A HISTORY OF THE EARTH, AND ANIMATED NATURE.

IN FOUR VOLUMES.

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A HISTORY OF ANIMALS.

BOOK I.

ANIMALS OF THE HORSE KIND.

CHAP. I.

OF THE HORSE *.

ANIMALS of the horſe-kind deſerve a place next to man in a Hiſtory of Nature. Their activity, their ſtrength, their uſefulneſs, and their beauty, all contribute to render them the principal objects of our curioſity and care; a race of creatures in whoſe welfare we are intereſted next to our own.

Of all the quadruped animals, the horſe ſeems the moſt beautiful; the noble largeneſs of his form, the gloſſy ſmooth-

* As it may happen that in a deſcription where it is the aim rather to inſert what is not uſually known, than all that is known, ſome of the more obvious particulars may be omitted; I will take leave to ſubjoin in the notes the characteriſtic marks of each animal, as given us by Linnæus. "The horſe, with ſix cutting teeth before, and ſingle-hoofed; a native of Europe and the Eaſt (but I rather believe of Africa): a generous, proud, and ſtrong animal; fit either for the draught, the courſe, or the road; he is delighted with woods; he takes care of his hinder parts; defends himſelf from the flies with his tail; ſcratches his fellow; defends its young; calls by neighing; ſleeps after night-fall; fights by kicking, and by biting alſo; rolls on the ground when he ſweats; eats the graſs cleſer than the ox; diſtributes the ſeed by dunging; wants a gall-bladder; never vomits; the foal is produced with the feet ſtretched out; he is injured by being ſtruck on the ear; upon the ſtiffle; by being caught by the noſe in barnacles; by having his teeth rubbed with tallow; by the herb padus; by the herb phalandria; by the cruculio; by the conops. His diſeaſes are different in different countries. A conſumption of the ethmoid bones of the noſe, called the *glanders*, is with us the moſt infectious and fatal. He eats hemlock without injury. The mare goes with foal 290 days. The placenta is not fixed. He acquires not the canine teeth till the age of five years.

nefs of his ſkin, the graceful eaſe of his motions, and the exact ſymmetry of his ſhape, have taught us to regard him as the firſt, and as the moſt perfectly formed; and yet, what is extraordinary enough, if we examine him internally, his ſtructure will be found the moſt different from that of man of all other quadrupeds whatſoever. As the ape approaches us the neareſt in internal conformation, ſo the horſe is the moſt remote*; a ſtriking proof that there may be oppoſitions of beauty, and that all grace is not to be referred to one ſtandard.

To have an idea of this noble animal in his native ſimplicity, we are not to look for him in the paſtures or the ſtables, to which he has been conſigned by man; but in thoſe wild and extenſive plains where he has been originally produced; where he ranges without controul, and riots in all the variety of luxurious Nature. In this ſtate of happy independence, he diſdains the aſſiſtance of man, which only tends to ſervitude. In thoſe boundleſs tracts, whether of Africa or New Spain, where he runs at liberty, he ſeems no way incommoded with the inconveniences to which he is ſubject in Europe. The continual verdure of the fields ſupplies his wants; and the climate, that never knows a winter, ſuits his conſtitution, which naturally ſeems adapted to heat. His enemies of the foreſt are but few, for none but the greater kinds will venture to attack him; any one of theſe he is ſingly able to overcome; while, at the ſame time, he is content to find ſafety in ſociety; for the wild horſes of thoſe countries always herd together.

In theſe countries, therefore, the horſes are often ſeen feeding in droves of five or ſix hundred. As they do not carry on war againſt any other race of animals, they are ſatisfied to remain entirely upon the defenſive. The paſtures on which they live, ſatisfy all their appetites, and all other precautions are purely for their ſecurity, in caſe of a ſurpriſe. As they are never attacked but at a diſadvantage, whenever they ſleep in the foreſts, they have always one among their number that ſtands as centinel, to give notice of any approaching danger; and this office they take by turns†. If

* Hiſtoire Naturelle, Daubenton, vol. vii. p. 374.

† Dictionaire Univerſelle Des Animaux, p. 19.

a man approaches them while they are feeding by day, their centinel walks up boldly near him, as if to examine his ſtrength, or to intimidate him from proceeding; but if the man approaches within piſtol ſhot, the centinel then thinks it high time to alarm his fellows; this he does by a loud kind of ſnorting, upon which they all take the ſignal, and fly off with the ſpeed of the wind; their faithful centinel bringing up the rear *.

It is not eaſy to ſay from what country the horſe came originally. It ſhould ſeem that the colder climates do not agree with his conſtitution; for although he is found almoſt in them all, yet his form is altered there, and he is found at once diminutive and ill-ſhaped. We have the teſtimony of the ancients that there were wild horſes once in Europe; at preſent, however, they are totally brought under ſubjection; and even thoſe which are found in America are of a Spaniſh breed, which being ſent thither upon its firſt diſcovery, have ſince become wild, and have ſpread over all the ſouth of that vaſt continent, almoſt to the ſtraits of Magellan. Theſe, in general, are a ſmall breed, of about fourteen hands high. They have thick jaws and clumſy joints; their ears and neck, alſo, are long; they are eaſily tamed; for the horſe by nature is a gentle complying creature, and reſiſts rather from fear than obſtinacy. They are caught by a kind of nooze, and then held faſt by the legs, and tied to a tree, where they are left for two days without food or drink. By that time, they begin to grow manageable; and in ſome weeks they become as tame as if they had never been in a ſtate of wildneſs. If, by any accident, they are once more ſet at liberty, they never become wild again, but know their maſters, and come to their call. Some of the buccaneers have often been agreeably ſurpriſed, after a long abſence, to ſee their faithful horſes once more preſent themſelves, with their uſual aſſiduity; and come up, with a fond ſubmiſſion, to receive the rein.

Theſe American horſes, however, cannot properly be ranked among the wild races, ſince they were originally bred from ſuch as were tame. It is not in the new, but the old world that we are to look for this animal, in a true ſtate

* Labat. tome vii.

of nature; in the extenſive deſerts of Africa, in Arabia, and thoſe wide ſpread countries that ſeparate Tartary from the more ſouthern nations. Vaſt droves of theſe animals are ſeen wild among the Tartars: they are of a ſmall breed, extremely ſwift, and very readily evade their purſuers. As they go together, they will not admit of any ſtrange animals among them, though even of their own kind. Whenever they find a tame horſe attempting to aſſociate with them, they inſtantly gather round him, and ſoon oblige him to ſeek ſafety by flight. There are vaſt numbers alſo of wild horſes to the north of China, but they are of a weak, timid breed; ſmall of ſtature, and uſeleſs in war.

At the Cape of Good Hope there are numbers of horſes, in a ſtate of nature, but ſmall, vicious, and untameable. They are found wild, alſo, in ſeveral other parts parts of Africa; but the wretched inhabitants of that country either want the art to tame them, or ſeem ignorant of their uſes. It is common with the Negroes, who are carried over from thence to America, when they firſt ſee a horſe, to teſtify both terror and ſurpriſe. Theſe poor men ſeem not to have any knowledge of ſuch a creature; and, though the horſe is probably a native of their own country, they have let all the reſt of mankind enjoy the benefit of his ſervices, without turning them to any advantage at home. In ſome parts of Africa, therefore, where the horſe runs wild, the natives ſeem to conſider him rather in the light of a dainty for food, than an uſeful creature, capable of aſſiſting them either in war or labour: riding ſeems a refinement that the natives of Angola or Caffraria have not as yet been able to obtain to; and whenever they catch a horſe, it is only with an intent to eat him.

But of all countries in the world, where the horſe runs wild, Arabia produces the moſt beautiful breed, the moſt generous, ſwift, and perſevering. They are found, though not in great numbers, in the deſerts of that country; and the natives uſe every ſtratagem to take them. Although they are active and beautiful, yet they are not ſo large as thoſe that are bred up tame; they are of a brown colour, their mane and tail very ſhort, and the hair black and tufted*.

* Marm. Deſcript. de l'Afrique, lib. i. p. 51.

Their ſwiftneſs is incredible; the attempt to purſue them in the uſual manner of the chaſe, with dogs, would be entirely fruitleſs. Such is the rapidity of their flight, that they are inſtantly out of view, and the dogs themſelves give up the vain purſuit. The only method, therefore, of taking them is by traps, hidden in the ſand, which entangling their feet, the hunter at length comes up, and either kills them or carries them home alive. If the horſe be young, he is conſidered among the Arabians as a very great delicacy; and they feaſt upon him while any part is found remaining; but if, from his ſhape or vigour, he promiſes to be ſerviceable in his more noble capacity, they take the uſual methods of taming him, by fatigue and hunger, and he ſoon becomes an uſeful domeſtic animal.

The uſual manner of trying their ſwiftneſs is by hunting the oſtrich: the horſe is the only animal whoſe ſpeed is comparable to that of this creature, which is found in the ſandy plains, with which thoſe countries abound. The inſtant the oſtrich perceives itſelf aimed at, it makes to the mountains, while the horſeman purſues with all the ſwiftneſs poſſible, and endeavours to cut off its retreat. The chaſe then continues along the plain, while the oſtrich makes uſe of both legs and wings to aſſiſt its motion. However, a horſe of the firſt ſpeed is able to out-run it; ſo that the poor animal is then obliged to have recourſe to art to elude the hunter, by frequently turning: at length, finding all eſcape hopeleſs, it hides its head wherever it can, and ſuffers itſelf tamely to be taken. If the horſe, in a trial of this kind, ſhews great ſpeed, and is not readily tired, his price becomes proportionably great, and there are ſome horſes valued at a thouſand ducats.

But the horſes thus caught, or trained in this manner, are at preſent but very few; the value of Arabian horſes, over all the world, has, in a great meaſure, thinned the deſerts of the wild breed; and there are very few to be found in thoſe countries, except ſuch as are tame. The Arabians, as we are told by hiſtorians, firſt began the management of horſes in the time of Sheque Iſmael. Before that, they wandered wild along the face of the country, neglected and uſeleſs; but the natives then firſt began to tame their fierceneſs, and

to improve their beauty; ſo that at preſent they poſſeſs a race of the moſt beautiful horſes in the world, with which they drive a trade, and furniſh the ſtables of princes at immenſe prices.

There is ſcarce an Arabian, how poor ſoever, but is provided with his horſe *. They, in general, make uſe of mares in their ordinary excurſions; experience having taught them that they ſupport fatigue, thirſt, and hunger, better than the horſes are found to do. They are alſo leſs vicious, of a gentler nature, and are not ſo apt to neigh. They are more harmleſs alſo among themſelves, not ſo apt to kick or hurt each other, but remain whole days together without the leaſt miſchief. The Turks, on the contrary, are not fond of mares; and the Arabians ſell them ſuch horſes as they do not chooſe to keep for ſtallions at home. They preſerve the pedigree of their horſes with great care, and for ſeveral ages back. They know their alliances and all their genealogy; they diſtinguiſh the races by different names, and divide them into three claſſes. The firſt is that of the nobles, the ancient breed, and unadulterated on either ſide: the ſecond is that of the horſes of the ancient race, but adulterated; and the third is that of the common and inferior kind: the laſt they ſell at a low price; but thoſe of the firſt claſs, and even of the ſecond, amongſt which are found horſes of equal value to the former, are ſold extremely dear. They know, by long experience, the race of a horſe by his appearance; they can tell the name, the ſurname, the colour, and the marks properly belonging to each. When they are not poſſeſſed of ſtallions of the noble race themſelves, for their mares, they borrow from their neighbours, paying a proper price as with us, and receive a written atteſtation of the whole. In this atteſtation is contained the name of the horſe and the mare, and their reſpective genealogies. When the mare has produced her foal, new witneſſes are called, and a new atteſtation ſigned, in which are deſcribed the marks of the foal, and the day noted when it was brought forth. Theſe atteſtations increaſe the value of the horſe; and they are given to the perſon who buys him. The moſt ordinary mare of this race ſells for five hundred crowns; there are

* Buffon.

many that ſell for a thouſand; and ſome of the very fineſt kinds for fourteen or fifteen hundred pounds. As the Arabians have no other houſe but a tent to live in, this alſo ſerves them for a ſtable; ſo that the mare, the foal, the huſband, the wife, and the children, lie all together indiſcriminately; the little children are often ſeen upon the body, or the neck of the mare, while theſe continue inoffenſive and harmleſs, permitting them thus to play with and careſs them without any injury. The Arabians never beat their horſes: they treat them gently; they ſpeak to them, and ſeem to hold a diſcourſe; they uſe them as friends; they never attempt to increaſe their ſpeed by the whip, nor ſpur them but in caſes of neceſſity. However, when this happens, they ſet off with amazing ſwiftneſs; they leap over obſtacles with as much agility as a buck; and, if the rider happens to fall, they are ſo manageable that they ſtand ſtill in the midſt of their moſt rapid career. The Arabian horſes are of a middle ſize, eaſy in their motions, and rather inclined to leanneſs than fat. They are regularly dreſſed every morning and evening, and with ſuch care that the ſmalleſt roughneſs is not left upon their ſkins. They waſh the legs, the mane, and the tail, which they never cut; and which they ſeldom comb, leſt they ſhould thin the hair. They give them nothing to eat during the day; they only give them to drink once or twice; and at ſun-ſet they hang a bag to their heads, in which there is about half a buſhel of clean barley. They continue eating the whole night, and the bag is again taken away the next morning. They are turned out to paſture in the beginning of March, when the graſs is pretty high, and at which time the mares are given to the ſtallion. When the ſpring is paſt, they take them again from paſture, and they get neither graſs nor hay during the reſt of the year; barley is their only food, except now and then a little ſtraw. The mane of the foal is always clipped when about a year or eighteen months old, in order to make it ſtronger and thicker. They begin to break them at two years old, or two years and an half at fartheſt; they never ſaddle or bridle them till at that age; and then they are always kept ready ſaddled at the door of the tent, from morning till ſun-ſet, in order to be prepared againſt any ſurpriſe. They at preſent

ſeem ſenſible of the great advantage their horſes are to the country; there is a law, therefore, that prohibits the exportation of the mares, and ſuch ſtallions as are brought into England are generally purchaſed on the Eaſtern ſhores of Africa, and come round to us by the Cape of Good Hope. They are in general leſs in ſtature than our own, being not above fourteen, or fourteen hands and a half high; their motions are much more graceful and ſwifter than of our own horſes; but, nevertheleſs, their ſpeed is far from being equal; they run higher from the ground; their ſtroke is not ſo long and cloſe; and they are far inferior in bottom. Still, however, they muſt be conſidered as the firſt and fineſt breed in the world; and that from which all others have derived their principal qualifications. It is even probable that Arabia is the original country of horſes; ſince there, inſtead of croſſing the breed, they take every precaution to keep it entire. In other countries they muſt continually change the races, or their horſes would ſoon degenerate; but there the ſame blood has paſt down through a long ſucceſſion, without any diminution either of force or beauty.

The race of Arabian horſes has ſpread itſelf into Barbary, among the Moors, and has even extended acroſs that extenſive continent to the Weſtern ſhores of Africa. Among the Negroes of Gambia and Senegal, the chiefs of the country are poſſeſſed of horſes; which, though little, are very beautiful, and extremely manageable. Inſtead of barley, they are fed in thoſe countries, with maize, bruiſed and reduced into meal, and mixed up with milk when they deſign to fatten them. Theſe are conſidered as next to the Arabian horſes, both for ſwiftneſs and beauty; but they are rather ſtill ſmaller than the former. The Italians have a peculiar ſport, in which horſes of this breed run againſt each other. They have no riders, but ſaddles ſo formed as to flap againſt the horſes' ſides as they move, and thus to ſpur them forward. They are ſet to run in a kind of railed walk, about a mile long, out of which they never attempt to eſcape; but, when they once ſet forward, they never ſtop, although the walk from one end to the other is covered with a crowd of ſpectators, which opens and gives way as the horſes approach. Our horſes would ſcarcely, in this manner, face a crowd, and continue their ſpeed, without a rider, through the midſt of

a multitude; and, indeed, it is a little ſurpriſing how in ſuch a place the horſes find their own way. However, what our Engliſh horſes may want in ſagacity, they make up by their ſwiftneſs; and it has been found upon computation that their ſpeed is nearly one fourth greater, even carrying a rider, than that of the ſwifteſt Barb without one.

The Arabian breed has been diffuſed into Egypt as well as Barbary, and into Perſia alſo; where, as we are told by Marcus Paulus, there are ſtuds of ten thouſand white mares all together, very fleet, and with the hoof ſo hard that ſhoeing is unneceſſary. In theſe countries, they in general give their horſes the ſame treatment that they give in Arabia, except that they litter them upon a bed of their own dung, dried in the ſun, and then reduced to powder. When this, which is ſpread under the horſe about five inches thick, is moiſtened, they dry it again, and ſpread it as before. The horſes of theſe countries a good deal reſemble each other. They are uſually of a ſlender make; their legs fine, bony, and far apart; a thin mane, a fine creſt; a beautiful head; the ear ſmall and well pointed; the ſhoulder thin; the ſide rounded, without any unſightly prominence; the croup is a little of the longeſt, and the tail is generally ſet high. The race of horſes, however, is much degenerated in Numidia; the natives having been diſcouraged from keeping the breed up by the Turks, who ſeize upon all the good horſes, without paying the owners the ſmalleſt gratuity for their care in bringing them up. The Tingitanians and Egyptians have now, therefore, the fame of rearing the fineſt horſes, both for ſize and beauty. The ſmalleſt of theſe laſt are uſually ſixteen hands high; and all of them ſhaped, as they expreſs it, with the elegance of an antelope.

Next to the Barb, travellers generally rank the Spaniſh genette. Theſe horſes, like the former, are little, but extremely ſwift and beautiful. The head is ſomething of the largeſt; the mane thick; the ears long, but well pointed; the eyes filled with fire; the ſhoulder thickiſh, and the breaſt full and large. The croup round and large; the legs beautiful, and without hair; the paſtern a little of the longeſt, as in the Barb, and the hoof rather too high. Nevertheleſs, they move with great eaſe, and carry themſelves extremely well. Their moſt uſual colour is black, or a dark bay.

They ſeldom or never have white legs, or white ſnip. The Spaniards, who have a groundleſs averſion to theſe marks, never breed from ſuch as have them. They are all branded on the buttock with the owner's name; and thoſe of the province of Andaluſia paſs for the beſt. Theſe are ſaid to poſſeſs courage, obedience, grace, and ſpirit, in a greater degree than even the Barb; and, for this reaſon, they have been preferred as war-horſes to thoſe of any other country.

The Italian horſes were once more beautiful than they are at preſent, for they have greatly neglected the breed. Nevertheleſs, there are ſtill found ſome beautiful horſes among them, particularly among the Neapolitans, who chiefly uſe them for the draught. In general, they have large heads and thick necks. They are alſo reſtiff, and conſequently unmanageable. Theſe faults, however, are recompenſed by the largeneſs of their ſize, by their ſpirit, and the beauty of their motion. They are excellent for ſhew, and have a peculiar aptitude to prance.

The Daniſh horſes are of ſuch an excellent ſize and ſo ſtrong a make, that they are preferred to all others for the draught. There are ſome of them perfectly well ſhaped; but this but ſeldom ſeen, for in general they are found to have a thick neck, heavy ſhoulders, long and hollow back, and a narrow croup: however, they all move well, and are found excellent both for parade and war. They are of all colours, and often of whimſical ones, ſome being ſtreaked like the tiger, or mottled like the leopard.

The German horſes are originally from Arabian and Barbary ſtocks; nevertheleſs, they appear to be ſmall and ill ſhaped: it is ſaid alſo, that they are weak and waſhy, with tender hoofs. The Hungarian horſes, on the other hand, are excellent for the draught, as well as the ſaddle. The Huſſars, who uſe them in war, uſually ſlit their noſtrils; which is done, as it is ſaid, to prevent their neighing, but, perhaps, without any real foundation.

The Dutch breed is good for the draught, and is generally uſed for that purpoſe over Europe: the beſt come from the province of Friezland. The Flanders horſes are much inferior to the former; they have moſt commonly large heads, flat feet, and ſwollen legs; which are an eſſential blemiſh in horſes of this kind.

The BROWN BEAR

The French horſes are of various kinds; but they have few that are good. The beſt horſes of that country come from Limoſin; they have a ſtrong reſemblance to the Barb, and, like them, are excellent for the chaſe; but they are ſlow in coming to perfection: they are to be carefully-treated while young, and muſt not be backed till they are eight years old. Normandy furniſhes the next beſt; which, though not ſo good for the chaſe, are yet better for war. In general, the French horſes have the fault of being heavy ſhouldered, which is oppoſite to the fault of the Barb, which is too thin in the ſhoulder, and is, conſequently, apt, to be ſhoulder-ſlipt.

Having mentioned the horſes moſt uſually known in Europe, we paſs on to thoſe of more diſtant countries, of whoſe horſes we can only judge by report. We mentioned the wild horſes of America. Such as are tame, if we may credit the lateſt reports*, are admirable. Great numbers of theſe are bred up to the chaſe, and are chiefly kept for this purpoſe, particularly at Quito. The hunters, as Ulloa informs us, are divided into two claſſes; one part on foot, the other on horſeback: the buſineſs of the footmen is to rouze the deer; and that of the horſemen, to hunt it down. They all, at break of day, repair to the place appointed, which is generally on the ſummit of an hill, with every man his greyhound. The horſemen place themſelves on the higheſt peaks; whilſt thoſe on foot range the precipices, making an hideous noiſe, in order to ſtart the deer. Thus the company extend themſelves three or four leagues, or more, according to their numbers. On ſtarting any game, the horſe which firſt perceives it, ſets off, and the rider, being unable to guide or ſtop him, purſues the chaſe, ſometimes down ſuch a ſteep ſlope, that a man on foot, with the greateſt care, could hardly keep his legs; from thence he flies up a dangerous aſcent; or along the ſide of a mountain, ſo that a perſon not uſed to this exerciſe, would think it much ſafer to throw himſelf out of the ſaddle, than commit his life to the precipitate ardour of his horſe. The other horſes, which join in the chaſe, do not wait for the riders to animate them; they ſet forward immediately upon ſeeing another at full

* Ulloa's Voyage, vol. i. p. 464.

ſpeed; and it becomes prudence in the rider to give them their way, and at the ſame time to let them feel the ſpur, to carry him over the precipices. Theſe horſes are backed and exerciſed to this method of hunting; and their uſual pace is trotting.

There are ſaid to be very good horſes in the iſlands of the Archipelago. Thoſe of Crete were in great reputation among the ancients, for their ſwiftneſs and force; however, at preſent they are but little uſed, even in the country itſelf, becauſe of the unevenneſs of the ground, which is there very rocky and mountainous. The original horſes of Morocco are much ſmaller than the Arabian breed; however, they are very ſwift and vigorous. In Turkey there are to be found horſes of almoſt all races: Arabians, Tartars, Hungarians, and thoſe natural to the place. The latter are very beautiful and elegant; they have a great deal of fire, ſwiftneſs, and management; but they are not able to ſupport fatigue: they eat little; they are eaſily heated; and they have ſkins ſo ſenſible, that they can ſcarcely bear the rubbing of the ſtirrup. The Perſian horſes are, in general, the moſt beautiful and moſt valuable of all the eaſt. The paſtures in the plains of Media, Perſepolis, Ardebil, and Derbent, are excellent for the purpoſe of rearing them; and there were bred in thoſe places vaſt numbers, by order of the government of Perſia, while that country was under any government. Pietro della Valle prefers the horſes of Perſia to thoſe of Italy; and informs us, that they are in general of a middle ſize; and although ſome are found even of the ſmalleſt ſtature, yet that does not impair their beauty or their ſtrength: yet, in ſome places, they are found of a very good ſize, and as large as the Engliſh ſaddle-horſes are generally found to be: they have all a thin head, a fine creſt, a narrow breaſt, ſmall ears well placed, the legs fine, the hoof hard, and the croup beautiful; they are docile, ſpirited, nimble, hardy, courageous, and capable of ſupporting a very great fatigue; they run very ſwiftly, without being eaſily fatigued; they are ſtrong and eaſy, being only ſupplied with barley and chopped ſtraw; they are put to graſs only for ſix weeks in the ſpring; they have always the tail at full length, and there is no ſuch thing as geldings among the number; they are defended

The WHITE BEAR

from the air, as in England, by body-clothes; they attend them with the moſt punctual exactneſs; and they are rid generally in a ſnaffle, without ſpurs. Great numbers of theſe are every year tranſported into Turkey, but chiefly into the Eaſt-Indies: however, after all, travellers agree that they are not to be compared to the Arabian horſes, either for courage, force, or beauty; and that the latter are eagerly ſought, even in Perſia.

The horſes of India are of a very indifferent kind, being weak and waſhy. Thoſe which are uſed by the grandees of the country, come from Perſia and Arabia; they are fed with a ſmall quantity of hay during the day; and at night they have boiled peas, mixed with ſugar and butter, inſtead of oats or barley: this nouriſhment ſupports them, and gives them ſtrength; otherwiſe, they would ſoon ſink and degenerate. Thoſe naturally belonging to the country, are very ſmall and vicious. Some are ſo very little, that Taverner reports, that the young Mogul prince, at the age of ſeven or eight, rode one of thoſe little horſes, that was not much larger than a grey-hound: and it is not long ſince one of theſe was brought over into this country, as a preſent to the Queen, that meaſures no more than nine hands high; and is not much larger than a common maſtiff. It would ſeem, that climates exceſſively hot, are unfavourable to this animal. In this manner, the horſes of the Gold-coaſt, and of Guinea, are extremely little, but very manageable. It is a common exerciſe with the grandees of that country, who are excellent horſemen, to dart out their lances before them upon full gallop, and to catch them again before they come to the ground. They have a ſport alſo on horſe-back, that requires great dexterity in the rider, and a great ſhare of activity in the horſe: they ſtrike off a ball, with a battledore, while they are upon a full gallop, and purſuing it, ſtrike it again before it comes to the ground; and this they continue for a mile together, ſtriking ſometimes to the right, and ſometimes to the left, with amazing ſpeed and agility.

The horſes of China are as indifferent as thoſe of India: they are weak, little, ill-ſhaped, and cowardly. Thoſe of Corea are not above three feet high: almoſt all the breed

there are made geldings, and are so timorous, that they can be rendered no way serviceable in war; so that it may be said, that the Tartar horses were properly the conquerors of China. These, indeed, are very serviceable in war; and although but of a middle size, yet they are surprisingly patient, vigorous, swift, and bold; their hoofs are extremely hard, though rather too narrow; their heads are fine, but rather too little; the neck is long and stiff; the legs of the longest; and yet, with all these faults, they are found to be an excellent breed. The Tartars live with their horses pretty much in the same manner as the Arabians do; they begin to back them at the age of seven or eight months, placing their children upon them, who manage them even at that early age. By these means they break them by little and little, till at last, about the age of six or seven years, they are capable of enduring amazing hardships. Thus they have been known to march two or three days without once stopping; to continue five or six, without eating any thing except an handful of grass at every eight hours; and, besides, to remain without drinking for four and twenty hours. These horses, which are so vigorous in their own country, lose all their strength when they are brought into China or the Indies; but they thrive pretty well in Persia and Turkey. The race of little Tartars towards the north, have also a breed of little horses, which they set such a value upon, that it is forbidden to sell them to strangers: these horses have the very same qualities with those of the larger kind; which they probably derive from a similar treatment. There are also very fine horses in Circassia and Mingrelia. There are some greatly esteemed in the Ukraine, in Walachia, Poland, and Sweden; but we have no particular accounts of their excellencies or defects.

If we consult the ancients on the nature and qualities of the horses of different countries, we learn, that the Grecian horses, and particularly those of Thessaly, had the reputation of being excellent for war; that those of Achaia were the largest that were known; that the most beautiful came from Egypt, which bred great numbers; that the horses of Ethiopia were not in esteem, from the heat of the country; that Arabia and Afric furnished very beautiful horses, and

very fit for the courſe; that thoſe of Italy, and particularly of Apulia, were very good; that in Sicily, Capadocia, Syria, Armenia, Media, and Perſia, there were excellent horſes, equally eſteemed for their ſpeed and vigour; that thoſe of Sardinia and Corſica, though ſmall, were ſpirited and courageous; that thoſe of Spain reſembled the Parthian horſes, in being very well adapted for war; that in Walachia and Tranſylvania, there were horſes with buſhy tails, and manes hanging down to the ground, which, nevertheleſs, were extremely ſwift and active; that the Daniſh horſes were good leapers; thoſe of Scandinavia, though little, were well ſhaped, and poſſeſſed of great agility; that the Flanders breed was ſtrong; that the Gauliſh horſes were good for carrying burthens; that the German breeds were ſo bad, ſo diminutive, and ill-ſhaped, that no uſe could be made of them; that the Swiſs and Hungarian horſes were good; and, laſtly, that thoſe of India were very diminutive and feeble.

Such are the different accounts we have of the various races of horſes in different parts of the world. I have hitherto omitted making mention of one particular breed, more excellent than any that either the ancients or moderns have produced; and that is our own. It is not without great aſſiduity, and unceaſing application, that the Engliſh horſes are now become ſuperior to thoſe of any other part of the world, for ſize, ſtrength, ſwiftneſs, and beauty. It was not without great attention, and repeated trials of all the beſt horſes in different parts of the world, that we have been thus ſucceſsful in improving the breed of this animal; ſo that the Engliſh horſes are now capable of performing what no others could ever attain to. By a judicious mixture of the ſeveral kinds, by the happy difference of our ſoils, and by our ſuperior ſkill in management, we have brought this animal to its higheſt perfection. An Engliſh horſe, therefore, is now known to excel the Arabian, in ſize and ſwiftneſs, to be more durable than the Barb, and more hardy than the Perſian. An ordinary racer is known to go at the rate of a mile in two minutes: and we had one inſtance, in the admirable Childers, of ſtill greater rapidity. He has been frequently known to move above eighty-two feet and an half in a ſecond, or almoſt a mile in a minute: he has run

alſo round the courſe of Newmarket, which is very little leſs than four miles, in ſix minutes and forty ſeconds. But what is ſurpriſing, few horſes have been ſince found, that ever could equal him; and thoſe of his breed have been remarkably deficient.

However this be, no horſes can any way equal our own, either in point of ſwiftneſs or ſtrength; and theſe are the qualifications our horſemen ſeem chiefly to value. For this reaſon, when the French, or other foreigners, deſcribe our breed, they all mention, as a fault, the awkward and ungainly motion of our horſes; they allow them to be very good indeed, but they will not grant them an eaſy or an elegant carriage*. But theſe writers do not conſider that this ſeeming want of grace is entirely the reſult of our manner of breaking them. We conſult only ſpeed and deſpatch in this animal's motions: the French, and other nations, are more anxious for parade and ſpirit. For this reaſon we always throw our horſes forward, while they put them upon their haunches; we give them an eaſy ſwift gait of going, that covers a great deal of ground: they, on the contrary, throw them back, giving them a more ſhewy appearance indeed, but one infinitely leſs uſeful. The fault of our manner of breaking is, that the horſe is ſometimes apt to fall forward; the French managed horſe never falls before, but more uſually on one ſide; and for this reaſon, the rider wears ſtiff boots, to guard his legs againſt ſuch accidents. However, it would be a very eaſy matter to give our horſes all that grace which foreigners are ſo fond of; but it would certainly take from their ſwiftneſs and durability.

But in what degree of contempt ſoever foreigners might formerly have held our horſes, they have for ſome time perceived their error, and our Engliſh hunters are conſidered as the nobleſt and the moſt uſeful horſes in the world. Our geldings are, therefore, ſent over to the continent in great numbers, and ſell at very great prices; as for our mares and ſtallions, their is a law prohibiting their exportation; and one ſimilar to this, is ſaid to have obtained even as early as the times of Athelſtan, who prohibited their exportation, except where deſigned as preſents.

* See Buffon's Account of our Horſes.

Roger de Belegme, created Earl of Shrewſbury by William the Conqueror *, is the firſt who is recorded to have made attempts towards the mending our native breed. He introduced Spaniſh ſtallions into his eſtate at Powiſland in Wales, from which that part of the country was for many ages after famous for a ſwift and generous race of horſes: however, at that time ſtrength and ſwiftneſs were more regarded than beauty; the horſes ſhapes, in time of action, being entirely hid by a coat of armour, which the knights then uſually put upon them, either by way of ornament or defence.

The number of our horſes, in London alone, in the time of King Stephen, is ſaid to have amounted to twenty thouſand. However, long after, in the times of Queen Elizabeth, the whole kingdom could not ſupply two thouſand horſes to form our cavalry. At preſent, the former numbers ſeem revived; ſo that, in the late war, we furniſhed out above thirteen thouſand horſemen; and could, if hard puſhed, ſupply above four times that number. How far this great increaſe of horſes among us may be beneficial, or otherwiſe, is not the proper buſineſs of the preſent page to diſcuſs; but certain it is, that where horſes increaſe in too great a degree, men muſt diminiſh proportionably; as that food which goes to ſupply the one, might very eaſily be converted into nouriſhment to ſerve the other. But, perhaps, it may be ſpeculating too remotely, to argue for the diminution of their numbers upon this principle, ſince every manufacture we export into other countries, takes up room, and may have occupied that place, which, in a ſtate of greater ſimplicity, might have given birth and ſubſiſtence to mankind, and have added to population.

Be this as it will, as we have been at ſuch expence and trouble to procure an excellent breed of horſes, it is not now to be expected that we ſhould decline the advantages ariſing from it, juſt when in our poſſeſſion. It may be, therefore, the moſt prudent meaſure in our Legiſlature, to encourage the breed as an uſeful branch of commerce, and a

* Britiſh Zoology, vol. i. p. 4. To this work I am indebted for ſeveral particulars with regard to the native animals of this iſland.

natural defence to the country. But how far this end is anſwered by the breeding up of racers, is what moſt perſons, verſed in this ſubject, are very apt to queſtion. They aſſert, that the running-horſe, as the breed has been for a long time refined, is unfit for any other ſervice than that of the courſe, being too ſlight either for the road, the chaſe, or the combat; and his joints ſo delicately united, as to render him ſubject to the ſmalleſt accidents. They, therefore, conclude, that leſs encouragement given to racing, would be a means of turning us from breeding rather for ſwiftneſs than ſtrength; and that we ſhould thus be again famous for our ſtrong hunters, which, they ſay, are wearing out from among us.

How far this may be fact, I will not take upon me to determine, being but little verſed in a ſubject that does not properly come within the compaſs of natural hiſtory. Inſtead, therefore, of farther expatiating on this well-known animal's qualifications, upon which many volumes might eaſily be written, I will content myſelf with juſt mentioning the deſcription of Camerarius, in which he profeſſes to unite all the perfections which a horſe ought to be poſſeſſed of:—"It muſt," ſays he, "have three parts like thoſe of a woman; the breaſt muſt be broad, the hips round, and the mane long: it muſt in three things reſemble a lion; its countenance muſt be fierce, its courage muſt be great, and its fury irreſiſtible: it muſt have three things belonging to the ſheep; the noſe, gentleneſs, and patience: it muſt have three of a deer; head, leg, and ſkin: it muſt have three of a wolf; throat, neck, and hearing: it muſt have three of a fox; ear, tail, and trot: three of a ſerpent; memory, ſight, and flexibility: and, laſtly, three of a hare; running, walking, and perſeverance."

CHAP. II.

OF THE ASS*.

ALTHOUGH this animal is very eaſily diſtinguiſhed from the horſe at firſt ſight, yet, upon cloſer inſpection, the ſimilitude between them is very ſtriking. They have both a ſimilar outline in the external parts; the ſame conformation within. One would be led, from the great reſemblance there is between them, to ſuppoſe them of the ſame ſpecies; and that the aſs was only a horſe degenerated: however, they are perfectly diſtinct, and there is an inſeparable line drawn between them, for the mule they produce is barren. This ſeems to be the barrier between every ſpecies of animals; this keeps them aſunder, and preſerves the unities of their form. If the mule, or the monſter, bred between two animals, whoſe form nearly approaches, is no longer fertile, we may then conclude, that theſe animals, however reſembling, are of different kinds. Nature has providently ſtopped the fruitfulneſs of theſe ill-formed productions, in order to preſerve the form of every animal uncontaminated: were it not for this, the races would quickly be mixed with each other; no one kind would preſerve its original perfection; every creature would quickly degenerate; and the world would be ſtocked with imperfection and deformity.

The horſe and the aſs, therefore, though ſo nearly approaching in form, are of two diſtinct kinds, different in their natures; and were there but one of each kind, both races would then be extinguiſhed. Their ſhapes and their habits may, indeed, be very nearly alike; but there is ſomething in every animal, beſides its conformation or way of life, that determines its ſpecific nature. Thus there is much greater reſemblance between the horſe and the aſs, than between the ſheep and the goat; and yet the latter produce an animal that is by no means barren, but which quickly re-produces an offſpring reſembling the ſheep; while the mule of the former is marked with certain ſterility. The goat and the ſheep may be therefore ſaid to be of one kind, although ſo

* Many parts of this account are extracted from Daubenton and Buffon; which I mention here, to avoid troubling the reader with a multiplicity of quotations.

much unlike in figure; while the horſe and the aſs are perfectly diſtinct, though ſo cloſely reſembling. It has, indeed, been ſaid by Ariſtotle, that their male is ſometimes prolific; this, however, has not been confirmed by any other teſtimony, although there has elapſed a period of near two thouſand years to collect the evidence.

But what tends to put the ſubject out of diſpute is, that the two animals are found in a ſtate of nature, entirely different. The onager, or wild aſs, is ſeen in ſtill greater abundance than the wild horſe; and the peculiarities of its kind are more diſtinctly marked than in thoſe of the tame one. Had it been a horſe degenerated, the likeneſs would be ſtronger between them, the higher we went to the original ſtock from whence both have been ſuppoſed to be ſprung. The wild animals of both kinds would, in ſuch a caſe, reſemble each other, much more than thoſe of the tame kind, upon whom Art has, for a ſucceſſion of ages, been exerciſing all its force, and producing ſtrange habits and new alterations. The contrary, however, obtains, and the wild aſs is even more aſſinine, if I may ſo expreſs it, than that bred in a ſtate of domeſtic ſervitude; and has even a natural averſion to the horſe, as the reader will ſhortly learn.

The wild aſs has, by ſome writers, been confounded with the zebra, but very improperly, for they are of a very different ſpecies. The wild aſs is not ſtreaked like the zebra, nor is his ſhape ſo beautiful: his figure is pretty much the ſame as that of the common aſs, except that he is of a brighter colour, and has a white liſt running from his head to his tail. This animal is found wild in many iſlands of the Archipelago, particularly in that of Cerigo. There are many wild aſſes in the deſerts of Lybia and Numidia, that run with ſuch amazing ſwiftneſs, that ſcarce even the courſers of the country can overtake them. When they ſee a man, they ſet up a horrid braying, and ſtop ſhort all together, till he approaches near them; they then, as if by common conſent, fly off with great ſpeed; and it is upon ſuch occaſions that they generally fall into the traps which are previouſly prepared to catch them. The natives take them chiefly upon account of their fleſh, which they eſteem as delicious eating; and for their ſkins, of which that kind of leather is made which is called *ſhagreen*.

