys.

**TREBLE NOTE**. The note in the treble staff, placed on the line with the cliff.



**TREE**. A plant with a woody trunk.

**TREFOIL**. Three leaved grass.

**TREMOLITE**. A sort of calcareous earth.

**TRENCHES**. Ditches in fortifications.

**TREPAN**. A surgical instrument, like a saw, for removing a broken bone from the skull.

**TRESPASS** (in Law). Any wrong done by one private man to another, either to his person or his property.

**TRET**. An allowance for waste, or for the dirt that may be mixed with any commodity.

**TRIAD** (in Music). The common chord, consisting of the third, fifth, and eighth.

**TRIAL**. The examination of causes before a proper judge, which, as regards matters of fact, are to be tried by a jury, as regard matters of law by the judge, and as regards records by the record itself.

**TRIANDRIA**. One of the Linnæan classes, comprehending plants the flowers of which have three stamens, as the crocus, gladrole, valerian, &c.

**TRIANGLE**. A figure bounded by three sides.

**TRIBUNE**. An officer among the Ro-

mans, chosen from among the people to defend their rights.

**TRICOCCEÆ**. One of Linnæus's natural orders of plants, comprehending such as have a three armed capsule, as the euphorbia, &c.

**TRIDENT**. A three forked instrument.

**TRIENNIAL**. Every three years, as triennial parliaments.

**TRIGGER**. The catch of a gun lock, which when pulled disengages the cock and causes it to strike fire.

**TRIGLYPH**. A member of the Doric frieze.

**TRIGONOMETRY**. The art of measuring the sides and angles of triangles. The business of this science is to find the angles where the sides are given; and the sides of their respective ratios when the angles are given.

**TRILLION** (in Arithmetic). A billion of billions.

**TRIM OF A SHIP**. Her best posture, proportion of ballast, and hanging of her masts, &c. for sailing.

**TRINITARIANS**. Those who believe in the Trinity.

**TRINITY**. The doctrine of three persons in the Godhead, namely, the Father, the Son, and the Holy Ghost.

**TRIO** (in Music). A piece for three voices.

**TRIPLE CROWN**. The tiara, or papal crown.

**TRIPLE TIME** (in Music). A time consisting of three measures in a bar.

**TRIPOD**. The sacred seat, supported by three feet, on which the priestesses among the ancients used to deliver the oracles.

**TRIPOLI**. A mineral of an earthy texture, but for the most part found considerably indurated.

**TRISECTION**. The dividing a thing into three parts.

**TRISYLLABLE**. A word consisting of three syllables.

**TRITON**. A sea god.

**TRIUMPHAL CROWN**. A crown



among the Romans given to a victorious general; it was made at first of wreaths of laurel, and afterwards of gold.

**TRIUMVIRATE.** A form of government in which three persons bear rule, as the Roman triumvirate of Pompey, Cæsar, and Crassus, and afterwards that of Augustus, Marc Antony, and Lepidus.

**TROCAR.** An instrument used in tapping for the dropsy.

**TROOP.** A certain number of horse soldiers.

**TROOPER.** A horse soldier.

**TROPICS** (in Astronomy). Circles drawn at the distance of twenty-three and a half degrees on each side the equator, that on the north side called the Tropic of Cancer, that on the south the Tropic of Capricorn.

**TROPICS** (in Geography). The regions on the earth which lie within the tropical circles.

**TROUBADOURS.** Ancient bards of Provence and Normandy.

**TROVER.** An action which a man has against any one who having found his goods, or having them unjustly in his possession, refuses to deliver them up.

**TROUGH.** A hollow piece of wood, which serves to hold water or any other fluid.

**TROUT.** A fish of the salmon tribe.

**TROWEL.** A bricklayer's stool for spreading mortar.

**TROY WEIGHT.** A weight of twelve ounces to the pound, twenty pennyweights to the ounce, and twenty-four grains to the pennyweight, used for weighing gold and silver. It is so called from Troyes, a town in France.

**TRUCE.** A suspension of hostilities.

**TRUFFLES.** A sort of mushrooms.

**TRUMPET.** The loudest of all wind instruments, consisting of a folded tube, generally of brass.



**TRUMPETER.** The soldier who sounds the trumpet.

**TRUMPETER-BIRD.** A bird of South America, so called from its harsh cry, like a child's trumpet.

**TRUSS** (in Surgery). An elastic bandage worn in cases of hernia or ruptures.

**TRUSS** (among Mariners). A machine for pulling a yard home to the mast.

**TRUSS** (in Commerce). A bundle of

hay or straw, containing fifty-six pounds of hay and thirty-six pounds of straw.

**TRUST** (in Law). A right to receive the profits of land; and in equity to dispose of the land.

**TRUSTEE** (in Law). One who has an estate or money put into his hands for the use of another.

**TUBE.** Any pipe or canal which serves as a passage for air or any other fluid.

**TUFAS.** Beds of lime.

**TULIP.** A kind of plants which for the diversity and beautiful arrangement of their colours have fetched extraordinarily high prices.

**TUMBRIL.** A dung cart.

**TUMOUR.** A preternatural or hard swelling.

**TUN, or TON.** A vessel for wine and other liquors; also a certain measure of capacity, containing 242 gallons; also a weight equal to 2240 pounds, whereby the burden of ships is estimated.

**TUNIC.** An under garment in use among the Romans.

**TUNING** (in Music). Rectifying the false sounds of musical instruments.

**TUNISTEN.** An opaque mineral of a white colour and great weight, composed of lime and other earthy substances.

**TUNNEL.** A subterraneous passage cut through hills, mountains, and even in some cases under water.

**TURBOT.** A sort of fish inhabiting the European seas, which grows sometimes to thirty pounds weight.

**TURKEY.** A large domestic bird, the young of which are exceedingly tender. The cock is very proud and irascible, and struts about with his tail expanded when moved either by pride or anger.



**TURMERIC.** A drug procured from an Indian tree, the curcuma of Linnæus, which is used in dyeing.

**TURNER.** One who follows the art of turning. The company of turners was incorporated in 1603.



**TURNING.** The art of forming wood, ivory, and other hard substances into a round or oval shape, by means of a machine called a lathe, and several instruments, as gouges, chisels, drills, formers, and screw tales, with which the turner works the thing into the desired form as the lathe is turning.

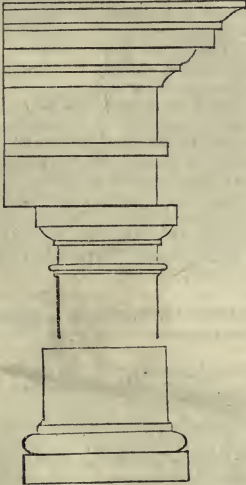
**TURNPIKE.** A gate set across a road, through which all travellers passing either on horseback or in a conveyance must pay toll; also the road which has such a gate.

**TURNSPIT.** A sort of dog that used to be taught to turn a spit before the introduction of smoke jacks.

**TURPENTINE.** A resinous substance procured from different species of the pine and fir. The best sort comes from North America. The method of obtaining it is by making a series of incisions in the bark of the tree, from which the turpentine exudes, and falls down into holes or other receptacles prepared to catch it.