Olearius relates that the monarch of Perſia invited him on a certain day to be preſent at an entertainment of a very peculiar nature, which was exhibited in a ſmall building, near the palace, reſembling a theatre. After a collation of fruits and ſweetmeats, more than thirty of theſe wild aſſes were driven into the area, among which the monarch diſcharged ſeveral ſhot, and ſome arrows, and in which he was imitated by ſome of the reſt of his attendants. The aſſes, finding themſelves wounded, and no way of eſcaping, inſtantly began to attack each other, biting with great fierceneſs, and braying terribly. In this manner they continued their mutual animoſity, while the arrows were poured in from above, until they were all killed; upon which they were ordered to be taken, and ſent to the king's kitchen at Iſpahan. The Perſians eſteem the fleſh of this animal ſo highly, that its delicacy is even become a proverb among them. What may be the taſte of the wild aſs's fleſh, we are unable to ſay; but certain it is that the fleſh of the tame aſs is the worſt that can be obtained, being dryer, more tough, and more diſagreeable than horſe-fleſh. Galen even ſays that it is very unwholeſome. Yet we ſhould not judge haſtily upon the different taſtes of different people, in the preference they give to certain meats. The climate produces very great changes in the tenderneſs and the ſavour of ſeveral viands: that beef, for inſtance, which is ſo juicy and good in England, is extremely tough and dry when killed under the line; on the contrary, that pork, which is with us ſo unpalatable in ſummer, in the warmer latitudes, where it is always hotter than here, is the fineſt eating they have, and much preferable to any hog's fleſh in Europe.

The aſs, like the horſe, was originally imported into America by the Spaniards, and afterwards by other nations. That country ſeems to have been peculiarly favourable to this race of animals; and where they have run wild, they have multiplied in ſuch numbers, that in ſome places they are become a nuiſance*. In the kingdom of Quito, the owners of the grounds where they are bred, ſuffer all perſons to take away as many as they can, on paying a ſmall acknowledgment, in proportion to the number of days their

* Ulloa, vol. i. p. 316.

ſport laſts. They catch them in the following manner. A number of perſons go on horſeback, and are attended by Indians on foot: when arrived at the proper places, they form a circle in order to drive them into ſome valley; where, at full ſpeed, they throw the nooſe, and endeavour to halter them. Thoſe creatures, finding themſelves incloſed, make very furious efforts to eſcape; and, if only one forces his way through, they all follow with an irreſiſtible impetuoſity. However, when nooſed, the hunters throw them down and ſecure them with fetters, and thus leave them till the chaſe is over. Then, in order to bring them away with greater facility, they pair them with tame beaſts of the ſame kind; but this is not eaſily performed, for they are ſo remarkably fierce that they often hurt the perſons who undertake to manage them. They have all the ſwiftneſs of horſes, and neither declivities nor precipices can retard their career. When attacked, they defend themſelves with their heels and mouth with ſuch activity, that, without ſlackening their pace, they often maim their purſuers. But the moſt remarkable property in theſe creatures is, that after carrying their firſt load, their celerity leaves them, their dangerous ferocity is loſt, and they ſoon contract the ſtupid look and dullneſs peculiar to the aſſinine ſpecies. It is alſo obſervable, that theſe creatures will not permit a horſe to live among them. They always feed together; and, if a horſe happens to ſtray into the place where they graze, they all fall upon him; and, without giving him the liberty of flying, they bite and kick him till they leave him dead upon the ſpot.

Such is this animal in its natural ſtate, ſwift, fierce, and formidable; but, in his ſtate of tameneſs, the aſs preſents a very different picture; the moment his native liberty is repreſſed, he ſeems entirely to give up all claims to freedom; and he aſſumes a patience and ſubmiſſion even humbler than his ſituation. He is, in a ſtate of tameneſs, the moſt gentle and quiet of all animals. He ſuffers with conſtancy, and, perhaps, with courage, all the ill treatment that cruelty and caprice are pleaſed to inflict. He is temperate with regard to the quantity and the quality of his proviſion. He is contented with the moſt neglected weeds; and makes his humble repaſt upon what the horſe and other animals leave be-

hind. If he gives the preference to any vegetable, it is to the plantane; for which he is often ſeen to neglect every other herb in the paſture: but he is chiefly delicate with reſpect to his water; he drinks only at the cleareſt brooks, and chiefly thoſe to which he has been accuſtomed. He drinks as ſoberly as he eats; and never, like the horſe, dips his noſe into the ſtream. As he is ſeldom ſaddled, he frequently rolls himſelf upon the graſs; and lies down, for this purpoſe, as often as he has an opportunity, without minding what becomes of his burden. He never rolls, like the horſe, in the mud; he even fears to wet his feet; and turns out of his way to avoid the dirty parts of a road.

When very young, the aſs is ſprightly, and even tolerably handſome; but he ſoon loſes theſe qualifications, either by age or bad treatment, and he becomes ſlow, ſtupid, and headſtrong. He ſeems to ſhew no ardour, except for the female, having been often known to die after the covering. The ſhe-aſs is not leſs fond of her young than the male is of her; and we are aſſured that ſhe will croſs fire and water to protect, or rejoin it. This animal is ſometimes not leſs attached to his owner; by whom he is too often abuſed. He ſcents him at a diſtance, and diſtinguiſhes him from others in a crowd; he knows the ways he has paſſed, and the places where he inhabits.

When over-loaded, the aſs ſhews the injuſtice of his maſter, by hanging down his head and lowering his ears; when he is too hard preſſed, he opens his mouth and draws back his lips in a very diſagreeable manner. If his eyes are covered, he will not ſtir a ſtep; and, if he is laid down in ſuch a manner, that one eye is covered with the graſs while the other is hidden with a ſtone, or whatever is next at hand, he will continue fixed in the ſame ſituation, and will not ſo much as attempt to riſe to free himſelf from thoſe ſlight impediments. He walks, trots, and gallops like a horſe; but, although he ſets out very freely at firſt, yet he is ſoon tired; and then no beating will make him mend his pace. It is in vain that his unmerciful rider exerts his whip or his cudgel; the poor little animal bears it all with patience, and without a groan; and, conſcious of his own imbecility, does not offer even to move.

Notwithſtanding the ſtupid heavineſs of his air, he may be educated with as much eaſe as any other animal; and ſeveral have been brought up to perform, and exhibited as a ſhew. In general, however, the poor animal is entirely neglected. Man deſpiſes this humble uſeful creature, whoſe efforts are exerted to pleaſe him, and whoſe ſervices are too cheaply purchaſed. The horſe is the only favourite, and upon him alone all expence and labour are beſtowed. He is fed, attended, and ſtabled, while the aſs is abandoned to the cruelty of the loweſt ruſtics, or even to the ſport of children, and, inſtead of gaining by the leſſons he receives, is always a loſer. He is conducted along by blows; he is inſulted by unneceſſary ſtripes; he is overloaded by the lazy; and, being generally the property of the poor, he ſhares with them in their wants and their diſtreſſes. Thus this faithful animal, which, were there no horſes, would be the firſt of the quadruped kind in our eſteem, is now conſidered as nothing; his properties and qualifications being found in a higher degree elſewhere, he is entirely diſregarded; and, from being the ſecond, he is degraded into one of the moſt uſeleſs of the domeſtic quadrupeds.

For this reaſon, very little care has been taken to improve the breed; it is ſuffered to degenerate; and it is probable, that of all other animals this alone is rendered feebler and more diminutive, by being in a ſtate of domeſtic ſervitude. The horſe, the cow, and the ſheep, are rendered larger by the aſſiduity of man; the aſs is ſuffered to dwindle every generation, and particularly in England, where it is probable that, but for the medicinal qualities of its milk, the whole ſpecies would have ere now been extinguiſhed. Nevertheleſs, we have good reaſons to believe that, were the ſame care beſtowed on the aſs that is ſpent upon the horſe, were the ſame induſtry uſed in croſſing the breed and improving it, we ſhould ſee the aſs become from his preſent mean ſtate, a very portly and ſerviceable animal; we ſhould find him rival the horſe in ſome of his perfections, and exceed him in others. The aſs, bulk for bulk, is ſtronger than the horſe; is more ſure footed; and, though more ſlow in his motions, he is much leſs apt to ſtart out of the way.

The Spaniards, of all people in Europe, ſeem alone to be acquainted with the value of the aſs. They take all proper precautions to improve the breed; and I have ſeen a jack-aſs, from that country, above fifteen hands high. This animal, however, ſeems originally a native of Arabia. A warm climate is known to produce the largeſt and the beſt; their ſize and ſpirit decline in proportion as they advance into colder regions.

Though now ſo common in all parts of England, the aſs was entirely loſt amongſt us during the reign of Queen Elizabeth. Holingſhed informs us that our land did yield no aſſes*. However, there are accounts of their being common in England before that time. In Sweden, they are at preſent a ſort of rarity; nor does it appear by the laſt hiſtory of Norway that they have yet reached that country. It is in the hotter climates alone that we are to look for the original of this ſerviceable creature. In Guinea, they are larger and more beautiful than even the horſes of the ſame country. In Perſia, they have two kinds; one of which is uſed for burdens, being ſlow and heavy; the other, which is kept for the ſaddle, being ſmooth, ſtately, and nimble. They are managed as horſes, only that the rider ſits nearer the crupper, and they are taught to amble like them. They generally cleave their noſtrils to give them more room for breathing, and many of theſe are ſold for forty or fifty pounds.

The aſs is a much more hardy animal than the horſe, and liable to fewer diſeaſes. Of all animals covered with hair, he is the leaſt ſubject to vermin, for he has no lice, probably owing to the dryneſs and the hardneſs of his ſkin. Like the horſe, he is three or four years in coming to perfection; he lives till twenty or twenty-five; ſleeps much leſs than the horſe; and never lies down for that purpoſe, unleſs very much tired. The ſhe-aſs goes above eleven months with young, and never brings forth more than one at a time. The mule may be engendered either between a horſe or a ſhe-aſs, or between a jack-aſs and a mare. The latter breed is every way preferable, being larger, ſtronger, and better ſhaped. It is not yet well known whether the animal called

* Britiſh Zoology, vol. i. p. 11.

the Gimerro be one of thefe kinds; or, as is afferted, bred between the afs and the bull. While naturalifts affirm the impoffibility of this mixture, the natives of the Alpine countries, where this animal is bred, as ftrongly infift upon its reality. The common mule is very healthy, and will live above thirty years, being found very ferviceable in carrying burdens, particularly in mountainous and ftony places, where horfes are not fo fure footed. The fize and ftrength of our affes is at prefent greatly improved by the importation of Spanifh jack-affes; and it is probable we may come in time to equal the Spaniards in breeding them, where it is not uncommon to give fifty or fixty guineas for a mule; and, indeed, in fome mountainous countries, the inhabitants cannot well do without them. Their manner of going down the precipices of the Alps, or the Andes, is very extraordinary; and with it we will conclude their hiftory. In thefe paffages, on one fide, are fteep eminences, and, on the other, frightful abyffes; and, as they generally follow the direction of the mountain, the road, inftead of lying in a level, forms at every little diftance fteep declivities, of feveral hundred yards downward. Thefe can only be defcended by mules; and the animal itfelf feems fenfible of the danger, and the caution that is to be ufed in fuch defcents. When they come to the edge of one of thefe defcents, they ftop, without being checked by the rider; and, if he inadvertently attempts to fpur them on, they continue immoveable. They feem all this time ruminating on the danger that lies before them, and preparing themfelves for the encounter. They not only attentively view the road, but tremble and fnort at the danger. Having prepared for the defcent, they place their fore-feet in a pofture, as if they were ftopping themfelves; they then alfo put their hinder-feet together, but a little forward, as if they were going to lie down. In this attitude, having taken as it were a furvey of the road, they flide down with the fwiftnefs of a meteor. In the mean time, all the rider has to do is to keep himfelf faft on the faddle, without checking the rein, for the leaft motion is fufficient to diforder the equilibrium of the mule; in which cafe they both unavoidably perifh. But their addrefs, in this rapid defcent, is truly wonderful; for, in

their ſwifteſt motion, when they ſeem to have loſt all governments of themſelves, they follow exactly the different windings of the road, as if they had previouſly ſettled in their minds the route they were to follow, and taken every precaution for their ſafety. In this journey, the natives, who are placed along the ſides of the mountains, and hold by the roots of the trees, animate the beaſts with ſhouts, and encourage him to perſeverance. Some mules, after being long uſed to theſe journeys, acquire a kind of reputation for their ſafety and ſkill; and their value riſes in proproportion to their fame*.

CHAP. III.

OF THE ZEBRA.

THERE are but three animals of the horſe kind. The horſe, which is the moſt ſtately and courageous; the aſs, which is the moſt patient and humble; and the zebra, which is the moſt beautiful, but at the ſame time the wildeſt animal in Nature. Nothing can exceed the delicate regularity of this creature's colour, or the luſtrous ſmoothneſs of its ſkin; but, on the other hand, nothing can be more timid or more untameable.

It is chiefly a native of the ſouthern parts of Africa; and there are whole herds of them often ſeen feeding in thoſe extenſive plains that lie towards the Cape of Good Hope. However, their watchfulneſs is ſuch, that they will ſuffer nothing to come near them, and their ſwiftneſs ſo great, that they readily leave every purſuer far behind. The zebra, in ſhape, rather reſembles the mule, than the horſe or the aſs. It is rather leſs than the former, and yet larger than the latter. Its ears are not ſo long as thoſe of the aſs, and yet not ſo ſmall as in the horſe-kind. Like the aſs, its head is large, its back ſtraight, its legs finely placed, and its tail tufted at the end; like the horſe, its ſkin its ſmooth and cloſe, and its hind quarters round and fleſhy

* Ulloa, vol. i.

But its greateſt beauty lies in the amazing regularity and elegance of its colours. In the male, they are white and brown; in the female, white and black. Theſe colours are diſpoſed in alternate ſtripes over the whole body, and with ſuch exactneſs and ſymmetry, that one would think Nature had employed the rule and compaſs to paint them. Theſe ſtripes, which, like ſo many ribbands, are laid all over its body, are narrow, parallel, and exactly ſeparated from each other. It is not here, as in other party-coloured animals, where the tints are blendid into each other; every ſtripe here is perfectly diſtinct, and preſerves its colour round the body, or the limb, without any diminution. In this manner are the head, the body, the thighs, the legs, and even the tail and the ears beautifully ſtreaked, ſo that at a little diſtance one would be apt to ſuppoſe that the animal was dreſſed out by Art, and not thus admirably adorned by Nature.

In the male zebra, the head is ſtriped with fine bands of black and white, which in a manner centre in the forehead. The ears are variegated with a white and duſky brown. The neck has broad ſtripes of the ſame dark brown running round it, leaving narrow white ſtripes between. The body is ſtriped alſo acroſs the back with broad bands, leaving narrower ſpaces of white between them, and ending in points at the ſides of the belly, which is white, except a black line pectinated on each ſide, reaching from between the fore-legs, along the middle of the belly, two thirds of its length. There is a line of ſeparation between the trunk of the body and the hinder quarters, on each ſide; behind which, on the rump, is a plat of narrow ſtripes, joined together, by a ſtripe down the middle, to the end of the tail. The colours are different in the female; and in none the ſtripes ſeem entirely to agree in form, but in all they are equally diſtinct; the hair equally ſmooth and fine; the white ſhining and unmixed; and the black, or brown, thick and luſtrous.

Such is the beauty of this creature, that it ſeems by Nature fitted to ſatisfy the pride and the pleaſure of man: and formed to be taken into his ſervice. Hitherto, however, it appears to have diſdained ſervitude, and neither force nor kindneſs have been able to wean it from its native independence and

ferocity. But this wildneſs might, perhaps, in time, be ſurmounted; and, it is probable, the horſe and the aſs, when firſt taken from the foreſt, were equally obſtinate, fierce, and unmanageable. Mr. Buffon informs us, that the zebra, from which he took his deſcription, could never be entirely maſtered, notwithſtanding all the efforts which were tried to tame it. They continued, indeed, to mount it, but then with ſuch precautions as evidently ſhewed its fierceneſs, for two men were obliged to hold the reins while the third ventured upon its back; and even then it attempted to kick whenever it perceived any perſon approaching. That which is now in the Queen's managerie, at Buckingham-Gate, is even more vicious than the former; and the keeper who ſhews it takes care to inform the ſpectators of its ungovernable nature. Upon my attempting to approach, it ſeemed quite terrified, and was preparing to kick, appearing as wild as if juſt caught, although taken extremely young, and uſed with the utmoſt indulgence. Yet ſtill it is moſt probable that this animal, by time and aſſiduity, could be brought under ſubjection. As it reſembles the horſe in form, without all doubt it has a ſimilitude of nature, and only requires the efforts of an induſtrious and ſkilful nation, to be added to the number of our domeſtics. It is not *now* known what were the pains and dangers which were firſt undergone to reclaim the breed of horſes from ſavage ferocity; theſe, no doubt, made an equal oppoſition; but, by being oppoſed, by an induſtrious and enterpriſing race of mankind, their ſpirit was at laſt ſubdued, and their freedom reſtrained. It is otherwiſe with regard to the zebra; it is the native of countries where the human inhabitants are but little raiſed above the quadruped. The natives of Angola, or Cafraria, have no other idea of advantage from horſes but as they are good for food; neither the fine ſtature of the Arabian courſer, nor the delicate colourings of the zebra, have any allurements to a race of people who only conſider the quantity of fleſh and not its conformation. The delicacy of the zebra's ſhape, or the painted elegance of its form, are no more regarded by ſuch, than by the lion that makes it his prey. For this reaſon, therefore, the zebra may hitherto have continued wild, becauſe it is the native of a country where

there have been no ſucceſſive efforts made to reclaim it. All purſuits that have been hitherto inſtituted againſt it, were rather againſt its life than its liberty; the animal has thus been long taught to conſider man as its moſt mortal enemy; and it is not to be wondered that it refuſes to yield obedience where it has ſo ſeldom experienced mercy. There is a kind of knowledge in all animals, that I have often conſidered with amazement; which is, that they ſeem perfectly to know their enemies, and to avoid them. Inſtinct, indeed, may teach the deer to fly from the lion; or the mouſe to avoid the cat: but what is the principle that teaches the dog to attack the dog-butcher wherever he ſees him? In China, where the killing and dreſſing dogs is a trade, whenever one of theſe people move out, all the dogs of the village, or the ſtreet, are ſure to be after him. This I ſhould hardly have believed, but that I have ſeen more than one inſtance of it among ourſelves. I have ſeen a poor fellow who made a practice of ſtealing and killing dogs for their ſkins, purſued in full cry for three or four ſtreets together, by all the bolder breed of dogs, while the weaker flew from his preſence with affright. How theſe animals could thus find out their enemy, and purſue him, appears I own unaccountable, but ſuch is the fact; and it not only obtains in dogs, but in ſeveral other animals, though perhaps to a leſs degree. This very probably may have been, in ſome meaſure, a cauſe that has hitherto kept the zebra in its ſtate of natural wildneſs; and in which it may continue, till kinder treatment ſhall have reconciled it to its purſuers.

It is very likely, therefore, as a more civilized people are now placed at the Cape of Good Hope, which is the chief place where this animal is found, that we may have them tamed and rendered ſerviceable. Nor is its extraordinary beauty the only motive we have for wiſhing this animal among the number of our dependents: its ſwiftneſs is ſaid to ſurpaſs that of all others; ſo that the ſpeed of a zebra is become a proverb among the Spaniards and Portugueſe. It ſtands better upon its legs alſo than the horſe; and is conſequently ſtronger in proportion. Thus, if by proper care we improved the breed, as we have in other inſtances, we ſhould probably in time to come have a race as large as the horſe, as fleet, as ſtrong, and much more beautiful.

The ZEBRA

The zebra, as was ſaid, is chiefly a native of the Cape of Good Hope. It is alſo found in the kingdom of Angola; and, as we are aſſured by Lopez, in ſeveral provinces alſo of Barbary. In thoſe boundleſs foreſts it has nothing to reſtrain its liberty; it is too ſhy to be caught in traps, and therefore ſeldom taken alive. It would ſeem, therefore, that none of them have ever been brought into Europe, that were caught ſufficiently young, ſo as to be untinctured by their original ſtate of wildneſs. The Portugueſe, indeed, pretend that they have been able to tame them, and that they have ſent four from Africa to Liſbon, which were ſo far brought under, as to draw the king's coach*: they add, that the perſon who ſent them over, had the office of notary conferred upon him for his reward, which was to remain to him and his poſterity for ever: but I do not find this confirmed by any perſon who ſays he ſaw them. Of thoſe which were ſent to Braſil, not one could be tamed; they would permit one man only to approach them; they were tied up very ſhort; and one of them, which had by ſome means got looſe, actually killed his groom, having bitten him to death†.—Notwithſtanding this, I believe, were the zebra taken up very young, and properly treated, it might be rendered as tame as any other animal; and Merolla, who ſaw many of them, aſſerts, that when tamed, which he ſpeaks of as being common enough, they are not leſs eſtimable for their ſwiftneſs than their beauty.

This animal, which is neither to be found in Europe, Aſia, or America, is nevertheleſs very eaſily fed. That which came over into England ſome years ago, would eat almoſt any thing, ſuch as bread, meat, and tobacco; that which is now among us, ſubſiſts entirely upon hay. As it ſo nearly reſembles the horſe and the aſs in ſtructure, ſo it probably brings forth annually as they do. The noiſe they make is neither like that of a horſe nor an aſs, but more reſembling the confuſed barking of a maſtiff dog. In the two which I ſaw, there was a circumſtance that ſeems to have eſcaped naturaliſts; which is, that the ſkin hangs looſe below the jaw upon the neck, in a kind of dewlap, which takes away much from the general beauty. But whether this be a na-

* Dapper. † Pyrard. tom. ii. p. 376.

tural or accidental blemiſh, I will not take upon me to determine.

Theſe animals are often ſent as preſents to the princes of the eaſt. We are told, that one of the governors of Batavia gave a zebra, which had been ſent to him from Africa, to the emperor of Japan, for which he received, as an equivalent for the company, a preſent, to the value of ſixty thouſand crowns*. Teller alſo relates, that the Great Mogul gave two thouſand ducats for one of them. And it is frequent with the African ambaſſadors to the court of Conſtantinople, to bring ſome of theſe animals with them, as preſents for the Grand Signior.

* Navendorf.

BOOK II.

OF RUMINATING ANIMALS.

CHAP. I.

INTRODUCTION.

OF all animals, thoſe that chew the cud are the moſt harmleſs, and the moſt eaſily tamed. As they live entirely upon vegetables, it is neither their intereſt nor their pleaſure to make war upon the reſt of the brute creation; content with the paſtures where they are placed, they ſeldom deſire to change, while they are furniſhed with a proper ſup ply; and, fearing nothing from each other, they generally go in herds for their mutual ſecurity. All the fierceſt of the carnivorous kinds ſeek their food in gloomy ſolitude; theſe, on the contrary, range together; the very meaneſt of them are found to unite in each other's defence; and the hare itſelf is a gregarious animal, in thoſe countries where it has no other enemies but the beaſts of the foreſt to guard againſt.

As the food of ruminant animals is entirely of the vegetable kind, and as this is very eaſily procured; ſo theſe animals ſeem naturally more indolent and leſs artful than thoſe of the carnivorous kinds; and as their appetites are more ſimple, their inſtincts ſeem to be leſs capable of variation.—The fox or the wolf are for ever prowling; their long habits of want give them a degree of ſharpneſs and cunning; their life is a continued ſcene of ſtratagem and eſcape: but the patient ox, or the deer, enjoy the repaſt that Nature has abundantly provided; certain of ſubſiſtence, and content with ſecurity.

As Nature has furniſhed theſe animals with an appetite for ſuch coarſe and ſimple nutriment, ſo ſhe has enlarged the capacity of the inteſtines, to take in a greater ſupply. In the

carnivorous kinds, as their food is nourifhing and juicy, their ftomachs are but fmall, and their inteftines fhort; but in thefe, whofe pafture is coarfe, and where much muft be accumulated before any quantity of nourifhment can be obtained, their ftomachs are large and numerous, and their inteftines long and mufcular. The bowels of a ruminating animal may be confidered as an elaboratory, with veffels in it, fitted for various tranfmutations. It requires a long and tedious procefs before grafs can be tranfmuted into flefh; and, for this purpofe, Nature, in general, has furnifhed fuch animals as feed upon grafs, with four ftomachs, through which the food fucceffively paffes, and undergoes the proper feparations.

Of the four ftomachs with which ruminant animals are furnifhed, the firft is called the *paunch*, which receives the the food after it has been flightly chewed; the fecond is called the *honeycomb*, and is properly nothing more than a continuation of the former: thefe two, which are very capacious, the animal fills as faft as it can, and then lies down to ruminate; which may be properly confidered as a kind of vomiting without effort or pain. The two ftomachs abovementioned being filled with as much as they can contain, and the grafs, which was flightly chewed, beginning to fwell with the heat of the fituation, it dilates the ftomachs, and thefe again contract upon their contents. The aliment, thus fqueezed, has but two paffages to efcape at; one into the third ftomach, which is very narrow; and the other back, by the gullet, into the mouth, which is wider. The greateft quantity, therefore, is driven back, through the largeft aperture, into the mouth, to be chewed a fecond time; while a fmall part, and that only the moft liquid, is driven into the third ftomach, through the orifice which is fo fmall. The food which is driven to the mouth, and chewed a fecond time, is thus rendered more foft and moift, and becomes at laft liquid enough to pafs into the conduit that goes to the third ftomach, where it undergoes a ftill farther comminution. In this ftomach, which is called the *manyfold*, from the number of its leaves, all which tend to promote digeftion, the grafs has the appearance of boiled fpinage, but not yet fufficiently reduced, fo as to make a part of the

animal's nourifhment: it requires the operation of the fourth ftomach for this purpofe, where it undergoes a complete maceration, and is feparated to be turned into chyle.

But Nature has not been lefs careful in another refpect, in fitting the inteftines of thefe animals for their food. In the carnivorous kinds they are thin and lean; but in ruminating animals they are ftrong, flefhy, and well covered with fat. Every precaution feems taken that can help their digeftion: their ftomach is ftrong and mufcular, the more readily to act upon its contents; their inteftines are lined with fat, the better to preferve their warmth; and they are extended to a much greater length, fo as to extract every part of that nourifhment which their vegetable food fo fcantily fupplies.

In this manner are all quadrupeds of the cow, the fheep, or the deer kind, feen to ruminate; being thus furnifhed with four ftomachs, for the macerating of their food. Thefe, therefore, may moft properly be called the *ruminant kinds;* although there are many others that have this quality in a lefs obfervable degree. The rhinoceros, the camel, the horfe, the rabbit, the marmotte, and the fquirrel, all chew the cud by intervals, although they are not furnifhed with ftomachs like the former. But not thefe alone, there are numberlefs other animals that appear to ruminate; not only birds, but fifhes, and infects. Among birds are the pelican, the ftork, the heron, the pigeon, and the turtle; thefe have a power of difgorging their food to feed their young. Among fifhes are lobfters, crabs, and that fifh called the *dorado*. The falmon alfo is faid to be of this number: and, if we may believe Ovid, the fcarus likewife; of which he fays *:

> Of all the fifh that graze beneath the flood,
> He *only* ruminates his former food.

Of infects, the ruminating tribe is ftill larger: the mole, the cricket, the wafp, the drone, the bee, the grafhopper, and the beetle. All thefe animals either actually chew the cud, or feem at leaft to ruminate. They have the ftomach com-

* At contra herbofa pifces laxantur arena,
Ut fcarus epaftas *folus* qui ruminat efcas.

posed of muscular fibres, by means whereof the food is ground up and down, in the same manner as in those which are particularly distinguished by the appellation of *ruminants*.

But not these alone; men themselves have been often known to ruminate, and some even with pleasure. The accounts of these calamities, for such I must consider them, incident to our fellow-creatures, are not very pleasant to read; yet I must transcribe a short one, as given us by Slare, in the Philosophical Transactions, as it may in some measure shew the satisfaction which the lower tribes of animals enjoy while they ruminate. The man in question was a citizen of Bristol, of about twenty years of age, and, what seemed more extraordinary still, of a ruminating family, for his father was frequently subject to the same infirmity, or amusement, as he himself perhaps would call it. This young man usually began to chew his meat over again within about a quarter of an hour after eating. His ruminating after a full meal generally lasted about an hour and a half; nor could he sleep until his task was performed. The victuals, upon the return, tasted even more pleasantly than at first; and returned as if they had been beaten up in a mortar. If he ate a variety of things, that which he ate at first came up again first; and if this return was interrupted for any time, it produced sickness and disorder, and he was never well till it returned. Instances of this kind, however, are rare and accidental; and it is happy for mankind that they are so. Of all other animals, we spend the least time in eating; this is one of the great distinctions between us and the brute creation; and eating is a pleasure of so low a kind, that none but such as are nearly allied to the quadruped, desire its prolongation.

CHAP. II.

OF QUADRUPEDS OF THE COW KIND.

OF all ruminant animals, those of the cow kind deserve the first rank, both for their size, their beauty, and their services. The horse is more properly an animal belonging to the rich; the sheep chiefly thrives in a flock, and requires

attendance; but the cow is more especially the poor man's pride, his riches, and his support. There are many of our peasantry that have no other possession but a cow; and even of the advantages resulting from this most useful creature, the poor are but the nominal possessors. Its flesh they cannot pretend to taste, since then their whole riches are at once destroyed; its calf they are obliged to fatten for sale, since veal is a delicacy they could not make any pretensions to; its very milk is wrought into butter and cheese for the tables of their masters; while they have no share even in their own possession, but the choice of their market, I cannot bear to hear the rich crying out for liberty, while they thus starve their fellow creatures, and feed them up with an imaginary good, while they monopolize the real benefits of Nature.

In those countries where the men are under better subordination, this excellent animal is of more general advantage. In Germany, Poland, and Switzerland, every peasant keeps two or three cows, not for the benefit of his master, but for himself. The meanest of the peasants there kills one cow at least for his own table, which he salts and hangs up, and thus preserves as a delicacy all the year round. There is scarce a cottage in those countries that is not hung round with these marks of hospitality; and which often make the owner better contented with hunger, since he has it in his power to be luxurious when he thinks proper. A piece of beef hung up there, is considered as an elegant piece of furniture, which, though seldom touched, at least argues the possessor's opulence and ease. But it is very different, for some years past, in this country, where our lower rustics at least are utterly unable to purchase meat any part of the year, and by them even butter is considered as an article of extravagance.

The climate and pasture of Great Britain, however, is excellently adapted to this animal's moderate nature; and the verdure and the fertility of our plains are perfectly suited to the manner of its feeding; for wanting the upper fore-teeth, it loves to graze in a high rich pasture. This animal seems but little regardful of the quality of its food, provided it be supplied in sufficient abundance; it makes no

particular diſtinctions in the choice of its herbage, but indiſcriminately and haſtily devours the proper quantity. For this reaſon, in our paſtures, where the graſs is rather high than ſucculent, more flouriſhing than nutricious, the cow thrives admirably; and there is no part of Europe where the tame animal grows larger, yields more milk, and more readily fattens, than with us.

Our paſtures ſupply them with abundance, and they in return enrich the paſture; for, of all animals, the cow ſeems to give back more than it takes from the ſoil. The horſe and the ſheep are known, in a courſe of years, to impoveriſh the ground. The land where they have fed becomes weedy, and the vegetables coarſe and unpalatable: on the contrary, the paſture where the cow has been bred, acquires a finer ſofter ſurface, and becomes every year more beautiful and even. The reaſon is, that the horſe being furniſhed with fore-teeth in the upper jaw, nips the graſs cloſely, and therefore, only chooſes that which is the moſt delicate and tender; the ſheep alſo, though, with reſpect to its teeth, formed like the cow, only bites the moſt ſucculent parts of the herbage: theſe animals, therefore, leave all the high weeds ſtanding; and while they cut the finer graſs too cloſely, ſuffer the ranker herbage to vegetate and overrun the paſture. But it is otherwiſe with the cow; as its teeth cannot come ſo cloſe to the ground as thoſe of the horſe, nor ſo readily as thoſe of the ſheep, which are leſs, it is obliged to feed upon the talleſt vegetables that offer; thus it eats them all down, and, in time, levels the ſurface of the paſture.

The age of the cow is known by the teeth and horns. This animal is furniſhed with eight cutting teeth in the lower jaw; at the age of ten months, the two middlemoſt of theſe fall out, and are replaced by others, that are not ſo white, but broader; at the age of ſixteen months, the two next milk-white teeth fall out likewiſe, and others come up in their room: thus, at the end of every ſix months, the creature loſes and gains, till, at the age of three years, all the cutting teeth are renewed, and then they are long, pretty white and equal; but in proportion as the animal advances in years, they become irregular and black, their inequalities become ſmoother, and the animal leſs capable

of chewing its food. Thus the cow often declines from this ſingle cauſe; for as it is obliged to eat a great deal to ſupport life, and as the ſmoothneſs of the teeth makes the difficulty of chewing great, a ſufficient quantity of food cannot be ſupplied to the ſtomach. Thus the poor animal ſinks in the midſt of plenty, and every year grows leaner and leaner, till it dies.

The horns are another, and a ſurer method of determining this animal's age. At three years old, it ſheds its horns, and new ones ariſe in their place, which continue as long as it lives; at four years of age, the cow has ſmall pointed neat ſmooth horns, thickeſt near the head; at five the horns become larger, and are marked round with the former year's growth. Thus, while the animal continues to live, the horns continue to lengthen; and every year a new ring is added at the root; ſo that allowing three years before their appearance, and then reckoning the number of rings, we have in both together the animal's age exactly.

As we have indiſputably the beſt breed of horned cattle of any in Europe, ſo it was not without the ſame aſſiduity that we came to excel in theſe, as in our horſes. The breed of cows has been entirely improved by a foreign mixture, properly adapted to ſupply the imperfections of our own. Such as are purely Britiſh, are far inferior in ſize to thoſe on many parts of the continent; but thoſe which we have thus improved, by far excel all others. Our Lincolnſhire kind derive their ſize from the Holſtein breed: and the large hornleſs cattle that are bred in ſome parts of England, came originally from Poland. We were once famous for a wild breed of theſe animals, but theſe have long ſince been worn out; and perhaps no kingdom in Europe can furniſh ſo few wild animals of all kinds, as our own. Cultivation and agriculture are ſure to baniſh theſe, wherever they are found; and every addition a country receives from Art, drives away thoſe animals that are only fitted for a ſtate of Nature.

Of all quadrupeds, the cow ſeems moſt liable to alteration from its paſture. In the different parts of our own country, we eaſily perceive the great varieties produced among theſe animals, by the richneſs or poverty of the ſoil. In ſome

they grow to a great bulk; and I have ſeen an ox ſixteen hands high, which is taller than the general run of our horſes. In others, they appear as diminutive; being not ſo large as an aſs. The breed of the Iſle of Man, and moſt parts of Scotland, is much leſs in general than in England or Ireland: they are differently ſhaped alſo, the dewlap being much ſmaller, and, as the expreſſion is, the beaſt has more of the ewe neck. This, till ſome years ago, was conſidered in cattle as a deformity; and the cow was choſen, according to Virgil's direction, with a large dewlap: however, at preſent it is the univerſal opinion, that the cow wants in udder what it has in neck, and the larger the dewlap, the ſmaller is the quantity of its milk. Our graziers now, therefore, endeavour to mix the two breeds; the large Holſtein with the ſmall northern; and from both reſults that fine milch breed, which excels the cattle of any other part of the world.

This difference, ariſing from paſture, is more obſervable in other countries than in our own. The cow kind is to be found in almoſt every part of the world, large in proportion to the richneſs of the paſture; and ſmall, as the animal is ſtinted in its food. Thus Africa is remarkable for the largeſt and the ſmalleſt cattle of this kind; as is alſo India, Poland, Switzerland, and ſeveral other parts of Europe. Among the Eluth Tartars, where the paſtures are remarkably rich and nouriſhing, the cow becomes ſo large, that he muſt be a tall man who can reach the tip of its ſhoulder. On the contrary, in France, where the animal is ſtinted in its food, and driven from the moſt flouriſhing paſtures, it greatly degenerates.

But the differences in the ſize of this animal are not ſo remarkable as thoſe which are found in its form, its hair, and its horns. The difference is ſo very extraordinary in many of them, that they have been even conſidered as a different kind of creature, and names have been given them as a diſtinct ſpecies, when in reality they are all the ſame*. In this manner the urus and the biſon have been conſidered, from the variety in their make, to be diſtinct in their production; but they are all in fact the deſcendants of one com-

* Buffon, vol. xxiii. p. 78.

mon ſtock, as they have that certain mark of unity, they breed and propagate among each other. Naturaliſts have therefore laboured under an obvious error, when, becauſe of the extreme bulk of the urus, or becauſe of the hump upon the back of the biſon, they aſſigned them different places in the creation, and ſeparated a claſs of animals which was really united. It is true, the horſe and the aſs do not differ ſo much in form, as the cow and the biſon; nevertheleſs, the former are diſtinct animals, as their breed is marked with ſterility; the latter are animals of the ſame kind, as their breed is fruitful, and a race of animals is produced, in which the hump belonging to the biſon is ſoon worn away. The differences, therefore, between the cow, the urus, and the biſon, are merely accidental. The ſame caprice in Nature that has given horns to ſome cows, and denied them to others, may alſo have given the biſon an hump, or increaſed the bulk of the urus; it may have given the one a mane, or denied a ſufficiency of hair to the other.

But before we proceed farther, it may be proper to deſcribe theſe varieties, which have been thus taken for diſtinct kinds*. The urus, or wild bull, is chiefly to be met with in the province of Lithuania; and grows to a ſize, that ſcarce any other animal, except the elephant, is found to equal. It is quite black, except a ſtripe mixed with white, that runs from the neck to the tail, along the top of the back; the horns are ſhort, thick, and ſtrong; the eyes are fierce and fiery; the forehead is adorned with a kind of garland of black curled hair, and ſome of them are found to have beards of the ſame; the neck is ſhort and ſtrong, and the ſkin has an odour of muſk. The female, though not ſo big as the male, exceeds the largeſt of our bulls in ſize; nevertheleſs, her udder and teats are ſo ſmall, that they can ſcarcely be perceived. Upon the whole, however, this animal reſembles the tame one very exactly, except in ſome trifling varieties, which his ſtate of wildneſs, or the richneſs of the paſtures where he is found, may eaſily have produced.

The biſon, which is another variety of the cow kind, differs from the reſt, in having a lump between its ſhoulders.

* This deſcription is chiefly taken from Klein.