**TURTLE.** A species of the tortoise that mostly inhabits the sea. Its flesh is held to be a great delicacy.

**TUSCAN ORDER.** An order of architecture first used in Tuscany in Italy, which has but few ornaments or mouldings.



**TUSKS.** The great teeth that stand out in a boar's mouth.

**TUTTY.** A gray oxide of zinc.

**TWILIGHT.** That period of light between darkness and the rising or setting of the sun. In our latitude it may be said to begin and end when the sun is about eighteen degrees below the horizon.

**TYMPAN.** A frame belonging to a printing press.

**TYMPANIUM.** The drum or barrel of the ear, in which are lodged the bones of the ear.

**TYPES.** Pieces of metal cut or cast, which are employed in printing.

**TYPHUS.** A violently contagious fever, accompanied with a tendency in all the fluids to putrefaction.

**TYPOGRAPHY.** A description of all that relates to the use of types in the formation of books; a history of the art of printing.

## U AND V.

**U or V,** the twentieth letter in the alphabet, stands as a numeral for 5, and formerly with a dash over it, thus  $\bar{V}$ , for 5000; as an abbreviation, V. G. Verbi gratia, V. L. videlicet, &c.

**VACANCY (in Law).** A post or benefice wanting the regular officer or incumbent.

**VACATION (in Law).** The period between the end of one term and the beginning of another; and the same in the Universities.

**VACCINATION.** Inoculation with the cow pock, intended as a preservative against infection from the small pox.

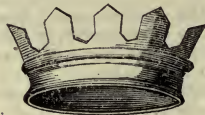
**VACUUM (in Philosophy).** A space supposed to be devoid of all matter or body.

**VADE MECUM.** The name of any small book that may be carried about with one.

**VAGRANTS (in Law).** Beggars, strolling and idle persons who wander from place to place.

**VALET.** Formerly a young gentleman of family, but now applied to a serving man of low degree.

**VALLAR CROWN.** A crown bestowed among the Romans on a general who first entered an enemy's camp.



**VALVE.** A kind of lid or cover to a tube or vessel, contrived to open one way.

**VALVES** (in Conchology). The principal pieces of which a shell is composed; by their shells they are distinguished into univalves, for such as have only one piece; bivalves, for those that have two pieces; and multivalves, for those that have three or more pieces.

**VALVE, SAFETY.** An orifice which allows the escape of steam when the pressure is so great as to endanger the apparatus.

**VAMPIRE.** An animal of the bat tribe.

**VAN** (in the Army). The front of the army, or the first line.

**VAN** (in the Navy). The foremost division of a naval armament.

**VANE.** A device on the top of buildings to show the direction of the wind.

**VAPOUR.** A watery exhalation that, being rarefied by heat, ascends to a certain height in the atmosphere.

**VARIATION** (in Geography and Navigation). A deviation of the magnetical needle in the mariner's compass.

**VARIETY.** Any individual plant or animal that differs from the rest of the species in some accidental circumstances.

**VARIORUM EDITIONS.** Editions of the Greek and Latin authors, with the notes of different critics.

**VARNISH.** A thick, viscid, shining liquor, used by painters and other artificers to give a gloss to their works. Resin is the principal constituent of varnish.

**VASE.** An ornamental urn.



**VASES** (in Architecture). Ornaments placed on cornices, socles, or pediments, representing such vessels as the ancients used in sacrifices, &c.

**UBIQUITY.** The property of being every where; the attribute of God.

**UDDER.** The milk bag of a cow or other four-footed beast.

**VEGETABLE.** An organic body destitute of sense and spontaneous motion, but furnished with pores and vessels, by the help of which it draws nourishment from other bodies.

**VEGETABLE MARROW.** The fruit of a plant of the gourd kind growing in Persia. Its flesh is very tender, soft, and of a buttery quality.

**VEIN** (among Miners). A space containing ores, spar, clay, &c.: when it bears ore it is called a quick vein, when no ore a dead vein.

**VEINS** (in Anatomy). The long membranous canals which return the blood from the arteries to the heart.

**VELLUM.** The finest kind of parchment.

**VELOCITY.** That affection of motion whereby a moveable body is disposed to run over a certain space in a certain time.

**VELVET.** A sort of fine shagged silk.

**VENA CAVA,** the **HOLLOW VEIN** (in Anatomy). The largest vein in the body, so called from its great cavity or hollow space into which, as a common channel, all the lesser veins, except the pulmonaris, empty themselves. This vein receives the blood from the liver and other parts, and carries it to the heart.



**VENA PORTA.** The great vein situated at the entrance of the liver.



**VENEERING.** A kind of inlaying of thin slices of fine woods of different kinds and colours.

**VENTILATOR.** A contrivance for supplying rooms with fresh air.

**VENTRICLE.** A cavity of the heart or brain.

**VENTRILOQUIST.** One who by art, or by a particular conformation of organs, is enabled in speaking to make the sound appear to come from the stomach, or from a distance.

**VENUE (in Law).** The neighbourhood whence juries are to be summoned for the trial of causes.

**VENUS.** The goddess of beauty, and daughter of Jupiter.



**VENUS (in Astronomy).** One of the inferior planets, but the brightest and to appearance the largest of all, marked by this character ♀.

**VEPRECULÆ.** One of Linnæus's natural orders, containing briarlike plants, as the bramble, thorn, &c.

**VERB.** A part of speech which serves to express action, passion, or existence; it is either active, passive, or neuter.

**VERBATIM.** Word for word.

**VERDEGRIS.** An acetate of copper used as a pigment; it is the rust of brass gathered by laying plates of that metal in beds with the husks of pressed grapes, and then scraping it off the plates.

**VERDICT.** The report or determination of a jury upon any cause.

**VERDITER.** A green paint.

**VERGE.** The compass of the king's court.

**VERGER.** An officer of a court or a cathedral, who carries a rod before the judge or the bishop.

**VERJUICE.** The expressed juice of the wild apple or crab.

**VERMES.** Worms, a class of animals

in the Linnæan system, that are slow of motion, of a soft substance, extremely tenacious of life, capable of reproducing parts that have been destroyed, and inhabiting moist places.

**VERMICELLI.** An Italian dish.

**VERSE.** A line in poetry, consisting of a number of long and short syllables; also the division of a chapter in the Bible.

**VERSIFICATION.** The art and practice of making verses.

**VERSION.** A translation out of one language into another.

**VERT (in Law).** Every thing in a forest that bears a green leaf which may serve as a cover for deer.

**VERT (in Heraldry).** The colour of green on coats of arms, represented in engraving by lines drawn from the dexter chief to the sinister base.

**VERTEBRÆ.** A chain of little bones reaching from the neck down to the back, and forming the spine.

**VERTEX (in Geometry).** The top of any line or figure, as the vertex of a triangle.

**VERTEX (in Anatomy).** The crown of the head.

**VERTICAL.** Pertaining to the vertex or zenith; a star is said to be vertical when it is in the zenith.

**VERTICAL CIRCLE.** A great circle of the sphere passing through the zenith and nadir, and cutting the horizon at right angles.