Thefe animals are of various kinds; fome very large, others as diminutively little. In general, to regard this animal's fore-parts, he has fomewhat the look of a lion, with a long fhaggy mane, and a beard under his chin; his head is little, his eyes red and fiery, with a furious look; the forehead is large, and the horns fo big, and fo far afunder, that three men might often fit between them. On the middle of the back there grows a bunch almoft as high as that of a camel, covered with hair, and which is confidered as a great delicacy by thofe that hunt him. There is no purfuing him with fafety, except in forefts where there are trees large enough to hide the hunters. He is generally taken by pit-falls; the inhabitants of thofe countries where he is found wild, digging holes in the ground, and covering them over with boughs of trees and grafs; then provoking the bifon to purfue them, they get on the oppofite fide of the pit-fall, while the furious animal, running head foremoft, falls into the pit prepared for him, and is there quickly overcome and flain.

Befides thefe real diftinctions in the cow kind, there have been many others made, that appear to be in name only. Thus the bonafus, of which naturalifts have given us long defcriptions, is fuppofed by Klein and Buffon to be no more than another name for the bifon, as the defcriptions given of them by the ancients, coincide. The bubalus alfo of the ancients, which fome have fuppofed to belong to the cow kind, Buffon places among the lower clafs of ruminant quadrupeds, as it moft refembles them in fize, fhape, and the figure of its horns. Of all the varieties, therefore, of the cow kind, there are but two that are really diftinct; namely, the cow, and the buffalo: thefe two are feparated by Nature; they feem to bear an antipathy to each other; they avoid each other, and may be confidered as much removed as the horfe is from the afs or the zebra. When, therefore, we have defcribed the varieties of the cow kind, we fhall pafs on to the buffalo, which being a different animal, requires a feparate hiftory.

There is fcarce a part of the world, as was faid before, in which the cow is not found in fome one of its varieties; either large, like the urus, or humped as the bifon; with

The BISON

ſtraight horns, or bending, inverted backwards, or turning ſideways to the cheek, like thoſe of the ram; and, in many countries, they are found without any horns whatſoever. But, to be more particular, beginning at the north, the few kine which ſubſiſt in Iceland, are without horns, although of the ſame race originally with ours. The ſize of theſe is rather relative to the goodneſs of the paſture, than the warmth or coldneſs of the climate. The Dutch frequently bring great quantities of lean cattle from Denmark, which they fatten on their own rich grounds. Theſe are in general of a larger ſize than their own natural breed; and they fatten very eaſily. The cattle of the Ukraine, where the paſture is excellent, become very fat, and are conſidered as one of the largeſt breeds of Europe. In Switzerland, where the mountains are covered with a rich nouriſhing herbage, which is entirely reſerved for their kine, theſe animals grow to a very large ſize. On the contrary, in France, where they get no other graſs but what is thought unfit for horſes, they dwindle, and grow lean. In ſome parts of Spain, the cow grows to a good ſize; thoſe wild bulls, however, which they pride themſelves ſo much in combating, are a very mean deſpicable little animal, and ſomewhat ſhaped like one of our cows, with nothing of that peculiar ſternneſs of aſpect for which our bulls are remarkable. In Barbary, and the provinces of Africa, where the ground is dry, and the paſturage ſhort, the cows are of a very ſmall breed, and give milk in proportion. On the contrary, in Ethiopia, they are of a prodigious bigneſs. The ſame holds in Perſia and Tartary; where, in ſome places, they are very ſmall, and, in others, of an amazing ſtature. It is thus, in almoſt every part of the world, this animal is found to correſpond in ſize to the quantity of its proviſion.

If we examine the form of theſe animals, as they are found tame, in different regions, we ſhall find, that the breed of the urus, or thoſe without a hump, chiefly occupies the cold and the temperate zones, and is not ſo much diſperſed towards the ſouth. On the contrary, the breed of the biſon, or the animal with a hump, is found in all the ſouthern parts of the world; throughout the vaſt continent of India; throughout Africa, from Mount Atlas to the Cape

of Good Hope. In all theſe countries, the biſon ſeems chiefly to prevail; where they are found to have a ſmooth ſoft hair, are very nimble of foot, and, in ſome meaſure, ſupply the want of horſes. The biſon breed is alſo more expert and docile than ours; many of them, when they carry burdens, bend their knees to take them up, or ſet them down: they are treated, therefore, by the natives of thoſe conntries, with a degree of tenderneſs and care equal to their utility; and the reſpect for them in India has degenerated even into blind adoration. But it is among the Hottentots where theſe animals are chiefly eſteemed, as being more than commonly ſerviceable. They are their fellow-domeſtics, the companions of their pleaſures and fatigues; the cow is at once the Hottentot's protector and ſervant, aſſiſts him in attending his flocks, and guarding them againſt every invader; while the ſheep are grazing, the faithful backely, as this kind of cow is called, ſtands, or grazes beſide them: ſtill, however, attentive to the looks of its maſter, the backely flies round the field, herds in the ſheep that are ſtraying, obliges them to keep within proper limits, and ſhews no mercy to robbers, or even ſtrangers, who attempt to plunder. But it is not the plunderers of the flock alone, but even the enemies of the nation, that theſe backelies are taught to combat. Every army of Hottentots is furniſhed with a proper herd of theſe, which are let looſe againſt the enemy, when the occaſion is moſt convenient. Being thus ſent forward, they overturn all before them; they ſtrike every oppoſer down with their horns, and trample upon them with their feet; and thus often procure their maſters an eaſy victory, even before they have attempted to ſtrike a blow. An animal ſo ſerviceable, it may be ſuppoſed, is not without its reward. The backely lives in the ſame cottage with its maſter, and, by long habit, gains an affection for him; and in proportion as the man approaches to the brute, ſo the brute ſeems to attain even to ſome ſhare of human ſagacity. The Hottentot and his backely thus mutually aſſiſt each other; and when the latter happens to die, a new one is choſen to ſucceed him, by a council of the old men of the village. The new backely is then joined with one of the veterans of his own kind, from whom he learns his art, becomes ſocial and dili-

gent, and is taken for life into human friendſhip and protection.

The biſons, or cows with a hump, are found to differ very much from each other in the ſeveral parts ofthe world where they are found. The wild ones of this kind, as with us, are much larger than the tame. Some have horns, and ſome are without any; ſome have them depreſſed, and ſome raiſed in ſuch a manner that they are uſed as weapons of annoyance or defence; ſome are extremely large, and others among them, ſuch as the zebu, or Barbary cow, are very ſmall. They are all, however, equally docile and gentle when tamed; and, in general, furniſhed with a fine luſtrous ſoft hair, more beautiful than that of our own breed; their hump is alſo of different ſizes, in ſome weighing from forty to fifty pounds, in others leſs; it is not, however, to be conſidered as a part neceſſarily belong to the animal; and probably it might be cut away without much injury: it reſembles a griſtly fat; and, as I am aſſured, cuts and taſtes ſomewhat like a dreſſed udder. The biſons of Malabar, Abyſſinia, and Madagaſcar, are of the great kind, as the paſtures there are plentiful. Thoſe of Arabia, Petræa, and moſt parts of Africa, are ſmall, and of the zebu or little kind. In America, eſpecially towards the north, the biſon is well known. The American biſon, however, is found to be rather leſs than that of the ancient continent; its hair is longer and thicker, its beard more remarkable, and its hide more luſtrous and ſoft. There are many of them brought up tame in Carolina; however, their wild diſpopoſitions ſtill ſeem to continue, for they break through all fences to get into the corn-fields, and lead the whole tame herd after them, wherever they penetrate. They breed alſo with the tame kinds originally brought over from Europe; and thus produce a race peculiar to that country.

From all this it appears*, that naturaliſts have given various names to animals in reality the ſame, and only differing in ſome few accidental circumſtances. The wild cow and the tame, the animal belonging to Europe, and that of Aſia, Africa, and America, the bonaſus and the urus, the biſon and the zebu, are all one and the ſame, propagate

* Buffon, vol. xxiii. p. 130.

among each other, and, in the courſe of a few generations, the hump wears away, and ſcarce any veſtiges of ſavage fiercenefs are found to remain. Of all animals, therefore, except man alone, the cow ſeems moſt extenſively propagated. Its nature ſeems equally capable of the rigours of heat and cold. It is an inhabitant as well of the frozen fields of Iceland, as the burning deſerts of Lybia. It ſeems an ancient inmate in every climate, domeſtic and tame in thoſe countries which have been civilized, ſavage and wild in the countries which are leſs peopled, but capable of being made uſeful in all: able to defend itſelf in a ſtate of nature againſt the moſt powerful enemy of the foreſt; and only ſubordinate to man whoſe force it has experienced, and whoſe aid it at laſt ſeems to require. However wild the calves are, which are taken from the dam in a ſavage ſtate, either in Africa or Aſia, they ſoon become humble, patient, and familiar; and man may be conſidered, in thoſe countries, as almoſt helpleſs without their aſſiſtance. Other animals preſerve their nature or their form with inflexible perſeverance; but theſe, in every reſpect, ſuit themſelves to the appetites and conveniences of mankind; and as their ſhapes are found to alter, ſo alſo does their nature; in no animal is there ſeen a greater variety of kinds, and in none a more humble and pliant diſpoſition.

THE BUFFALO.

If we ſhould compare the ſhape of our common cow with that of the biſon, the difference will appear very great. The ſhaggy mane of the latter, the beard, the curled forehead, the inverted horns, the broad breaſt, and the narrow hinder parts, give it the appearance rather of a lion than a cow; and fit it more for a ſtate of war with mankind, than a ſtate of ſervitude. Yet, notwithſtanding theſe appearances, both animals are found to be the ſame; or at leaſt ſo nearly allied, that they breed among each other, and propagate a race that continues the kind.

On the other hand, if we compare the buffalo with our common cow, no two animals can be more nearly alike,

either in their form or their nature; both equally ſubmiſſive to the yoke, both often living under the ſame roof, and employed in the ſame domeſtic ſervices; the make and the turn of their bodies ſo much alike, that it requires a cloſe attention to diſtinguiſh them: and yet, after all this, no two animals can be more diſtinct, or ſeem to have ſtronger antipathies to each other*. Were there but one of each kind remaining, it is probable the race of both would ſhortly be extinct. However, ſuch is the fixed averſion formed between theſe creatures, that the cow refuſes to breed with the buffalo, which it nearly reſembles; while it is known to propagate with the biſon, to which it has, in point of form, but a very diſtant ſimilitude.

The buffalo is, upon the whole, by no means ſo beautiful a creature as the cow; his figure is more clumſy and awkward; his air is wilder; and he carries his head lower, and nearer the ground; his limbs are leſs fleſhy, and his tail more naked of hair; his body is ſhorter and thicker than that of the cow kind; his legs are higher; his head ſmaller; his horns not ſo round, black, and compreſſed, with a bunch of curled hair hanging down between them; his ſkin is alſo harder and thicker, more black, and leſs furniſhed with hair; his fleſh, which is hard and blackiſh, is not only diſagreeable to the taſte, but likewiſe to the ſmell. The milk of the female is by no means ſo good us that of the cow; it is however produced in great abundance. In the warm countries, almoſt all their cheeſe is made of the milk of the buffalo; and they ſupply butter alſo in large quantities. The veal of the young buffalo is not better eating than the beef of the old. The hide of this animal ſeems to be the moſt valuable thing he furniſhes. The leather made of it is well known for its thickneſs, ſoftneſs, and impenetrability. As theſe animals are, in general, larger and ſtronger than the cow, they are uſefully employed in agriculture. They are uſed in drawing burdens, and ſometimes in carrying them; being guided by a ring, which is thruſt through their noſe. Two buffaloes yoked in a waggon, are ſaid to draw more than four ſtrong horſes; as their heads and necks are naturally bent downward, they are thus better fitted for the draught, and the

* Buffon.

whole weight of their bodies is applied to the carriage that is to be drawn forward.

From the ſize and bulk of the buffalo, we may be eaſily led to conclude that he is a native of the warmer climates. The largeſt quadrupeds are generally found in the torrid zone; and the buffalo is inferior, in point of ſize, only to the elephant, the rhinoceros, or the hippopotamos. The camelopard or the camel may, indeed, be taller, but they are neither ſo long, nor near ſo corpulent. Accordingly, we find this animal wild in many parts of India; and tamed, alſo, wherever the natives have occaſion for his ſervices. The wild buffaloes are very dangerous animals, and are often found to gore travellers to death, and then trample them with their feet, until they have entirely mangled the whole body: however, in the woods they are not ſo much to be feared as in the plains, becauſe in the violence of their purſuit their large horns are apt to be entangled in the branches of the trees, which gives thoſe who have been ſurpriſed by them time to eſcape the danger. There is ſcarce any other method of avoiding their purſuit; they run with great ſwiftneſs; they overturn a tree of moderate growth; and are ſuch ſwimmers, as to croſs the largeſt rivers without any difficulty. In this manner, like all other large animals of the torrid zone, they are very fond of the water; and, in the midſt of their purſuit, often plunge in, in order to cool themſelves. The Negroes of Guinea, and the Indians of Malabar, where buffaloes are in great abundance, take great delight in hunting and deſtroying them; however, they never attempt to face the buffalo openly, but, generally climbing up the tree, ſhoot at him from thence, and do not come down till they find they have effectually deſpatched him.—When they are tamed, no animal can be more patient or humble; and though by no means ſo docile as the cow kind, yet they go through domeſtic drudgeries with more ſtrength and perſeverance.

Although theſe animals be chiefly found in the torrid zone, yet they are bred in ſeveral parts of Europe, particularly in Italy, where they make the food and the riches of the poor. The female produces but one at a time, in the ſame manner as the cow; but they are very different in the

times of geſtation; for the cow, as we know, goes but nine months; whereas the buffalo continues pregnant for twelve. They are all afraid of fire; and, perhaps, in conſequence of this, have an averſion to red colours, that reſemble the colour of flame: it is ſaid, that in thoſe countries where they are found in plenty, no perſon dares to dreſs in ſcarlet. In general, they are inoffenſive animals, if undiſturbed; as, indeed, all thoſe which feed upon graſs are found to be; but when they are wounded, or when even but fired at, nothing then can ſtop their fury; they then turn up the ground with their fore-feet, bellow much louder and more terribly than the bull, and make at the object of their reſentment with ungovernable rage. It is happy, in ſuch circumſtances, if the perſon they purſue has a wall to eſcape over, or ſome ſuch obſtacle, otherwiſe they ſoon overtake, and inſtantly deſtroy him. It is remarkable, however, that although their horns are ſo very formidable, they in general make more uſe of their feet in combat, and rather tread their enemies to death than gore them.

Having thus gone through the hiſtory of theſe animals, it may be proper to obſerve, that no names have been more indiſcriminately uſed than thoſe of the bull, the urus, the biſon, and the buffalo. It therefore becomes ſuch as would have diſtinct ideas of each, to be careful in ſeparating the kinds, the one from the other, allowing the cow for the ſtandard of all. The urus, whether of the large enormous kind of Lithuania, or the ſmaller race of Spain, whether with long or ſhort horns, whether with or without long hair in the forehead, is every way the ſame with what our common breed was before they were taken from the foreſt, and reduced to a ſtate of ſervitude. The biſon, and all its varieties, which are known by a hump between the ſhoulders, is alſo to be ranked in the ſame claſs. This animal, whether with crooked or ſtraight horns, whether they be turned towards the cheek, or totally wanting, whether it be large or diminutive, whatever be its colour, or whatever the length of its hair, whether called the *bonaſus* by ſome, or the *bubalus* by others, is but a variety of the cow kind, with whom it breeds, and with whom of conſequence it has the cloſeſt connection. Laſtly, the buffalo, though ſhaped much more

like the cow, is a diſtinct kind by itſelf, that never mixes with any of the former; that goes twelve months with young; whereas the cow goes but nine; that teſtifies an averſion to the latter; and, though bred under the ſame roof, or feeding in the ſame paſture, has always kept ſeparate; and makes a diſtinct race in all parts of the world. Theſe two kinds are ſuppoſed to be the only real varieties in the cow kind, of which naturaliſts have given ſo many varieties. With reſpect to ſome circumſtances mentioned by travellers, ſuch as that of many kinds defending themſelves by voiding their dung againſt their purſuers; this is a practice which they have in common with other timid creatures when purſued, and ariſes rather from fear than a deſire of defence. The muſky ſmell alſo by which ſome have been diſtinguiſhed, is found common to many of theſe kinds, in a ſtate of nature; and does not properly make the characteriſtic marks of any. The particular kind of noiſe, alſo, which ſome of them are known to make, which rather reſembles grunting, than bellowing or lowing, is but a ſavage variety, which many wild animals have, and yet loſe when brought into a ſtate of tameneſs. For theſe reaſons, Mr. Buffon, whom I have followed in this deſcription, is of opinion, that the zebu, or little African cow, and the grunting, or Siberian cow, are but different races of the biſon; as the ſhape of the horns, or the length of the hair; are never properly characteriſtic marks of any animal, but are found to vary with climate, food, and cultivation.

In this manner, the number of animals of the cow kind, which naturaliſts have extended to eight or ten ſorts, are reduced to two; and as the utmoſt deference is paid to the opinion of Mr. Buffon in this particular, I have taken him for my guide. Nevertheleſs, there is an animal of the cow kind, which neither he, nor any other naturaliſt that I know of, has hitherto deſcribed, yet which makes a very diſtinct claſs, and may be added as a third ſpecies.

This animal was ſhewn ſome years ago, in London, and ſeemed to unite many of the characteriſtics of the cow and the hog; having the head, the horns, and the tail of the former; with the briſtles, the colour and the grunting of the latter. It was about the ſize of an aſs, but broader and

The ZEBU

thicker; the colour refembling that of a hog, and the hair briftly, as in that animal. The hair upon the body was thin, as in the hog; and a row of briftles ran along the fpine, rather fhorter and fofter than in the hog kind. The head was rather larger than that of a cow; the teeth were entirely refembling thofe of that animal, and the tongue was rough in like manner. It fed upon hay; and, confequently, its internal conformation muft have refembled that of the cow kind more than the hog, whofe food is always chofen of a kind more fucculent. The eyes were placed in the head as with the cow, and were pretty nearly of the fame colour; the horns were black and flattifh, but bent rather backwards to the neck, as in the goat kind; the neck was fhort and thick, and the back rather rifing in the middle; it was cloven footed, like the cow, without thofe hinder claws that are found in the hog kinds. But the greateft variety of all in this extraordinary creature, which was a female, was, that it had but two teats, and, confequently, in that refpect, refembled neither of the kinds to which, in other circumftances, it bore fo ftrong a fimilitude. Whether this animal was a diftinct kind or a monfter, I will not pretend to fay; it was fhewn under the name of the bonafus; and it was faid, by the perfon who fhewed it, to have come from India: but no credit is to be given to intereftted ignorance; the perfon only wanted to make the animal appear as extraordinary as poffible; and, I believe, would fcarcely feruple a lie or two, to increafe that wonder in us, by which he found the means of living.

CHAP. III.

OF ANIMALS OF THE SHEEP AND GOAT KIND.

AS no two animals are found entirely the fame, fo it is not to be expected that any two races of animals fhould exactly correfpond in every particular. The goat and the fheep are apparently different, in the form of their bodies, in their covering, and in their horns. They may, from hence, be confidered as two different kinds, with regard to all common and domeftic purpofes. But if we come to

examine them closer, and observe their internal conformation, no two animals can be more alike; their feet, their four stomachs, their suet, their appetites, all are entirely the same, and shew the similitude between them: but what makes a much stronger connection is, that they propagate with each other. The buck goat is found to produce with the ewe an animal that, in two or three generations, returns to the sheep, and seems to retain no marks of its ancient progenitor*. The sheep and the goat, therefore, may be considered as belonging to one family; and were the whole races reduced to one of each, they would quickly replenish the earth with their kind.

If we examine the sheep and goat internally, we shall find, as was said, that their conformation is entirely the same; nor is their structure very remote from that of the cow kind, which they resemble in their hoofs, and in their chewing the cud. Indeed, all ruminant animals are internally very much alike. The goat, the sheep, or the deer, exhibit to the eye of the anatomist the same parts in miniature, which the cow or the bison exhibited in the great. But the differences between these animals are, nevertheless, sufficiently apparent. Nature has obviously marked the distinctions between the cow and the sheep kind, by their form and size; and they are also distinguished from those of the deer kind, by never shedding their horns. Indeed, the form and figure of these animals, if there were nothing else, would seldom fail of guiding us to the kind; and we might almost, upon sight, tell which belong to the deer kind, and which are to be degraded into that of the goat. However, the annually shedding the horns in the deer, and the permanence in the sheep, draws a pretty exact line between the kinds; so that we may hold to this distinction only, and define the sheep and goat kind as ruminant animals of a smaller size, that never shed their horns.

If we consider these harmless and useful animals in one point of view, we shall find that both have been long reclaimed, and brought into a state of domestic servitude.—Both seem to require protection from man; and are, in some measure, pleased with his society. The sheep, indeed,

* Buffon passim.

is the more ſerviceable creature of the two; but the goat has more ſenſibility and attachment. The attending upon both was once the employment of the wiſeſt and the beſt of men; and thoſe have been ever ſuppoſed the happieſt times in which theſe harmleſs creatures were conſidered as the chief objects of human attention. In the earlieſt ages, the goat ſeemed rather the greater favourite; and, indeed, it continues ſuch, in ſome countries, to this day among the poor.—However, the ſheep has long ſince become the principal object of human care; while the goat is diſregarded by the generality of mankind, or become the poſſeſſion only of the loweſt of the people. The ſheep, therefore, and its varieties, may be conſidered firſt; and the goat, with all thoſe of its kind, will then properly follow.

THE SHEEP.

Those animals that take refuge under the protection of man, in a few generations become indolent and helpleſs. Having loſt the habit of ſelf-defence, they ſeem to loſe alſo the inſtincts of Nature. The ſheep, in its preſent domeſtic ſtate, is of all animals the moſt defenceleſs and inoffenſive. With its liberty, it ſeems to have been deprived of its ſwiftneſs and cunning; and what in the aſs might rather be called patience, in the ſheep appears to be ſtupidity. With no one quality to fit it for ſelf-preſervation, it makes vain efforts at all. Without ſwiftneſs, it endeavours to fly; and without ſtrength, ſometimes offers to oppoſe. But theſe feeble attempts rather incite than repreſs the inſults of every enemy; and the dog follows the flock with greater delight upon ſeeing them fly, and attacks them with more fierceneſs upon their unſupported attempts at reſiſtance. Indeed they run together in flocks, rather with the hopes of loſing their ſingle danger in the crowd, than of uniting to repreſs the attack by numbers. The ſheep, therefore, were it expoſed in its preſent ſtate to ſtruggle with its natural enemies of the foreſt, would ſoon be extirpated. Loaded with a heavy fleece, deprived of the defence of its horns, and rendered heavy, ſlow, and feeble, it can have no other ſafety than what it finds from man. This animal is now, therefore, obliged to rely

ſolely upon that art for protection, to which it originally owes its degradation.

But we are not to impute to Nature the formation of an animal ſo utterly unprovided againſt its enemies, and ſo unfit for defence. The mouſſlon, which is the ſheep in a ſavage ſtate, is a bold, fleet creature, able to eſcape from the greater animals by its ſwiftneſs, or to oppoſe the ſmaller kinds with the arms it has received from Nature. It is by human art alone that the ſheep has become the tardy, defenceleſs creature we find it. Every race of quadrupeds might eaſily be corrupted by the ſame allurements by which the ſheep has been thus debilitated and depreſſed. While undiſturbed, and properly ſupplied, none are found to ſet any bounds to their appetite. They all purſue their food while able, and continue to graze, till they often die of diſorders occaſioned by too much fatneſs. But it is very different with them in a ſtate of nature: they are in the foreſt, ſurrounded by dangers, and alarmed with unceaſing hoſtilities; they are purſued every hour from one tract of country to another; and ſpend a greater part of their time in attempts to avoid their enemies. Thus conſtantly exerciſed, and continally practiſing all the arts of defence and eſcape, the animal at once preſerves its life and native independence, together with its ſwiftneſs, and the ſlender agility of its form.

The ſheep, in its ſervile ſtate, ſeems to be diveſted of all inclinations of its own; and of all animals it appears the moſt ſtupid. Every quadruped has a peculiar turn of countenance, a phyſiognomy, if we may ſo call it, that generally marks its nature. The ſheep ſeems to have none of thoſe traits that betoken either courage or cunning; its large eyes, ſeparated from each other, its ears ſticking out on each ſide, and its narrow noſtrils, all teſtify the extreme ſimplicity of this creature; and the poſition of its horns, alſo, ſhew that Nature deſigned the ſheep rather for flight than combat. It appears a large maſs of fleſh, ſupported upon four ſmall, ſtraight legs, ill fitted for carrying ſuch a burden; its motions are awkward, it is eaſily fatigued, and often ſinks under the weight of its own corpulency. In proportion as theſe marks of human transformation are more numerous, the animal becomes more helpleſs and ſtupid. Thoſe which live

upon a more fertile paſture, and grow fat, become entirely feeble; thoſe that want horns are found more dull and heavy than the reſt*; thoſe whoſe fleeces are longeſt and fineſt, are moſt ſubject to a variety of diſorders; and, in ſhort, whatever changes have been wrought in this animal by the induſtry of man, are entirely calculated for human advantage, and not for that of the creature itſelf. It might require a ſucceſſion of ages, before the ſheep could be reſtored to its primitive ſtate of activity, ſo as to become a match for its purſuers of the foreſt.

The goat, which it reſembles in ſo many other reſpects, is much its ſuperior. The one has its particular attachments, ſees danger, and generally contrives to eſcape it; but the other is timid without a cauſe, and ſecure when real danger approaches. Nor is the ſheep, when bred up tame in the houſe, and familiarized with its keepers, leſs obſtinately abſurd: from being dull and timid, it then acquires a degree of pert familiarity; butts with its head, becomes miſchievous, and ſhews itſelf every way unworthy of being ſingled out from the reſt of the flock. Thus it ſeems rather formed for ſlavery than friendſhip; and framed more for the neceſſities than the amuſements of mankind. There is but one inſtance in which the ſheep ſhews any attachment to its keeper; and that is ſeen rather on the continent than among us in Great Britain. What I allude to is, their following the ſound of the ſhepherd's pipe. Before I had ſeen them trained in this manner, I had no conception of thoſe deſcriptions in the old paſtoral poets, of the ſhepherd leading his flock from one country to another. As I had been uſed only to ſee theſe harmleſs creatures driven before their keepers, I ſuppoſed that all the reſt was but invention: but in many parts of the Alps, and even ſome provinces of France, the ſhepherd and his pipe are ſtill continued, with true antique ſimplicity. The flock is regularly penned every evening, to preſerve them from the wolf; and the ſhepherd returns homeward at ſunſet with his ſheep following him, and ſeemingly pleaſed with the ſound of the pipe, which is blown with a reed, and reſembles the chanter of the bag-pipe. In this manner, in thoſe countries that ſtill continue poor, the Arcadian life is

* Daubenton upon the Sheep.

preſerved in all its former purity; but in countries where a greater inequality of conditions prevail, the ſhepherd is generally ſome poor wretch who attends a flock from which he is to derive no benefits, and only guards thoſe luxuries which he is not fated to ſhare.

It does not appear, from early writers, that the ſheep was bred in Britain; and it was not till ſeveral ages after this animal was cultivated, that the woollen manufacture was carried on among us*. That valuable branch of buſineſs lay for a conſiderable time in foreign hands; and we were obliged to import the cloth, manufactured from our own materials. There were, notwithſtanding, many unavailing efforts among our kings to introduce and preſerve the manufacture at home. Henry the Second, by a patent granted to the weavers in London, directed, that if any cloth was found made of a mixture of Spaniſh wool, it ſhould be burned by the mayor. Such edicts at length, although but ſlowly, operated towards the eſtabliſhing this trade among us. The Flemings, who at the revival of arts poſſeſſed the art of cloth-working in a ſuperior degree, were invited to ſettle here; and ſoon after foreign cloth was prohibited from being worn in England. In the times of queen Elizabeth, this manufacture received every encouragement; and many of the inhabitants of the Netherlands being then forced, by the tyranny of Spain, to take refuge in this country, they improved us in thoſe arts, in which we at preſent excel the reſt of the world. Every art, however, has its riſe, its meridian, and its decline: and it is ſuppoſed by many, that the woollen manufacture has for ſome time been decaying amongſt us. The cloth now made is thought to be much worſe than that of ſome years paſt; being neither ſo firm nor ſo fine; neither ſo much courted abroad, nor ſo ſerviceable at home.

No country, however, produces ſuch ſheep as England; either with larger fleeces, or better adapted for the buſineſs of cloathing. Thoſe of Spain, indeed, are finer, and we generally require ſome of their wool to work up with our own: but the weight of a Spaniſh fleece is no way comparable to one of Lincoln or Warwickſhire; and, in thoſe counties, it is no uncommon thing to give 100 guineas for a ram.

* Britiſh Zoology, vol. i. p. 23.

The ſheep without horns are counted the beſt ſort, becauſe a great part of the animal's nouriſhment is ſuppoſed to go up into the horns *. Sheep, like other ruminant animals, want the upper fore-teeth; but have eight in the lower jaw: two of theſe drop, and are replaced at two years old; four of them are replaced at three years old; and all at four. The new teeth are eaſily known from the reſt, by their freſhneſs and whiteneſs. There are ſome breeds, however, in England, that never change their teeth at all; theſe the ſhepherds call the *leather-mouthed cattle;* and, as their teeth are thus longer wearing, they are generally ſuppoſed to grow old a year or two before the reſt †. The ſheep bring forth one or two at a time; and ſometimes three or four. The firſt lamb of an ewe is generally pot-bellied, ſhort and thick, and of leſs value than thoſe of a ſecond or third production; the third being ſuppoſed the beſt of all. They bear their young five months; and, by being houſed, they bring forth at any time of the year.

But this animal, in its domeſtic ſtate, is too well known to require a detail of its peculiar habits, or of the arts which have been uſed to improve the breed. Indeed, in the eye of an obſerver of Nature, every art which tends to render the creature more helpleſs and uſeleſs to itſelf, may be conſidered rather as an injury than an improvement; and if we are to look for this animal in its nobleſt ſtate, we muſt ſeek for it in the African deſert, or the extenſive plains of Siberia. Among the degenerate deſcendants of the wild ſheep, there have been ſo many changes wrought, as entirely to diſguiſe the kind, and often to miſlead the obſerver. The variety is ſo great that ſcarce any two countries has its ſheep of the ſame kind; but there is found a manifeſt difference in all, either in the ſize, the covering, the ſhape, or the horns.

The woolly ſheep‡, as it is ſeen among us, is found only in Europe, and ſome of the temperate provinces of Aſia. When tranſported into warmer countries, either into Florida or Guinea, it loſes its wool, and aſſumes a covering fitted to the climate, becoming hairy and rough; it there alſo loſes its fertility, and its fleſh no longer has the ſame flavour. In

* Liſle's Huſbandry, vol. ii. p. 155. † Ibid.

‡ Buffon, vol. xxiii. p. 168.

the ſame manner, in the very cold countries, it ſeems equally helpleſs and a ſtranger; it ſtill requires the unceaſing attention of mankind for its preſervation; and although it is found to ſubſiſt, as well in Greenland as in Guinea *, yet it ſeems a natural inhabitant of neither.

Of the domeſtic kinds to be found in the different parts of the world, beſides our own, which is common in Europe, the firſt variety is to be ſeen in Iceland, Muſcovy, and the coldeſt climates of the north. This, which may be called the Iceland ſheep, reſembles our breed, in the form of the body and the tail; but differs in a very extraordinary manner in the number of the horns; being generally found to have four, and ſometimes even eight, growing from different parts of the forehead. Theſe are large and formidable; and the animal ſeems thus fitted by Nature for a ſtate of war: however, it is of the nature of the reſt of its kind, being mild, gentle, and timid. Its wool is very different, alſo, from that of the common ſheep, being long, ſmooth, and hairy. Its colour is of a dark brown; and under its outward coat of hair, it has an internal covering, that rather reſembles fur than wool, being fine, ſhort, and ſoft.

The ſecond variety to be found in this animal, is that of the broad-tailed ſheep, ſo common in Tartary, Arabia, Perſia, Barbary, Syria, and Egypt. This ſheep is only remarkable for its large and heavy tail, which is often found to weigh from twenty to thirty pounds. It ſometimes grows a foot broad, and is obliged to be ſupported by a ſmall kind of board, that goes upon wheels. This tail is not covered underneath with wool, like the upper part, but is bare; and the natives, who conſider it as a very great delicacy, are very careful in attending and preſerving it from injury. Mr. Buffon ſuppoſes that the fat which falls into the caul in our ſheep, goes in theſe to furniſh the tail; and that the reſt of the body is from thence deprived of fat in proportion. With regard to their fleeces, in the temperate climates, they are, as in our own breed, ſoft and woolly; but in the warmer latitudes, they are hairy: yet in both they preſerve the enormous ſize of their tails.

* Krantz.

The MOUFFLON

The third obſervable variety is that of the ſheep called *ſtrepſicheros*. This animal is a native of the iſlands of the Archipelago, and only differs from our ſheep, in having ſtraight horns, ſurrounded with a ſpiral furrow.

The laſt variety is that of the Guinea ſheep, which is generally found in all the tropical climates, both of Africa and the Eaſt-Indies. They are of a large ſize, with a rough hairy ſkin, ſhort horns, and ears hanging down, with a kind of dewlap under the chin. They differ greatly in form from the reſt; and might be conſidered as animals of another kind, were they not known to breed with other ſheep. Theſe, of all the domeſtic kinds, ſeem to approach the neareſt to the ſtate of Nature. They are larger, ſtronger, and ſwifter than the common race; and, conſequently, better fitted for the precarious foreſt life. However, they ſeem to rely, like the reſt, on man for ſupport; being entirely of a domeſtic nature, and ſubſiſting only in the warmer climates.

Such are the varieties of this animal, which have been reduced into a ſtate of domeſtic ſervitude. Theſe are all capable of producing among each other; all the peculiarities of their form have been made by climate and human cultivation; and none of them ſeem ſufficiently independent, to live in a ſtate of ſavage nature. They are, therefore, to be conſidered as a degenerate race, formed by the hand of man, and propagated merely for his benefit. At the ſame time, while man thus cultivates the domeſtic kinds, he drives away and deſtroys the ſavage race, which are leſs beneficial, and more headſtrong. Theſe, therefore, are to be found in but a very ſmall number, in the moſt uncultivated countries, where they have been able to ſubſiſt by their native ſwiftneſs and ſtrength. It is in the more uncultivated parts of Greece, Sardinia, Corſica, and particularly in the deſerts of Tartary, that the moufflon is to be found, that bears all the marks of being the primitive race; and that has been actually known to breed with the domeſtic animal.

The moufflon, or muſmon, though covered with hair, bears a ſtronger ſimilitude to the ram, than to any other animal; like the ram it has the eyes placed near the horns; and its ears are ſhorter than thoſe of the goat: it alſo reſembles

the ram in its horns, and in all the particular contours of its form. The horns alſo are alike; they are of a yellow colour; they have three ſides, as in the ram, and bend backwards in the ſame manner behind the ears, the muzzle and the inſide of the ears, are of a whitiſh colour, tinctured with yellow; the other parts of the face are of a browniſh grey. The general colour of the hair over the body is of a brown, approaching to that of the red deer. The inſide of the thighs and belly are of a white, tinctured with yellow. The form, upon the whole, ſeems more made for agility and ſtrength than that of the common ſheep; and the mouffion is actually found to live in a ſavage ſtate, and maintain itſelf either by force or ſwiftneſs, againſt all the animals that live by rapine. Such is its extreme ſpeed, that many have been inclined rather to rank it among the deer kind, than the ſheep. But in this they are deceived, as the muſmon has a mark that entirely diſtinguiſhes it from that ſpecies, being known never to ſhed its horns. In ſome theſe are ſeen to grow a ſurpriſing ſize; many of them meaſuring, in their convolutions, above two ells long. They are of a yellow colour, as was ſaid; but the older the animal grows, the darker the horns become: with theſe they often maintain very furious battles between each other; and ſometimes they are found broken off in ſuch a manner, that the ſmall animals of the foreſt creep into the cavity for ſhelter *. When the muſmon is ſeen ſtanding on the plain, his fore-legs are always ſtraight, while his hinder-legs ſeem bent under him; but in caſes of more active neceſſity, this ſeeming deformity is removed, and he moves with great ſwiftneſs and agility. The female very much reſembles the male of this ſpecies, but that ſhe is leſs, and her horns alſo are never ſeen to grow to that prodigious ſize they are of in the wild ram. Such is the ſheep in its ſavage ſtate; a bold, noble, and even beautiful animal: but it is not the moſt beautiful creatures that are always found moſt uſeful to man. Human induſtry has therefore deſtroyed its grace, to improve its utility.

* Gmelin, as quoted by Buffon.

THE GOAT,

AND ITS NUMEROUS VARIETIES.

THERE are ſome domeſtics animals that ſeem as auxiliaries to the more uſeful ſorts; and, that by ceaſing to be the firſt, are conſidered as nothing. We have ſeen the ſervices of the aſs ſlighted, becauſe inferior to thoſe of the horſe; and, in the ſame manner, thoſe of the goat are held cheap, becauſe the ſheep ſo far exceeds it. Were the horſe or the ſheep removed from Nature, the inferior kinds would then be invaluable; and the ſame arts would probably be beſtowed in perfecting their kinds, that the higher order of animals have experienced. But in their preſent neglected ſtate, they vary but little from the wild animals of the ſame kind; man has left them their primitive habits and forms; and the leſs they owe to his aſſiduity, the more they receive from Nature.

The goat ſeems, in every reſpect, more fitted for a life of ſavage liberty than the ſheep*. It is naturally more lively, and more poſſeſſed with animal inſtinct. It eaſily attaches itſelf to man, and ſeems ſenſible of his careſſes. It is alſo ſtronger and ſwifter, more courageous, and more playful, lively, capricious, and vagrant: it is not eaſily confined to its flock, but chooſes its own paſtures, and loves to ſtray remote from the reſt. It chiefly delights in climbing precipieces; in going to the very edge of danger: it is often ſeen ſuſpended upon an eminence hanging over the ſea, upon a very little baſe, and even ſleeps there in ſecurity. Nature has, in ſome meaſure, fitted it for traverſing theſe declivities with eaſe; the hoof is hollow underneath, with ſharp edges, ſo that it walks as ſecurely on the ridge of a houſe, as on the level ground. It is a hardy animal, and very eaſily ſuſtained; for which reaſon it is chiefly the property of the poor, who have no paſtures with which to ſupply it. Happily, however, it ſeems better pleaſed with the neglected wild, than the cultivated fields of Art; it chooſes the heathy mountain, or the ſhrubby rock; its favourite food is the tops

* Buffon.

of the boughs, or the tender bark of young trees; it feems lefs afraid of immoderate heat, and bears the warm climates, better than the fheep: it fleeps expofed to the fun; and feems to enjoy its warmeft fervours: neither is it terrified at the ftorm, or incommoded by the rain; immoderate cold alone feems to affect it, and is faid to produce a vertigo, with which this animal is fometimes incommoded. The inconftancy of its nature is perceiveable in the irregularity of its gait; it goes forward, ftops, runs, approaches, flies, merely from caprice, and with no other feeming reafon than the extreme vivacity of its difpofition.