**VERTICAL POINT (in Astronomy).** That point in the heavens which is over our heads, otherwise called the zenith.

**VERTICELLATÆ.** One of the Linnæan natural orders of plants, including those whose flowers grow in the form of a whorl, as the mint, &c.

**VERTIGO.** Giddiness.

**VERVAIN.** A perennial, a sort of mallow.

**VESICLE.** Any small vessels, either in the animal body or in plants.

**VESPERS.** The evening prayers in the Romish church.

**VESPERTILIO.** A genus of animals in the Linnæan system, comprehending the species of the bat and the vampire.

**VESSEL.** Any sort of utensil used for holding liquids.

**VESSEL (among Mariners).** Every kind of ship, large or small, that serves to carry men or goods on water.

**VESSELS (in Anatomy).** The conduits or canals for conveying the blood or other juices to the different parts of the animal body, as the arteries, veins, &c.

**VESSELS** (in Botany). The channels or reservoirs which convey the sap or air to different parts of plants for their nutriment.

**VESTA** (in the Heathen Mythology). The daughter of Rhea and Saturn, and the goddess of fire.

**VESTA**. A newly discovered planet.

**VESTAL VIRGINS**. Priestesses to the goddess Vesta among the Romans, to whom was committed the care of the vestal fire.

**VESTIBULE**. The entrance to a house, or an open space before a door.

**VESTIBULUM**. A cavity in the bone of the ear.

**VESTRY**. A small apartment adjoining a church, where the vestments of the clergyman are kept, and where the parishioners assemble for the discharge of parochial business; also the persons assembled in the vestry: a select vestry is a certain number of persons permanently appointed to conduct the affairs of the parish, who are chosen from among the higher orders, and fill up their own vacancies.

**VESTRY CLERK**. A scrivener who keeps the parish accounts.

**VESTRYMEN**. Members of the vestry who conduct the affairs of the parish.

**VESUVIAN**. A mineral found in lava, especially on Mount Vesuvius, which is often confounded with hyacinth; the primitive form of its crystal is a cube.

**VETCH**. A kind of pulse or peas, bearing a papilionaceous flower.

**VETERINARY ART**, otherwise called **FARRIERY**. The art of managing cattle, and curing their diseases, whence a veterinary surgeon, vulgarly called a horse doctor or farrier, and the veterinary college, where horses are taken in for cure, and persons resort to acquire practice and information in all that relates to the care of animals. The principal diseases to which horses are subject are the water farcy, or dropsy of the skin; ascites, or dropsy of the belly; broken wind, supposed to arise from a rupture of the cells in the lungs; cracks in the heels, from gross habit or from filth; farcy, an infection of the skin; foot-foundering, when a horse is unable to rest on any of his feet; greasy heels, from weakness or overlabour; lampers, a swelling of the bars in the roof of the mouth; mange, an affection of the skin, when the hair falls off; staggers, a sort of lethargy, and mad staggers, a sort of frenzy from a pressure on the brain; strangles, a disease attended with a fever, cough, and running at the nose; thrush, a discharge

from the frog of the foot; pole evil, arising from friction of the collar at the back of the ears; besides inflammations, fevers, dysenteries, and other disorders which they have in common with human subjects.

**VETURINO**. A hirer of horses in Italy; also a guide to travellers.

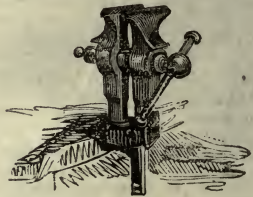
**V. G.** Verbi gratia, as for instance.

**VIA LACTEA**. The milky way.

**VIBRATION**. The alternate motion of any suspended body, like the pendulum of a clock, which swings this way and then that. The regular motion of the pendulum of a clock is 3600 vibrations in an hour. Vibration is also a quivering motion that acts by quick returns.

**VICAR** (in Law). One that acts in the stead of another; more particularly taken for the parson of a parish where the tithes are impropriated.

**VICE** (in Smithery). An instrument used for holding fast any piece of iron which the artificer is working upon.



**VICE** (among Glaziers). A machine for drawing lead into flat rods for case windows.

**VICE**. In the stead or turn; hence the compounds vice-gerent, vice-admiral, &c.

**VICEADMIRAL**. The second commander in a fleet; the admiral who commands the second squadron in a fleet.

**VICECHAMBERLAIN**. The officer next to the chamberlain, who acts in his stead.

**VICECHANCELLOR**. An officer appointed to assist the Lord Chancellor; in the Universities, the superior acting officer, who performs the duties of the Chancellor.

**VICEGERENT**. A governor acting with a delegated power.

**VICEROY**. The lord lieutenant of a kingdom, as the Viceroy of Ireland.

**VICE VERSA**. On the contrary, the side being turned or changed.

**VIDELICET**, generally written *Viz.* That is, namely.

**VI ET ARMIS** (in Law). By force of arms, terms in an indictment charging a

forcible and violent commission of trespass.

**VIGIL.** The service used in the Romish church on the night preceding a holyday.

**VIGILS.** Certain fasts preceding festivals.

**VIGNETTE.** A frontispiece, or an ornamental picture fronting the title page.

**VILLAINS.** Men of base and servile condition, who in the feudal times were immediately attached to the land, and bound to the lord to do services for him.

**VINCULUM** (in Algebra). A mark or line drawn over a quantity, thus,  $a+b$ , denoting it to be one quantity.

**VINE.** A plant that flourishes most in warm countries, as Italy, Spain, Portugal, and France, where its cultivation forms a part of husbandry. It grows in those parts in the open fields, and is not suffered to rise much higher than gooseberry or currant bushes. The fruit of the vine is there an important article of trade.

**VINEGAR.** Wine or any other liquor exposed to the sun until it is become acid.

**VINEYARD.** A place set apart for the cultivation of the vine.

**VIOL.** A muscial stringed instrument.

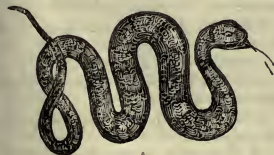
**VIOLET.** A plant bearing a blue sweet scented flower; also the colour of the violet, or purple.

**VIOLIN.** A common musical stringed instrument, which requires great skill in the performer to make it agreeable.



**VIOLONCELLO.** A small bass viol.

**VIPER.** An animal of the snake tribe, the bite of which is more or less venomous every where; in hot countries it is almost instantly fatal.



**VIRGO.** The sixth sign of the zodiac, marked thus ♍, and a constellation containing from 32 to 110 stars, according to different authors.

**VIRTUOSO.** One skilled in antique or natural curiosities; a lover of the liberal arts.

**VISCERA.** The intestines.

**VIS INERTIÆ.** The power in bodies that are in a state of rest to resist any change that is endeavoured to be made upon them to change their state. This, according to Newton, is implanted in all matter.

**VISCOUNT.** A nobleman next in degree to an earl. The first viscount was created in the reign of Henry VI.

**VISCOUNT'S CORONET.** Has neither flowers nor points raised above the circle, like those of superior degree, but only pearls placed on the circle itself.



**VISCUS.** Any organ having an appropriate use in the human body, as the liver, gall, bladder, &c.; but particularly the intestines.