There are proofs of this animal's being naturally the friend of man; and that the goat feldom refumes its primœval wildnefs, when once reduced into a ftate of fervitude. In the year 1698, an Englifh veffel happening to touch at the iflands of Bonavifta, two Negroes came, and offered the failors as many goats as they chofe to take away. Upon the captain's expreffing his aftonifhment at this offer, the Negroes affured him that there were but twelve perfons in the ifland, and that the goats were multiplied in fuch a manner as even to become a nuifance: they added, that inftead of giving any trouble to catch them, they followed the few inhabitants that were left with a fort of obftinacy, and rather became importunate with their tamenefs.

The goat produces but two at a time; and three at the moft. But in the warmer climates, although the animal degenerates, and grows lefs, yet it becomes more fruitful, being generally found to bring forth three, four, and five at a fingle delivery. The buck is capable of propagating at the age of one year, and the female at feven months; however the fruits of this premature generation are weak and defective; and their beft breeding time is generally delayed till the age of two years, or eighteen months at leaft. One buck is fufficient for a hundred and fifty goats; his appetites are exceffive: but this ardour brings on a fpeedy decay, fo that he is enervated in four years at moft, and even becomes old before he reaches his feventh year. The goat, like the fheep, continues five months with young; and, in fome places, bears twice a year.

The milk of the goat is fweet, nourifhing, and medicinal; not fo apt to curdle upon the ftomach as that of the cow;

and, therefore, preferable to thoſe whoſe digeſtion is but weak. The peculiarity of this animal's food, gives the milk a flavour different from that either of the cow or the ſheep; for as it generally feeds upon ſhrubby paſtures, and heathy mountains, there is an agreeable wildneſs in the taſte very pleaſing to ſuch as are fond of that aliment. In ſeveral parts of Ireland, and the highlands of Scotland, the goat makes the chief poſſeſſion of the inhabitants. On thoſe mountains, where no other uſeful animal could find ſubſiſtence, the goat continues to glean a ſufficient living; and ſupplies the hardy natives with what they conſider as varied luxury. They lie upon beds made of their ſkins, which are ſoft, clean, and wholeſome; they live upon their milk, with oat bread; they convert a part of it into butter, and ſome into cheeſe; the fleſh, indeed, they ſeldom taſte of, as it is a delicacy which they find too expenſive; however, the kid is conſidered, even by the city epicure, as a great rarity; and the fleſh of the goat, when properly prepared, is ranked by ſome as no way inferior to veniſon. In this manner, even in the wildeſt ſolitudes, the poor find comforts of which the rich do not think it worth their while to diſpoſſeſs them; in theſe mountainous retreats, where the landſcape preſents only a ſcene of rocks, heaths, and ſhrubs, that ſpeak the wretchedneſs of the ſoil, theſe ſimple people have their feaſts, and their pleaſures, their faithful flock of goats attends them to theſe awful ſolitudes, and furniſhes them with all the neceſſaries of life; while their remote ſituation happily keeps them ignorant of greater luxury.

As theſe animals are apt to ſtray from the flock, no man can attend above fifty of them at a time. They are fattened in the ſame manner as ſheep; but, taking every precaution, their fleſh is never ſo good or ſo ſweet, in our climate, as that of mutton. It is otherwiſe between the tropics. The mutton there becomes flabby and lean, while the fleſh of the goat rather ſeems to improve; and in ſome places the latter is cultivated in preference to the former. We, therefore, find this animal in almoſt every part of the world, as it ſeems fitted for the neceſſities of man in both extremes. Towards the north, where the paſture is coarſe and barren, the goat is fitted to find a ſcanty ſubſiſtence; between the

tropics, where the heat is exceſſive, the goat is fitted to bear the climate, and its fleſh is found to improve.

One of the moſt remarkable varieties we find in the goat is in that of Natolia. The Natolian goat, or, as Mr. Buffon calls it, the goat of *Angora*, has the ears longer than ours, and broader in proportion. The male has horns of about the ſame length with the goat of Europe, but black, and turned very differently, going out horizontally on each ſide of the head, and twiſted round in the manner of a cork-ſcrew. The horns of the female are ſhorter, and encircle the ear ſomewhat like thoſe of the ram. They are of a dazzling white colour, and in all the hair is very long, thick, fine, and gloſſy; which, indeed, is the caſe with almoſt all the animals of Syria. There are a great number of theſe animals about Angora, where the inhabitants drive a trade with their hair, which is ſold either raw, or manufactured into all parts of Europe. Nothing can exceed the beauty of the ſtuffs which are made from the hair of almoſt all the animals of that country. Theſe are well known among us by the name of *camblet*.

A ſecond variety is the Aſſyrian goat of Geſner, which is ſomewhat larger than ours, with ears almoſt hanging down to the ground, and broad in proportion. The horns, on the contrary, are not above two inches and an half long, black, and bending a little backwards. The hair is of a fox colour, and under the throat there are two excreſcences, like the gills of a cock. Theſe animals are chiefly kept round Aleppo, for the ſake of their milk. They are driven through the ſtreets, and their milk is ſold to the inhabitants as they paſs along.

In the third variety may be reckoned, the little goat of America, which is of the ſize of a kid, but the hair is as long as that of the ordinary breed. The horns, which do not exceed the length of a man's finger, are thick, and bend downwards ſo cloſe to the head, that they almoſt enter the ſkin.

There is an animal of this kind at the Cape of Good Hope, called the *blue goat*, which may be ranked as the fourth variety. It is in ſhape like the domeſtic, but much larger, being nearly of the ſize of a ſtag. Its hair is very

ſhort, and of a delightful blue; but its loſes a great deal of its beauty when the animal is dead. It has a very long beard; but the horns are not ſo long in proportion as in other goats, being turned ſpirally, in the manner of a cork-ſcrew. It has very long legs, but well proportioned; and the fleſh is very well taſted, but lean. For this reaſon, in that plentiful country, it is chiefly killed upon account of its ſkin. It is a very ſhy animal, and ſeldom comes near the Dutch ſettlements; but they are found in great abundance in the more uncultivated parts of the country. Beſides theſe, they are found in this extenſive region of various colours, and many of them are ſpotted beautifully, with red, white and brown.

In fine, the Juda goat reſembles ours in moſt parts, except in ſize, it being much ſmaller. This animal is common in Guinea, Angola, and all along the coaſt of Africa: it is not much larger than the hare, but it is extremely fat, and its fleſh admirably taſted. It is in that country univerſally preferred to mutton.

Theſe animals ſeem all of one kind, with very trifling diſtinctions between them. It is true that they differ in ſome reſpects; ſuch as having neither the ſame colour, hair, ears, or horns. But it ought to be conſidered as a rule in natural hiſtory, that neither the horns, the colour the fineneſs or the length of the hair, nor the poſition of the ears, are to be conſidered as making an actual diſtinction in the kinds. Theſe are accidental varieties, produced by climate and food, which are known to change even in the ſame animal, and give it a ſeeming difference of form. When we ſee the ſhapes, the inclinations, and the internal conformation of ſeemingly different creatures nearly the ſame; and, above all, when we ſee them producing among each other, we then have no heſitation in pronouncing the ſpecies, and aſſerting that theſe are of the goat kind, with which they are ſo materially connected.

But, although theſe are evidently known to belong to the goat kind, there are others nearly reſembling the goat, of whoſe kindred we cannot be equally certain. Theſe are ſuch as, being found in a ſtate of nature, have not as yet been ſufficiently ſubjected to human obſervation. Hence it

is impoſſible to determine with preciſion to which claſs they belong; whether they be animals of a particular kind, or merely the goat in its ſtate of ſavage freedom. Were there but one of theſe wild animals, the inquiry would ſoon be ended; and we might readily allow it for the parent ſtock; but, in the preſent caſe, there are two kinds that have almoſt equal pretenſions to this honour; and the claims of which it has been found difficult to determine. The animals in queſtion are the ſhammoy and the ibex. Theſe both bear very near approaches to the goat in figure; have horns that never ſhed; and, at the ſame time, are more different from each other than from the animal in queſtion. From which of theſe two ſources our domeſtic goat is derived, is not eaſy to ſettle. Inſtead, therefore, of entering into the diſcuſſion, I will content myſelf with the reſult of Mr. Buffon's inquiries. He is of opinion that the ibex is the principal ſource; that our domeſtic goat is the immediate deſcendant; and that the ſhammoy is but a variety from that ſtock, a ſort of collateral branch of the ſame family. His principal reaſon for giving the preference to the ibex, is its having a more maſculine figure, large horns, and a large beard; whereas the ſhammoy wants theſe marks of primitive ſtrength and wildneſs. He ſuppoſes, therefore, in their original ſavage ſtate, that our goat has taken after the male of the parent ſtock, and the ſhammoy after the female; and that this has produced a variety in theſe animals, even before they underwent human cultivation.

However, this be, the two animals in queſtion ſeem both well fitted for their precarious life, being extremely ſwift, and capable of running with eaſe along the ledges of precipices, where even the wolf or the fox, though inſtigated by hunger, dares not purſue them. They are both natives of the Alps, the Pyrenees, and the mountains of Greece; there they propagate in vaſt numbers, and continue to exiſt in ſpite of the hunter and every beaſt of prey that is found inceſſantly to purſue them.

The ibex reſembles the goat in the ſhape of its body; but differs in the horns, which are much larger. They are bent backward, full of knots; and it is generally aſſerted that there is a knot added every year. There are ſome of

thefe found, if we believe Bellonius, at leaft two yards long. The ibex has a large black beard, is of a brown colour, with a thick warm coat of hair. There is a ftreak of black runs along the top of the back; and the belly and back of the thighs are of a fawn colour.

The fhammoy*, though a wild animal, is very eafily tamed, and docile; and to be found only in rocky and mountainous places. It is about the fize of a domeftic goat, and refembles one in many refpects. It is moft agreeably lively, and active beyond expreffion. The fhammoy's hair is fhort, like that of the doe; in fpring it is of an afh colour, in autumn a dun colour, inclining to black, and in winter of a blackifh brown. This animal is found in great plenty in the mountains of Dauphiny, of Piedmont, Savoy, Switzerland, and Germany. They are peaceful, gentle creatures, and live in focicty with each other. They are found in flocks of from four to fourfcore, and even a hundred, difperfed upon the crags of the mountains. The large males are feen feeding detached from the reft, except in rutting time, when they approach the females, and drive away the young. The time of their coupling is from the beginning of September to the end of October; and they bring forth in April and March. The young keeps with the dam for about five months, and fometimes longer, if the hunters and the wolves do not feparate them. It is afferted that they live between twenty and thirty years. Their flefh is good to eat; and they are found to have ten or twelve pounds of fuet, which far furpaffes that of the goat in hardnefs and goodnefs. The fhammoy has fcarce any cry, as moft animals are known to have; if it has any, it is a kind of feeble bleat, by which the parent calls its young. But in cafes of danger, and when it is to warn the reft of the flock, it ufes a hiffing noife, which is heard at a great diftance. For it is to be obferved, that this creature is extremely vigilant, and has an eye the quickeft and moft piercing in Nature. Its fmell alfo is not lefs diftinguifhing. When it fees its enemy diftinctly, it ftops for a moment; and then, if the perfon be near, in an inftant after it flies off. In the fame manner, by its fmell, it can difcover a man at half a league diftance, and

* Mr. Peroud's Account, as quoted by Buffon.

gives the earlieſt notice. Upon any alarm, therefore, or any apprehenſions of danger, the ſhammoy begins his hiſſing note with ſuch force, that the rocks and the foreſts re-echo to the ſound. The firſt hiſs continues as long as the time of one inſpiration. In the beginning it is very ſharp, and deeper towards the cloſe. The animal having, after this firſt alarm, repoſed a moment, again looks round, and, perceiving the reality of its fears, continues to hiſs by intervals, until it has ſpread the alarm to a very great diſtance. During this time, it ſeems in the moſt violent agitation; it ſtrikes the ground with its fore-foot, and ſometimes with both: it bounds from rock to rock; it turns and looks round; it runs to the edge of the precipice; and, ſtill perceiving the enemy, flies with all its ſpeed. The hiſſing of the male is much louder and ſharper than that of the female; it is performed through the noſe; and is properly no more than a very ſtrong breath driven violently through a ſmall aperture.—The ſhammoy feeds upon the beſt herbage, and chooſes the moſt delicate parts of the plants, the flower and the tender buds. It is not leſs delicate with regard to ſeveral aromatic herbs which grow upon the ſides of the mountains. It drinks but very little while it feeds upon the ſucculent herbage, and chews the cud in the intervals of feeding. This animal is greatly admired for the beauty of its eyes, which are round and ſparkling, and which mark the warmth of its conſtitution. Its head is furniſhed with two ſmall horns, of about half a foot long, of a beautiful black, and riſing from the forehead, almoſt betwixt the eyes. Theſe, contrary to what they are found in other animals, inſtead of going backwards or ſideways, jet out forward, and bend a little, at their extremities, backward, in a ſmall circle, and end in a very ſharp point. The ears are placed, in a very elegant manner, near the horns; and there are two ſtripes of black on each ſide of the face, the reſt being of a whitiſh yellow, which never changes. The horn of this animal is often uſed as the head of a cane. Thoſe of the female are leſs, and not ſo much bent; and ſome farriers are ſeen to bleed cattle with them. Theſe animals are ſo much incommoded by heat, that they are never found in ſummer, except in the caverns of rocks, amidſt fragments of unmelted ice,

under the ſhade of high and ſpreading trees, or of rough and hanging precipices, that face the north, and which keep off entirely the rays of the ſun. They go to paſture both morning and evening, and ſeldom during the heat of the day. They run along the rocks with great eaſe and ſeeming indifference, and leap from one to another, ſo that no dogs are able to purſue them. There is nothing more extraordinary than to ſee them climbing, and deſcending precipices, that to all other quadrupeds are inacceſſible. They always mount or deſcend in an oblique direction; and throw themſelves down a rock of thirty feet, and light with great ſecurity upon ſome excreſcence or fragment, on the ſide of the precipice, which is juſt large enough to place their feet upon; they ſtrike the rock, however, in their deſcent, with their feet, three or four times, to ſtop the velocity of their motion; and, when they have got upon their baſe below, they at once ſeem fixed and ſecure. In fact, to ſee them jump in this manner, they ſeem rather to have wings than legs: ſome, indeed, pretend to ſay, that they uſe their horns for climbing, but this wants confirmation. Certain it is that their legs alone are formed for this arduous employment, the hinder being rather longer than the former, and bending in ſuch a manner that, when they deſcend upon them, they break the force of the fall. It is alſo aſſerted, that when they feed, one of them always ſtands as centinel; but how far this may be true is queſtionable. For certain, while they feed, there are ſome of them that keep continnally gazing round the reſt; but this is practiſed among all gregarious animals; ſo that when they ſee any danger they warn the reſt of the herd of its approach. During the rigours of winter, the ſhammoy ſleeps in the thicker foreſts, and feeds upon the ſhrubs and the buds of the pine-tree. It ſometimes turns up the ſnow with its foot, to look for herbage; and, where it is green, makes a delicious repaſt. The more craggy and uneven the foreſt, the more this animal is pleaſed with the abode, which thus adds to its ſecurity. The hunting the ſhammoy is very laborious, and extremely difficult. The moſt uſual way is to hide behind the clefts of the rocks and ſhoot them. This, however, muſt be done with great precaution; the ſportſman muſt creep for a vaſt way upon his

belly, in ſilence, and take alſo the advantage of the wind, which if it blow from him they would inſtantly perceive.—When arrived at a proper diſtance, he then advances his piece, which is to be rifle-barrelled, and to carry one ball, and tries his fortune among them. Some alſo purſue this animal, as they do the ſtag, by placing proper perſons at all the paſſages of a glade or valley, and then ſending in others to rouze the game. Dogs are quite uſeleſs in this chaſe, as they rather alarm than overtake. Nor is it without danger even to the men; for it often happens that when the animal finds itſelf over-preſſed, it drives at the hunter with its head, and often tumbles him down the neighbouring precipice. This animal cannot go upon ice when ſmooth; but if there be the leaſt inequalities on its ſurface, it then bounds along in ſecurity, and quickly evades all purſuit.

The ſkin of the ſhammoy was once famous, when tanned, for its ſoftneſs and warmth; at preſent, however, ſince the art of tanning has been brought to greater perfection, the leather called *ſhammoy* is made alſo from thoſe of the tame goat, the ſheep, and the deer. Many medicinal virtues alſo were ſaid to reſide in the blood, fat, gall, and the concretion ſometimes found in the ſtomach of this animal, called the *German bezoar*. The fat, mixed with milk, was ſaid to be good in ulcers of the lungs. The gall was ſaid to be uſeful in ſtrengthening the ſight; the ſtone, which is generally about the ſize of a walnut, and blackiſh, was formerly in great requeſt for having the ſame virtues with oriental bezoar. However, in the preſent enlightened ſtate of phyſic, all theſe medicines are quite out of repute; and although we have the names of ſeveral medicines procurable from quadrupeds, yet, except the muſk or hartſhorn alone, I know of none in any degree of reputation. It is true, the fat, the urine, the beak, and even the dung of various animals, may be found efficacious, where better remedies are not to be had; but they are far ſurpaſſed by many at preſent in uſe, whoſe operations we know, and whoſe virtues are confirmed by repeated experience.

Such are the quadrupeds that more peculiarly belong to the goat kind. Each of theſe, in all probability, can engender and breed with the other; and were the whole race ex-

tinguiſhed, except any two, theſe would be ſufficient to repleniſh the world, and continue the kind. Nature, however, proceeds in her variations by ſlow and inſenſible degrees, and ſcarce draws a firm, diſtinguiſhed line between any two neighbouring races of animals whatſoever. Thus it is hard to diſcover where the ſheep ends, and the goat begins; and we ſhall find it ſtill harder to fix preciſely the boundaries between the goat kind and the deer. In all tranſitions from one kind to the other, there are found to be a middle race of animals, that ſeem to partake of the nature of both, and that can preciſely be referred to neither. That race of quadrupeds, called the *gazelles*, are of this kind; they are properly neither goat nor deer, and yet they have many of the marks of both; they make the ſhade between theſe two kinds, and fill up the chaſm in Nature.

THE GAZELLES.

The Gazelles, of which there are ſeveral kinds, can, with propriety, be referred neither to the goat nor the deer; and yet they partake of both natures. Like the goat, they have hollow horns that never fall, which is otherwiſe in the deer. They have a gall-bladder, which is found in the goat and not in the deer; and, like that animal, they feed rather upon ſhrubs than graſſy paſture. On the other hand, they reſemble the roebuck in ſize and delicacy of form; they have deep pits under the eyes like that animal; they reſemble the roebuck in the colour and nature of their hair; they reſemble him in the bunches upon their legs, which only differ in being upon the fore-legs in theſe, and on the hind-legs in the other. They ſeem, therefore, to be of a middle nature between theſe two kinds; or, to ſpeak with greater truth and preciſion, they form a diſtinct kind by themſelves.

The diſtinguiſhing marks of this tribe of animals, by which they differ both from the goat and the deer, are theſe: their horns are made differently, being annulated or ringed round, at the ſame time that there are longitudinated depreſſions running from the bottom to the point. They have bunches of hair upon their fore-legs; they have a ſtreak of black, red, or brown, running along the lower part of their ſides, and three ſtreaks of whitiſh hair in the inter-

nal ſide of the ear. Theſe are characters that none of them are without; beſides theſe, there are others which, in general, they are found to have, and which are more obvious to the beholder. Of all animals in the world, the gazelle has the moſt beautiful eye, extremely brilliant, and yet ſo meek, that that all the eaſtern poets compare the eyes of their miſtreſs to thoſe of this animal. A gazelle-eyed beauty is conſidered as the higheſt compliment that a lover can pay; and, indeed, the Greeks themſelves thought it no inelegant piece of flattery to reſemble the eyes of a beautiful woman to thoſe of a cow. The gazelle, for the moſt part, is more delicately and finely limbed than even the roebuck; its hair is as ſhort, but finer, and more gloſſy. Its hinder legs are longer than thoſe before, as in the hare, which gives it greater ſecurity in aſcending or deſcending ſteep places.—Their ſwiftneſs is equal, if not ſuperior, to that of the roe; but as the latter bounds forward, ſo theſe run along in an even uninterrupted courſe. Moſt of them are brown upon the back, white under the belly, with a black ſtripe, ſeparating thoſe colours between. Their tail is of various lengths, but in all covered with pretty long hair; and their ears are beautiful, well-placed, and terminating in a point.—They all have a cloven hoof, like the ſheep; they all have permanent horns; and the female has them ſmaller than the male.

Of theſe animals, Mr. Buffon makes twelve varieties; which, however, is much fewer than what other naturaliſts have made them. The firſt is the *gazella*, properly ſo called, which is of the ſize of the roebuck, and very much reſembling it in all the proportions of its body, but entirely differing, as was ſaid in the nature and faſhion of the horns, which are black and hollow, like thoſe of the ram or the goat, and never fall. The ſecond he calls the *kevel*, which is rather leſs than the former; its eyes alſo ſeem larger; and its horns, inſtead of being round, are flatted on the ſides, as well in the male as the female. The third he calls the *corin*, which very much reſembles the two former, but that it is ſtill leſs than either. Its horns alſo are ſmaller in proportion, ſmoother than thoſe of the other two, and the annular prominences belonging to the kind are ſcarce diſcern-

ible, and may be rather called wrinkles than prominences.—Some of these animals are often seen streaked like the tiger. These three are supposed to be of the same species. The fourth he calls the *zeiran*, the horns only of which he has seen; which, from their size, and the description of travellers, he supposes to belong to a larger kind of the gazelle, found in India and Persia, under that denomination.

The fifth he calls the *koba*, and the sixth the *kob;* these two differ from each other only in size, the former being much larger than the latter. The muzzle of these animals is much longer than those of the ordinary gazelle; the head is differently shaped, and they have no depressions under the eyes. The seventh he calls after its Egyptian name, the *algazel;* which is shaped pretty much like the ordinary gazelle, except that the horns are much longer, being generally three feet from the point to the insertion; whereas, in the common gazelle, they are not above a foot; they are smaller also, and straighter, till near the extremities, when they turn short, with a very sharp flexure: they are black and smooth, and the annular prominences are scarcely observable. The eighth is called the *pazan;* or, by some, the *bezoar goat*, which greatly resembles the former, except a small variety in their horns; and also with this difference, that as the algazel feeds upon the plains, this is only found in the mountains. They are both inhabitants of the same countries and climate; being found in Egypt, Arabia, and Persia. This last is the animal famous for that concretion in the intestines or stomach, called the *oriental bezoar*, which was once in such repute all over the world for its medicinal virtues. The word *bezoar* is supposed to take its name either from the pazan or pazar, which is the animal that produces it; or from a word in the Arabic language, which signifies *antidote*, or *counter-poison*. It is a stone of a glazed blackish colour, found in the stomach, or the intestines of some animal, and brought over to us from the East-Indies. Like all other animal-concretions, it is found to have a kind of nucleus, or hard substance within, upon which the external coatings were formed; for, upon being sawed through, it is seen to have layer over layer, as in an onion. This nucleus is of various kinds; sometimes the buds of a shrub, sometimes a piece of stone,

and ſometimes a marcaſite. This ſtone is from the ſize of an acorn to that of a pigeon's egg; the larger the ſtone, the more valuable it is held; its price increaſing, like that of a diamond. There was a time when a ſtone of four ounces ſold in Europe for above two hundred pounds; but, at preſent, the price is greatly fallen, and they are in very little eſteem. The bezoar is of various colours; ſometimes of a blood colour, ſometimes of a pale yellow, and of all the ſhades between theſe two. It is generally gloſſy, ſmooth, and has a fragant ſmell, like that of ambergris, probably ariſing from the aromatic vegetables upon which the animal that produces it, feeds. It has been given in vertigoes, epilepſis, palpitations of the heart, cholic, jaundice, and, in thoſe places, where the dearneſs, and not the value of medicines, is conſulted, in almoſt every diſorder incident to man. In all, perhaps, it is equally efficacious, acting only as an abſorbent powder, and poſſeſſing virtues equal to common chalk, or crabs-claws. Judicious phyſicians have therefore diſcarded it; and this celebrated medicine is now chiefly conſumed in countries where the knowledge of Nature has been but little advanced. When this medicine was in its higheſt reputation, many arts were uſed to adulterate it; and many countries endeavoured to find out a bezoar of their own. Thus we had occidental bezoar, brought from America; German bezoar, which has been mentioned before; cow bezoar, and monkey bezoar. In fact, there is ſcarce an animal, except of the carnivorous kinds, that does not produce ſome of theſe concretions in the ſtomach, inteſtines, kidneys, bladder, and even in the heart. To theſe ignorance may impute virtues that they do not poſſeſs; experience has found but few cures wrought by their efficacy: but it is well known, that they often prove fatal to the animal that bears them. Theſe concretions are generally found in cows, by their practice of licking off their hair, which gathers in the ſtomach into the ſhape of a ball, acquires a ſurpriſing degree of hardneſs, and ſometimes a polith like leather. They are often as large as a gooſe-egg; and, when become too large to paſs, block up the paſſage of the food, and the animal dies. The ſubſtance of theſe balls, however, is different from the bezoar mentioned above; being rather

a concretion of hair than of ſtone. There is a bezoar found in the gall-bladder of a boar, and thence called *hog bezoar*, in very great eſteem; but perhaps with as little juſtice as any of the former. In ſhort, as we have already obſerved, there is ſcarce an animal, or ſcarce a part of their bodies, in which concretions are not formed; and it is more than probable, as Mr. Buffon juſtly remarks, that the bezoar ſo much in uſe formerly, was not the production of the pazar, or any one animal only, but that of the whole gazelle kind; who feeding upon odoriferous herbs and plants, gave this admirable fragrance to the accidental concretions which they were found to produce. As this medicine, however, is but little uſed at preſent, our curioſity is much abated, as to the cauſe of its formation. To return, therefore, to the varieties in the gazelle tribe, the ninth is called the *ranguer*, and is a native of Senegal. This differs ſomewhat in ſhape and colour from the reſt; but particularly in the ſhape of its horns, which are ſtraight near to the points, where they crook forward, pretty much in the ſame manner as in the ſhammoy they crook backward. The tenth variety of the gazelle is the *antelope*, ſo well known to the Engliſh, who have given it the name. This animal is of the ſize of a roe-buck, and reſembles the gazelle in many particulars, but differs in others: it has deeper eye-pits than the former; the horns are formed diſferently alſo, being about ſixteen inches long, almoſt touching each other at the bottom, and ſpreading as they riſe, ſo as at their tips to be ſixteen inches aſunder. They have the annular prominences of their kind, but not ſo diſtinguiſhable as in the gazelle: however, they have a double flexure, which is very remarkable, and ſerves to diſtinguiſh them from all others of their kind. At the root they have a tuft of hair, which is longer than that of any part of the body. Like others of the ſame kind, the antelope is brown on the back, and white under the belly; but theſe colours are not ſeparated by the black ſtreak which is to be found in all the reſt of the gazelle kinds. There are different ſorts of this animal, ſome with larger horns than others, and others with leſs. The one which makes the eleventh variety in the gazelle kind, Mr. Buffon calls the *lidme*, which has very long

horns; and the other, which is the twelfth and laſt, he calls the *Indian antelope*, the horns of which are very ſmall.

To theſe may be added three or four varieties more, which it is not eaſy to tell whether to refer to the goat or the gazelle, as they equally reſemble both. The firſt of theſe is the *bubalus*, an animal that ſeems to partake of the mixed natures of the cow, the goat, and the deer. It reſembles the ſtag in the ſize and the figure of its body, and particularly in the ſhape of its legs. But it has permanent horns, like the goat; and made entirely like thoſe of the gazelle kind. It alſo reſembles that animal in its way of living: however, it differs in the make of its head, being exactly like the cow in the length of its muzzle, and in the diſpoſition of the bones of its ſkull; from which ſimilitude it has taken its name. This animal has a narrow long head; the eyes are placed very high; the forehead ſhort and narrow; the horns permanent, about a foot long, black, thick, annulated, and the rings of the gazelle kind, remarkable large; its ſhoulders are very high, and it has a kind of bunch on them, that terminates at the neck; the tail is about a foot long, and tufted with hair at the extremity. The hair of this animal is remarkable in being thicker at the middle than at the root: in all other quadrupeds, except the elk and this, the hair tapers off from the bottom to the point; but in theſe, each hair ſeems to ſwell in the middle, like a nine-pin. The bubalus alſo reſembles the elk in ſize, and the colour of its ſkin; but theſe are the only ſimilitudes between them: as the one has a very large branching head of ſolid horns that are annually deciduous, the other has black unbranching hollow horns that never fall. The bubalus is common enough in Barbary, and has often been called by the name of the *barbary cow*, from which animal it differs ſo widely. It partakes pretty much of the nature of the antelope; like that having the hair ſhort, the hide black, the ears pointed, and the fleſh good for food.

The ſecond anomalous animal of the goat-kind, Mr. Buffon calls the *condoma*. It is ſuppoſed to be equal in ſize to the largeſt ſtag, but with hollow horns, like thoſe of the goat kind, and with varied flexures, like thoſe of the antelope. They are above three feet long; and, at their ex-

tremities, about two feet afunder. All along the back there runs a white lift, which ends at the infertion of the tail; another of the fame colour croffes this, at the bottom of the neck, which it entirely furrounds: there are two more of the fame kind running round the body, one behind the fore-legs, and the other running parellel to it before the hinder. The colour of the reft of the body is greyifh, except the belly, which is white: it has alfo a long grey beard; and its legs, though long, are well proportioned.

The third that may be mentioned, he calls the *guiba*. It refembles the gazelles in every particular, except in the colour of the belly, which, as we have feen, is white in them, but in this is of a deep brown. Its horns alfo are not marked with annular prominences, but are fmooth and polifhed. It is alfo remarkable for white lifts, on a brown ground, that are difpofed along the animal's body, as if it were covered with harnefs. Like the former, it is a native of Africa.

The *African wild goat* of Grimmius is the fourth. It is of a dark afh-colour; and in the middle of the head is a hairy tuft, ftanding upright; on both fides, between the eyes and the nofe, there are very deep cavities, greater than thofe of the other kinds, which contain a yellow oily liquor, which coagulates into a black fubftance, that has a fmell between mufk and civet. This being taken away, the liquor again runs out, and coagulates, as before. These cavities have no communication with the eyes, and, confequently, this oozing fubftance can have nothing of the nature of tears.

To this we may add the *chevrotin*, or little guinea deer, which is the leaft of all cloven footed quadrupedes, and perhaps the moft beautiful; its legs, at the fmalleft part, are not much thicker than the fhank of a tobacco-pipe; it is about feven inches high, and about twelve from the point of the nofe to the infertion of the tail. It is the moft delicately fhaped animal in the world, being completely formed like a ftag in miniature; except that its horns, when it has any, are more of the gazelle kind, being hollow and annulated in the fame manner. It has two canine teeth in the upper jaw; in which refpect it differs from all other animals of the goat or deer kind, and thus makes a fpecies entirely diftinct by itfelf. This wonderful animal's colour is not lefs pleafing;

the hair which is ſhort and gloſſy, being in ſome of a beautiful yellow, except on the neck and belly, which is white. They are natives of India, Guinea, and the warm climates between the tropics; and are found in great plenty. But though they are amazingly ſwift for their ſize, yet the Negroes often overtake them in the purſuit, and knock them down with their ſticks. They may be eaſily tamed, and then they become familiar and pleaſing; but they are of ſuch delicate conſtitutions, that they can bear no climate but the hotteſt; and they always periſh with the rigours of ours, when they are brought over. The male in Guinea has horns; the female is without any; as are all the kinds of this animal, to be found either in Java or Ceylon, where they chiefly abound.

Such is the liſt of the gazelles; all which pretty nearly reſemble the deer in form, and delicacy of ſhape; but have the horns hollow, ſingle, and permanent, like thoſe of the goat. They properly fill up, as has been already obſerved, the interval between theſe two kinds of animals; ſo that it is difficult to tell where the goat ends, and the deer may be ſaid to begin. If we compare the gazelles with each other, we ſhall find but very ſlight diſtinctions between them. The turn or the magnitude of the horns, the different ſpots on the ſkin, or a difference of ſize in each, are chiefly the marks by which their varieties are to be known; but their way of living, their nature, and their peculiar ſwiftneſs, all come under one deſcription.

The gazelles are, in general, inhabitants of the warmer climates; and contribute, among other embelliſhments, to add beauty to thoſe foreſts that are for ever green. They are often ſeen feeding in herds, on the ſides of the mountain, or in the ſhade of the woods; and fly all together, upon the ſmall approaches of danger. They bound with ſuch ſwiftneſs, and are ſo very ſhy, that dogs or men vainly attempt to purſue them. They traverſe thoſe precipices with eaſe and ſafety, which to every quadruped elſe are quite impracticable; nor can any animals but of the winged kind, overtake them. Accordingly, in all thoſe countries where they are chiefly found, they are purſued by falcons; and this admirable manner of hunting makes one of the

principal amuſements of the upper ranks of people all over the Eaſt. The Arabians, Perſians, and Turks, breed up for this purpoſe, that kind of hawk called the *falcon gentle*, with which, when properly trained, they go forth on horſeback among the foreſts and the mountains, the falcon perching upon the hand of the hunter. Their expedition is conducted with profound ſilence; their dogs are taught to hang behind; while the men, on the fleeteſt courſes, look round for the game. Whenever they ſpy a gazelle at the proper diſtance, they point the falcon to its object, and encourage it to purſue. The falcon, with the ſwiftneſs of an arrow, flies to the animal; that, knowing its danger, endeavours, but too late, to eſcape. The falcon ſoon coming up with its prey, fixes its talons, one into the animal's cheek, the other into its throat, and deeply wounds it. On the other hand, the gazelle attempts to eſcape, but is generally wounded too deep to run far. The falcon clings with the utmoſt perſeverance, nor ever leaves its prey till it falls; upon which the hunters from behind approaching, take up both, and reward the falcon with the blood of the ſpoil. They alſo teach the young ones, by applying them to the dead animal's throat, and accuſtoming them betimes to fix upon that particular part; for if it ſhould happen that the falcon fixed upon any other part of the gazelle, either its back or its haunches, the animal would eaſily eſcape among the mountains, and the hunter would alſo loſe his falcon. They ſometimes alſo hunt theſe animals with the ounce. This carnivorous and fierce creature being made tame and domeſtic, generally ſits on horſeback behind the hunter, and remains there with the utmoſt compoſure, until the gazelle is ſhewn; it is then that it exerts all its arts and fierceneſs; it does not at once fly at its prey, but approaches ſlyly, turning and winding about until it comes within the proper diſtance, when all at once it bounds upon the heedleſs animal, and inſtantly kills it, and ſucks its blood. If, on the other hand, it miſſes its aim, it reſts in its place, without attempting to purſue any farther, but ſeems aſhamed of its own inability.

There is ſtill another way of taking the gazelle, which ſeems not ſo certain, nor ſo amuſing as either of the former.

A tame gazelle is bred up for this purpofe, who is taught to join thofe of its kind, wherever it perceives them. When the hunter, therefore, perceives a herd of thefe together, he fixes a noofe round the horns of the tame grzelle, in fuch a manner, that if the reft but touch it, they are entangled; and thus prepared, he fends his gazelle among the reft. The tame animal no fooner approaches, but the males of the herd inftantly fally forth to oppofe him; and, in butting with their horns, are caught in the noofe. In this, both ftruggling for fome time, fall together to the ground; and, at laft, the hunter coming up, difengages the one, and kills the other. Upon the whole, however, thefe animals, whatever be the arts ufed to purfue them, are very difficult to be taken. As they are continually fubject to alarms from carnivorous beafts, or from man, they keep chiefly in the moft folitary and inacceffible places, and find their only protection from fituations of the greateft danger.

CHAP. IV.

OF THE MUSK ANIMAL.

THE more we fearch into Nature, the more we fhall find how little fhe is known; and we fhall more than once have occafion to find, that protracted inquiry is more apt to teach us modefty, than to produce information. Although the number and nature of quadrupeds at firft glance feems very little known; yet, when we come to examine clofer, we find fome with which we are very partially acquainted, and others that are utterly unknown. There is fcarce a cabinet of the curious but what has the fpoils of animals, or the horns or the hoofs of quadrupeds, which do not come within former defcriptions. There is fcarce a perfon whofe trade is to drefs or improve furs, but knows feveral creatures by their fkins, which no naturalift has hitherto had notice of. But of all quadrupeds, there is none fo juftly the reproach of natural hiftorians, as that which bears the mufk. This perfume, fo well known to the elegant, and fo very ufeful in the hands of the phyfician; a medicine that has for more

than a century been imported from the Eaſt in great quantities, and during all that time has been improving in its reputation, is, nevertheleſs, ſo very little underſtood, that it remains a doubt whether the animal that produces it be a hog, an ox, a goat, or a deer. When an animal with which we are ſo nearly connected, is ſo utterly unknown, how little muſt we know of many that are more remote and unſerviceable! Yet naturaliſts proceed in the ſame train, enlarging their catalogues and their names, without endeavouring to find out the nature, and fix the preciſe hiſtory of thoſe with which we are very partially acquainted. It is the ſpirit of the ſcholars of the preſent age to be fonder of increaſing the bulk of our knowledge, than its utility; of extending their conqueſts, than of improving their empire.

The muſk which comes to Europe, is brought over in ſmall bags, about the ſize of a pigeon's egg, which, when cut open, appear to contain a kind of duſky, reddiſh ſubſtance, like coagulated blood, and which, in large quantities, has a very ſtrong ſmell; but, when mixed and diffuſed, becomes a very agreeable perfume. Indeed, no ſubſtance now known in the world has a ſtronger or a more permanent ſmell. A grain of muſk perfumes a whole room; and its odour continues for ſome days, without diminution. But in a larger quantity it continues for years together; and ſeems ſcarce waſted in its weight, although it has filled the atmoſphere to a great diſtance with its parts. It is particularly uſed in medicine, in nervous and hyſteric diſorders; and is found in ſuch caſes, to be the moſt powerful remedy now in uſe: however, the animal that furniſhes this admirable medicine, has been very variouſly deſcribed, and is known but very imperfectly.

The deſcription given of this animal by Grew, is as follows: "The muſk animal is properly neither of the goat nor deer kind, for it has no horns, and it is uncertain whether it ruminates or not; however, it wants the fore-teeth in the upper jaw, in the ſame manner as in ruminating animals; but, at the ſame time, it has tuſks like thoſe of a hog. It is three feet ſix inches in length, from the head to the tail; and the head is above half a foot long. The fore-part of the head is like that of a greyhound; and the ears are three

inches long, and erect, like thofe of a rabbit; but the tail is not above two inches. It is cloven-footed, like beafts of the goat kind; the hair on the head and legs is half an inch long, on the belly an inch and a half, and on the back and buttocks three inches, and proportionably thicker than in any other animal. It is brown and white alternately, from the root to the point; on the head and thighs it is brown, but under the belly and tail white, and a little curled, efpecially on the back and belly. On each fide of the lower jaw, under the corners of the mouth, there is a tuft of thick hair, which is fhort and hard, and about three quarters of an inch long. The hair, in general of this animal, is remarkable for its foftnefs and fine texture; but what diftinguifhes it particularly are the tufks, which are an inch and a half long, and turn back in the form of a hook; and more particularly the bag which contains the mufk, which is three inches long, two broad, and ftands out from the belly an inch and a half. It is a very fearful animal, and, therefore, it has long ears; and the fenfe of hearing is fo quick, that it can difcover an enemy at a great diftance."