**VISION.** The sensation in the brain produced by the rays of light passing or acting on the optic nerves of the eye.

**VISITATION** (in Law). An act of jurisdiction, whereby the bishop once in three years, and the archdeacon once every year, visits the churches within his diocess or district, to see that the discipline of the church is observed.

**VISITOR** (in Law). An inspector into the government of a corporation.

**VISUAL ANGLE.** An angle under which an object is seen.

**VISUAL POINT.** A point in the horizontal line wherein all the ocular rays unite.

**VITAL AIR,** now called **OXYGEN.** The air of which the atmosphere is principally composed, which is essential to the support of life in animals and plants.

**VITAL FUNCTIONS.** Those functions or faculties of the body on which life immediately depends.

**VITREOUS HUMOUR.** The pellucid body which fills the whole bulb of the eye behind the crystalline lens.

**VITRIOL.** A salt, of a very caustic taste. It is a sulphate generally found in mines in a capillary state, or in a loose powdery efflorescence. The three principal sorts are the green vitriol, copperas, or sulphate of iron; the blue vitriol, or sulphate of copper; and the white vitriol, or sulphate of zinc.

**VITRIOL, OIL OF.** Sulphuric acid.

**VITUS' DANCE, or ST. VITUS' DANCE.**

A nervous disease accompanied with involuntary gesticulations.

**VIVA VOCE.** By word of mouth.

**VIVIPAROUS.** An epithet for animals which bring forth living young.

**ULCER.** A purulent wound or running sore.

**ULLAGE.** A want of measure in a cask.

**ULTIMATUM.** The final conditions on which any party consents to treat for peace.

**ULTRAMARINE.** The finest sort of blue paint, prepared from lapis lazuli.

**UMBEL.** A sort of inflorescence like an umbrella.

**UMBELLATÆ.** One of the Linnæan natural orders, comprehending umbelliferous plants, or those which have flowers in the form of an umbel, as fennel, dill, &c.

**UMBER.** A dark yellow colour used in shading.

**UMBRELLA.** A kind of screen held over the head to keep off the sun and rain. It was introduced into England at the close of the last century.

**UNA VOCE.** With one voice, unanimously.

**UNCTION.** Anointing with consecrated oil, a practice among the Jews in consecrating kings and priests; also still in use at coronations, and in the Romish church on different occasions. The anointing of persons who are on their deathbed is called extreme unction.

**UNCTUOUS.** Oily, or like an ointment.

**UNDECAGON.** A figure having eleven sides.

**UNDER SHERIFF.** An assistant to the high sheriff.

**UNDERTAKERS.** Persons who conduct funerals.

**UNDERTAKING (in Law).** An engagement to do a particular thing.

**UNDERWRITER.** The person who undertakes to insure against losses at sea.

**UNDULATION.** The tremulous or vibratory motion in a liquid.

**UNICORN.** An animal said to have but one horn in the forehead.

**UNIFORMITY.** One form of public worship, as prescribed by different statutes to be observed in England.

**UNION.** The bringing of two countries under one form of government, as the Union of England and Scotland, and the Union of Great Britain and Ireland.

**UNISON.** Unity of sound, mostly applied to that which proceeds from different voices.

**UNIT.** A figure expressing the number one.

**UNITARIANS.** Those who deny the divinity of our Saviour, and consequently the doctrine of the Holy Trinity.

**UNIVALVE.** A shell consisting of one valve or piece.

**UNIVERSITY.** An institution established by public authority for the education of youth in the liberal arts, and conferring degrees in the several faculties. It consists of several colleges under the government of a chancellor, vicechancellor, proctors, and beadles, besides the heads of the several houses, as in the universities of Cambridge and Oxford.

**VOCAL MUSIC.** Musical sounds proceeding from the human voice; also compositions for the voice.

**VOCATIVE CASE.** The fifth case in Latin nouns.

**VOLATILE.** An epithet for bodies that are apt to evaporate.

**VOLATILE ALKALIES.** Ammonia and carbonic acid.

**VOLATILIZATION.** The process by which bodies are resolved into air.

**VOLCANO.** A burning mountain, such as Vesuvius, Ætna, and Hecla, in Europe; which send forth flame, ashes, lava, stones, smoke, &c.

**VOLTAIC BATTERY.** See BATTERY.

**VOLUME (in Music).** The compass of a voice from grave to acute.

**VOLUME (in Literature).** A book, or any thing folded into the form of a book.

**VOLUNTARY (in Music).** An extemporary performance upon the organ, introduced as an incidental part of divine service.

**VOLUTE.** A spiral scroll in the Ionic and Composite capitals.

**VOMICA.** See NUX VOMICA.

**VOWEL.** A letter which affords a complete sound of itself.

**VOX POPULI.** The popular or universal opinion.

**URANIUM.** A newly discovered metal,

soft and brittle, but hardly fusible before the blowpipe; but with phosphate of soda and ammonia melts into a grass-green glass.

**URETER.** The membranous canal which conveys the urine from each kidney to the urinary bladder.

**URETHRA.** A membranous canal which serves as a passage for the discharge of the urine.

**URN.** A vessel among the Romans, in which they put the names of those who were to engage at the public games, taking them in the order in which they were drawn out. In such a vessel also they threw in the notes of their votes at the elections.

**URSA.** The name of two northern constellations, namely, Ursa Major and Ursa Minor, the Great and Little Bear.

**URSUS.** A genus of animals in the Linnæan system, including the bear, badger, racoon, glutton, &c.

**USANCE.** A determinate time fixed for the payment of a bill of exchange, reckoned either from the day of the bill's being accepted, or from the day of its date, and so called because it is regulated by the usage or custom of the place.

**USHER (in Law).** An officer who has the care and direction of the door of a court or hall.

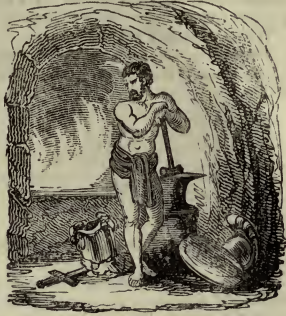
**USHER (in Schools).** An assistant or lower master.

**USHER OF THE BLACK ROD.** An officer whose business it is to bear the rod before the king at the feast of St. George and other solemnities.

**USURY.** The taking more interest for the loan of money than is allowed by law.

**VULCAN.** The son of Jupiter and Juno,

and the god of fire. He is commonly represented with a hammer, anvil, &c.



**VULGATE.** A very ancient Latin translation of the Bible, which was translated from the Greek of the Septuagint. It is the only one acknowledged by the Romish church to be authentic.

**VULTURE.** A carnivorous bird that lives on lizards, rats, &c. It mostly inhabits South America.



## W.

**W,** the twenty-first letter of the alphabet, composed of two V's. It was not known to the Hebrews, Greeks, or Romans, being peculiar to the Teutones and other northern tribes.

**WACKE.** An argillaceous earth.

**WADD.** Plumbago or black lead. Black wadd is an ore of manganese found in Derbyshire.

**WADDING.** A stopple of paper or tow forced into a gun, to keep in the powder and shot.

**WAFER.** Paste made of flour, eggs, isinglass, &c. cut into a thin round cake, and coloured, for the purpose of sealing letters.

**WAFER (in the Romish Church).** A thin piece of consecrated bread used at the holy rite of the sacrament.

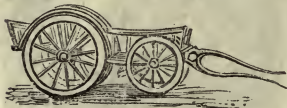
**WAGER OF BATTLE.** A mode of trial by single combat, which has lately been abolished in England.

**WAGER OF LAW.** A mode of trial in an action of debt by simple contract,

where the defendant by his own oath, with that of eleven other persons called compurgators, declaring that he owes the plaintiff nothing, may discharge himself.

**WAGES.** Money paid for labour.

**WAGGON.** A large kind of four-wheeled conveyance, much used in husbandry.



**WAGTAIL.** A bird that is continually wagging its tail.

**WAIFS (in Law).** Goods stolen, and afterwards waived or abandoned, which are forfeited to the king.

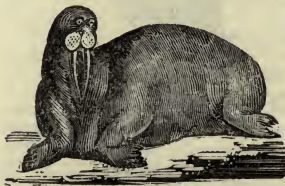
**WAIST.** That part of a ship between the quarterdeck and forecastle.

**WAITERS (in Law).** Officers appointed to see that goods are not landed clandestinely. Those who go on board the vessels are called tide-waiters; those who do this duty on shore are land-waiters.

**WAITS.** Nightly musicians, who go their rounds in the night-time and play just before Christmas.

**WALLFLOWER.** A plant bearing a sweet-scented flower.

**WALRUS.** An animal inhabiting the Indian seas, which in form most resembles an ox.



**WALTZ.** A particular kind of dance, introduced into England from Germany. It is mostly performed by the parties going with measured steps in circles.

**WAPENTAKE.** The same as a HUNDRED.

**WARD (in Law).** A district or portion of a city committed to the ward or special charge of one of the aldermen; also one in the care of a guardian, or in particular cases, under the special care of the court of Chancery.

**WARDEN (in Law).** One who has the charge or keeping of any person or thing

by virtue of his office, as the warden of the Fleet, who has charge of the prisoners committed there; so likewise the warden of a college, or the warden of the Cinque Ports, &c.

**WARDMOTE.** The court of each ward in the city of London.

**WARDROBE.** A place for keeping clothes; also the clothes themselves.

**WARDROBE, CLERK OF THE.** An officer who takes charge of the king's wardrobe.

**WAREHOUSE.** A place where merchandises are kept.

**WARNING-WHEEL.** The third or fourth wheel of a clock, according to its distance from the first wheel.

**WARP.** The thread extended lengthwise on the weaver's loom, which is crossed by the workman in forming the cloth, stuff, or silk.

**WARRANT (in Law).** A writ commanding an officer of justice to take up any offender.

**WARRANT OF ATTORNEY.** An authority given to an attorney by his client to appear and plead for him.

**WARRANT, PRESS (in the Navy).** Issued by the admiralty, authorizing an officer to impress seamen.

**WARRANTING (among Horsedealers).** An assurance given by the seller to the buyer that the horse sold is free from all defects at the time of sale.

**WARREN (in Law).** A franchise or privileged place for keeping beasts and fowls of the warren, as hares, partridges, and pheasants.

**WART.** A spongy substance growing near the eye of a horse.

**WASHES.** A dangerous shore in Norfolk.

**WASHING (among Goldsmiths).** Drawing particles of silver and gold out of ashes.

**WASHING (among Painters).** Colouring a pencil design with one colour, as Indian ink, &c.

**WASP.** A stinging insect resembling a bee.

**WASTE (in Law).** A spoil or destruction made in houses, woods, and lands, by the tenant for life or years.

**WASTE-BOOK.** A book containing an account of a merchant's transactions in the order of time as they occur.

**WASTE-LANDS.** Such as are not in any man's occupation, that lie common.

**WATCH (in the Navy).** The space of time during which one division of the ship's crew remains on deck, to keep watch at night.



**WATCH** (in the Police). Persons appointed to guard the streets or particular places at night.

**WATCH.** A small portable machine, constructed with wheels, that serves to show the hour of the day. A watch consists of a spiral steel spring, which is the moving power; the barrel, a brass box for receiving the spring when coiled up; the worm-wheel, which is turned round by a worm; the fusee, which receives the chain when the watch is wound up; the ratchet wheel, at the lower end of the fusee; the great wheel, which has forty-eight teeth; the centre wheel, which has fifty-four teeth; the third wheel, which has forty-eight teeth; the centrate wheel, which has forty-eight teeth; and the balance wheel, which has fifteen teeth: besides the arbour of the balance wheel, called the verge, and the two pallets belonging to this arbour, &c.

**WATCH-GLASS.** Hour and half-hour glasses of sand, employed on board vessels to measure the period of the watch.



**WATCHMAKER.** One who puts together the different parts of a watch, so as to make the whole machine act.

**WATER.** A simple substance in the opinion of the ancients, and one of the five elements. It is now considered as a compound fluid consisting of two gases, hydrogen gas and oxygen gas.

**WATER** (among Lapidaries). The lustre of precious stones.

**WATER** (among Manufacturers). A lustre imitating waves, set on silks, mohair, &c.

**WATER** (among Farriers). A filthy humour issuing from a wound in a horse.

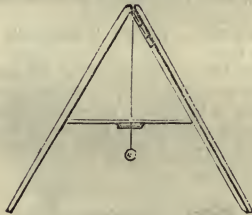
**WATER-BAILIFF** (in Law). An officer in seaport towns who searches ships, and in London has particular charge of the fish brought to market.

**WATERCOLOURS.** Colours made of water instead of oil. The principal of the water-colours are as follow: White—Cerule, white lead, Spanish white, flake white, spodium: Black—Burnt cherry stones, ivory black, lamp black: Green—Green bice, green verditer, grass green, sap green,

verdigrise distilled: Blue—Sanders blue, terre blue, blue verditer, indigo litmus, smalt, Prussian blue, light blue, ultramarine, blue bice: Brown—Spanish brown, Spanish liquorice, amber, bistre, terra de Sienna burnt and unburnt: Red—Native cinnabar, burnt ochre, Indian red, red lead, minium, lake, vermilion, carmine, red ink, Indian lake: Yellow—English ochre, gall stones, gamboge, masticot, ochre de luce, orpiment, Roman ochre, Dutch pink, saffron water, king's yellow, gold yellow, French berries.

**WATER-COURSE.** Any natural or artificial stream of water, as a river, a canal, and the like.

**WATER-LEVEL.** A kind of level used in agriculture for finding the level of roads or grounds by means of a surface of water or other fluid, founded on the principle that water always finds its own level. It consists of a long wooden trough, as represented underneath, which, being filled with water, shows the line of level.



**WATERMAN.** One who plies with a boat upon a river. The company of watermen was incorporated in the reign of Philip and Mary.

**WATERMARK.** The utmost limit of the rise of the flood.

**WATERMARK.** The mark visible in paper, which is made in the manufacturing of it.

**WATER-SPOUT.** An aqueous meteor, most frequently observed at sea, rising at first in the form of a small cloud, which afterwards enlarges, and, assuming the shape of a cylinder or cone, emits thunder, lightning, as also rain and hail, in such quantities as to inundate vessels, and overset trees, houses, and every thing else which comes in its way.