After fo long and circumftantial a defcription of this animal, its nature is but very little known; nor has any anatomift as yet examined its internal ftructure; or been able to inform us whether it be a ruminant animal, or one of the hog kind; how the mufk is formed, or whether thofe bags in which it comes to us be really belonging to the animal, or are only the fophifications of the venders. Indeed, when we confider the immenfe quantities of this fubftance which are confumed in Europe alone, not to mention the Eaft, where it is in ftill greater repute than here, we can hardly fuppofe that any one animal can furnifh the fupply; and particularly when it muft be killed before the bag can be obtained. We are told, it is true, that the mufk is often depofited by the animal upon trees and ftones, againft which it rubs itfelf when the quantity becomes uneafy; but it is not in that form which we receive it, but always in what feems to be its own natural bladder. Of thefe, Taverner brought home near two thoufand in one year; and, as the animal is wild, fo many muft, during that fpace, have been hunted and taken. But as the creature is reprefented very fhy, and

The MUSK

as it is found but in ſome particular provinces of the Eaſt, the wonder is how its bag ſhould be ſo cheap, and furniſhed in ſuch great plenty. The bag in common does not coſt (if I do not forget) above a crown by retail, and yet this is ſuppoſed the only one belonging to the animal; and for the obtaining of which, it muſt have been hunted and killed.—The only way of ſolving this difficulty, is to ſuppoſe that theſe bags are, in a great meaſure, counterfeit, taken from ſome other animal, or from ſome part of the ſame, filled with its blood, and a very little of the perfume, but enough to impregnate the reſt with a ſtrong and permanent odour. It comes to us from different parts of the Eaſt; from China, Tonquin, Bengal, and often from Muſcovy: That of Thibet is reckoned the beſt, and ſells for fourteen ſhillings an ounce; that of Muſcovy the worſt, and ſells but for three; the odour of this, though very ſtrong at firſt, being quickly found to evaporate. Muſk was ſome years ago in the higheſt requeſt as a perfume, and but little regarded as a medicine; but at preſent its reputation is totally changed; and having been found of great benefit in phyſic, it is but little regarded for the purpoſes of elegance. It is thus that things which become neceſſary, ceaſe to continue pleaſing, and the conſciouſneſs of their uſe, deſtroys their power of adminiſtering delight.

CHAP. V.

ANIMALS OF THE DEER KIND.

IF we compare the ſtag and the bull, as to ſhape and form, no two animals can be more unlike; and yet, if we examine their internal ſtructure, we ſhall find a ſtriking ſimilitude between them. Indeed, their differences, except to a nice obſerver, will ſcarcely be perceivable. All of the deer kind want the gall-bladder; their kidneys are formed differently; their ſpleen is alſo proportionably larger; their tail is ſhorter; and their horns, which are ſolid, are renewed every year. Such are the ſlight internal diſcriminations be-

tween two animals, one of which is among the ſwifteſt, and the other the heavieſt of the brute creation.

The ſtag is one of thoſe innocent and peaceable animals that ſeems made to embelliſh the foreſt, and animate the ſolitudes of Nature. The eaſy elegance of his form, the lightneſs of his motions, thoſe large branches that ſeem made rather for the ornament of his head than its defence, the ſize, the ſtrength, and the ſwiftneſs of this beautiful creature, all ſufficiently rank him among the firſt of quadrupeds, among the moſt noted objects of human curioſity.

The ſtag, or hart, whoſe female is called a *hind*, and the young a *calf*, differs in ſize and in horns from a fallow-deer. He is much larger, and his horns are round; whereas in the fallow kind they are broad and palmated. By theſe the animal's age is known. The firſt year the ſtag has no horns, but a horny excreſcence, which is ſhort, rough, and covered with a thin, hairy ſkin. The next year the horns are ſingle and ſtraight; the third year they have two antlers, three the fourth, four the fifth, and five the ſixth; this number is not always certain, for ſometimes there are more, and often leſs. When arrived at the ſixth year, the antlers do not always increaſe; and although the number may amount to ſix or ſeven on each ſide, yet the animal's age is then eſtimated rather from the ſize of the antlers, and the thickneſs of the branch which ſuſtains them, than from their variety. Theſe horns, large as they ſeem, are, notwithſtanding, ſhed every year, and new ones come in their place. The old horns are of a firm, ſolid texture, and uſually employed in making handles for knives, and other domeſtic utenſils. But, while young, nothing can be more ſoft or tender; and the animal, as if conſcious of his own imbecillity, at thoſe times, inſtantly upon ſhedding his former horns, retires from the reſt of his fellows, and hides himſelf in ſolitudes and thickets, never venturing out to paſture, except by night. During this time, which moſt uſually happens in the ſpring, the new horns are very painful, and have a quick ſenſibility of any external impreſſion. The flies, alſo, are extremely troubleſome to him. When the old horn is fallen off, the new does not begin immediately to appear; but the bones of the ſkull are ſeen covered only with a tranſparent perioſteum or ſkin,

which, as anatomiſts teach us, covers the bones of all animals. After a ſhort time, however, this ſkin begins to ſwell, and to form a ſoft tumour, which contains a great deal of blood, and which begins to be covered with a downy ſubſtance that has the feel of velvet, and appears nearly of the ſame colour with the reſt of the animal's hair. This tumour every day buds forward from the point like the graft of a tree; and, riſing by degrees from the head, ſhoots out the antlers on either ſide, ſo that in a few days, in proportion as the animal is in condition, the whole head is completed — However, as was ſaid above, in the beginning, its conſiſtence is very ſoft, and has a ſort of bark, which is no more than a continuation of the integument of the ſkull. It is velveted and downy, and every where furniſhed with blood-veſſels, that ſupply the growing horns with nouriſhment. As they creep along the ſides of the branches, the print is marked over the whole ſurface; and the larger the blood-veſſels, the deeper theſe marks are found to be: from hence ariſes the inequality of the ſurface of the deer's horns; which, as we ſee, are furrowed all along the ſides, the impreſſions diminiſhing towards the point, where the ſubſtance is as ſmooth and as ſolid as ivory. But it ought to be obſerved, that this ſubſtance, of which the horns are compoſed, begins to harden at the bottom while the upper part remains ſoft, and ſtill continues growing; from whence it appears that the horns grow differently in deer from thoſe of ſheep or cows; in which they are always ſeen to increaſe from the bottom. However, when the whole head has received its full growth, the extremities then begin to acquire their ſolidity; the velvet covering, or bark, with its blood-veſſels, dry up, and then begin to fall; and this the animal haſtens, by rubbing its antlers againſt every tree it meets. In this manner, the whole external ſurface being ſtripped off by degrees, at length the whole head acquires its complete hardneſs, expanſion, and beauty.

It would be a vain taſk to inquire into the cauſe of the animal production of theſe horns; it is ſufficient to obſerve, that if a ſtag be caſtrated when its horns are fallen off, they will never grow again; and, on the contrary, if the ſame operation is performed when they are on, they will never

fall off. If only one of his teſticles are taken out, he will want the horn on that ſide; if one of the teſticles only be tied up, he will want the horn of the oppoſite ſide. The increaſe of their proviſion alſo tends to facilitate the growth and the expanſion of the horns; and Mr. Buffon thinks it poſſible to retard their growth entirely by greatly retrenching their food *. As a proof of this, nothing can be more obvious than the difference between a ſtag bred in fertile paſtures and undiſturbed by the hunter, and one often purſued and ill nouriſhed. The former has his head expanded, his antlers numerous, and the branches thick; the latter has but few antlers, the traces of the blood-veſſels upon them are but ſlight, and the expanſion but little. The beauty and ſize of their horns, therefore, mark their ſtrength and their vigour; ſuch of them as are ſickly, or have been wounded, never ſhooting out that magnificent profuſion ſo much admired in this animal. Thus the horns may, in every reſpect, be reſembled to a vegetable ſubſtance, grafted upon the head of an animal. Like a vegetable they grow from the extremities; like a vegetable they are for a while covered with a bark that nouriſhes them; like a vegetable they have their annual production and decay; and a ſtrong imagination might ſuppoſe that the leafy productions on which the animal feeds, go once more to vegetate in his horns †.

The ſtag is uſually a twelvemonth old before the horns begin to appear, and then a ſingle branch is all that is ſeen for the year enſuing. About the beginning of ſpring, all of this kind are ſeen to ſhed their horns, which fall off of themſelves; though ſometimes the animal aſſiſts the efforts of Nature, by rubbing them againſt a tree. It ſeldom happens that the branches on both ſides fall off at the ſame time, there often being two or three days between the dropping of the one and the other. The old ſtags uſually ſhed their horns firſt; which generally happens towards the latter end of February, or the beginning of March. Thoſe of the ſecond head, (namely, ſuch as are between five and ſix years old) ſhed their horns about the middle or latter end of March; thoſe ſtill younger, in the month of April; and the

* Buffon, vol. xi. p. 113.

† Mr. Buffon has ſuppoſed ſomething like this. Vide paſſim.

youngeſt of all not till the middle, or the latter end of May; they generally ſhed them in pools of water, whither they retire from the heat; and this has given riſe to the opinion of their always hiding their horns. Theſe rules, though true in general, are yet ſubject to many variations; and univerſally it is known that a ſevere winter retards the ſhedding of the horns. The horns of the ſtag generally increaſe in thickneſs and in height from the ſecond year of its age to the eighth. In this ſtate of perfection they continue during the vigour of life; but as the animal grows old the horns feel the impreſſions of age, and ſhrink like the reſt of the body. No branch bears more than twenty or twenty-two antlers even in the higheſt ſtate of vigour; and the number is ſubject to great variety; for it happens that the ſtag at one year has either leſs or more than the year preceding, in proportion to the goodneſs of his paſture, or the continuance of his ſecurity, as theſe animals ſeldom thrive when often rouzed by the hunters. The horns are alſo found to partake of the nature of the ſoil; in the more fertile paſtures they are large and tender; on the contrary, in the barren ſoil they are hard, ſtunted and brittle. As ſoon as the ſtags have ſhed their horns, they ſeparate from each other, and ſeek the plainer parts of the country, remote from every other animal, which they are utterly unable to oppoſe. They then walk with their heads ſtooping down, to keep their horns from ſtriking againſt the branches of the trees above. In this ſtate of imbecility they continue near three months before their heads have acquired their full growth and ſolidity; and then, by rubbing them againſt the branches of every thicket, they at length clear them of the ſkin which had contributed to their growth and nouriſhment. It is ſaid by ſome that the horn takes the colour of the ſap of the tree againſt which it is rubbed; and that ſome thus become red, when rubbed againſt the heath; and others brown, by rubbing againſt the oak; this, however, is a miſtake, ſince ſtags kept in parks where there are no trees, have a variety in the colour of their horns, which can be aſcribed to nothing but Nature. A ſhort time after they have furniſhed their horns, they begin to feel the impreſſions of the rut, or the deſire of copulation. The old ones are the moſt forward;

and about the end of Auguſt, or the beginning of September, they quit their thickets, and return to the mountain in order to ſeek the hind, to whom they call with a loud tremulous note. At this time their neck is ſwoln; they appear bold and furious; fly from country to country; ſtrike with their horns againſt the trees and other obſtacles, and continue reſtleſs and fierce until they have found the female; who at firſt flies from them, but is at laſt compelled and overtaken. When two ſtags contend for the ſame female, how timorous ſoever they may appear at other times, they then ſeem agitated with an uncommon degree of ardour. They paw up the earth, menace each other with their horns, bellow with all their force, and ſtriking in a deſperate manner againſt each other, ſeem determined upon death or victory. This combat continues till one of them is defeated or flies; and it often happens that the victor is obliged to fight ſeveral of thoſe battles before it remains undiſputed maſter of the field. The old ones are generally the conquerors upon theſe occaſions, as they have more ſtrength and greater courage; and theſe alſo are preferred by the hind to the young ones, as the latter are more feeble, and leſs ardent. However, they are all equally inconſtant, keeping to the female but a few days, and then ſeeking out for another, not to be enjoyed, perhaps, without a repetition of their former danger.

In this manner the ſtag continues to range from one to the other for about three weeks, the time the rut continues; during which he ſcarce eats, ſleeps, or reſts, but continues to purſue, to combat, and to enjoy. At the end of this period of madneſs, for ſuch in this animal it ſeems to be, the creature that was before fat, ſleek, and gloſſy, becomes lean, feeble, and timid. He then retires from the herd to ſeek plenty and repoſe; he frequents the ſide of the foreſt, and chooſes the moſt nouriſhing paſtures, remaining there till his ſtrength is renewed. Thus is his whole life paſſed in the alternations of plenty and want, of corpulence and inanition, of health and ſickneſs, without having his conſtitution much affected by the violence of the change. As he is above five years coming to perfection, he lives about forty years; and it is a general rule, that every animal lives about ſeven or

eight times the number of years which it continues to grow. What, therefore, is reported concerning the life of this animal, has arifen from the credulity of ignorance: fome fay, that a ftag having been taken in France, with a collar, on which were written thefe words, "Cæfar hoc me donavit;" this was interpreted of Julius Cæfar; but it is not confidered that Cæfar is a general name for kings, and that one of the Emperors of Germany, who are always ftyled Cæfars, might have ordered the infcription.

This animal may differ in the term of his life according to the goodnefs of his pafture, or the undifturbed repofe he happens to enjoy. Thefe are advantages that influence not only his age, but his fize and his vigour. The ftags of the plains, the vallies, and the little hills, which abound in corn and pafture, are much more corpulent and much taller than fuch as are bred on the rocky wafte, or the heathy mountain. The latter are low, fmall, and meagre, incapable of going fo fwift as the former, although they are found to hold out much longer. They are alfo more artful in evading the hunters; their horns are generally black and fhort, while thofe of the lowland ftags are reddifh and flourifhing; fo that the animal feems to increafe in beauty and ftature in proportion to the goodnefs of the pafture, which he enjoys in fecurity.

The ufual colour of the ftag in England was red; nevertheleefs, the greater number in other countries are brown. There are fome few that are white; but thefe feem to have obtained this colour in a former ftate of domeftic tamenefs. Of all the animals that are natives of this climate, there are none that have fuch a beautiful eye as the ftag; it is fparkling, foft, and fenfible. His fenfes of fmelling and hearing are in no lefs perfection. When he is in the leaft alarmed, he lifts the head and erects the ears, ftanding for a few minutes as if in a liftening pofture. Whenever he ventures upon fome unknown ground, or quits his native covering, he firft ftops at the fkirt of the plain to examine all around; he next turns againft the wind to examine by the fmell if there be any enemy approaching. If a perfon fhould happen to whiftle or call out, at a diftance, the ftag is feen to ftop fhort in his flow meafured pace, and gazes upon the ftranger

with a kind of awkward admiration: if the cunning animal perceives neither dogs nor fire-arms preparing againſt him, he goes forward, quite unconcerned, and ſlowly proceeds without offering to fly. Man is not the enemy he is moſt afraid of; on the contrary, he ſeems to be delighted with the ſound of the ſhepherd's pipe; and the hunters ſometimes make uſe of that inſtrument to allure the poor animal to his deſtruction.

The ſtag eats ſlowly, and is very delicate in the choice of his paſture. When he has eaten a ſufficiency, he then retires to the covert of ſome thicket to chew the cud in ſecurity. His rumination, however, ſeems performed with much greater difficulty than with the cow or ſheep; for the graſs is not returned from the firſt ſtomach without much ſtraining, and a kind of hiccup, which is eaſily perceived during the whole time it continues. This may proceed from the greater length of his neck and the narrowneſs of the paſſage, all thoſe of the cow and the ſheep kind having it much wider.

This animal's voice is much ſtronger, louder, and more tremulous in proportion as he advances in age; in the time of rut it is even terrible. At that ſeaſon he ſeems ſo tranſported with paſſion, that nothing obſtructs his fury; and, when at bay, he keeps the dogs off with great intrepidity. Some years ago, William Duke of Cumberland cauſed a tiger and a ſtag to be incloſed in the ſame area; and the ſtag made ſo bold a defence, that the tiger was at laſt obliged to fly. The ſtag ſeldom drinks in the winter, and ſtill leſs in the ſpring, while the plants are tender and covered over with dew. It is in the heat of ſummer, and during the time of rut, that he is ſeen conſtantly frequenting the ſide of rivers and lakes, as well to ſlake his thirſt as to cool his ardour. He ſwims with great eaſe and ſtrength, and beſt at thoſe times when he is fatteſt, his fat keeping him buoyant, like oil upon the ſurface of the water. During the time of rut he even ventures out to ſea, and ſwims from one iſland to to another, although there may be ſome leagues diſtance between them.

The cry of the hind, or female, is not ſo loud as that of the male, and is never excited but by apprehenſion for her-

ſelf or her young. It need ſcarce be mentioned that ſhe has no horns, or that ſhe is more feeble and unfit for hunting than the male. When once they have conceived, they ſeparate from the males, and then they both herd apart. The time of geſtation continues between eight and nine months, and the generally produce but one at a time. Their uſual ſeaſon for bringing forth is about the month of May, or the beginning of June, during which they take great care to hide their young in the moſt obſcure thickets. Nor is this precaution without reaſon, ſince almoſt every creature is then a formidable enemy. The eagle, the falcon, the oſprey, the wolf, the dog, and all the rapacious family of the cat kind, are in continual employment to find out her retreat. But, what is more unnatural ſtill, the ſtag himſelf is a profeſſed enemy, and ſhe is obliged to uſe all her arts to conceal her young from him, as from the moſt dangerous of her purſuers. At this ſeaſon, therefore, the courage of the male ſeems transferred to the female; ſhe defends her young againſt her leſs formidable opponents by force; and when purſued by the hunter, ſhe ever offers herſelf to miſlead him from the principal objects of her concern. She flies before the hounds for half the day, and then returns to her young, whoſe life ſhe has thus preſerved at the hazard of her own. The *calf*, for ſo the young of this animal is called, never quits the dam during the whole ſummer; and in winter, the hind, and all the males under a year old, keep together, and aſſemble in herds, which are more numerous in proportion as the ſeaſon is more ſevere. In the ſpring they ſeparate; the hinds to bring forth, while none but the year olds remain together; theſe animals are, however, in general, fond of herding and grazing in company; it is danger or neceſſity alone that ſeparates them.

The dangers they have to fear from other animals, are nothing when compared to thoſe from man. The men of every age and nation have made the chaſe of the ſtag one of their moſt favourite purſuits; and thoſe who firſt hunted from neceſſity, have continued it for amuſement. In our own country, in particular, hunting was ever eſteemed as one of the principal diverſions of the great*. At firſt, in-

* Britiſh Zoology.

indeed, the beaſts of chaſe had the whole iſland for their range, and knew no other limits than thoſe of the ocean.

The Roman juriſprudence, which was formed on the manners of the firſt ages, eſtabliſhed it as a law, that, as the natural right of things which have no maſter, belongs to the firſt poſſeſſor, wild beaſts, birds, and fiſhes, are the property of whoſoever could firſt take them. But the northern barbarians, who overran the Roman empire, bringing with them the ſtrongeſt reliſh for this amuſement, and, being now poſſeſſed of more eaſy means of ſubſiſtence from the lands they had conquered, their chiefs and leaders began to appropriate the right of hunting, and, inſtead of a natural right, to make it a royal one. When the Saxon kings, therefore, had eſtabliſhed themſelves into a heptarchy, the chaſes were reſerved by each ſovereign for his own particular amuſement. Hunting and war, in thoſe uncivilized ages, were the only employment of the great. Their active, but uncultivated minds, were ſuſceptible of no pleaſures but thoſe of a violent kind, ſuch as gave exerciſe to their bodies; and prevented the uneaſineſs of thinking. But as the Saxon kings only appropriated thoſe lands to the buſineſs of the chaſe which were unoccupied before, ſo no individuals received any injury. But it was otherwiſe when the Norman kings were ſettled upon the throne. The paſſion for hunting was then carried to an exceſs, and every civil right was involved in general ruin. This ardour for hunting was ſtronger than the conſideration of religion even in a ſuperſtitious age. The village communities, nay, even the moſt ſacred edifices, were thrown down, and all turned into one vaſt waſte, to make room for animals, the objects of a lawleſs tyrant's pleaſure. Sanguinary laws were enacted to preſerve the game; and, in the reigns of William Rufus and Henry I. it was leſs criminal to deſtroy one of the human ſpecies than a beaſt of chaſe. Thus it continued while the Norman line filled the throne; but when the Saxon line was reſtored, under Henry II. the rigour of the foreſt-laws were ſoftened. The barons alſo for a long time imitated the encroachments, as well as the amuſements, of the monarch; but when property became more equally divided, by the introduction of arts and induſtry, theſe extenſive hunting grounds became

more limited; and as tillage and husbandry increased, the beasts of chase were obliged to give way to others more useful to the community. Those vast tracts of land, before dedicated to hunting, were then contracted; and, in proportion as the useful arts gained ground, they protected and encouraged the labours of the industrious, and repressed the licentiousness of the sportsman. It is, therefore, among the subjects of a despotic government only, that these laws remain in full force; where large wastes lie uncultivated for the purposes of hunting; where the husbandman can find no protection from the invasions of his lord, or the continual depredations of those animals which he makes the objects of his pleasure.

In the present cultivated state of this country, therefore, the stag is unknown in its wild natural state; and such of them as remain among us are kept, under the name of *red deer*, in parks among the fallow-deer. But they are become less common than formerly; its excessive viciousness, during the rutting season, and the badness of its flesh, inducing most people to part with the species. The few that still remain wild, are to be found on the moors that border on Cornwall and Devonshire; and in Ireland, on most of the large mountains of that country.

In England, the hunting the stag and the buck are performed in the same manner; the animal is driven from some gentleman's park, and then hunted through the open country. But those who pursue the wild animal, have a much higher object, as well as a greater variety in the chase. To let loose a creature that was already in our possession, in order to catch it again, is, in my opinion, but a poor pursuit, as the reward, when obtained, is only what we before had given away. But to pursue an animal that owns no proprietor, and which he that first seizes may be said to possess, has something in it that seems at least more rational; this rewards the hunter for his toil, and seems to repay his industry. Besides, the superior strength and swiftness of the wild animal prolongs the amusement; it is possessed of more various arts to escape the hunter, and leads him to precipices where the danger ennobles the chase. In pursuing the animal let loose from a park, as it is unused to danger, it is but

little verſed in the ſtratagems of eſcape; the hunter follows as ſure of overcoming, and feels none of thoſe alternations of hope and fear which ariſe from the uncertainty of ſucceſs. But it is otherwiſe with the mountain ſtag: having ſpent his whole life in a ſtate of continual apprehenſion; having frequently been followed, and as frequently eſcaped, he knows every trick to miſlead, to confound, or intimidate his purſuers; to ſtimulate their ardour, and enhance their ſucceſs.

Thoſe who hunt this animal have their peculiar terms for the different objects of their purſuit. The profeſſors in every art take a pleaſure in thus employing a language known only to themſelves, and thus accumulate words which to the ignorant have the appearance of knowledge. In this manner, the ſtag is called the firſt year, a *calf*, or *hind calf*; the ſecond year, a *knobber*; the third, a *brock*; the fourth, a *ſtaggard*; the fifth, a *ſtag*; the ſixth, a *hart*. The female is called a *hind*; the firſt year ſhe is a *calf*; the ſecond a *hearſe*; the third, a *hind*. This animal is ſaid to *harbour* in the place where he reſides. When he cries, he is ſaid to *bell*; the print of his hoof is called the *ſlot*; his tail is called the *ſingle*; his excrement the *ſewmet*; his horns are called his *head*: when ſimple, the firſt year, they are called *broches*; the third year, *ſpears*; the fourth year, that part which bears the antlers is called the *beam*, and the little impreſſions upon its ſurface *glitters*; thoſe which riſe from the cruſt of the beam are called *pearls*. The antlers alſo have diſtinct names: the firſt that branches off is called the *antler*; the ſecond, the *ſur-antler*; all the reſt which grow afterwards, till you come to the top, which is called the *crown*, are called *royal antlers*. The little buds about the tops are called *croches*. The impreſſion on the place where the ſtag has lain, is called the *layer*. If it be in covert or a thicket, it is called his *harbour*. When a deer has paſſed into a thicket, leaving marks whereby his bulk may be gueſſed, it is called an *entry*. When they caſt their heads, they are ſaid to *mew*. When they rub their heads againſt trees, to bring off the peel of their horns, they are ſaid to *fray*. When a ſtag hard-hunted takes to ſwimming in the water, he is ſaid to *go ſail*; when he turns his head againſt the hounds, he is ſaid to *bay*; and when the hounds purſue upon the ſcent, until they have unharboured the ſtag, they are ſaid to *draw on the ſlot*.

Such are but a few of the many terms uſed by hunters in purſuing of the ſtag, moſt of which are now laid aſide, or in uſe only among gamekeepers. The chaſe, however, is continued in many parts of the country where the red deer is preſerved, and ſtill makes the amuſement of ſuch as have not found out more liberal entertainments. In thoſe few places where the animal is perfectly wild, the amuſement, as was ſaid above, is ſuperior. The firſt great care of the hunter, when he leads out his hounds to the mountain ſide, where the deer are generally known to harbour, is to make choice of a proper ſtag to purſue. His ambition is to unharbour the largeſt and the boldeſt of the whole herd; and for this purpoſe he examines the track, if there be any, which if he finds long and large, he concludes, that it muſt have belonged to a ſtag, and not an hind, the print of whoſe foot is rounder. Thoſe marks alſo which he leaves on trees, by the rubbing of his horns, ſhew his ſize, and point him out as the proper object of purſuit. Now to ſeek out a ſtag in his haunt, it is to be obſerved, that he changes his manner of feeding every month. From the concluſion of rutting-time, which is November, he feeds in heaths and broomy places. In December they herd together, and withdraw into the ſtrength of the foreſts, to ſhelter themſelves from the ſeverer weather, feeding on holm, elder trees, and brambles. The three following months they leave herding, but keep four or five in a company, and venture out to the corners of the foreſt, where they feed on winter paſture, ſometimes making their incurſions into the neighbouring corn-fields, to feed upon the tender ſhoots, juſt as they peep above ground. In April and May they reſt in thickets and ſhady places, and ſeldom venture forth, unleſs rouzed by approaching danger. In September and October their annual ardour returns; and then they leave the thickets, boldly facing every danger, without any certain place for food or harbour. When, by a knowledge of theſe circumſtances, the hunter has found out the reſidence, and the quality of his game, his next care is to uncouple and caſt off his hounds in the purſuit: theſe no ſooner perceive the timorous animal that flies before them, but they altogether open in full cry, purſuing rather by the ſcent than the view, encouraging each

other to continue the chaſe, and tracing the flying animal with the moſt amazing ſagacity. The hunters alſo are not leſs ardent in their ſpeed on horſeback, cheering up the dogs, and directing them where to purſue. On the other hand, the ſtag, when unharboured, flies at firſt with the ſwiftneſs of the wind, leaving his purſuers ſeveral miles in the rear; and at length having gained his former coverts, and no longer hearing the cries of the dogs and men that he had juſt left behind, he ſtops, gazes round him, and ſeems to recover his natural tranquillity. But this calm is of ſhort duration, for his inveterate purſuers ſlowly and ſecurely trace him along, and he once more hears the approaching deſtruction from behind. He again, therefore, renews his efforts to eſcape, and again leaves his purſuers at almoſt the former diſtance; but this ſecond effort makes him more feeble than before, and when they come up a ſecond time, he is unable to outſtrip them with equal velocity. The poor animal now, therefore, is obliged to have recourſe to all his little arts of eſcape, which, ſometimes, though but ſeldom, avail him. In proportion as his ſtrength fails him, the ardour of his purſuers is inflamed; he tracks more heavily on the ground, and this increaſing the ſtrength of the ſcent, redoubles the cries of the hounds, and enforces their ſpeed. It is then that the ſtag ſeeks for refuge among the herd, and tries every artifice to put off ſome other head for his own. Sometimes he will ſend forth ſome little deer in his ſtead, in the mean time lying cloſe himſelf, that the hounds may overſhoot him. He will break into one thicket after another to find deer, rouzing them, gathering them together, and endeavouring to put them upon the tracks he has made. His old companions, however, with a true ſpirit of ingratitude, now all forſake and ſhun him with the moſt watchful induſtry, leaving the unhappy creature to take his fate by himſelf. Thus abandoned of his fellows, he again tries other arts, by doubling and croſſing in ſome hard beaten highway, where the ſcent is leaſt perceivable. He now alſo runs againſt the wind, not only to cool himſelf, but the better to hear the voice, and judge of the diſtance of his implacable purſuers. It is now eaſily perceivable how ſorely he is preſſed, by his manner of running, which, from the bounding eaſy pace

with which he began, is converted into a ſtiff and ſhort manner of going; his mouth alſo is black and dry, without foam on it; his tongue hangs out; and the tears, as ſome ſay, are ſeen ſtarting from his eyes. His laſt refuge, when every other method of ſafety has failed him, is to take the water, and to attempt an eſcape by croſſing whatever lake or river he happens to approach. While ſwimming, he takes all poſſible care to keep in the middle of the ſtream, leaſt, by touching the bough of a tree, or the herbage on the banks, he may give ſcent to the hounds. He is alſo ever found to ſwim againſt the ſtream; whence the huntſmen have made it into a kind of proverb, *That he that would his chaſe find, muſt up with the river and down with the wind.* On this occaſion too he will often cover himſelf under water, ſo as to ſhew nothing but the tip of his noſe. Every reſource, and every art being at length exhauſted, the poor creature tries the laſt remains of his ſtrength, by boldly oppoſing thoſe enemies he cannot eſcape; he therefore faces the dogs and men, threatens with his horns, guards himſelf on every ſide, and for ſome time ſtands at bay. In this manner, quite deſperate, he furiouſly aims at the firſt dog or man that approaches; and it often happens that he does not die unrevenged. At that time, the more prudent, both of the dogs and men, ſeem willing to avoid him; but the whole pack quickly coming up, he is ſoon ſurrounded and brought down, and the huntſman winds a *treble mort*, as it is called, with his horn.

Such is the manner of purſuing this animal in England; but every country has a peculiar method of its own, adapted either to the nature of the climate, or the face of the ſoil. The ancient manner was very different from that practiſed at preſent; they uſed their dogs only to find out the game, but not to rouze it. Hence they were not curious as to the muſic of their hounds, or the compoſition of their pack; the dog that opened before he had diſcovered his game, was held in no eſtimation. It was their uſual manner ſilently to find out the animal's retreat, and ſurround it with nets and engines, then to drive him up with all their cries, and thus force him into the toils which they have previouſly prepared. In ſucceeding times the faſhion ſeemed to alter;

and particularly in Sicily, the manner of hunting was as follows*. The nobles and gentry being informed which way a herd of deer paſſed, gave notice to one another, and appointed a day of hunting. For this purpoſe, every one was to bring a croſs-bow, or a long bow, and a bundle of ſtaves, ſhod with iron, the heads bored, with a cord paſſing through them all. Thus provided they came to where the herd continued grazing, and caſting themſelves about in a large ring, ſurrounded the deer on every ſide. Then each taking his ſtand, unbound his faggot, ſet up his ſtake, and tied the end of the cord to that of his next neighbour, at the diſtance of about ten feet one from the other. Between each of theſe ſtakes was hung a bunch of crimſon feathers, and ſo diſpoſed, that with the leaſt breath of wind they would whirl round, and preſerve a ſort of fluttering motion. This done, the perſons who ſet up the ſtaves withdrew, and hid themſelves in the neighbouring coverts: then the chief huntſman, entering with his hounds within the lines, rouzed the game with a full cry. The deer, frighted, and flying on all ſides, upon approaching the lines, were ſcared away by the fluttering of the feathers, and wandered about within this artificial paling, ſtill awed by the ſhining and fluttering plumage that encircled their retreat: the huntſman, however, ſtill purſuing, and calling every perſon by name, as he paſſed by their ſtand, commanded him to ſhoot the firſt, third, or ſixth, as he pleaſed; and if any of them miſſed, or ſingled out another than that aſſigned him, it was conſidered as a moſt ſhameful miſchance. In this manner, however, the whole herd was at laſt deſtroyed; and the day concluded with mirth and feaſting.

The ſtags of China are of a particular kind, for they are no taller than a common houſe-dog; and hunting them is one of the principal diverſions of the great. Their fleſh, while young, is exceedingly good; but when they arrive at maturity, it begins to grow hard and tough: however, the tongue, the muzzle, and the ears, are in particular eſteem among that luxurious people. Their manner of taking them is ſingular enough: they carry with them the heads of ſome of the females ſtuffed, and learn exactly to imitate their cry;

* Pier Hieroglyph. lib. vii. cap. vi.

upon this the male does not fail to appear, and looking on all ſides, perceives the head, which is all that the hunter, who is himſelf concealed, diſcovers. Upon their nearer approach, the whole company riſe, ſurround, and often take him alive.

There are very few varieties in the red deer of this country; and they are moſtly found of the ſame ſize and colour. But it is otherwiſe in different parts of the world, where they are ſeen to differ in form, in ſize, in horns, and in colour.

The ſtag of Corſica is a very ſmall animal, being not above half the ſize of thoſe common among us. His body is ſhort and thick, his legs ſhort, and his hair of a dark brown.

There is in the foreſts of Germany, a kind of ſtag, named by the ancients the *Tragelaphus*, and which the natives call the *bran deer*, or the *brown deer*. This is of a darker colour than the common ſtag, of a lighter ſhade upon the belly, long hair upon the neck and throat, by which it appears bearded, like the goat.

There is alſo a very beautiful ſtag, which by ſome is ſaid to be a native of Sardinia; but others (among whom is Mr. Buffon) are of opinion that it comes from Africa or the Eaſt Indies. He calls it the *axis*, after Pliny; and conſiders it as making the ſhade between the ſtag and the fallow deer. The horns of the axis are round, like thoſe of the ſtag; but the form of its body entirely reſembles that of the buck, and the ſize alſo is exactly the ſame. The hair is of four colours; namely, fallow, white, black, and grey. The white is predominant under the belly, on the inſide of the thighs and the legs. Along the back there are two rows of ſpots in a right line; but thoſe on other parts of the body are very irregular. A white line runs along each ſide of this animal, while the head and neck are grey. The tail is black above, and white beneath; and the hair upon it is ſix inches long.

Although there are but few individuals of the deer kind, yet the race ſeems diffuſed over all parts of the earth. The new continent of America, in which neither the ſheep, the goat, nor the gazelle, have been originally bred, nevertheleſs produces ſtags, and other animals of the deer kind, in ſufficient plenty. The Mexicans have a breed of white ſtags

in their parks, which they call *ſtags royal**. The ſtags of Canada differ from ours in nothing except the ſize of the horns, which in them is greater; and the direction of the antlers, which rather turn back, than project forward, as in thoſe of Europe. The ſame difference of ſize that obtains among our ſtags, is alſo to be ſeen in that country; and, as we are informed by Ruyſch, the Americans have brought them into the ſame ſtate of domeſtic tameneſs that we have our ſheep, goats, or black cattle. They ſend them forth in the day-time to feed in the foreſts; and at night they return home with the herdſman who guards them. The inhabitants have no other milk but what the hind produces; and uſe no other cheeſe but what is made from thence. In this manner we find, that an animal which ſeems made only for man's amuſement, may be eaſily brought to ſupply his neceſſities. Nature has many ſtores of happineſs and plenty in reſerve, which only want the call of induſtry to be produced, and now remain as candidates for human approbation.

The FALLOW DEER.

No two animals can be more nearly allied than the ſtag and the fallow deer†. Alike in form, alike in diſpoſition, in the ſuperb furniture of their heads, in their ſwiftneſs and timidity; and yet no two animals keep more diſtinct, or avoid each other with more fixed animoſity. They are never ſeen to herd in the ſame place, they never engender together, or form a mixed breed; and even in thoſe countries where the ſtag is common, the buck ſeems to be entirely a ſtranger; in ſhort, they both form diſtinct families; which, though ſo ſeemingly near are ſtill remote: and although with the ſame habitudes, yet retain an unalterable averſion. The fallow deer, as they are much ſmaller, ſo they ſeem of a nature leſs robuſt, and leſs ſavage than thoſe of the ſtag kind. They are found but rarely wild in the foreſts; they are, in general, bred up in parks, and kept for the purpoſes of hunting, or of luxury, their fleſh being preferred to that of any other animal. It need ſcarce be mentioned, that the horns of the buck made its principal diſtinction, being broad and palmated; whereas thoſe of the ſtag are in every part round.

* Buffon, vol. xii. p. 35. † Ibid, vol. xii. p. 36.

In the one, they are flatted and ſpread like the palm of the hand; in the other they grow like a tree, every branch being of the ſhape of the ſtem that bears it. The fallow deer alſo has the tail longer, and the hair lighter than the ſtag; in other reſpects, they pretty near reſemble one another.

The head of the buck, as of all other animals of this kind, is ſhed every year, and takes the uſual time for repairing. The only difference between it and the ſtag is, that this change happens later in the buck; and its rutting-time, conſequently, falls more into the winter. It is not found ſo furious at this ſeaſon as the former; nor does it ſo much exhauſt itſelf by the violence of its ardour. It does not quit its natural paſtures in queſt of the female, nor does it attack other animals with indiſcriminate ferocity: however, the males combat for the female among each other; and it is not without many conteſts, that one buck is ſeen to become maſter of the whole herd. It often happens alſo, that an herd of fallow deer is ſeen to divide into two parties, and engage each other with great ardour and obſtinacy*. They both ſeem deſirous of gaining ſome favourite ſpot of the park for paſture, and of driving the vanguiſhed party into the coarſer and more diſagreeable parts. Each of theſe factions has its particular chief; namely, the two oldeſt and ſtrongeſt of the herd. Theſe lead on to the engagement; and the reſt follow under their direction. Theſe combats, are ſingular enough, from the diſpoſition and conduct which ſeems to regulate their mutual efforts. They attack with order, and ſupport the aſſault with courage; they come to each other's aſſiſtance, they retire, they rally, and never give up the victory upon a ſingle defeat. The combat is renewed for ſeveral days together; until at length the moſt feeble ſide is obliged to give way, and is content to eſcape to the moſt diſagreeable part of the park, where only they can find ſafety and protection.

The fallow deer is eaſily tamed, and feeds upon many things which the ſtag refuſes. By this means it preſerves its veniſon better; and even after rutting, it does not appear entirely exhauſted. It continues almoſt in the ſame ſtate through the whole year, although there are particular

* Buffon, vol. xii. p. 36.