**WATERMILL.** A mill that is put in motion by means of water.

**WATER-WHEEL.** An engine for raising water out of a well.

**WATERWORKS.** All kinds of ma-

chines employed in raising or sustaining water, as watermills, sluices, aqueducts, and the like.

**WATTLE.** A kind of hurdle used in making sheepfolds.

**WATTLES.** Fleishy appendages at the sides of the lower mandibles in some birds.

**WAX.** A soft, yellowish, and tenacious matter wherewith the bees form cells for the reception of the honey. It is a vegetable substance, that may be extracted from several plants: also a tenacious substance made of wax for the purpose of sealing letters.

**WAXCHANDLER.** One who makes candles of wax. The company of waxchandlers was incorporated in the reign of Richard III.

**WAY.** A road, as the highway.

**WAY** (among Seamen). The ship's course.

**WAYS AND MEANS.** The supplies for meeting the expenditure of the year, either voted by parliament or drawn from other sources.

**WEAR, or WEIR.** A dam made to stop water.

**WEASEL.** An animal of the same genus or kind as the otter, but otters live mostly in the water, and weasels on the land. It is a name for several of the species of the viverra and mustela of Linnæus.



**WEATHER-GLASSES.** Instruments contrived to show the state of the atmosphere, as barometers, thermometers, &c.

**WEAVING.** The art of forming single threads of silk, cotton, or flax, into a close fabric in a loom with a shuttle.

**WEDGE.** One of the mechanical powers, which has one end thick, that gradually tapers to a thin edge. It is used particularly in cleaving wood.



**WEDNESDAY.** The fourth day of the week.

**WEEK.** A division comprising seven days. Fifty-two weeks make the year.

**WEEPERS.** Pieces of white cambric, crape, or muslin, sewed upon the sleeves in deep mourning.

**WEIGHT** (in Mechanics). Any thing that is to be sustained, raised, or moved by a machine.

**WEIGHT** (in Commerce). Any body of a known weight that is made the measure of weighing other bodies. Two sorts of weights are admitted in England, namely, Troy weight and avoirdupois weight.

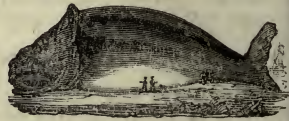
**WELD.** A sort of herb that grows in Kent, Herefordshire, and other parts of England, the stalk and root of which are used in dyeing bright yellow and lemon colours.

**WELDING.** Working two pieces of iron together by means of heat, until they form one mass.

**WELL.** A hole dug in the ground, of sufficient depth to admit the water to spring up. When the water is got out of it by means of a line and a bucket, it is a well properly so called, but when the water is raised by means of a pump, it is called a pump.

**WEST.** One of the four cardinal points of the horizon, at which the sun sets.

**WHALE.** A huge animal that inhabits the Arctic seas, and is said to measure sometimes from 50 to 100 feet. The blubber of the whale contains the oil, which is an article of commerce, and the horny laminae in the upper jaw yield what is called whalebone.



**WHARF, or QUAY.** A structure raised on the shore of a road or harbour.

**WHEAT.** A valuable grain, of which bread is made.

**WHEEL.** One of the most important of the six mechanical powers, which is employed in the structure of almost every machine.

**WHIG.** The name of those who uphold the rights of the people in opposition to the prerogatives of the crown.

**WHIRLPOOL.** An eddy or vortex.

**WHIRLWIND.** An exceedingly rapid and impetuous wind, that rises in a whirling direction, and continues in the same way for some time.

**WHISPERING GALLERIES.** Places which, like the gallery in St. Paul's Cathedral, by their peculiar construction enable any one who whispers on the wall on the one side to be heard by a person standing on the opposite side.

**WHITE.** A colour supposed by Newton to be a composition of all the other colours.

**WHITE LEAD.** The rust of lead.

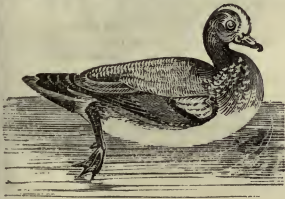
**WHITING.** A fish of the cod tribe.

**WHITSUNDAY.** A festival in the Christian church, that falls on the fiftieth day after Easter.

**WHITILE.** A woollen shawl.

**WICKLIFFITES.** The followers of John Wickliffe, who first opposed the see of Rome, and prepared the way for the Reformation in this country.

**WIGEON.** A bird of the duck tribe.



**WILD MAN.** A species of the monkey in the East and West Indies, that approaches the nearest to man in his form and actions.



**WILL.** The solemn act by which a

man declares his will as to the disposal of his estate after his death. If by word of mouth, it is a nuncupative will; but if by a written deed, it is a testament.

**WIND.** The current or stream of the air, together with the vapours that the air carries along it, which are supposed to be rarefied and put into motion by the force of heat.

**WINDBOUND.** An epithet for a ship that cannot leave the port on account of unfavourable winds.

**WINDLASS.** A kind of crane by which great weights are raised, as guns, stones, &c. into a vessel.

**WINDMILL.** A mill that is put in motion by means of the wind acting on the sails, as in the subjoined figure.



**WINDWARD.** Towards the wind; as a windward tide, a tide that runs against the wind.

**WINE.** The fermented juice of the grape, which is found to contain an acid, alcohol, tartar, extract, aroma, and colouring matter.

**WINGS.** The right and left divisions of an army.

**WINGS (in Fortification).** The large projecting sides of hornwork.

**WINNOWER.** Separating corn from the chaff by the help of the wind.

**WINTER.** That season of the year when, in the northern hemisphere, the sun is in the tropic of Capricorn, or in his greatest declination from the equator.

**WIRE.** A piece of metal drawn out to the size of a thread, or even smaller, according to the size of the hole which it is made to pass through. One single grain of gold admits of being drawn out into a wire 98 yards long.

**WITNESS** (in Law). One sworn to give evidence in a cause.

**WOLF**. An animal nearly allied to the dog tribe, that at one period infested this country, and is still to be met with in France. It is very fierce, and, when pressed with hunger, will enter houses and carry away children.



**WOAD**. A plant growing in France and on the coast of the Baltic, from which a blue dye of the same name is extracted.

**WOODCOCK**. A wild fowl, and a bird of passage, which is esteemed for its flesh.



**WOODCUTTER**. An artist who cuts figures and letters in wood, to serve the purpose of engraving on copper. This art has been carried to very great perfection, and in many respects will be found to effect the purpose quite as well as the sister art of copperplate engraving.

**WOODPECKER**. A bird, so called because it pecks holes in the bark of trees.

**WOOL**. The covering of sheep, which is an important article of commerce in this country. Much attention, therefore, is paid to the breed, and also to the feeding of sheep, to render their wool as perfect as possible.

**WOOLPACK**. Literally, a pack of wool; a name for the seat of the Lord Chancellor in the House of Lords.

**WOOLSTAPLER**. One who deals in wool, and collects it for the manufacturer.

**WORD**. An articulate sound that represents some idea to the mind; in Military Affairs, a watchword, or peculiar word that serves as a token or mark for all sentinels to detect spies or other persons who may wish to intrude into a camp.

**WORM**. A long winding pewter pipe, placed in a tub of water to cool and thicken the vapours in the distillation of liquors.

**WORM** (in Gunnery). The instrument used for drawing the charge out of a gun.

**WRECK**. The ruins of a ship at sea that has been dashed to pieces.

**WREN**. A small singing bird.



**WRIT** (in Law). The king's precept issuing out of some court of law, commanding something to be done touching some suit.

## X.

**X**, the twenty-second letter of the alphabet, stands as a numeral for 10; and with a line over it thus,  $\bar{X}$ , it stood formerly for 10,000.

**XEBEC**. A small three-masted vessel navigated in the Mediterranean.



## Y.

**Y**, the twenty-third letter of the alphabet, stood as a numeral for 150; and with a line over it thus,  $\bar{Y}$ , for 150,000.

**YACHT**. A small ship with one deck, carrying four, eight, or twelve guns, and thirty or forty men. They are in general employed as vessels of state.



**YAM**. An Indian tree, the fruit of which is much eaten by the natives.

**YARD**. A long measure containing 3 feet.

**YARD** (in Shipbuilding). A long piece of timber suspended upon the masts of a ship to extend the sails to the wind.

**YARD-ARM**. That half of the yard that is on either side of the mast when it lies athwart the ship.

**YARN**. One of the threads of which rope is made.

**YEAR**. The time that the sun takes in performing his apparent revolution through the twelve signs of the zodiac.

**YEAST**. The head or scum that rises on beer.

**YEOMAN** (in Law). The first degree of freeholders, who have lands of their own and live by husbandry.

**YEOMEN OF THE GUARD**. A certain description of foot-guards, a hundred in number, who always attend immediately on the person of the king.

**YEW-TREE**. A tree which is a native of Britain and most other countries of Europe, as also of North America. It is an evergreen, and remarkable for the hardness of its wood.

## Z.

**Z**, the twenty-fourth letter of the alphabet, formerly stood as an abbreviation for an ounce and other weights.

**ZAFFRE**. The oxide of cobalt, employed for painting pottery of a blue colour.

**ZEBRA**. An African animal of the horse tribe, about the size of a mule. It is beautiful, swift, wild, and vicious.



**ZENITH**. The vertical point of the heavens, 90 degrees distant from the horizon.

**ZEOLITHE**. A sort of argillaceous earths.

**ZERO**. The cipher (0).

**ZINC**. A metal of a bluish white colour, somewhat brighter than lead, possessing but little either of malleability or ductility. Specific gravity, 7.190.

**ZODIAC**. An imaginary belt in the heavens, in the middle of which is the ecliptic or sun's path. It has also twelve constellations within its space, which are called the twelve signs of the zodiac.

**ZONE**. A division of the earth's surface, of which there are five in number, distinguished according to the degree of heat to which each part is exposed, into two temperate, two frigid, and one torrid zone.

**ZOOLOGY**. That branch of natural history which treats of animals. That which treats of quadrupeds is also called by the

general name of zoology, to distinguish it from ornithology, which treats of birds; ichthyology, which treats of fishes; entomology, which treats of insects; helminthology, which treats of worms; erptology, which treats of creeping things.

General zoology comprehends the whole animal kingdom, as this class of natural objects is styled by Linnæus. It is divided into six classes; these classes are subdivided into orders, and the orders into genera, and the genera into species.

The first class, *Mammalia*, comprehends seven orders, namely, the primates, bruta, feræ, glires, pecora, belluina, and cete. Under the Primates are four genera, namely, homo, man; simia, the ape, baboon, and monkey; lemur, the lemur; vespertilio, the bat. Of the Bruta there are the following genera, namely, bradypus, the sloth; myrmecophaga, the ant-eater; dasyopus, the armadillo; rhinoceros, the rhinoceros; sokotyro; elephas, the elephant; trichechus, the morse and walrus, and the manis. The Feræ consist of ten genera, namely, phoca, the seal; canis, the dog, the wolf, the fox, and the hyæna; felis, the lion, tiger, leopard, tiger-cat, the lynx, and the cat; viverra, the weasel, the shank, the civet, the genet, and the fitchet; mustela, the otter, the marten, the ferret, the polecat, the ermine, and the stoat; ursus, the bear, the badger, the racoon, and the glutton; didelphis, the opossum, the marmose, the phalanger, and the kangaroo; talpa, the mole; sorex, the shrew; erinaceus, the hedgehog. The Glires consist of histrix, the porcupine; cavia, the cavy; castor, the beaver; mus, the rat, musk-rat, and the mouse; arctomys, the marmot; sciurus, the squirrel; myoxus, the dormouse; dipus, the jerboa; lepus, the hare and the rabbit; and the hyrax. The Pecora consist of camelus, the camel and the llama; moschus, the musk; cervus, the stag, the deer, the moose or elk; camelopardalis, the camelopard or giraffe; antilopus, the antelope; capra, the goat; ovis, the sheep; and bos, the ox. The Belluina consist of equus, the horse, the ass, and the mule; hippopotamus, the river-horse; tapir, the tapir; and sus, the hog. The Cetæ consist of monodon, the monodon; balæna, the whale; physeter, the cachelot; delphinus, the porpoise, the dolphin, and the grampus.

The second class, *Aves*, is divided into six orders, namely, accipitres, picæ, anseres, grallæ, gallinæ, and passereres. The Accipitres consist of four genera, namely, vultur, the vulture and the condur; falco, the eagle, the kite, the buzzard, the falcon, and the

hawk; strix, the owl; lanius, the shrike, the butcher-bird, and the woodchat. The Picæ consist of the following genera, namely, ramphastos, the toucan; momotus, the motmot; psittacus, the parrot, the macaw, the parroquet, the cockatoo, and the lory; buceros, the hornbill; crotophaga, the ani; glaucopsis, the wattle-bird; corvus, the crow, the rook, the raven, the jackdaw, and the jay; coracoas, the roller; oriolus, the oriole; gracula, the grackle; paradisæa, the bird of paradise; buceo, the barbet; trogon, the curucui; cuculus, the cuckoo; yurex, the wryneck; picus, the woodpecker; sitta, the nuthatch; todus, the toddy; alcedo, the kingfisher; galbula, the jacama; merope, the bee-eater; upupa, the hoopoe; certhia, the creeper; trochilus, the humming-bird; buphaga; and scythrops. The Anseres consist of anus, the swan, the goose, the duck, the shoveler, and the teal; mergus, the merganser, the goosander, the dunn-diver, and the smew; alca, the ank or razorbill; apterodytes, the penguin; procellaria, the petrel; diomedea, the albatross or man-of-war bird; pelicanus, the pelican, the cormorant, the shag, the crane, the gennet, and the booby; plotus, the darter; phaeton, the tropic bird; colymbus, the guillemot, the diver, and the grebe; larus, the gull, and the tarrock or kittiwake; sterna, the tern; rynchops, the skimmer. The Grallæ consist of the phoenicopteros, the flamingo; platalea, the spoonbill; palamedea, the screamer; mycteria, the jabira; canroma, the boatbill; scopus, the umbre; ardea, the heron, the crane, the stork, and the bittern; tantalus, the ibis; corira, the courier; scolopax, the curlew, the whinril, the snipe, the woodcock, the godwit, and the red-shank; tringa, the sandpiper, the phalarop, and the purre; charadrius, the plover and the dotterel; recurvirostra, the avocet; hæmatopus, the sea-pie or pied oyster, and the catcher; glarcola, the pratincole; fulica, the gallinule, the moorhen, and the coot; vaginalis, the sheath-bill; parra, the jacama; rallus, the rail, the crake or land-rail, the brook-ouzel or water-rail, and the soree; psophia, the trumpeter. The Gallinæ consist of the olis, the bustard; struthio, the ostrich; and the casowary or emeu; didus, the dodo; pavo, the peacock; meleagris, the turkey; penelope, the guam and the yacow; crux, the curassow; phasianus, the pheasant; numidia, the pintado or guinea-hen; tetrao, the grouse, the moorcock, the partridge, the quail, and the tinamon. The Passeres consist of columba, the pigeon, the ring-dove, the turtle-dove, &c.; alauda,