ſeaſons when its fleſh is chiefly in eſteem. This animal alſo browzes cloſer than the ſtag; for which reaſon it is more prejudicial among young trees, which it often ſtrips too cloſe for recovery. The young deer eat much faſter and more greedily than the old; they ſeek the female at their ſecond year, and, like the ſtag, are fond of variety. The doe goes with young above eight months, like the hind; and commonly brings forth one at a time: but they differ in this, that the buck comes to perfection at three, and lives till ſixteen; whereas the ſtag does not come to perfection till ſeven, and lives till forty.

As this animal is a beaſt of chaſe, like the ſtag, ſo the hunters have invented a number of names relative to him. The buck is the firſt year called a *fawn;* the ſecond, a *pricket;* the third, a *ſorel;* the fourth, a *ſore;* the fifth, a *buck of the firſt head*; and the ſixth, a *great buck:* The female is called a *doe;* the firſt year a *fawn;* and the ſecond, a *tegg*. The manner of hunting the buck is pretty much the ſame as that of ſtag hunting, except that leſs ſkill is required in the latter. The buck is more eaſily rouzed; it is ſufficient to judge by the view, and mark what grove or covert it enters, as it is not known to wander far from thence; nor, like the ſtag, to change is *layer*, or place of repoſe. When hard hunted, it takes to ſome ſtrong hold or covert with which it is acquainted, in the more gloomy parts of the wood, or the ſteeps of the mountain; not like the ſtag, flying before the hounds, nor croſſing nor doubling, nor uſing any of the ſubtleties which the ſtag is accuſtomed to. It will take the water when ſorely preſſed, but ſeldom a great river; nor can it ſwim ſo long, nor ſo ſwiftly, as the former. In general, the ſtrength, the cunning, and the courage of this animal, are inferior to thoſe of the ſtag; and conſequently, it affords neither ſo long, ſo various, nor ſo obſtinate a chaſe: beſides, being lighter, and not tracing ſo deeply, it leaves a leſs powerful and laſting ſcent, and the dogs in the purſuit are more frequently at a fault.

As the buck is a more delicate animal than the ſtag, ſo alſo it is ſubject to greater varieties*. We have in England two varieties of the fallow deer, which are ſaid to be of

* Britiſh Zoology.

foreign origin. The beautiful ſpotted kind, which is ſuppoſed to have been brought from Bengal; and the very deep brown ſort, that are now ſo common in ſeveral parts of this kingdom. Theſe were introduced by king James the Firſt, from Norway: for having obſerved their hardineſs, and that they could endure the winter, even in that ſevere climate, without fodder, he brought over ſome of them into Scotland, and diſpoſed of them among his chaſes. Since that time, they have multiplied in many parts of the Britiſh empire; and England is now become more famous for its veniſon, than any other country in the world. Whatever pains the French have taken to rival us in this particular, the fleſh of their fallow deer, of which they keep but a few, has neither the fatneſs nor the flavour of that fed upon Engliſh paſture.

However, there is ſcarce a country in Europe, except far to the northward, in which this animal is a ſtranger. The Spaniſh fallow-deer are as large as ſtags, but of a darker colour, and a more ſlender neck: their tails are longer than thoſe of ours, they are black above, and white below. The Virginian deer are larger and ſtronger than ours, with great necks, and their colour inclinable to grey. Other kinds have the hoofs of their hind legs marked outwardly with a white ſpot; and their ears and tails much longer than the common. One of theſe has been ſeen full of white ſpots, with a black liſt down the middle of his back. In Guiana, a country of South America, according to Labat, there are deer without horns, which are much leſs than thoſe of Europe, but reſembling them in every other particular. They are very lively, light of courſe, and exceſſively fearful; their hair is of a reddiſh fallow, their heads are ſmall and lean, their ears little, their necks long and arched, the tail ſhort, and the ſight piercing. When purſued, they fly into places where no other animal can follow them. The Negroes, who purſue them, ſtand to watch for them in narrow paths, which lead to the brook or the meadow where they feed; there waiting in the utmoſt ſilence, for the ſlighteſt ſound will drive them away, the Negro, when he perceives the animal within reach, ſhoots, and is happy if

he can bring down his game. Their flesh, though seldom fat, is considered as a great delicacy, and the hunter is well rewarded for his trouble.

THE ROE-BUCK.

THE roe-buck is the smallest of the deer kind known in our climate, and is now almost extinct among us, except in some parts of the Highlands of Scotland. It is generally about three feet long, and about two feet high. The horns are from eight to nine inches long, upright, round, and divided into only three branches. The body is covered with very long hair, well adapted to the rigour of its mountainous abode. The lower part of each hair is ash colour; near the ends is a narrow bar of black, and the points are yellow. The hairs on the face are black, tipped with ash colour. The ears are long, their insides of a pale yellow, and covered with long hair. The spaces bordering on the eyes and mouth, are black. The chest, belly, and legs, and the inside of the thighs, are of a yellowish white; the rump is of a pure white, and the tail very short. The make of this little animal is very elegant; and its swiftness equals its beauty. It differs from the fallow-deer, in having round horns, and not flatted like theirs. It differs from the stag, in its smaller size, and the proportionable paucity of its antlers: and it differs from all of the goat kind, as it annually sheds its head, and obtains a new one, which none of that kind are ever seen to do.

As the stag frequents the thickest forests, and the sides of the highest mountains, the roe-buck, with humbler ambition, courts the shady thicket, and the rising slope. Although less in size, and far inferior in strength to the stag, it is yet more beautiful, more active, and even more courageous. Its hair is always smooth, clean, and glossy; and it frequents only the dryest places, and of the purest air. Though but a very little animal, as we have already observed, yet, when its young is attacked, it faces even the stag himself, and often comes off victorious*. All its motions are elegant and easy; it bounds without effort, and continues the course with but little fatigue. It is also pos-

* Buffon, vol. xii. p. 75.

ſeſſed of more cunning in avoiding the hunter, is more difficult to purſue, and, although its ſcent is much ſtronger than that of the ſtag it is more frequently found to make a good retreat. It is not with the roe-buck, as with the ſtag, who never offers to uſe art until his ſtrength is beginning to decline; this more cunning animal, when it finds that its firſt efforts to eſcape are without ſucceſs, returns upon its former track, again goes forward, and again returns, until by its various windings it has entirely confounded the ſcent, and joined the laſt emanations to thoſe of its former courſe. It then, by a bound, goes to one ſide, lies flat upon its belly, and permits the pack to paſs by very near, without offering to ſtir.

But the roe-buck differs not only from the ſtag in ſuperior cunning, but alſo in its natural appetites, its inclinations, and its whole habits of living. Inſtead of herding together, theſe animals live in ſeparate families; the ſire, the dam, and the young ones, aſſociate together, and never admit a ſtranger into their little community. All others of the deer kind are inconſtant in their affection; but the roe-buck never leaves its mate; and, as they have been generally bred up together, from their firſt fawning, they conceive ſo ſtrong an attachment, the male for the female, that they never after ſeparate. Their rutting-ſeaſon continues but fifteen days; from the latter end of October to about the middle of November. They are not at that time, like the ſtag, overloaded with fat; they have not that ſtrong odour, which is perceived in all others of the deer kind; they have none of thoſe furious exceſſes; nothing, in ſhort, that alters their ſtate; they only drive away their fawns upon theſe occaſions; the buck forcing them to retire, in order to make room for a ſucceeding progeny; however, when the copulating ſeaſon is over, the fawns return to their does, and remain with them ſome time longer; after which, they quit them entirely, in order to begin an independent family of their own. The female goes with young but five months and a half, which alone ſerves to diſtinguiſh this animal from all others of the deer kind, that continue pregnant more than eight. In this reſpect, ſhe rather approaches more nearly to the goat kind; from which, however, this race is ſeparated by the male's annually caſting its horns.

When the female is ready to bring forth, ſhe ſeeks a retreat in the thickeſt part of the woods, being not leſs apprehenſive of the buck, from whom ſhe then ſeparates, than of the wolf, the wild-cat, and almoſt every ravenous animal of the foreſt; ſhe generally produces two at a time, and three but very rarely. In about ten or twelve days theſe are able to follow their dam, except in caſes of warm purſuit, when their ſtrength is not equal to the fatigue. Upon ſuch occaſions, the tenderneſs of the dam is very extraordinary; leaving them in the deepeſt thickets, ſhe offers herſelf to the danger, flies before the hounds, and does all in her power to lead them from the retreat where ſhe has lodged her little ones. Such animals as are nearly upon her own level ſhe boldly encounters; attacks the ſtag, the wild-cat, and even the wolf; and while ſhe has life, continues her efforts to protect her young. Yet all her endeavours are often vain; about the month of May, which is her fawning time, there is a greater deſtruction among thoſe animals than at any other ſeaſon of the year. Numbers of the fawns are taken alive by the peaſants; numbers are found out, and worried by the dogs; and ſtill more by the wolf, which has always been their moſt inveterate enemy. By theſe continual depredations upon this beautiful creature, the roe-buck is every day becoming ſcarcer; and the whole race in many countries is wholly worn out. They were once common in England; the huntſmen, who characteriſed only ſuch beaſts as they knew, have given names to the different kinds and ages as to the ſtag: thus they called it the firſt year a *hind;* the ſecond, a *gyrle;* and the third, a *hemuſe;* but theſe names at preſent are utterly uſeleſs, ſince the animal no longer exiſts among us. Even in France, where it was once extremely common, it is now confined to a few provinces; and it is probable that in an age or two the whole breed will be utterly extirpated. Mr. Buffon, indeed, obſerves, that in thoſe diſtricts where it is moſtly found, it ſeems to maintain its uſual plenty, and that the balance between its deſtruction and increaſe is held pretty even; however, the number in general is known to decreaſe; for wherever cultivation takes place, the beaſts of Nature are known to retire.—Many animals that once flouriſhed in the world may now be

extinct; and the descriptions of Aristotle and Pliny, though taken from life, may be considered as fabulous, as their archetypes are no longer existing.

The fawns continue to follow the deer eight or nine months in all; and, upon separating, their horns begin to appear, simple, and without antlers, the first year, as in those of the stag kind*. These they shed at the latter end of autumn, and renew during the winter; differing in this from the stag, who sheds them in spring, and renews them in summer. When the roe-buck's head is completely furnished, it rubs the horns against trees in the manner of the stag, and thus strips them of the rough skin and the blood-vessels, which no longer contribute to their nourishment and growth. When these fall, and new ones begin to appear, the roe-buck does not retire as the stag to the covert of the wood, but continues its usual haunts, only keeping down its head to avoid striking its horns against the branches of trees, the pain of which it seems to feel with exquisite sensibility. The stag, who sheds his horns in summer, is obliged to seek a retreat from the flies, that at that time greatly incommode him; but the roe-buck, who sheds them in winter, is under no such necessity; and, consequently, does not separate from its little family, but keeps with the female all the year round †.

As the growth of the roe-buck, and its arrival at maturity, is much speedier than that of the stag, so its life is proportionably shorter. It seldom is found to extend above twelve or fifteen years; and, if kept tame, it does not live above six or seven. It is an animal of a very delicate constitution, requiring variety of food, air, and exercise. It must be paired with a female, and kept in a park of at least a hundred acres. They may easily be subdued, but never thoroughly tamed.—No arts can teach them to be familiar with the feeder, much less attached to him. They still preserve a part of their natural wildness, and are subject to terrors without a cause. They sometimes, in attempting to escape, strike themselves with such force against the walls of their inclosure, that they break their limbs, and become utterly disabled. Whatever care is taken to tame them, they are never entirely to be re-

* Buffon, vol. xii. p. 88. † Buffon, ibid.

lied on, as they have capricious fits of fiercenels, and fometimes ftrike at thofe they diflike with a degree of force that is very dangerous.

The cry of the roe-buck is neither fo loud nor fo frequent as that of the ftag. The young ones have a particular manner of calling to the dam, which the hunters eafily imitate, and often thus allure the female to her deftruction. Upon fome occafions alfo they become in a manner intoxicated with their food, which, during the fpring, is faid to ferment in their ftomachs, and they are then very eafily taken. In fummer they keep clofe under covert of the foreft, and feldom venture out, except in violent heats, to drink at fome river or fountain. In general, however, they are contented to flake their thirft with the dew that falls on the grafs and the leaves of trees, and feldom rifk their fafety to fatisfy their appetite. They delight chiefly in hilly grounds, preferring the tender branches and buds of trees to corn, or other vegetables; and it is univerfally allowed that the flefh of thofe between one and two years old is the greateft delicacy that is known. Perhaps alfo, the fcarcenefs of it enhances its flavour.

In America this animal is much more common than in Europe. With us there are but two known varieties; the red, which is the largeft fort; and the brown, with a fpot behind, which is lefs. But in the new continent the breed is extremely numerous, and the varieties in equal proportion. In Louifiana, where they are extremely common, they are much larger than in Europe, and the inhabitants live in a great meafure upon its flefh, which taftes like mutton when well fatted. They are found alfo in Brafil, where they have the name of *cugacu apara*, only differing from ours in fome flight deviations in the horns. This animal is alfo faid to be common in China; although fuch as have defcribed it feem to confound it with the mufk goat, which is of a quite different nature.

THE ELK.

We have hitherto been defcribing minute animals in comparifon of the elk; the fize of which, from concurrent teftimony, appears to be equal to that of the elephant itfelf. It

The FEMALE MOOSE OR ELK

is an animal rather of the buck than the ſtag kind, as its horns are flatted towards the top; but it is far beyond both in ſtature, ſome of them being known to be above ten feet high. It is a native both of the old and new continent, being known in Europe under the name of the *elk*, and in America by that of the *mooſe-deer*. It is ſometimes taken in the German and Ruſſian foreſts, although ſeldom appearing; but it is extremely common in North America, where the natives purſue, and track it in the ſnow. The accounts of this animal are extremely various; ſome deſcribing it as being no higher than a horſe, and others about twelve feet high.

As the ſtature of this creature makes its chief peculiarity, ſo it were to be wiſhed that we could come to ſome preciſion upon that head. If we were to judge of its ſize by the horns, which are ſometimes fortuitouſly dug up in many parts of Ireland, we ſhould not be much amiſs in aſcribing them to an animal at leaſt ten feet high. One of theſe I have ſeen, which was ten feet nine inches from one tip to the other. From ſuch dimenſions it is eaſy to perceive that it required an animal far beyond the ſize of a horſe to ſupport them. To bear a head with ſuch extenſive and heavy antlers, required no ſmall degree of ſtrength; and without all doubt the bulk of the body muſt have been proportionable to the ſize of the horns. I remember ſome years ago, to have ſeen a ſmall mooſe-deer, which was brought from America, by a gentleman of Ireland: it was about the ſize of a horſe, and the horns were very little larger than thoſe of a common ſtag: this, therefore, ſerves to prove that the horns bear an exact proportion to the animal's ſize; the ſmall elk has but ſmall horns; whereas thoſe enormous ones, which we have deſcribed above, muſt have belonged to a proportionable creature. In all the more noble animals, Nature obſerves a perfect ſymmetry; and it is not to be ſuppoſed ſhe fails in this ſingle inſtance. We have no reaſon, therefore to doubt the accounts of Jocelyn and Dudley, who affirm that they have been found fourteen ſpans; which, at nine inches to a ſpan, makes the animal almoſt eleven feet high. Others have extended their accounts to twelve and fourteen feet, which makes this creature one of the moſt formidable of the foreſt.

There is but very little difference between the European elk and the American moose-deer, as they are but varieties of the same animal. It may be rather larger in America than with us; as in the forests of that unpeopled country, it receives less disturbance than in our own. In all places, however, it is timorous and gentle; content with its pasture, and never willing to disturb any other animal, when supplied itself. The European elk grows to above seven or eight feet high. In the year 1742, there was a female of this animal shewn at Paris, which was caught in a forest of Red Russia, belonging to the Cham of Tartary*; it was then but young, and its height was even at that time six feet seven inches; but the describer observes, that it has since become much taller and thicker, so that we may suppose this female at least seven feet high. There have been no late opportunities of seeing the male; but, by the rule of proportion, we may estimate his size at eight or nine feet at the least, which is about twice as high as an ordinary horse. The height, however, of the female, which was measured, was but six feet seven inches, Paris measure; or almost seven English feet high. It was ten feet from the tip of the nose to the insertion of the tail; and eight feet round the body. The hair was very long and coarse, like that of a wild boar. The ears resembled those of a mule, and were a foot and a half long. The upper jaw was longer by six inches than the lower; and, like other ruminating animals, it had no teeth (cutting teeth, I suppose the describer means). It had a large beard under the throat, like a goat; and in the middle of the forehead, between the horns, there was a bone as large as an egg. The nostrils were four inches long on each side of the mouth. It made use of its fore-feet, as a defence against its enemies. Those who shewed it asserted, that it ran with astonishing swiftness; and that it swam also with equal expedition, and was very fond of the water. They gave it thirty pounds of bread every day, besides hay, and it drank eight buckets of water. It was tame and familiar, and submissive enough to its keeper.

This description differs in many circumstances from that which we have of the moose, or American elk, which the

* Dictionnaire Raisonée des Animaux. Au Nom, Elan.

French call the original. Of thefe there are two kinds, the common light grey moofe, which is not very large; and the black moofe which grows to an enormous height. Mr. Dudley obferves, that a doe or hind of the black moofe kind, of the fourth year, wanted but an inch of feven feet high. All, however, of both kinds, have flat, palmed horns, not unlike the fallow-deer, only that the palm is much larger, having a fhort trunk at the head, and then immediately fpreading above a foot broad, with a kind of fmall antlers, like teeth on one of the edges. In this particular, all of the elk kind agree; as well the European elk, as the grey and the black moofe-deer.

The grey moofe-deer is about the fize of a horfe; and, although it has large buttocks, its tail is not above an inch long. As, in all of this kind, the upper lip is much longer than the under, it is faid that they continue to go backward as they feed. Their noftrils are fo large that a man may thruft his hand in a confiderable way; and their horns are as long as thofe of a ftag, but, as was obferved, much broader.

The black moofe is the enormous auimal mentioned above, from eight to twelve feet high. Joffelyn, who is the firft Englifh writer that mentions it, fays, that it is a goodly creature, twelve feet high, with exceeding fair horns, that have broad palms, two fathoms from the top of one horn to to another. He affures us, that it is a creature, or rather a monfter of fuperfluity, and many times bigger than an Englifh ox. This account is confirmed by Dudley; but he does not give fo great an expanfion to the horns, meafuring them only thirty-one inches between one tip and the other: however, that fuch an extraordinary animal as Joffelyn defcribes, has actually exifted, we can make no manner of doubt of, fince there are horns common enough to be feen among us, twelve feet from one tip to the other.

Thefe animals delight in cold countries, feeding upon grafs in fummer, and the bark of trees in winter. When the whole country is deeply covered with fnow, the moofe-deer herd together under the tall pine-trees, ftrip off the bark, and remain in that part of the foreft while it yields them fubfiftence. It is at that time that the natives prepare

to hunt them: and particularly when the ſun begins to melt the ſnow by day, which is frozen again at night; for then the icy cruſt which covers the ſurface of the ſnow, is too weak to ſupport ſo great a bulk, and only retards the animal's motion. When the Indians, therefore perceive an herd of theſe at a diſtance, they immediately prepare for their purſuit, which is not, as with us, the ſport of an hour, but is attended with toil, difficulty, and danger*. The timorous animal no ſooner obſerves its enemies approach, than it immediately endeavours to eſcape, but ſinks at every ſtep it takes. Still, however, it purſues its way through a thouſand obſtacles: the ſnow, which is uſually four feet deep, yields to its weight, and embarraſſes its ſpeed; the ſharp ice wounds its feet; and its loſty horns are entangled in the branches of the foreſt, as it paſſes along. The trees, however, are broken down with eaſe; and wherever the mooſe-deer runs, it is perceived by the ſnapping off the branches of the trees, as thick as a man's thigh, with its horns. The chaſe laſts in this manner for the whole day; and ſometimes it has been known to continue for two, nay three days together; for the purſuers are often not leſs excited by famine, than the purſued by fear. Their preſervance, however, generally ſucceeds; and the Indian who firſt comes near enough, darts his lance, with unerring aim, which ſticks in the poor animal, and at firſt increaſes its efforts to eſcape. In this manner the mooſe trots heavily on, (for that is its uſual pace) till its purſuers once more come up, and repeat their blow: upon this, it again ſummons up ſufficient vigour to get a-head; but, at laſt, quite tired, and ſpent with loſs of blood, it ſinks, as the deſcriber expreſſes it, like a ruined building, and makes the earth ſhake beneath its fall.

This animal, when killed, is a very valuable acquiſition to the hunters. The fleſh is very well taſted, and ſaid to be very nouriſhing. The hide is ſtrong, and ſo thick that it has been often known to turn a muſket-ball; however, it is ſoft and pliable, and, when tanned, the leather is extremely light, yet very laſting. The fur is a light grey in ſome, and blackiſh in others; and when viewed through a microſcope,

* Phil. Tranſ. vol. ii. p. 436.

The REIN DEER

appears ſpongy like a bulruſh, and is ſmaller at the roots and points than in the middle; for this reaſon, it lies very flat and ſmooth, and though beaten or abuſed never ſo much, it always returns to its former ſtate. The horns alſo are not leſs uſeful, being applied to all the purpoſes for which hartſhorn is beneficial: theſe are different in different animals; in ſome they reſemble entirely thoſe of the European elk, which ſpread into a broad palm, with ſmall antlers on one of the edges; in others they have a branched brow-antler between the bur and the palm, which the German elk has not: and in this they entirely agree with thoſe whoſe horns are ſo frequently dug up in Ireland. This animal is ſaid to be troubled with the epilepſy, as it is often found to fall down when purſued, and thus becomes an eaſier prey; for this reaſon, an imaginary virtue has been aſcribed to the hinder hoof, which ſome have ſuppoſed to be a ſpecific againſt all epileptic diſorders. This, however, may be conſidered as a vulgar error; as well as that of its curing itſelf of this diſorder by applying the hinder hoof behind the ear. After all, this animal is but very indifferently and confuſedly deſcribed by travellers; each mixing his account with ſomething falſe or trivial; often miſtaking other ſome quadruped for the elk, and confounding its hiſtory. Thus ſome have miſtaken it for the rein-deer, which in every thing but ſize it greatly reſembles; ſome have ſuppoſed it to be the ſame with the Tapurette*, from which it entirely differs; ſome have deſcribed it as the common red American ſtag, which ſcarcely differs from our own; and, laſtly, ſome hove confounded it with the Bubalus, which is more properly a gazelle of Africa†.

THE REIN-DEER.

OF all animals of the deer kind, the rein-deer is the moſt extraordinary and the moſt uſeful. It is a native of the icy regions of the north; and though many attempts have been made to accuſtom it to a more ſouthern climate, it ſhortly feels the influence of the change, and in a few months declines and dies. Nature ſeems to have fitted it entirely to anſwer the neceſſities of that hardy race of mankind that live near

* Condamine. † Dapper, Deſcription de l'Afrique, p. 17.

the pole. As thefe would find it impoffible to fubfift among their barren fnowy mountains without its aid, fo this animal can live only there, where its affiftance is moft abfolutely neceffary. From it alone the natives of Lapland and Greenland fupply moft of their wants; it anfwers the purpofes of a horfe, to convey them and their fcanty furniture from one mountain to another; it anfwers the purpofes of a cow, in giving milk; and it anfwers the purpofes of the fheep, in furnifhing them with a warm, though an homely kind of clothing. From this quadruped alone, therefore, they receive as many advantages as we derive from three of our moft ufeful creatures; fo that Providence does not leave thefe poor outcafts entirely deftitute, but gives them a faithful domeftic, more patient and ferviceable than any other in Nature.

The rein-deer refembles the American elk in the fafhion of its horns. It is not eafy in words to defcribe thefe minute differences; nor will the reader, perhaps, have a diftinct idea of the fimilitude, when told that both have brow-antlers, very large, and hanging over their eyes, palmated towards the top, and bending forward, like a bow. But here the fimilitude between thefe two animals ends; for, as the elk is much larger than the ftag, fo the rein-deer is much fmaller. It is lower and ftronger built than the ftag; its legs are fhorter and thicker, and its hoofs much broader than in that animal; its hair is much thicker and warmer, its horns much larger in proportion, and branching forward over its eyes; its ears are much larger; its pace is rather a trot than a bounding, and this it can continue for a whole day; its hoofs are cloven and moveable, fo that it fpreads them abroad as it goes, to prevent its finking in the fnow. When it proceeds on a journey, it lays its great horns on its back, while there are two branches which always hang over its forehead, and almoft cover its face. One thing feems peculiar to this animal and the elk; which is, that as they move along, their hoofs are heard to crack with a pretty loud noife. This arifes from their manner of treading; for as they reft upon their cloven hoof, it fpreads on the ground, and the two divifions feparate from each other, but when they lift it, the divifions clofe again, and ftrike againft each

other with a crack. The female alſo of the rein-deer has horns as well as the male, by which the ſpecies is diſtinguiſhed from all other animals of the deer kind whatſoever.

When the rein deer firſt ſhed their coat of hair, they are brown; but in proportion as ſummer approaches, their hair begins to grow whitiſh; until, at laſt, they are nearly grey*. They are, however, always black about the eyes. The neck has long hair, hanging down, and coarſer than upon any other part of the body. The feet, juſt, at the inſertion of the hoof, are ſurrounded with a ring of white. The hair in general ſtands ſo thick over the whole body, that if one ſhould attempt to ſeparate it, the ſkin will no where appear uncovered: whenever it falls alſo, it is not ſeen to drop from the root, as in other quadrupeds, but ſeems broken ſhort near the bottom; ſo that the lower part of the hair is ſeen growing, while the upper falls away. The horns of the female are made like thoſe of the male, except that they are ſmaller and leſs branching. As in the reſt of the deer kind, they ſprout from the points; and alſo in the beginning, are furniſhed with an hairy cruſt, which ſupports the blood-veſſels, of moſt exquiſite ſenſibility. The rein-deer ſhed their horns, after rutting-time, at the latter end of November; and they are not completely furniſhed again till towards autumn. The female always retains hers till ſhe brings forth, and then ſheds them, about the beginning of November. If ſhe be barren, however, which is not unfrequently the caſe, ſhe does not ſhed them till winter. The caſtration of the rein-deer does not prevent the ſhedding of their horns: thoſe which are the ſtrongeſt, caſt them early in winter; thoſe which are more weakly not ſo ſoon. Thus, from all theſe circumſtances, we ſee how greatly this animal differs from the common ſtag. The female of the rein-deeer has horns, which the hind is never ſeen to have; the rein-deer, when caſtrated, renews its horns, which we are aſſured the ſtag never does: it differs not leſs in its habits and manner of living, being tame, ſubmiſſive, and patient; while the ſtag, is wild, capricious, and unmanageable.

* For the greateſt part of this deſcription of the rein-deer, I am obliged to Mr. Hoffberg; upon whoſe authority, being a native of Sweden, and an experienced naturaliſt, we may confidently rely.

The rein-deer, as was ſaid, is naturally an inhabitant of the countries bordering on the arctic circle. It is not unknown to the natives of Siberia. The North Americans alſo hunt it under the name of the *caribou*. But in Lapland, this animal is converted to the utmoſt advantage; and ſome herdſmen of that country are known to poſſeſs above a thouſand in a ſingle herd.

Lapland is divided into two diſtricts, the mountainous and the woody. The mountainous part of the country is at beſt barren and bleak, exceſſively cold, and uninhabitable during the winter; ſtill, however, it is the moſt deſirable part of this frightful region, and is moſt thickly peopled during the ſummer. The natives generally reſide on the declivity of the mountains, three or four cottages together, and lead a cheerful and ſocial life. Upon the approach of winter, they are obliged to migrate into the plains below, each bringing down his whole herd, which often amounts to more than a thouſand, and leading them where the paſture is in greateſt plenty. The woody part of the country is much more deſolate and hideous. The whole face of Nature there preſents a frightful ſcene of trees without fruit, and plains without verdure. As far as the eye can reach, nothing is to be ſeen, even in the midſt of ſummer, but barren fields, covered only with a moſs, almoſt as white as ſnow; no graſs, no flowery landſcapes, only here and there a pine-tree, which may have eſcaped the frequent conflagrations by which the natives burn down their foreſts. But what is very extraordinary, as the whole ſurface of the country is clothed in white, ſo on the contrary, the foreſts ſeem to the laſt degree dark and gloomy. While one kind of moſs makes the fields look as if they were covered with ſnow, another kind blackens over all their trees, and even hides their verdure. This moſs, however, which deforms the country, ſerves for its only ſupport, as upon it alone the rein-deer can ſubſiſt. The inhabitants, who, during the ſummer, lived among the mountains, drive down their herds in winter, and people the plains and woods below. Such of the Laplanders as inhabit the woods and the plains, all the year round, live remote from each other, and having been uſed to ſolitude, are melancholy, ignorant, and helpleſs. They

are much poorer alſo than the mountaineers; for, while one of thoſe is found to poſſeſs a thouſand rein-deer at a time, none of theſe are ever known to rear the tenth part of that number. The rein-deer makes the riches of this people; and the cold mountainous parts of the country agree beſt with its conſtitution. It is for this reaſon, therefore, that the mountains of Lapland are preferred to the woods; and that many claim an excluſive right to the tops of hills, covered in almoſt eternal ſnow. As ſoon as the ſummer begins to appear, the Laplander, who had fed his rein-deer upon the lower grounds, during the winter, then drives them up to the mountains, and leaves the woody country, and the low paſture, which at that ſeaſon are truly deplorable. The gnats, bred by the ſun's heat, in the marſhy bottoms, and the weedy lakes, with which the country abounds more than any other part of the world, are all upon the wing, and fill the whole air, like clouds of duſt in a dry windy day. The inhabitants, at that time, are obliged to daub their faces with pitch, mixed with milk, to ſhield their ſkins from their depredations. All places are then ſo greatly infeſted, that the poor natives can ſcarce open their mouths without fear of ſuffocation; the inſects enter, from their numbers and minuteneſs, into the noſtrils and the eyes, and do not leave the ſufferer a moment at his eaſe. But they are chiefly enemies to the rein-deer: the horns of that animal being then in their tender ſtate, and poſſeſſed of extreme ſenſibility; a famiſhed cloud of inſects inſtantly ſettle upon them, and drive the poor animal almoſt to diſtraction. In this extremity, there are but two remedies, to which the quadruped, as well as its maſter, are obliged to have recourſe. The one is, for both to take ſhelter near their cottage, where a large fire of tree moſs is prepared, which filling the whole place with ſmoke, keeps off the gnat, and thus, by one inconvenience, expels a greater; the other is, to aſcend to the higheſt ſummit of the mountains, where the air is too thin, and the weather too cold, for the gnats to come. There the rein-deer are ſeen to continue the whole day, although without food, rather than to venture down to the lower parts, where they can have no defence againſt their unceaſing perſecutors. Beſides the gnat, there is alſo

a gadfly, that, during the ſummer ſeaſon, is no leſs formidable to them. This inſect is bred under their ſkins, where the egg has been depoſited the preceding ſummer; and it is no ſooner produced as a fly, than it again endeavours to depoſit its eggs in ſome place ſimilar to that from whence it came. Whenever, therefore, it appears flying over an herd of rein-deer, it puts the whole body, how numerous ſoever, into motion; they know their enemy, and do all they can, by toſſing their horns, and running among each other, to terrify or avoid it. All their endeavours, however, are too generally without effect; the gadfly is ſeen to depoſit its eggs, which burrowing under the ſkin, wound it in ſeveral places, and often bring on an incurable diſorder. In the morning, therefore, as ſoon as the Lapland herdſman drives his deer to paſture, his greateſt care is to keep them from ſcaling the ſummits of the mountains where there is no food, but where they go merely to be at eaſe from the gnats and gadflies that are ever annoying them. At this time, there is a ſtrong conteſt between the dogs and the deer; the one endeavouring to climb up againſt the ſide of the hill, and to gain thoſe ſummits that are covered in eternal ſnows; the other forcing them down, by barking and threatening, and, in a manner, compelling them into the places where their food is in the greateſt plenty. There the men and dogs confine them; guarding them with the utmoſt precaution the whole day, and driving them home at the proper ſeaſons for milking.

The female brings forth in the middle of May, and gives milk till about the middle of October. Every morning and evening, during the ſummer, the herdſman returns to the cottage with his deer to be milked, where the women previouſly have kindled up a ſmoky fire, which effectually drives off the gnats, and keeps the rein-deer quiet while milking. The female furniſhes about a pint, which, though thinner than that of the cow, is, nevertheleſs, ſweeter, and more nouriſhing. This done, the herdſman drives them back to paſture; as he neither folds nor houſes them, neither provides for their ſubſiſtence during the winter, nor improves their paſture by cultivation.

Upon the return of the winter, when the gnats and flies are no longer to be feared, the Laplander defcends into the lower grounds; and, as there are but few to difpute the poffeffion of that defolate country, he has an extenfive range to feed them in. Their chief, and almoft their only food at that time, is the white mofs already mentioned; which, from its being fed upon by this animal, obtains the name of the *lichen rangiferinus*. This is of two kinds: the woody lichen, which covers almoft all the defert parts of the country like fnow; the other is black, and covers the branches of the trees in very great quantities. However unpleafing thefe may be to the fpectator, the native efteems them as one of his choiceft benefits, and the moft indulgent gift of Nature. While his fields are clothed with mofs, he envies neither the fertility nor the verdure of the more fouthern landfcape; dreffed up warmly in his deer-fkin clothes, with fhoes and gloves of the fame materials, he drives his herds along the defert, fearlefs and at eafe, ignorant of any higher luxury than what their milk and fmoke-dried flefh affords him.—Hardened to the climate, he fleeps in the midft of ice; or awaking, dozes away his time with tobacco; while his faithful dogs fupply his place, and keep the herd from wandering. The deer, in the mean time, with inftincts adapted to the foil, purfue their food, though covered in the deepeft fnow. They turn it up with their nofes, like fwine; and, even though its furface be frozen and ftiff, yet the hide is fo hardened in that part, that they eafily overcome the difficulty. It fometimes, however, happens, though but rarely, that the winter commences with rain, and a froft enfuing, covers the whole country with a glazed cruft of ice. Then, indeed, both the rein-deer and the Laplander are undone; they have no provifions laid up in cafe of accident, and the only refource is to cut down the large pine-trees, that are covered with mofs, which furnifhes but a fcanty fupply; fo that the greateft part of the herd is then feen to perifh, without a poffibility of affiftance. It fometimes alfo happens, that even this fupply is wanting; for the Laplander often burns down his woods, in order to improve and fertilize the foil which produces the mofs, upon which he feeds his cattle.

In this manner, the paſtoral life is ſtill continued near the pole; neither the coldneſs of the winter, nor the length of the nights, neither the wildneſs of the foreſt, nor the vagrant diſpoſition of the herd, interrupt the even tenour of the Laplander's life. By night and day he is ſeen attending his favourite cattle, and remains unaffected, in a ſeaſon which would be ſpeedy death to thoſe bred up in a milder climate. He gives himſelf no uneaſineſs to houſe his herds, or to provide a winter ſubſiſtence for them; he is at the trouble neither of manuring his grounds, nor bringing in his harveſts; he is not the hireling of another's luxury; all his labours are to obviate the neceſſities of his own ſituation; and theſe he undergoes with cheerfulneſs, as he is ſure to enjoy the fruits of his own induſtry. If, therefore, we compare the Laplander with the peaſant of more ſouthern climates, we ſhall have little reaſon to pity his ſituation; the climate in which he lives is rather terrible to us than to him; and, as for the reſt, he is bleſſed with liberty, plenty, and eaſe. The rein-deer alone ſupplies him with all the wants of life, and ſome of the conveniences; ſerving to ſhew how many advantages Nature is capable of ſupplying, when Neceſſity gives the call. Thus the poor, little, helpleſs native, who was originally, perhaps, driven by fear or famine into thoſe inhoſpitable climates, would ſeem, at firſt view, to be the moſt wretched of mankind: but it is far otherwiſe; he he looks round among the few wild animals that his barren country can maintain, and ſingles out one from among them, and that of a kind which the reſt of mankind have not thought worth taking from a ſtate of nature; this he cultivates, propagates, and multiplies; and from this alone derives every comfort that can ſoften the ſeverity of his ſituation.

The rein-deer of this country are of two kinds, the wild and the tame. The wild are larger and ſtronger, but more miſchievous than the others. Their breed, however, is preferred to that of the tame; and the female of the latter is often ſent into the woods, from whence ſhe returns home impregnated by one of the wild kind. Theſe are fitter for drawing the ſledge, to which the Laplander accuſtoms them betimes, and yokes them to it by a ſtrap, which goes round

the neck, and comes down between their legs. The ſledge is extremely light, and ſhod at the bottom with the ſkin of a young deer, the hair turned to ſlide on the frozen ſnow.—The perſon who ſits on this, guides the animal with a cord, faſtened round the horns, and encourages it to proceed with his voice, and drives it with a goad. Some of the wild breed, tho' by far the ſtrongeſt, are yet found refractory, and often turn upon their drivers; who have then no other reſource but to cover themſelves with their ſledge, and let the animal vent its fury upon that. But it is otherwiſe with thoſe that are tame; no creature can be more active, patient, and willing: when hard puſhed, they will trot nine or ten Swediſh miles, or between fifty and ſixty Engliſh miles, at one ſtretch. But, in ſuch a caſe, the poor obedient creature fatigues itſelf to death, and, if not prevented by the Laplander, who kills it immediately, it will die a day or two after. In general, they can go about thirty miles without halting, and this without any great or dangerous efforts. This, which is the only manner of travelling in that country, can be performed only in winter, when the ſnow is glazed over with ice; and although it be a very ſpeedy method of conveyance, yet it is inconvenient, dangerous, and troubleſome.

In order to make theſe animals more obedient, and more generally ſerviceable, they caſtrate them: this operation the Laplanders perform with their teeth; theſe become ſooner fat when taken from labour; and they are found to be ſtronger in drawing the ſledge. There is uſually one male left entire for every ſix females; theſe are in rut from the Feaſt of St. Matthew to about Michaelmas. At this time, their horns are thoroughly burniſhed, and their battles among each other are fierce and obſtinate. The females do not begin to breed till they are two years old; and then they continue regularly breeding every year till they are ſuperannuated. They go with young above eight months, and generally bring forth two at a time. The fondneſs of the dam for her young is very remarkable; it often happens that when they are ſeparated from her, ſhe will return from paſture, keep calling round the cottage for them, and will not deſiſt until, dead or alive, they are brought and laid at her feet. They are at firſt of a light brown; but they be-

come darker with age; and at laſt the old ones are of a brown almoſt approaching to blackneſs. The young follow the dam for two or three years; but they do not acquire their full growth until four. They are then broke in, and managed for drawing the ſledge; and they continue ſerviceable for four or five years longer. They never live above fifteen or ſixteen years; and when they arrive at the proper age, the Laplander generally kills them for the ſake of their ſkins and their fleſh. This he performs by ſtriking them on the back of the neck, with his knife, into the ſpinal marrow; upon which they inſtantly fall, and he then cuts the arteries that lead to the heart, and lets the blood diſcharge itſelf into the cavity of the breaſt.

There is ſcarce any part of this animal that is not converted to its peculiar uſes. As ſoon as it begins to grow old, and ſome time before the rut, it is killed, and the fleſh dried in the air. It is alſo ſometimes hardened with ſmoke, and laid up for travelling proviſion, when the natives migrate from one part of the country to another. During the winter, the rein-deer are ſlaughtered as ſheep with us; and every four perſons in the family are allowed one rein-deer for their week's ſubſiſtence. In ſpring, they ſpare the herd as much as they can, and live upon freſh fiſh. In ſummer, the milk and curd of the rein-deer makes their chief proviſion; and, in autumn, they live wholly upon fowls, which they kill with a croſs-bow, or catch in ſpringes. Nor is this ſo ſcanty an allowance; ſince, at that time, the ſea-fowls come in ſuch abundance that their ponds and ſprings are covered over. Theſe are not ſo ſhy as with us, but yield themſelves an eaſy prey. They are chiefly allured to thoſe places by the ſwarms of gnats which infeſt the country during ſummer, and now repay the former inconveniences, by inviting ſuch numbers of birds as ſupply the natives with food a fourth part of the year, in great abundance.

The milk, when newly taken, is warmed in a cauldron, and thickened with rennet; and then the curd is preſſed into cheeſes, which are little and well taſted. Theſe are never found to breed mites as the cheeſe of other countries; probably becauſe the mite-fly is not to be found in Lapland. The whey which remains is warmed up again, and

becomes of a conſiſtence as if thickened with the white of eggs. Upon this the Laplanders feed during the ſummer; it is pleaſant and well taſted, but not very nouriſhing. As to butter, they very ſeldom make any, becauſe the milk affords but a very ſmall quantity, and this both in taſte and conſiſtence, is more nearly reſembling to ſuet. They never keep their milk till it turns ſour; and do not dreſs it into the variety of diſhes which the more ſouthern countries are known to do. The only delicacy they make from it is with wood-ſorrel, which being boiled up with it, and coagulating, the whole is put into caſks, or deer-ſkins, and kept under ground to be eaten in winter.

The ſkin is even a more valuable part of this animal than either of the former. From that part of it which covered the head and feet, they make their ſtrong ſnow-ſhoes with the hair on the outſide. Of the other parts they compoſe their garments, which are extremely warm, and which cover them all over. The hair of theſe alſo is on the outſide; and they ſometimes line them with the fur of the glutton, or ſome other warm-furred animal of that climate. Theſe ſkins alſo ſerve them for beds. They ſpread them on each ſide of the fire, upon ſome leaves of the dwarf birch-tree, and in this manner lie both ſoft and warm. Many garments made of the ſkin of the rein-deer, are ſold every year to the inhabitants of the more ſouthern parts of Europe; and they are found ſo ſerviceable in keeping out the cold, that even people of the firſt rank are known to wear them.

In ſhort, no part of this animal is thrown away as uſeleſs. The blood is preſerved in ſmall caſks, to make ſauce with the marrow in ſpring. The horns are ſold to be converted into glue. The ſinews are dried, and divided ſo as to make the ſtrongeſt kind of ſewing thread, not unlike catgut. The tongues, which are conſidered as a great delicacy, are dried, and ſold into the more ſouthern provinces. The inteſtines themſelves are waſhed like our tripe, and in high eſteem among the natives. Thus the Laplander finds all his neceſſities amply ſupplied from this ſingle animal; and he who has a large herd of theſe animals has no idea of higher luxury.

But, although the rein-deer be a very hardy and vigorous animal, it is not without its diſeaſes. I have already men-

tioned the pain it feels from the gnat, and the apprehenſions it is under from the gadfly. Its hide is often found pierced in a hundred places, like a ſieve, from this inſect, and not a few die in their third year, from this very cauſe. Their teats alſo are ſubject to cracking, ſo that blood comes inſtead of milk. They ſometimes take a loathing for their food; and, inſtead of eating, ſtand ſtill and chew the cud. They are alſo troubled with a vertigo, like the elk, and turn round often till they die. The Laplander judges of their ſtate by the manner of their turning. If they turn to the right, he judges their diſorder but ſlight; if they turn to the left, he deems it incurable. The rein-deer are alſo ſubject to ulcers near the hoof, which unqualifies them for travelling, or keeping with the herd. But the moſt fatal diſorder of all is that which the natives call the *ſuddataka*, which attacks this animal at all ſeaſons of the year. The inſtant it is ſeized with this diſeaſe, it begins to breathe with great difficulty; its eyes begin to ſtare, and its noſtrils to expand. It acquires alſo an unuſual degree of ferocity, and attacks all it meets indiſcriminately. Still, however, it continues to feed as if in health, but is not ſeen to chew the cud, and it lies down more frequently than before. In this manner it continues, every day conſuming and growing more lean, till at laſt it dies from mere inanition; and not one of theſe that are attacked with this diſorder are ever found to recover. Notwithſtanding it is but very lately known in that part of the world; although, during the laſt ten or fifteen years, it has ſpoiled whole provinces of this neceſſary creature. It is contagious; and the moment the Laplander perceives any of his herd infected, he haſtens to kill them immediately, before it ſpreads any farther. When examined internally, there is a frothy ſubſtance found in the brain, and round the lungs; the inteſtines are lax and flabby, and the ſpleen is diminiſhed almoſt to nothing. The Laplander's only cure in all theſe diſorders, is to anoint the animal's back with tar; if this does not ſucceed, he conſiders the diſeaſe as beyond the power of art; and, with his natural phlegm, ſubmits to the ſeverities of Fortune.

Beſides the internal maladies of this animal, there are ſome external enemies which it has to fear. The bears now and then make depredations upon the herd; but of all their

perſecutors, the creature called the *glutton* is the moſt dangerous and the moſt ſucceſsful. The war between theſe is carried on not leſs in Lapland than in North America, where the rein-deer is called the *carribou*; and the *glutton* the *carcajou*. This animal, which is not above the ſize of a badger, waits whole weeks together for its prey, hid in the branches of ſome ſpreading tree; and when the wild rein-deer paſſes underneath, it inſtantly drops down upon it, fixing its teeth and claws into the neck, juſt behind the horns. It is in vain that the wounded animal then flies for protection, that it ruſtles among the branches of the foreſt, the glutton ſtill holds its former poſition, and, although it often loſes a part of its ſkin and fleſh, which are rubbed off againſt the trees, yet it ſtill keeps faſt, until its prey drops with fatigue and loſs of blood. The deer has but one only method of eſcape, which is by jumping into the water; that element its enemy cannot endure; for, as we are told, it quits its hold immediately, and then thinks only of providing for its own proper ſecurity.

BOOK III.

QUADRUPEDS OF THE HOG KIND.

CHAP. I.

INTRODUCTION.

ANIMALS of the hog kind ſeem to unite in themſelves all thoſe diſtinctions by which others are ſeparated. They reſemble thoſe of the horſe kind in the number of their teeth, which in all amount to forty-four, in the length of their head, and in having but a ſingle ſtomach. They reſemble the cow kind in their cloven hoofs and the poſition of their inteſtines; and they reſemble thoſe of the claw-footed kind in their appetite for fleſh, in their not chewing the cud, and in their numerous progeny. Thus this ſpecies ſerves to fill up that chaſm which is found between the carnivorous kinds and thoſe that live upon graſs; being poſſeſſed of the ravenous appetite of the one, and the inoffenſive nature of the other. We may conſider them, therefore, as of a middle nature, which we can refer neither to the rapacious nor the peaceful kinds, and yet partaking ſomewhat of the nature of both. Like the rapacious kinds, they are found to have ſhort inteſtines; their hoofs alſo, though cloven to the ſight, will, upon anatomical inſpection, appear to be ſupplied with bones like beaſts of prey; and the number of their teats alſo increaſe the ſimilitude; on the other hand, in a natural ſtate they live upon vegetables, and ſeldom ſeek after animal food, except when urged by neceſſity. They offend no other animal of the foreſt, at the ſame time that they are furniſhed with arms to terrify the braveſt.

THE WILD BOAR,

WHICH is the original of all the varieties we find in this creature, is by no means ſo ſtupid nor ſo filthy an animal as that we have reduced to tameneſs; he is much

ſmaller than the tame hog, and does not vary in his colour as thoſe of the domeſtic kind do, but is always found of an iron grey, inclining to black; his ſnout is much longer than that of the tame hog, and the ears are ſhorter, rounder, and black; of which colour are alſo the feet and the tail. He roots the ground in a different manner from the common hog; for as this turns up the earth in little ſpots here and there, ſo the wild boar ploughs it up like a furrow, and does irreparable damage in the cultivated lands of the farmer. The tuſks alſo of this animal are larger than in the tame breed, ſome of them being ſeen almoſt a foot long*. Theſe, as is well known, grow from both the under and upper jaw, bend upwards circularly, and are exceedingly ſharp at the points. They differ from the tuſks of the elephant in this, that they never fall; and it is remarkable of all the hog kind, that they never ſhed their teeth as other animals are ſeen to do. The tuſks of the lower jaw are always the moſt to be dreaded, and are found to give very terrible wounds.

The wild boar can properly be called neither a ſolitary nor a gregarious animal. The three firſt years the whole litter follows the ſow, and the family lives in a herd together. They are then called beaſts of company, and unite their common forces againſt the invaſions of the wolf, or the more formidable beaſts of prey. Upon this their principal ſafety while young depends, for when attacked they give each other mutual aſſiſtance, calling to each other with a very loud and fierce note; the ſtrongeſt face the danger; they form a ring, and the weakeſt fall into the centre. In this poſition few ravenous beaſts dare venture to attack them, but purſue the chaſe where there is leſs reſiſtance and danger. However, when the wild boar is come to a ſtate of maturity, and when conſcious of his own ſuperior ſtrength, he then walks the foreſt alone, and fearleſs. At that time he dreads no ſingle creature, nor does he turn out of his way even for man himſelf. He does not ſeek danger, and he does not much ſeem to avoid it.

This animal is therefore ſeldom attacked, but at a diſadvantage, either by numbers, or when found ſleeping by moon-light. The hunting the wild boar is one of the prin-

* Buffon, vol. ix. p. 147.

cipal amuſements of the nobility in thoſe countries where it is to be found. The dogs provided for this ſport are of the ſlow heavy kind. Thoſe uſed for hunting the ſtag, or the roebuck, would be very improper, as they would too ſoon come up with their prey; and, inſtead of a chaſe, would only furniſh out an engagement. A ſmall maſtiff is therefore choſen; nor are the hunters much mindful of the goodneſs of their noſe, as the wild boar leaves ſo ſtrong a ſcent, that it is impoſſible for them to miſtake its courſe. They never hunt any but the largeſt and the oldeſt, which are known by their tracks. When the boar is *rear'd*, as is the expreſſion for driving him from his covert, he goes ſlowly and uniformly forward, not much afraid, nor very far before his purſuers. At the end of every half mile, or thereabouts, he turns round, ſtops till the hounds come up, and offers to attack them. Theſe on the other hand, knowing their danger, keep off, and bay him at a diſtance. After they have for a while gazed upon each other, with mutual animoſity, the boar again ſlowly goes on his courſe, and the dogs renew their purſuit. In this manner the charge is ſuſtained, and the chaſe continues till the boar is quite tired, and refuſes to go any farther. The dogs then attempt to cloſe in upon him from behind; thoſe which are young, fierce, and unaccuſtomed to the chaſe, are generally the foremoſt, and often loſe their lives by their ardour. Thoſe which are older and better trained are content to wait until the hunters come up, who ſtrike at him with their ſpears, and, after ſeveral blows, deſpatch or diſable him. The inſtant the animal is killed, they cut off the teſticles, which would otherwiſe give a taint to the fleſh; and the huntſmen celebrate the victory with their horns.

THE HOG,

In a natural ſtate, is found to feed chiefly upon roots and vegetables; it ſeldom attacks any other animal, being content with ſuch proviſions as it procures without danger. Whatever animal happens to die in the foreſt, or is ſo wounded that it can make no reſiſtance, becomes a prey to the hog, who ſeldom refuſes animal food, how putrid ſoever, although it is never at the pains of taking or pro-

curing it alive. For this reason, it seems a glutton rather by accident than choice, content with vegetable food, and only devouring flesh when pressed by necessity, and when it happens to offer. Indeed, if we behold the hog in its domestic state, it is the most sordid and brutal animal in Nature*. The awkwardness of its form seems to influence its appetites; and all its sensations are as gross as its shapes are unsightly. It seems possessed only of an insatiable desire of eating; and seems to make choice only of what other animals find the most offensive. But we ought to consider that the hog with us is in an unnatural state, and that it is in a manner compelled to feed in this filthy manner from wanting that proper nourishment which it finds in the forest. When in a state of wildness, it is of all other quadrupeds the most delicate in the choice of what vegetable it shall feed on, and rejects a greater number than any of the rest. The cow, for instance, as we are assured by Linnæus, eats two hundred and seventy-six plants, and rejects two hundred and eighteen; the goat eats four hundred and forty-nine, and rejects an hundred and twenty-six; the sheep eats three hundred and eighty seven, and rejects an hundred and forty-one; the horse eats two hundred and sixty-two, and rejects two hundred and twelve; but the hog, more nice in its provision than any of the former, eats but seventy-two plants, and rejects an hundred and seventy-one. The indelicacy of this animal is, therefore, rather in our apprehensions than in its nature; since we find it makes a very distinguishing choice in the quality of its food; and if it does not reject animal putrefaction, it may be because it is abridged in that food which is most wholesome and agreeable to it in a state of nature. This is certain, that its palate is not insensible to the difference of eatables; for, where it finds variety, it will reject the worst, with as distinguishing a taste any other quadruped whatsoever †. In the orchards of peach-trees in North America, where the hog has plenty of delicious food, it is observed, that it will reject the fruit that has lain but a few hours on the ground, and continue on the watch whole hours together for a fresh wind-fall.

* Buffon, vol. ix. p. 14.

† British Zoology, vol. i. p. 42.

However, the hog is naturally formed in a more imperfect manner than the other animals that we have rendered domeſtic around us, leſs active in its motions, leſs furniſhed with inſtinct in knowing what to purſue or avoid. Without attachment, and incapable of inſtruction, it continues, while it lives, an uſeleſs or rather a rapacious dependent. The coarſeneſs of its hair, and the thickneſs of its hide, together with the thick coat of fat that lies immediately under the ſkin, render it inſenſible to blows, or rough uſage. Mice have been known to burrow in the back of theſe animals while fattening in the ſty*, without their ſeeming to perceive it. Their other ſenſes ſeem to be in tolerable perfection; they ſcent the hounds at a diſtance; and, as we have ſeen, they are not inſenſible in the choice of their proviſions.

The hog is, by nature, ſtupid, inactive, and drowſy; if undiſturbed, it would ſleep half its time; but it is frequently awaked by the calls of appetite, which when it has ſatisfied, it goes to reſt again. Its whole life is thus a round of ſleep and gluttony; and if ſupplied with ſufficient food, it ſoon grows unfit even for its own exiſtence; its fleſh becomes a greater load than its legs are able to ſupport, and it continues to feed lying down, or kneeling, an helpleſs inſtance of indulged ſenſuality. The only time it ſeems to have paſſions of a more active nature, are, when it is incited by venery, or when the wind blows with any vehemence. Upon this occaſion, it is ſo agitated as to run violently towards its ſty, ſcreaming horribly at the ſame time, which ſeems to argue that it is naturally found of a warm climate. It appears alſo to foreſee the approach of bad weather, bringing ſtraw to its ſty in its mouth, preparing a bed, and hiding itſelf from the impending ſtorm. Nor is it leſs agitated when it hears any of its kind in diſtreſs: when a hog is caught in a gate, as is often the caſe, or when it ſuffers any of the uſual domeſtic operations of ringing or ſpaying, all the reſt are then ſeen to gather round it, to lend their fruitleſs aſſiſtance, and to ſympathize with its ſufferings. They have often alſo been known to gather round a dog that had teazed them, and kill him upon the ſpot.

* Buffon.

Moſt of the diſeaſes of this animal ariſe from intemperance; meaſles, impoſthumes, and ſcruphulous ſwellings, are reckoned among the number. It is thought by ſome that they wallow in the mire to deſtroy a ſort of louſe or inſect that is often found to infeſt them; however, they are generally known to live, when ſo permitted, to eighteen or twenty years; and the females produce till the age of fifteen. As they produce from ten to twenty young at a litter, and that twice a year, we may eaſily compute how numerous they would ſhortly become, if not diminiſhed by human induſtry. In the wild ſtate they are leſs prolific; and the ſow of the woods brings forth but once a year, probably becauſe exhauſted by rearing up her former numerous progeny.

It would be ſuperfluous to dwell longer upon the nature and qualities of an animal too well known to need a deſcription: there are few, even in cities, who are unacquainted with its uſes, its appetites, and way of living. The arts of fattening, rearing, guarding, and managing hogs, fall more properly under the cognizance of the farmer than the naturaliſt; they make a branch of domeſtic economy, which, properly treated, may be extended to a great length; but the hiſtory of Nature ought always to end where that of Art begins. It will be ſufficient, therefore, to obſerve that the wild boar was formerly a native of our country, as appears from the laws of Hoeldda*, the famous Welch legiſlator, who permitted his grand huntſman to chaſe that animal from the middle of November to the beginning of December. William the Conqueror alſo puniſhed ſuch as were convicted of killing the wild boar in his foreſts, with the loſs of their eyes. At preſent, the whole wild breed is extinct; but no country makes greater uſe of the tame kinds, as their fleſh, which bears ſalt better than that of any other animal, makes a principal part of the proviſions of the Britiſh navy.

As this animal is a native of almoſt every country, there are ſome varieties found in the ſpecies. That which we call the Eaſt-India breed, is lower, leſs furniſhed with hair, is uſually black, and has the belly almoſt touching the

* Britiſh Zoology, vol. 1. p. 44.

ground; it is now common in England; it fattens more eafily than the ordinary kinds, and makes better bacon.

There is a remarkable variety of this animal about Upfal*, which is fingle hoofed, like the horfe; but in no other refpect differing from the common kinds. The authority of Ariftotle, who firft made mention of this kind, has been often called into queftion; fome have afferted, that fuch a quadruped never exifted, becaufe it happened not to fall within the fphere of their own confined obfervation; however, at prefent the animal is two well known to admit of any doubt concerning it. The hog common in Guinea differs alfo in fome things from our own; though fhaped exactly as ours, it is of a reddifh colour, with long ears, which end in a fharp point, and a tail which hangs down to the paftern; the whole body is covered with fhort red fhining hair, without any briftles, but pretty long near the tail. Their flefh is faid to be excellent, and they are very tame.

All thefe, from their near refemblance to the hog, may be confidered as of the fame fpecies; the Eaft Indian hog, we well know, breeds with the common kind; whether the fame obtains between it, and thofe of Upfal and Guinea, we cannot directly affirm; but where the external fimilitude is fo ftrong, we may be induced to believe that the appetites and habits are the fame. It is true, we are told, that the Guinea breed will not mix with ours, but keep feparate, and herd only together: however, this is no proof of their diverfity, fince every animal will prefer its own likenefs in its mate; and they will only then mix with another fort, when deprived of the fociety of their own. Thefe, therefore, we may confider as all of the hog kind; but there are other quadrupeds, that, in general, refemble this fpecies, which nevertheleefs, are very diftinct from them. Travellers, indeed, from their general form, or from their habits and way of living, have been content to call thefe creatures hogs alfo; but upon a clofer infpection, their differences are found to be fuch as entirely to feparate the kinds, and make each a diftinct animal by itfelf.

* Amænit Accad. vol. v. p. 465.

CHAP. II.

THE PECCARY, OR TAJACU.

THAT animal which of all others moſt reſembles the hog, and yet is of a formation very diſtinct from it, is called the *peccary* or *tajacu* It is a native of America, and found there, in ſuch numbers, that they are ſeen in herds of ſeveral hundreds together, grazing among the woods, and inoffenſive, except when offended.

The peccary, at firſt view, reſembles a ſmall hog; the form of its body, the ſhape of its head, the length of its ſnout, and the form of its legs, are entirely alike: however, when we come to examine it nearer, the differences begin to appear. The body is not ſo bulky; its legs not ſo long; its briſtles much thicker and ſtronger than thoſe of the hog, reſembling rather the quills of a porcupine, than hair; inſtead of a tail, it has only a little fleſhy protuberance, which does not even cover its poſteriors; but that which is ſtill more extraordinary, and in which it differs from all other qaadrupeds whatſoever, is, that it has got upon its back a lump, reſembling the naval in other animals, which is found to ſeparate a liquor of a very ſtrong ſmell. The peccary is the only creature that has thoſe kind of glands which diſcharge the muſky ſubſtance, on that part of its body. Some have them under the belly, and others under the tail; but this creature, by a conformation peculiar to itſelf, has them on its back. This lump, or naval, it ſituated on that part of the back which is over the hinder legs; it is, in general, ſo covered with long briſtles, that it cannot be ſeen, except they be drawn aſide. A ſmall ſpace then appears, that is almoſt bare, and only beſet with a few ſhort fine hairs. In the middle it riſes like a lump; and in this there is an orifice, into which one may thruſt a common gooſe quill. This hole or bag is not above an inch in depth; and round it, under the ſkin, are ſituated a number of ſmall glands, which diſtil a whitiſh liquor, in colour and ſubſtance, reſembling that obtained from the civet animal. Perhaps it was this analogy, that led Dr. Tyſon to ſay, that it ſmelt agreeably alſo, like that perfume. But this Mr. Buffon abſolutely denies; affirming, that the ſmell is at every time, and in every

proportion, ſtrong and offenſive, and to this I can add my own teſtimony, if that able naturaliſt ſhould want a voucher.

But, to be more particular in the deſcription of the other parts of this quadruped; the colour of the body is grizly, and beſet with briſtles, thicker and ſtronger than thoſe of a common hog; though not near ſo thick as thoſe of a porcupine, they reſemble, in this reſpect, that they are variegated with black and white rings. The belly is almoſt bare; and the ſhort briſtles on the ſides, gradually increaſe in length, as they approach the ridge of the back, where ſome are five inches long. On the head alſo between the ears, there is a large tuft of briſtles, that are chiefly black. The ears are about two inches and a half long, and ſtand upright; and the eyes reſemble thoſe of a common hog, only they are ſmaller. From the lower corner of the eye to the ſnout, is uſually ſix inches; and the ſnout itſelf is like that of an hog's, though it is but ſmall. One ſide of the lower lip is generally ſmooth, by the rubbing of the tuſk of the upper jaw. The feet and hoofs are perfectly like thoſe of a common hog; but, as was already obſerved, it has no tail. There are ſome anatomical differences in its internal ſtructure, from that of the common hog. Dr. Tyſon was led to ſuppoſe, that it had three ſtomachs; whereas the hog has but one: however, in this he was deceived, as Mr. Daubenton has plainly ſhewn, that the ſtomach is only divided by two cloſings, which gives it the appearance as if divided into three; and there is no conformation that prevents the food in any part of it, from going or returning to any other.

The peccary may be tamed like the hog, and has pretty nearly the ſame habits and natural inclinations. It feeds upon the ſame aliments; its fleſh, though drier and leaner than that of the hog, is pretty good eating; it is improved by caſtration; and, when killed, not only the parts of generation muſt be taken inſtantly away, but alſo the navel on the back, with all the glands that contribute to its ſupply. If this operation be deferred for only half an hour, the fleſh becomes utterly unfit to be eaten.

The peccary is extremely numerous in all the parts of Southern America. They go in herds of two or three hundred together; and unite, like hogs, in each other's defence.

The PECCARY

They are particularly fierce when their young are attempted to be taken from them. They ſurround the plunderer, attack him without fear, and frequently make his life pay the forfeit of his raſhneſs. When any of the natives are purſued by an herd in this manner, they frequently climb a tree to avoid them; while the peccaries gather round the root, threaten with their tuſks, and their rough briſtles ſtanding erect, as in the hog kind, they aſſume a very terrible appearance. In this manner they remain at the foot of the tree for hours together; while the hunter is obliged to wait patiently, and not without apprehenſions, until they think fit to retire.

The peccary is rather fond of the mountainous parts of the country, than the lowlands; it ſeems to delight neither in the marſhes nor the mud, like our hogs; it keeps among the woods, where it ſubſiſts upon wild fruits, roots, and vegetables; it is alſo an unceaſing enemy to the lizard, the toad, and all the ſerpent kinds, with which theſe uncultivated foreſts abound. As ſoon as it perceives a ſerpent, or a viper, it at once ſeizes it with its fore hoofs and teeth, ſkins it in an inſtant, and devours the fleſh. This is often ſeen; and may, therefore, be readily credited: but as to its applying to a proper vegetable immediately after, as an antidote to the poiſon of the animal it had devoured, this part of the relation we may very well ſuſpect. The fleſh, neither of the toad nor viper, as every one now knows, are poiſonous; and, therefore, there is no need of a remedy againſt their venom. Ray gives no credit to either part of the account; however, we can have no reaſon to diſbelieve that it feeds upon toads and ſerpents; it is only the making uſe of a vegetable antidote, that appears improbable, and which perhaps had its riſe in the ignorance and credulity of the natives

The peccary, like the hog, is very prolific; the young ones follow the dam, and do not ſeparate till they have come to perfection. If taken at firſt, they are very eaſily tamed, and ſoon loſe all their natural ferocity; however, they never ſhew any remarkable ſigns of docility, but continue ſtupid and rude, without attachment, or even ſeeming to know the hand that feeds them. They only continue to do no miſchief; and they may be permitted to run tame, without

apprehending any dangerous conſequences. They ſeldom ſtray far from home; they return of themſelves to the ſty; and do not quarrel among each other, except when they happen to be fed in common. At ſuch times, they have an angry kind of growl, much ſtronger and harſher than that of a hog; but they are ſeldom heard to ſcream as the former, only now and then, when frighted, or irritated, they have an abrupt angry manner of blowing like the boar.

The peccary, though like the hog in ſo many various reſpects, is, nevertheleſs, a very diſtinct race, and will not mix, nor produce an intermediate breed. The European hog has been tranſplanted into America, and ſuffered to run wild among the woods; it is often ſeen to herd among a drove of peccaries, but never to breed from them. They may, therefore, be conſidered as two diſtinct creatures; the hog is the larger, and the more uſeful animal; the peccary, more feeble and local; the hog ſubſiſts in moſt parts of the world, and in almoſt every climate; the peccary is a native of the warmer regions, and cannot ſubſiſt in ours, without ſhelter and aſſiſtance. It is more than probable, however, that we could readily propagate the breed of this quadruped, and that, in two or three generations, it might be familiarized to our climate: but as it is inferior to the hog, in every reſpect, ſo it would be needleſs to admit a new domeſtic, whoſe ſervices are better ſupplied in the old.

CHAP. III.

THE CAPIBARA, OR CABIAI.

THERE are ſome quadrupeds ſo entirely different from any that we are acquainted with, that it is hard to find a well known animal to which to reſemble them. In this caſe, we muſt be content to place them near ſuch as they moſt approach in form and habits, ſo that the reader may at once have ſome idea of the creature's ſhape or diſpoſition, although, perhaps, an inadequate and a very confuſed one.

Upon that confuſed idea, however, it will be our buſineſs to work; to bring it, by degrees, to greater preciſion; to mark out the differences of form, and thus give the cleareſt notions that words can eaſily convey. The known animal is

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a kind of rude ſketch of the figure we want to exhibit; from which, by degrees, we faſhion out the ſhape of the creature we deſire ſhould be known; as a ſtatuary ſeldom begins his work, till the rude outline of the figure is given by ſome other hand.—In this manner, I have placed the capibara among the hog kind, merely becauſe it is more like a hog than any other animal commonly known, and yet, more cloſely examined, it will be found to differ in ſome of the moſt obvious particulars.

The capibara reſembles a hog of about two years old, in the ſhape of its body, and the coarſeneſs and colour of its hair. Like the hog, it has a thick ſhort neck, and a rounded briſtly black; like the hog, it is fond of the water and marſhy places, brings forth many at a time, and, like it, feeds upon animal and vegetable food. But when examined more nearly, the differences are many and obvious. The head is longer, the eyes are larger, and the ſnout, inſtead of being rounded, as in the hog, is ſplit like that of a rabbit or a hare, and furniſhed with thick ſtrong whiſkers; the mouth is not ſo wide, the number and the form of the teeth are different, for it is without tuſks: like the peccary, it wants a tail; and, unlike to all others of this kind, inſtead of a cloven hoof, it is in a manner web-footed, and thus entirely fitted for ſwimming, and living in the water. The hoofs before are divided into four parts; and thoſe behind, into three; between the diviſions, there is a prolongation of the ſkin, ſo that the foot, when ſpread in ſwimming, can beat a greater ſurface of water.

As its feet are thus made for the water, ſo it is ſeen to delight entirely in that element; and ſome naturaliſts have called it the *water-hog* for that reaſon. It is a native of South America, and is chiefly ſeen frequenting the borders of lakes and rivers, like the otter. It ſeizes the fiſh upon which it preys, with its hoofs and teeth, and carries them to the edge of the lake, to devour them at its eaſe. It lives alſo upon fruits, corn, and ſugar-canes. As its feet are long and broad, it is often ſeen ſitting up, like a dog that is taught to beg. Its cry more nearly reſembles the braying of an aſs, than the grunting of a hog. It ſeldom goes out, except at night, and that always in company. It never ventures far from the ſides of the river or the lake in which it preys; for

as it runs ill, becauſe of the length of its feet, and the ſhortneſs of its legs, ſo its only place of ſafety is the water, into which it immediately plunges when purſued, and keeps ſo long at the bottom, that the hunter can have no hopes of taking it there. The Capibara, even in a ſtate of wildneſs, is of a gentle nature, and, when taken young, is eaſily tamed. It comes and goes at command, and even ſhews an attachment to its keeper. Its fleſh is ſaid to be fat and tender, but, from the nature of its food, it has a fiſhy taſte, like that of all thoſe which are bred in the water. Its head, however, is ſaid to be excellent; and, in this, it reſembles the beaver, whoſe fore parts taſte like fleſh, and the hinder like the fiſh it feeds on.

CHAP. IV.

THE BABYROUESSA, OR INDIAN HOG.

THE Babyroueſſa is ſtill more remote from the hog kind than the capibara; and yet moſt travellers who have deſcribed this animal, do not ſcruple to call it the hog of Borneo, which is an iſland in the Eaſt Indies, where it is principally to be found. Probably this animal's figure upon the whole moſt reſembles that of the hog kind, and may have induced them to rank it among the number: however, when they come to its deſcription, they repreſent it as having neither the hair, the briſtles, the head the ſtature, nor the tail of a hog. Its legs, we are told, are longer, its ſnout ſhorter, its body more ſlender, and ſomewhat reſembling that of a ſtag; its hair is finer, of a grey colour, rather reſembling wool than briſtles, and its tail alſo tufted with the ſame. From theſe varieties, therefore, it can ſcarcely be called a hog; and, yet, in this claſs we muſt be content to rank it until its form and nature come to be better known. What we at preſent principally diſtinguiſh it by, are four enormous tuſks, that grow out of each jaw; the two largeſt from the upper, and the two ſmalleſt from the under. The jawbones of this extraordinary animal are found to be very thick and ſtrong; from whence theſe monſtrous tuſks are ſeen to proceed, that diſtinguiſh it from all other quadrupeds

The BABYROUESSA

whatſoever. The two that go from the lower jaw are not above a foot long, but thoſe of the upper are above half a yard: as in the boar, they bend circularly, and the two lower ſtand in the jaw as they are ſeen to do in that animal; but the two upper riſe from the upper jaw, rather like horns than teeth; and, bending upwards and backwards, ſometimes have their points directed to the animal's eyes, and are often fatal by growing into them. Were it not that the babyroueſſa has two ſuch large teeth underneath, we might eaſily ſuppoſe the two upper to be horns; and, in fact, their ſockets are directed upwards; for which reaſon, Dr. Grew was of that opinion. But as the teeth of both jaws are of the ſame conſiſtence, and as they both grow out of ſockets in the ſame manner, the analogy between both is too ſtrong not to ſuppoſe them of the ſame nature. The upper teeth, when they leave the ſocket, immediately pierce the upper lips of the animal, and grow as if they immediately went from its cheek. The tuſks in both jaws are of a very fine ivory, ſmoother and whiter than that of the elephant, but not ſo hard or ſerviceable.

Theſe enormous tuſks give this animal a very formidable appearance; and yet it is thought to be much leſs dangerous than the wild boar*. Like animals of the hog kind, they go together in a body, and are often ſeen in company with the wild boar, with which, however, they are never known to engender. They have a very ſtrong ſcent, which diſcovers them to the hounds; and, when purſued, they growl dreadfully, often turning back upon the dogs, and wounding them with the tuſks of the lower jaw, for thoſe of the upper are rather an obſtruction than a defence. They run much ſwifter than the boar, and have a more exquiſite ſcent, winding the men and the dogs at a great diſtance. When hunted cloſely, they generally plunge themſelves into the ſea, where they ſwim with great ſwiftneſs and facility, diving, and riſing again at pleaſure; and in this manner they moſt frequently eſcape their purſuers. Although fierce and terrible when offended, yet they are peaceable and harmleſs when unmoleſted. They are eaſily tamed, and their fleſh is good to be eaten; but it is ſaid to putrefy in a very ſhort time.—They have a way of repoſing themſelves different from moſt

* Buffon, vol. xxv. p. 179.

other animals of the larger kind; which is by hitching one of their upper tusks on the branch of a tree, and then suffering their whole body to swing down at ease. Thus suspended from a tooth, they continue the whole night quite secure, and out of the reach of such animals as hunt them for prey.

The babyroussa, though by its teeth and tusks it seems fitted for a state of hostility, and probably is carnivorous, yet, nevertheless, seems chiefly to live upon vegetables and the leaves of trees. It seldom seeks to break into gardens, like the boar, in order to pillage the more succulent productions of human industry, but lives remote from mankind, content with coarser fare and security. It has been said, that it was only to be found in the island of Borneo, but this is a mistake, as it is well known in many other parts both of Asia and Africa, as at the Celebes, at Estrila, Senegal, and Madagascar*.

Such are the animals of the hog kind, which are not distinctly known; and even all these, as we see, have been but imperfectly examined or described. There are some others of which we have still more imperfect notices; such as the waree, a hog of the Isthmus of Darien, described by Wafer, with large tusks, small ears, and bristles like a coarse fur over all the body. This, however, may be the European hog, which has run wild in that part of the new world, as no other traveller has taken notice of the same. The Canary boar seems seems different from other animals of this kind, by the largeness of its tusks; and, as is judged from the skeleton, by the aperture of its nostrils, and the number of its grinders. I cannot conclude this account of those animals that are thus furnished with enormous tusks, without observing that there is a strong consent between these and the parts of generation. When castrated, it is well known that the tusks grow much smaller, and are scarce seen to appear without the lips; but what is still more remarkable, is, that in a boar, if the tusks by any accident or design be broke away, the animal abates of its fierceness and venery, and it produces nearly the same effect upon its constitution, as if castration had actually taken place†.

* Anderson's Natural History of Greenland.

† Lisle's Husbandry, vol. ii. p. 329.

BOOK IV.

CARNIVOROUS ANIMALS.

CHAP. I.

ANIMALS OF THE CAT KIND.

WE have hitherto been deſcribing a claſs of peaceful and harmleſs animals, that ſerve as the inſtruments of man's happineſs, or, at leaſt, that does not openly oppoſe him.—We come now to a bloody and unrelenting tribe, that diſdain to own his power, and carry on unceaſing hoſtilities againſt him. All the claſs of the cat kind are chiefly diſtinguiſhed by their ſharp and formidable claws, which they can hide and extend at pleaſure. They lead a ſolitary, ravenous life, neither uniting for their mutual defence, like vegetable feeders, nor for their mutual ſupport, like thoſe of the dog kind. The whole of this cruel and ferocious tribe ſeek their food alone; and, except at certain ſeaſons, are even enemies to each other. The dog, the wolf, and the bear, are ſometimes known to live upon vegetable or farinaceous food; but all of the cat kind, ſuch as the lion, the tiger, the leopard, and the ounce, devour nothing but fleſh, and ſtarve upon any other proviſion.

They are, in general, fierce, rapacious, ſubtle, and cruel, unfit for ſociety among each other, and incapable of adding to human happineſs. However, it is probable that even the fierceſt could be rendered domeſtic, if man thought the conqueſt worth the trouble. Lions have been yoked to the chariots of conquerors, and tigers have been taught to tend thoſe herds which they are known at preſent to deſtroy; but theſe ſervices are not ſufficient to recompenſe for the trouble of their keeping; ſo that ceaſing to be uſeful, they continue to

noxious, and become rebellious ſubjects becauſe not taken under equal protection with the reſt of the brute creation.

Other tribes of animals are claſſed with difficulty; having often but few points of reſemblance; and, though alike in form, have different diſpoſitions, and different appetites. But all thoſe of the cat kind, although differing in ſize, or in colour, are yet nearly allied to each other; being equally fierce, rapacious, and artful; and he that has ſeen one has ſeen all. In other creatures there are many changes wrought by human aſſiduity; the dog, the hog, or the ſheep, are altered in their natures and forms, juſt as the neceſſities or the caprice of mankind have found fitting; but all of this kind are inflexible in their forms, and wear the print of their natural wildneſs ſtrong upon them. The dogs or cows vary in different countries, but lions or tigers are ſtill found the ſame; the very colour is nearly alike in all; and the ſlighteſt alterations are ſufficient to make a difference in the kinds, and to give the animal a different denomination.

The cat kind are not leſs remarkable for the ſharpneſs and ſtrength of their claws, which thruſt forth from their ſheath when they ſeize their prey, than for the ſhortneſs of their ſnout, the roundneſs of their head, and the large whiſkers which grow on the upper lip. Their teeth alſo, which amount to the number of thirty, are very formidable, but are rather calculated for tearing their prey than for chewing it; for this reaſon they feed but ſlowly; and while they eat, generally continue growling, to deter others from taking a ſhare. In the dog kind, the chief power lies in the under jaw, which is long, and furniſhed with muſcles of amazing ſtrength; but in theſe the greateſt force lies in the claws, which are extended with great eaſe, and their gripe is ſo tenacious that nothing can open it. The hinder parts in all theſe animals are much weaker than thoſe before; and they ſeem leſs made for ſtrength than agility. Nor are they endued with the ſwiftneſs of moſt other animals; but generally owe their ſubſiſtence rather to catching their prey by ſurprize than by hunting it fairly down. They all ſeize it with a bound, at the ſame time expreſſing their fierce pleaſure with a roar; and the firſt graſp generally diſables the captive from all further reſiſtance. With all theſe qualifica-

tions for ſlaughter, they nevertheleſs ſeem timid and cowardly, and ſeldom make an attack, like thoſe of the dog kind, at a diſadvantage: on the contrary, they fly when the force againſt them is ſuperior, or even equal to their own; and the lion himſelf will not venture to make a ſecond attempt, where he has been once repulſed with ſucceſs. For this reaſon, in countries that are tolerably inhabited, the lion is ſo cowardly, that he is often ſcared away by the cries of women and children.