the lark; sturnus, the stare or starling, and the crane or water-ouzel; turdus, the thrush, the fieldfare, the blackbird, and the ring-ouzel; ampelis, the chattering; colius, the colly; loxia, the grossbeak, the crossbill, and the hawfinch; emberiza, the bunting; tanagra, the tanager; fringilla, the finch, the chaffinch, the siskin, the redpole, the linnet, the twite, and the sparrow; phytotoma, the phytotoma; muscipapa, the fly-catcher; motacilla, the wagtail or warbler, the nightingale, the hedge-sparrow, the wren, the white-throat, the wheat-ear, and the red-start; pipra, the minnakin; parus, the titmouse; hirundo, the swallow and the swift; caprimulgus, the goatsucker.

Amphibia, the third class, is divided into two orders, namely, reptilia, reptiles; and serpentes, serpents. The Reptilia consist of the following genera, namely, testudo, the tortoise and the turtle; rana, the toad, the frog, and the natterjack; draco, the flying dragon; lacerta, the crocodile, the alligator, the lizard, the guana, the newt, the salamander, the chameleon, and the eft; syren, the syren. The Serpentes consist of crotelus, the rattle-snake; boa, the boa constrictor; coluber, the viper and the asp; anguis, the snake and the blind-worm; achrocorchus, the warled snake; and cæcilia.

Pisces, the fourth class, is divided into six orders, namely, apodal, jugular, thoracic, abdominal, branchiostegous, chondropterigous. The Apodal order contains the following genera, namely, muræna, the eel; anarhicas, the wolf-fish; xiphias, the sword-fish; ammodytes, the lance; gymnotus, ophidium; stromatens; stylephorus, &c. The jugular order contains the following genera, namely, callionymus, the dragonet; trachinus, the sting-bull or weaver; gadus, the cod-fish, bib, whiting, coal-fish, hake, barbot, and rockling; blennius, the blenny, &c. The Thoracic order contains the following genera: echineis, the sucking-fish; gobius, the goby; coltus, the bull-head, father-lasher, and miller's-thumb; zeus, the John-doree; pleuronectes, the flounder, plaice, dab, sole, smeadab, pearl, and turbot; sparus, the gilt-head and the pudding-fish; labrus, the wrasse, goldfinny, the camber, and the cook; perca, the perch, basse, luffe, black-fish, and squirrel-fish; seomber, the mackerel, thunny, scad, and yellow-tail; trigla, the gurnard, piper, tub-fish, &c. The Abdominal order contains the following genera, namely, cobitis, the loche and the mud-fish; salmo, the salmon, trout, salmon-trout, bull-trout, charr, smelt, gurniad, and lavaret; fistularia, the tobacco-

pipe-fish; esox, the pike and gar-fish; mugel, the mullet; excocoetus, the flying-fish; clupea, the herring, pilchard, sprat, shad, and anchovy; cyprinus, the carp, barbel, gudgeon, tench, gold-fish, dace, roach, bleak, bream, minnow, graining, &c. The Branchiostegous order contains the following genera: tetrodon, the sun-fish; syngnathus, the pipe-fish and needle-fish; lophius, the fishing-frog, and angler or frog-fish, &c. The Chondropterigous order contains the following genera, namely, accipenser, the sturgeon; chimæra, the sea-monster; squalus, the shark, dog-fish, tope, sea-fox, and angel-fish; pristis, the saw-fish; raia, the ray, skate, thornback; petromyzon, the lamprey and the pride; gastrobranchus, the hag or hag-fish.

Insecta, the fifth class, is divided into seven orders, namely, coleoptera, hemiptera, lepidoptera, neuroptera, hymenoptera, diptera, and aptera. The order Coleoptera contains the following genera, namely, scarabæus, the beetle; dermestes, the leather-eater; ptinus, the deathwatch; forficula, the earwig; lampyrus, the fire-fly; hydrophilus, the water-clock, &c. The order Hemiptera contains blatta, the cockroach; gryllus, the locust, grasshopper, and cricket; fulgora, the lantern-fly; notonecta, the boat-fly; nepa, the water-scorpion; cimex, the bug; aphid, the plant-louse; coccus, the cochineal, &c. The order Lepidoptera contains papilio, the butterfly; sphinx, the hawk-moth; phalæna, the moth. The order Neuroptera contains libellula, the dragon-fly; ephemera, the day fly; myrmeleon, the lion-ant, &c. The order Hymenoptera contains cynips, the gall-fly; tentredo, the saw-fly; sirex, the tailed wasp; ichneumon, the ichneumon; chrysis, the golden fly; vespa, the wasp; apis, the bee; formica, the ant or emmet, &c. The order Diptera contains ostrus, the gad-fly and breeze; tipula, the crane-fly; musca, the fly; culex, the gnat; bombylius, the humblebee, &c. The order Aptera contains podura, the spring-tail; termes, the white ant; pediculus, the louse and crab-louse; acarus, the tick, harvest-bug, and itch-mite; aranea, the spider; scorpio, the scorpion; cancer, the crab, lobster, prawn, shrimp, and squill; pulex, the flea, &c.

The sixth class, Vermes, is divided into five orders, namely, intestina, mollusca, testacea, zoophytes, and infusoria. The order Intestina contains the following genera, namely, fasciola, the gourd-worm or fluke; tænia, the tape-worm; godius, the hair-worm; lumbricus, the earth-worm, the dew-worm, and the lug; hirsudo, the leech;

and sipunculus, the tube-worm, &c. The order Mollusca contains laplisia, the sea-hare; doris, the sea-lemon; actinia, the sea-daisy, sea-marigold, and sea-carnation; sepia, the cuttle-fish; asterias, the star-fish and sea-star; echinus, the sea-urchin, &c. The order Testacea contains lepas, the acorn-shell; arca, the ark; conus, the cone; turbo, the wreath; helix, the snail; halio-tis, the sea-ear; dentalium, the tooth-shell; ostrea, the oyster; cardium, the cockle; mytilus, the mussel; argonauta, the sailor; buccinum, the whelk, &c. The order Zoo-

phytes contains spongia, the sponge; isis, the coral; hydra, the polype; tubipora, the tubipore, &c. The order Infusoria contains the genera vorticella, monas, volvox, gonium, &c.

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