The cat, which is the ſmalleſt animal of this kind, is the only one that has been taken under human protection, and may be conſidered as a faithleſs friend, brought to oppoſe a ſtill more inſidious enemy*. It is, in fact, the only animal of this tribe whoſe ſervices can more than recompenſe the trouble of their education, and whoſe ſtrength is not ſufficient to make its anger formidable. The lion or the tiger may eaſily be tamed, and rendered ſubſervient to human command; but even in their humbleſt, and moſt familiar moments, they are ſtill dangerous; ſince their ſtrength is ſuch that the ſmalleſt fit of anger or caprice may have dreadful conſequences. But the cat, though eaſily offended, and often capricious in her reſentments, is not endowed with powers ſufficient to do any great miſchief. Of all animals, when young, there is none more prettily playful than the kitten; but it ſeems to loſe this diſpoſition as it grows old, and the innate treachery of its kind is then ſeen to prevail. From being naturally ravenous, education teaches it to diſguiſe its appetites, and to watch the favourable moment of plunder; ſupple, inſinuating, and artful, it has learned the arts of concealing its intentions till it can put them into execution; when the opportunity offers, it at once ſeizes upon whatever it finds, flies off with it, and continues at a diſtance till it ſuppoſes its offence forgotten. The cat has only the appearance of attachment; and it may eaſily be perceived, by its timid approaches, and ſide-long looks, that it either dreads its maſter, or diſtruſts his kindneſs; different from the dog, whoſe careſſes are ſincere, the cat is aſſiduous rather for its own pleaſure, than to pleaſe; and often gains confi-

* This deſcription is nearly tranſlated from Mr. Buffon: what I have added is marked with inverted commas.

dence, only to abuſe it. The form of its body, and its temperament, correſpond with its diſpoſition; active, cleanly, delicate, and voluptuous, it loves its eaſe, and ſeeks the ſofteſt cuſhions to lie on. "Many of its habits, however, are rather the conſequences of its formation, than the reſult of any perverſeneſs in its diſpoſition; it is timid and miſtruſtful, becauſe its body is weak, and its ſkin tender; a blow hurts it infinitely more than it does a dog, whoſe hide is thick, and body muſcular; the long fur in which the cat is clothed, entirely diſguiſes its ſhape, which, if ſeen naked, is long, feeble, and ſlender; it is not to be wondered, therefore, that it appears much more fearful of chaſtiſement than the dog, and often flies, even when no correction is intended. Being alſo the native of the warmer climates, as will be ſhewn hereafter, it chooſes the ſofteſt bed to lie on, which is always the warmeſt."

The cat goes with young fifty-ſix days, and ſeldom brings forth above five or ſix at a time. The female uſually hides the place of her retreat from the male, who is often found to devour her kittens. She feeds them for ſome weeks with her milk, and whatever ſmall animal ſhe can take by ſurpriſe, accuſtoming them betimes to rapine. Before they are a year old, they are fit to engender; the female ſeeks the male with cries; nor is their copulation performed without great pain, from the narrowneſs of the paſſage in the female. They live to about the age of ten years; and, during that period, they are extremely vivacious, ſuffering to be worried a long time before they die.

The young kittens are very playful and amuſing; but their ſport ſoon turns into malice, and they, from the beginning, ſhew a diſpoſition to cruelty; they often look wiſtfully towards the cage, ſit centinels at the mouth of a mouſehole, and, in a ſhort time, become more expert hunters, than if they had received the inſtructions of art. Indeed, their diſpoſition is ſo incapable of conſtraint, that all inſtruction would be but thrown away. It is true, that we are told of the Greek monks of the iſle of Cyprus, teaching cats to hunt the ſerpents with which the iſland is infeſted; but this may be natural to the animal itſelf, and they might have fallen upon ſuch a purſuit without any inſtruction.

Whatever animal is much weaker than themſelves, is to them an indiſcriminate object of deſtruction. Birds, young rabbits, hares, rats and mice, bats, moles, toads and frogs, are all equally purſued; thoughnot, perhaps, equally acceptable. The mouſe ſeems to be their favourite game; and, although the cat has the ſenſe of ſmelling in but a mean degree, it, nevertheleſs, knows thoſe holes in which its prey reſides. I have ſeen one of them patiently watch a whole day until the mouſe appeared, and continue quite motionleſs until it came within reach, and then ſeized it with a jump. Of all the marks by which the cat diſcovers its natural malignity, that of playing and ſporting with its little captive, before killing it outright, is the moſt flagrant.

The fixed inclination which they diſcover for this peculiar manner of purſuit, ariſes from the conformation of their eyes. The pupil in man, and in moſt other animals, is capable but of a ſmall degree of contraction and dilatation, it enlarges a little in the dark, and contracts when the light pours in upon it, in too great quantities. In the eyes of cats, however, this contraction and dilatation, of the pupil, is ſo conſiderable, that the pupil, which by day-light appears narrow and ſmall like the black of one's nail, by night expands over the whole ſurface of the eye-ball, and, as every one muſt have ſeen, their eyes ſeem on fire. By this peculiar conformation, their eyes ſee better in darkneſs than light; and the animal is thus better adapted for ſpying out and ſurpriſing its prey.

Although the cat is an inhabitant of our houſes, yet it cannot properly be called a dependent; although perfectly tame yet it acknowledges no obedience; on the contrary, it does only juſt what it thinks fit, and no art can controul any of its inclinations. In general, it is but half tamed; and has its attachments rather to the place in which it reſides, than to the inhabitant. If the inhabitant quits the houſe, the cat ſtill remains; and if carried elſewhere, ſeems for a while bewildered with its new ſituation. It muſt take time to become acquainted with the holes and retreats in which its prey reſides, with all the little labyrinths through which they often make good an eſcape.

The cat is particularly fearful of water, of cold, and of ill ſmells. It loves to keep in the ſun, to get near the fire, and to rub itſelf againſt thoſe who carry perfumes. It is exceſſively fond of ſome plants, ſuch as valerian, marum, and cat-mint: againſt theſe it rubs, ſmells them at a diſtance, and, at laſt, if they be planted in a garden, wears them out.

This animal eats ſlowly, and with difficulty, as its teeth are rather made for tearing, than chewing its aliments. For this reaſon, it loves the moſt tender food, particularly fiſh, which it eats as well boiled as raw. Its ſleeping is very light; and it often ſeems to ſleep, the better to deceive its prey. When the cat walks, it treads very ſoftly, and without the leaſt noiſe; and as to the neceſſities of nature, it is cleanly to the laſt degree. Its fur alſo is uſually ſleek and gloſſy; and, for this reaſon, the hair is eaſily electrified, ſending forth ſhining ſparks, if rubbed in the dark.

"The wild cat breeds with the tame*; and, therefore, the latter may be conſidered only as a variety of the former: however, they differ in ſome particulars; the cat, in its ſavage ſtate, is ſomewhat larger than the houſe-cat; and its fur being longer, gives it a greater appearance than it really has; its head is bigger, and face flatter; the teeth and claws much more formidable; its muſcles very ſtrong, as being formed for rapine; the tail is of a moderate length, but very thick and flat, marked with alternate bars of black and white, the end always black; the hips, and hind part of the lower joints of the leg, are always black; the fur is very ſoft and fine: the general colour of theſe animals, in England, is a yellowiſh white, mixed with a deep grey. Theſe colours, though they appear at firſt ſight confuſedly blended together, yet, on a cloſe inſpection, will be found to be diſpoſed like the ſtreaks on the ſkin of the tiger, pointing from the back downwards, riſing from a black liſt, that runs from the head, along the middle of the back, to the tail. This animal is found in our larger woods; and is the moſt deſtructive of the carnivorous kinds in this kingdom. It inhabits the moſt mountainous and woody parts of theſe iſlands, living moſtly in trees, and feeding only by night. It often happens, that the females of the tame kind go into the woods to ſeek mates among the wild ones. It ſhould

* Britiſh Zoology.

ſeem, that theſe, however, are not original inhabitants of this kingdom, but were introduced firſt in a domeſtic ſtate, and afterwards became wild in the woods, by ill uſage or neglect. Certain it is, the cat was an animal much higher in eſteem among our anceſtors than it is at preſent. By the laws of Howel, the price of a kitten, before it could ſee, was to be a penny; till it caught a mouſe, twopence; and, when it commenced mouſer, fourpence: is was required, beſides, that it ſhould be perfect in its ſenſes of hearing and ſeeing, be a good mouſer, have the claws whole, and be a good nurſe. If it failed in any of theſe qualities, the ſeller was to forfeit to the buyer the third part of its value. If any one ſtole or killed the cat that guarded the prince's granary, he was to forfeit a milch ewe, its fleece and lamb, or as much wheat as, when poured on the cat, ſuſpended by the tail, (the head touching the floor) would form a heap high enough to cover the tip of the former. From hence we diſcover, beſides a picture of the ſimplicity of the times, a ſtrong argument that cats were not naturally bred in our foreſts. An animal that could be ſo eaſily taken, could never have been rated ſo highly; and the precautions laid down to improve the breed, would have been ſuperfluous, in a creature that multiplies to ſuch an amazing degree.

"In our climate, we know but of one variety of the wild cat; and, from the accounts of travellers, we learn, that there are but very few differences in this quadruped in all parts of the world. The greateſt difference, indeed, between the wild and the tame cat, is rather to be found internally than in their outward form. Of all other quadrupeds, the wild cat, is perhaps, that whoſe inteſtines are proportionably the ſmalleſt and the ſhorteſt. The inteſtines of the ſheep, for inſtance, unravelled out, and meaſured according to their length, will be found to be above thirty times the length of its body; whereas, the wild cat's inteſtines, being meaſured out, will not be found above three times the length of its body. This is a ſurpriſing difference; but we may account for it, from the nature of the food in the two animals; the one living upon vegetables, which requires a longer, and a more tedious preparation, before they can become a part of its body; the other, living upon fleſh, which requires very little alteration, in order to be aſſimilated

into the ſubſtance of the creature that feeds upon it. The one, therefore, wanted a long canal for properly digeſting and ſtraining its food; the other, but a ſhort one, as the food is already prepared to paſs the uſual ſecretions: however, a difficulty ſtill remains behind; the inteſtines of the wild cat are, by one third, ſhorter than thoſe of the tame. How can we account for this? If we ſay that the domeſtic cat, living upon more nouriſhing and more plentiful proviſion, has its inteſtines enlarged to the quantity with which it is ſupplied, we ſhall find this obſervation contradicted in the wild boar and the wolf, whoſe inteſtines are as long as thoſe of the hog or the dog, though they lead a ſavage life, and, like the wild cat, are fed by precarious ſubſiſtence. The ſhortneſs, therefore, of the wild cat's inteſtines, is ſtill unaccounted for; and moſt naturaliſts conſider the difficulty as inextricable. We muſt leave it, therefore, as one of thoſe difficulties which future obſervation or accident are moſt likely to diſcover."

This animal is one of thoſe few which are common to the new continent, as well as the old. When Chriſtopher Columbus firſt diſcovered that country, a hunter brought him one, which he had diſcovered in the woods, which was of the ordinary ſize, the tail very long and thick. They were common alſo in Peru, although they were not rendered domeſtic. They are well known alſo in ſeveral parts of Africa, and many parts of Aſia. In ſome of theſe countries they are of a peculiar colour, and inclining to blue. In Perſia, Pietro dello Valle informs us, that there is a kind of cat, particularly in the province of Chorazan, of the figure and form of the ordinary one, but infinitely more beautiful in the luſtre and colour of its ſkin. It is of a grey blue, without mixture, and is ſoft and ſhining as ſilk. The tail is very long, and covered with hair ſix inches long, which the animal throws upon its back, like the ſquirrel. Theſe cats are well known in France; and have been brought over into England, under the name of the *blue cat*, which, however, is not their colour.

Another variety of this animal is called by us the *lion cat*; or, as others more properly term it, the *cat of Angora*. Theſe are larger than the common cat, and even than the wild one. Their hair is much longer, and hangs about their

The LION

head and neck, giving this creature the appearance of a lion. Some of these are white, and others of a dun colour. These come from Syria and Persia, two countries which are noted for giving a long soft hair to the animals which are bred in them. The sheep, the goats, the dogs, and the rabbits of Syria, are all remarkable for the fine glossy length and softness of their hair; but particularly the cat, whose nature seems to be so inflexible, conforms to the nature of the climate and soil, loses its savage colour, which it preserves almost in every other part of the world, and assumes the most beautiful appearance. There are some other varieties in this animal, but rather in colour than in form; and, in general, it may be remarked, that the cat, when carried into other countries, alters but very little, still preserving its natural manners, habits, and conformation.

THE LION.

THE influence of climate upon mankind is very small*; he is found to subsist in all parts of the earth, as well under the frozen poles, as beneath the torrid zone: but in animals, the climate may be considered as congenial, and a kind of second nature. They almost all have their particular latitudes, beyond which they are unable to subsist; either perishing with a moderate cold, or dying for want of a frozen air, even in a temperate climate. The rein-deer is never seen to depart from the icy fields of the north; and, on the contrary, the lion degenerates, when taken from beneath the line. The whole earth is the native country of man; but all inferior animals, have each their own peculiar districts.

Most terrestrial animals are found larger, fiercer, and stronger, in the warm, than in the cold or temperate climates. They are also more courageous and enterprising; all their dispositions seeming to partake of the ardour of their native soil. The lion, produced under the burning sun of Africa, is, of all others, the most terrible, the most undaunted. The wolf or the dog, instead of attempting to rival him, scarce deserve to attend his motions, or become his pro-

* This description is principally taken from Mr. Buffon: such parts as are added from others, I have marked with commas.

viders. Such, however, of thefe animals, are as bred in a more temperate climate, or towards the tops of cold and lofty mountains, are far more gentle, or, to fpeak more properly, far lefs dangerous than thofe bred in the torrid valleys beneath. The lions of Mount Atlas, the tops of which are covered in eternal fnows, have neither the ftrength nor the ferocity of the lions of Bildulgerid or Zaara, where the plains are covered with burning fands. It is particular in thefe frightful deferts, that thofe enormous and terrible beafts are found, that feem to be the fcourge and the terror of the neighbouring kingdoms. Happily, indeed, the fpecies is not very numerous; and it feems to be diminifhing daily: for thofe who have travelled through thefe countries, affure us, that there are by no means fo many there at prefent, as were known formerly; and Mr. Shaw obferves, that the Romans carried fifty times at many lions from Lybia, in one year, to combat in their amphitheatres, as are to be found in the whole country at this time. The fame remark is made with regard to Turkey, to Perfia, and the Indies; where the lions are found to diminifh in their numbers every day. Nor is it difficult to affign the caufe of this diminution: it is obvious that it cannot be owing to the increafe of the force of other quadrupeds, fince they are all inferior to the lion, and, confequently, inftead of leffening the number, only tend to increafe the fupplies on which they fubfift; it muft, therefore, be occafioned by the increafe of mankind, who is the only animal in Nature capable of making head againft thefe tyrants of the foreft, and preventing their increafe. The arms even of a Hottentot or a Negroe make them more than a match for this powerful creature; and they feldom make the attack, without coming off victorious. Their ufual manner is to find out his retreat, and with fpears headed with iron, to provoke him to the combat: four men are confidered as fufficient for this encounter; and he againft whom the lion flies, receives him upon his fpear, while the others attack him behind; the lion, finding himfelf wounded in the rear, turns that way, and thus gives the man he firft attacked, an opportunity to recover. In this manner they attack him on all fides; until, at laft, they entirely difable, and then defpatch him. This fuperiority in the the numbers, and the arts of man, that

are ſufficient to conquer the lion, ſerve alſo to enervate and diſcourage him; for he is brave only in proportion to the ſucceſs of his former encounters. In the vaſt deſerts of Zaara, in the burning ſands that lie between Mauritania and Negroland, in the uninhabited countries that lie to the north of Cafraria, and, in general, in all the deſerts of Africa, where man has not fixed his habitation, the lions are found in great numbers, and preſerve their natural courage and force. Accuſtomed to meaſure their ſtrength with every animal they meet, the habit of conquering renders them intrepid and terrible. Having never experienced the dangerous arts and combinations of man, they have no apprehenſions from his power. They boldly face him, and ſeem to brave the force of his arms. Wounds rather ſerve to provoke their rage than repreſs their ardour. They are not daunted even with the oppoſition of numbers; a ſingle lion of the deſert often attacks an entire caravan; and, after an obſtinate combat, when he finds himſelf overpowered, inſtead of flying, he continues to combat, retreating, and ſtill facing the enemy till he dies. On the contrary, the lions which inhabit the peopled countries of Morocco or India, having become acquainted with human power, and experienced man's ſuperiority, have loſt all their courage, ſo as to be ſcared away with a ſhout; and ſeldom attack any but the unreſiſting flocks or herds, which even woman and children are ſufficient to protect.

This alteration in the lion's diſpoſition ſufficiently ſhews that he might eaſily be tamed, and admit of a certain degree of education. "In fact, nothing is more common than for the keepers of wild beaſts to play with this animal, to pull out his tongue, and even to chaſtiſe him without a cauſe. He ſeems to bear it all with the utmoſt compoſure; and we very rarely have inſtances of his revenging theſe unprovoked ſallies of impertinent cruelty. However, when his anger is at laſt excited, the conſequences are terrible. Labat tells us of a gentleman who kept a lion in his chamber, and employed a ſervant to attend it; who, as is uſual, mixed his blows with careſſes. This ill-judged aſſociation continued for ſome time; till one morning the gentleman was awakened by a noiſe in his room, which, at firſt, he could not tell the cauſe of; but, drawing the curtains, he perceived an horrid

ſpectacle; the lion growling over the man's head, which he had ſeparated from the body, and toſſing it round the floor. He immediately, therefore, flew into the next room, called to the people without, and had the animal ſecured from doing further miſchief." However, this ſingle account is not ſufficient to weigh againſt the many inſtances we every day ſee of this creature's gentleneſs and ſubmiſſion. He is often bred up with other domeſtic animals, and is ſeen to play innocently and familiarly among them; and, if it ever happens that his natural ferocity returns, it is ſeldom exerted againſt his benefactors. As his paſſions are ſtrong, and his appetites vehement, one ought not to preſume that the impreſſions of education will always prevail; ſo that it would be dangerous in ſuch circumſtances to ſuffer him to remain too long without food, or to perſiſt in irritating and abuſing him: however, numberleſs accounts aſſure us that his anger is noble, his courage magnanimous, and his diſpoſition grateful. He has been often ſeen to deſpiſe contemptible enemies, and pardon their inſults, when it was in his power to puniſh them. He has been ſeen to ſpare the lives of ſuch as were thrown to be devoured by him, to live peaceably with them, to afford them a part of his ſubſiſtence, and ſometimes to want food himſelf rather than deprive them of that life which his generoſity had ſpared.

It may alſo be ſaid that the lion is not cruel, ſince he is ſo only from neceſſity, and never kills more than he conſumes. When ſatiated, he is perfectly gentle; while the tiger, the wolf, and all the inferior kinds, ſuch as the fox, the pole-cat, and the ferret, kill without remorſe, are fierce, without cauſe, and, by their indiſcriminate ſlaughter, ſeem rather to ſatisfy their malignity than their hunger.

The outward form of the lion ſeems to ſpeak his internal generoſity. His figure is ſtriking, his look confident and bold, his gait proud, and his voice terrible. His ſtature is not overgrown, like that of the elephant, or rhinoceros; nor is his ſhape clumſy, like that of the hippopotamos, or the ox. It is compact, well proportioned, and ſizeable; a perfect model of ſtrength joined with agility. It is muſcular and bold, neither charged with fat nor unneceſſary fleſh. It is ſufficient but to ſee him in order to be aſſured of his ſuperior force. His large head ſurrounded with a dreadful

mane; all thoſe muſcles that appear under the ſkin ſwelling with the ſlighteſt exertions; and the great breadth of his paws, with the thickneſs of his limbs, plainly evince that no other animal in the foreſt is capable of oppoſing him. He has a very broad face that, as ſome have imagined, reſembles the human. It is ſurrounded with very long hair, which gives it a very majeſtic air. The top of the head, the temples, the cheeks, the under jaw, the neck, the breaſt, the ſhoulder, the hinder part of the legs, and the belly, are furniſhed with it, while all the reſt of the body is covered with very ſhort hair, of a tawny colour. "The length of the hair in many parts, and the ſhortneſs of it in others, ſerves a good deal to diſguiſe this animal's real figure. The breaſt, for inſtance, appears very broad, but in reality it is as narrow and contracted in proportion as that of the generality of dogs and horſes. For the ſame reaſon, the tail ſeems to be of an equal thickneſs from one end to the other, on account of the inequality of the hair with which it is encompaſſed; it being ſhorter near the inſertion where the fleſh and bones are large, and growing longer in proportion as its real thickneſs leſſens towards the point, where it ends in a tuft. The hair about the neck and the breaſt is not different from that on the reſt of the body, except in the length of it; nor is each hair pointed as in moſt other animals, but of an equal thickneſs from one end to the other. The neck is very ſtrong, but not compoſed of one ſolid bone, as Ariſtotle has imagined; on the contrary, though very ſhort and muſcular, it has as many bones as the camel or the horſe; for it is univerſal to all quadrupeds to have ſeven joints in the neck; and not one of them have either more or leſs. However, the muſcles in the neck of the lion, that tye the bones together, are extremely ſtrong, and have ſomewhat the appearance of bones; ſo that ancient authors, who have treated of this animal, have miſtaken the whole for a ſingle bone. The tongue is rough, and beſet with prickles as hard as a cat's claws; theſe have the grain turned backwards; ſo that it is probable a lion, if it ſhould attempt to lick a man's hand, as we are told it ſometimes does, would tear off the ſkin. The eyes are always bright and fiery; nor even in death does this terrible look forſake them. In ſhort, the ſtructure of the paws, teeth, eyes, and tongue, are the ſame as in a cat; and alſo

in the inward parts these two animals so nearly resemble each other, that the anatomist's chief distinction arises merely from the size."

The lion has, as was observed before, a large mane, which grows every year longer as the animal grows older: the lioness is without this ornament at every age. This mane is not coarse or rough as in a horse, but composed of the same hair with the rest of the body, lengthened and shining. The mane, as well as the rest of the body, is of a yellow colour; nor is there ever any difference to be found in the colour of one lion from that of another. What the ancients might have said concerning black lions, or white, or streaked like the tiger, is not confirmed by modern experience; so that these varieties have never been seen, or exist no longer.

It is usually supposed that the lion is not possessed of the sense of smelling in such perfection as most other animals. It is also observed, that too strong a light greatly incommodes him. This is more than probable from the formation of his eyes, which, like those of the cat, seem fitted for seeing best in the dark. For this reason, he seldom appears in open day, but ravages chiefly by night; and not only the lion, but all other animals of the cat kind, are kept off by the fires which the inhabitants light to preserve their herds and flocks; the brightness of the flame dazzles their eyes, which are only fitted for seeing in the dark; and they are afraid to venture blindly into those places which they know to be filled with their enemies. "It is equally true of all this kind, that they hunt rather by the sight than the smell; and it sometimes happens that the lion pursues either the jackall or the wild dog, while they are hunting upon the scent; and, when they have run the beast down, he comes in and monopolizes the spoil. From hence, probably, may have arisen the story of the lion's provider: these little industrious animals may often, it is true, provide a feast for the lion; but they have hunted merely for themselves, and he is an unwelcome intruder upon the fruits of their toil."

The lion, when hungry, boldly attacks all animals that come in his way; but, as he is very formidable, and as they all seek to avoid him, he is often obliged to hide, in order to take them by surprise. For this purpose he crouches on his belly, in some thicket, or among the long grass, which

is found in many parts of the foreſt; in this retreat he continues, with patient expectation, until his prey comes within a proper diſtance, and he then ſprings after it, fifteen or twenty feet from him, and often ſeizes it at the firſt bound. If he miſſes the effort, and in two or three reiterated ſprings cannot ſeize his prey, he continues motionleſs for a time, ſeems to be very ſenſible of his diſappointment, and waits for a more ſucceſsful opportunity. In the deſerts and foreſts, his moſt uſual prey are the gazelles and the monkeys, with which the torrid regions abound. The latter he takes when they happen to be upon the ground, for he cannot climb trees like the cat or the tiger. He devours a great deal at a time, and generally fills himſelf for two or three days to come. His teeth are ſo ſtrong that he very eaſily breaks the bones, and ſwallows them with the reſt of the body. It is reported that he ſuſtains hunger a very long time, but thirſt he cannot ſupport in an equal degree, his temperament being extremely hot; ſome have even aſſerted that he is in a continual fever. He drinks as often as he meets with water, lapping it like a cat; which, as we know, drinks but ſlowly. He generally requires about fifteen pounds of raw fleſh in a day; he prefers that of live animals, and particularly thoſe which he has juſt killed. He ſeldom devours the bodies of animals when they begin to putrefy; and he chooſes rather to hunt for a freſh ſpoil, than to return to that which he had half devoured before. However, though he uſually feeds upon freſh proviſion, his breath is very offenſive, and his urine inſupportable.

The roaring of the lion is ſo loud, that when it is heard in the night, and re-echoed by the mountains, it reſembles diſtant thunder. This roar is his natural note; for when enraged he has a different growl, which is ſhort, broken, and reiterated. The roar is a deep hollow growl, which he ſends forth five or ſix times a day, particularly before rains. The cry of anger is much louder and more formidable. This is always excited by oppoſition; and upon thoſe occaſions, when the lion ſummons up all his terrors for the combat, nothing can be more terrible. He then laſhes his ſides with his long tail, which alone is ſtrong enough to lay a man level. He moves his mane in every direction; it ſeems to riſe and ſtand like briſtles round his head; the ſkin and

muſcles of his face are all in agitation; his huge eye-brows half cover his glaring eye balls; he diſcovers his teeth, which are formed rather for deſtruction than chewing his food; he ſhews his tongue covered with points, and extends his claws, which appear almoſt as long as a man's fingers. Prepared in this manner for war, there are few animals that will venture to engage him; and even the boldeſt of the human kind are daunted at his approach. The elephant, the rhinoceros, the tiger, and the hippopotamos, are the only animals that are not afraid ſingly to make oppoſition.

"Nevertheleſs, neither the leopard nor the wild boar, if provoked, will ſhun the combat; they do not ſeek the lion to attack, but will not fly at his approach; they wait his onſet, which he ſeldom makes unleſs compelled by hunger; they then exert all their ſtrength, and are ſometimes ſucceſsful. We are told of the combat of a lion and a wild boar, in a meadow near Algiers, which continued for a long time with incredible obſtinacy. At laſt, both were ſeen to fall by the wounds they had given each other; and the ground all about them was covered with their blood. Theſe inſtances, however, are very rare, for the lion is in general the undiſputed maſter of the foreſt. Man is the only creature that attacks him with almoſt certain ſucceſs; with the aſſiſtance of dogs and horſes, which are trained to the purſuit. Theſe animals that, in a ſtate of Nature, would have fled from the preſence of the lion, in an agony of conſternation, when conſcious of the aſſiſtance of man, become purſuers in their turn, and boldly hunt their natural tyrant. The dogs are always of the large breed; and the horſes themſelves, as Geſner, aſſures us, muſt be of that ſort called *charoſſi*, or lion-eyed, all others of this kind flying at the ſight of the lion, and endeavouring to throw their riders. When the lion is rouzed, he recedes with a ſlow, proud motion; he never goes off directly forward, nor meaſures his paces equally, but takes an oblique courſe, going from one ſide to the other, and bounding rather than running. When the hunters approach him, they either ſhoot or throw their javelins; and in this manner diſable him before he is attacked by the dogs, many of whom he would otherwiſe deſtroy. He is very vivacious, and is never killed at once, but continues to fight deſperately even after he has received

his mortal blow. He is alſo taken by pit-falls; the natives digging a deep hole in the ground, and covering it ſlightly over with ſticks and earth; which, however, give way beneath his weight, and he ſinks to the bottom, from whence he has no means of eſcape. But the moſt uſual manner of taking this animal is while a cub, and incapable of reſiſtance. The place near the den of the lioneſs is generally well known by the greatneſs of her depredations on that occaſion; the natives, therefore, watch the time of her abſence, and, aided by a ſwift horſe, carry off her cubs; which they ſell to ſtrangers, or to the great men of their country."

The lion, while young and active, lives by hunting in the foreſt, at the greateſt diſtance from any human habitation; and ſeldom quits this retreat while able to ſubſiſt by his natural induſtry; but when he becomes old, and unfit for the the purpoſes of ſurpriſe, he boldly comes down into places more frequented, attacks the flocks and herds that take ſhelter near the habitation of the ſhepherd or the huſbandman, and depends rather upon his courage than his addreſs for ſupport. It is remarkable, however, that when he makes one of theſe deſperate ſallies, if he finds men and quadrupeds in the ſame field, he only attacks the latter, and never meddles with men, unleſs they provoke him to engage. It is obſerved that he prefers the fleſh of camels to any other food; he is likewiſe ſaid to be fond of that of young elephants; theſe he often attacks before their trunk is yet grown; and, unleſs the old elephant comes to their aſſiſtance, he makes them an eaſy prey.

The lion is terrible upon all occaſions, but particularly at thoſe ſeaſons when he is incited by deſire, or when the female has brought forth. It is then that the lioneſs is ſeen followed by eight or ten males, who fight moſt bloody battles among each other, till one of them become victorious over all the reſt. She is ſaid to bring forth in ſpring, and to produce but once a year. "With reſpect to the time of geſtation, naturaliſts have been divided, ſome afferting that the lioneſs went with young ſix months, and others but two. The time alſo of their growth and their age have hitherto been left in obſcurity; ſome afferting that they acquired their full growth in three years, and others that they required

a longer period to come to perfection; ſome ſaying (and among this number is Mr. Buffon) that they lived to but twenty, or twenty-two years at moſt; others making their lives even of ſhorter duration. All theſe doubts are now reduced to certainty; for we have had ſeveral of theſe animals bred in the Tower; ſo that the manner of their copulation, the time of their geſtation, the number they bring forth, and the time they take to come to perfection, are all pretty well known. Although the lion emits his urine backwards, yet he couples in the ordinary manner; and, as was ſaid before, his internal ſtructure in almoſt every reſpect reſembles that of a cat. The lioneſs, however, is upon theſe occaſions particularly fierce, and often wounds the lion in a terrible manner. She goes with young, as I am aſſured by her keeper, no more than five months; the young ones, which are never more than two in number when brought forth, are about the ſize of a large pug dog, harmleſs, pretty, and playful; they continue the teat for twelve months, and the animal is more than five years in coming to perfection. As to its age, from its impriſoned ſtate, we can have no certainty; ſince it is very probable, that, being deprived of its natural climate, food, and exerciſe, its life muſt be very much abridged. However, naturaliſts have hitherto been greatly miſtaken as to the length of its exiſtence. The great he-lion, called *Pompey*, which died in the year 1760, was known to have been in the Tower for above ſeventy years; and one lately died there, which was brought from the river Gambia, that died above ſixty-three. The lion, therefore, is a very long-lived animal; and, very probably, in his native foreſts, his age exceeds even that of man himſelf."

In this animal, all the paſſions, even of the moſt gentle kind, are in exceſs, but particularly the attachment of the female to her young. The lioneſs, though naturally leſs ſtrong, leſs courageous, and leſs miſchievous than the lion becomes terrible when ſhe has got young ones to provide for. She then makes her incurſions with even more intrepidity than the lion himſelf; ſhe throws herſelf indiſcriminately among men and other animals; deſtroys without diſtinction; loads herſelf with the ſpoil, and brings it home reeking to her cubs; whom ſhe accuſtoms betimes to cruelty and

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ſlaughter. She uſually brings forth in the moſt retired and inacceſſible places; and when ſhe fears to have her retreat diſcovered, often hides her tracks, by running back her ground, or by bruſhing them out with her tail. She ſometimes alſo, when her apprehenſions are great, tranſports them from one place to another; and, if obſtructed, defends them with determined courage, and fights to the laſt.

The lion is chiefly an inhabitant of the torrid zone; and, as was ſaid, is always moſt formidable there: nevertheleſs, he can ſubſiſt in more temperate climates; and there was a time when even the ſouthern parts of Europe were infeſted by him. At preſent, he is only found in Africa and the Eaſt-Indies; in ſome of which countries he grows to an enormous height. The lion of Bildulgerid is ſaid to be nearly five feet high, and between nine and ten feet from the tip of the noſe to the inſertion of the tail. We have in the Tower, at preſent, one of above four feet high, that was brought from Morocco, which is the largeſt that for ſome time paſt has been ſeen in Europe. The ordinary ſize is between three and four feet; the female being in all her dimenſions about one third leſs than the male. There are no lions in America; the Puma, which has received the name of the *American lion*, is when compared, a very contemptible animal, having neither the ſhape, the ſize, nor the mane of the lion; being known to be extremely cowardly, to climb trees for its prey, to ſubſiſt rather by its cunning than its courage, and to be inferior even to the animal that goes by the name of the *American tiger*. We ought not, therefore, to confound this little treacherous creature with the lion, which all the ancients have concurred in denominating the *king of beaſts*, and which they have deſcribed as brave and merciful. "Indeed, the numerous accounts which they have given us of this animal's generoſity and tenderneſs, ſhew that there muſt be ſome foundation for the general belief of its good qualities; for mankind ſeldom err when they are all found to unite in the ſame ſtory. However, perhaps, the caution of Ariſtophanes, the comic poet, is better followed in practice, who adviſes us to have nothing to do with this creature, but to let the lioneſs ſuckle her own whelps *."

* Ου χρη λεοντος σκυμνον εν πολει τρεφειν.

THE TIGER.

"THE ancients had a ſaying, *That as the peacock is the moſt beautiful among birds, ſo is the tiger among quadrupeds**. In fact, no quadruped can be more beautiful than this animal; the gloſſy ſmoothneſs of his hair, which lies much ſmoother, and ſhines with greater brightneſs than even that of the leopard; the extreme blackneſs of the ſtreaks with which he is marked, and the bright yellow colour of the ground which they diverſify, at once ſtrike the beholder. To this beauty of colouring is added an extremely elegant form, much larger, indeed, than that of the leopard, but more ſlender, more delicate, and beſpeaking the moſt extreme ſwiftneſs and agility. Unhappily, however, this animal's diſpoſition is as miſchievous as its form is admirable, as if Providence was willing to ſhew the ſmall value of beauty, by beſtowing it on the moſt noxious of quadrupeds. We have at preſent one of theſe animals in the Tower, which to the view appears the moſt good-natured and harmleſs creature in the world; its phyſiognomy is far from fierce or angry; it has not the commanding, ſtern countenance of the lion, but a gentle, placid air; yet, for all this, it is fierce and ſavage beyond meaſure; neither correction can terrify it, nor indulgence can tame."

The chief and moſt obſervable diſtinction in the tiger, and in which it differs from all others of the mottled kind, is in the ſhape of its colours, which run in ſtreaks or bands in the ſame direction as his ribs, from the back down to the belly. The leopard, the panther, and the ounce, are all partly covered like this animal, but with this difference, that their colours are broken in ſpots all over the body; whereas, in the tiger they ſtretch lengthwiſe, and there is ſcarce a round ſpot to be found on his ſkin. Beſides this, there are other obſervable diſtinctions: The tiger is much larger, and often found bigger than even the lion himſelf; it is much ſlenderer alſo in proportion to its ſize; its legs ſhorter, and its neck and body longer. In ſhort, of all other animals, it moſt reſembles the cat in ſhape; and, if we conceive the latter

* Tantem autem præſtat pulchritudine tigris inter alias færas quantum inter volucres pavo.

magnified to a very great degree, we ſhall have a tolerable idea of the former.

In claſſing carnivorous animals, we may place the lion foremoſt *; and immediately after him follows the tiger, which ſeems to partake of all the noxious qualities of the lion, without ſharing any of his good ones. To pride, courage, and ſtrength, the lion joins greatneſs, clemency, and generoſity: but the tiger is fierce without provocation, and cruel without neceſſity. The lion ſeldom ravages except when excited by hunger; the tiger, on the contrary, though glutted with ſlaughter, is not ſatisfied, ſtill continues the carnage, and ſeems to have its courage only inflamed by not finding reſiſtance. In falling in among a flock or a herd, it gives no quarter, but levels all with indiſcriminate cruelty, and ſcarce finds time to appeaſe its appetite while intent upon ſatisfying the malignity of its nature. It thus becomes the ſcourge of the country where it is found; it fears neither the threats nor the oppoſition of mankind; the beaſts, both wild and tame, fall equally a ſacrifice to its inſatiable fury; the young elephant and the rhinoceros become equally its prey, and it not unfrequently ventures to attack even the lion himſelf.

Happily for the reſt of Nature, that this animal is not common, and that the ſpecies is chiefly confined to the warmeſt provinces of the Eaſt. The tiger is found in Malabar, in Siam, in Bengal, and in all the countries which are inhabited by the elephant or the rhinoceros. Some even pretend that it has a friendſhip for, and often accompanies the latter, in order to devour its excrements, which ſerve it as a purge. Be this as it will, there is no doubt but that they are often ſeen together at the ſides of lakes and rivers; where they are probably both compelled to go by the thirſt which, in that torrid climate, they muſt very often endure. It is likely enough alſo that they ſeldom make war upon each other, the rhinoceros being a peaceable animal, and the tiger knowing its ſtrength too well to venture the engagement.—It is ſtill more likely that the tiger finds this a very convenient ſituation, ſince it can there ſurpriſe a greater number of animals which are compelled thither from the ſame motives.

* The remainder of this deſcription is taken from Mr. Buffon, except where marked with commas.

In fact, it is generally known to lurk near ſuch places where it has an opportunity of chooſing its prey, or rather of multiplying its maſſacres. When it has killed one, it often goes to deſtroy others, ſwallowing their blood down at large draughts, and ſeeming rather glutted than ſatiated with its abundance.

However, when it has killed a large animal, ſuch as a horſe or a buffalo, it immediately begins to devour it on the ſpot, fearing to be diſturbed. In order to feaſt at his eaſe, it carries off its prey to the foreſt, dragging it along with ſuch eaſe, that the ſwiftneſs of its motion ſeems ſcarce retarded by the enormous load it ſuſtains. From this alone, we may judge of its ſtrength; but to have a more juſt idea of this particular, let us ſtop a moment to conſider the dimenſions of this moſt formidable creature. Some travellers have compared it for ſize to a horſe, and others to a buffalo, while others have contented themſelves with ſaying, that it is much larger than a lion. We have recent accounts of this animal's magnitude that deſerve the utmoſt confidence.—Mr. Buffon has been aſſured by one of his friends that he ſaw a tiger in the Eaſt Indies, of fifteen feet long. "Suppoſing that he means including the tail, this animal, allowing four feet for that, muſt have been eleven feet from the tip of the noſe to the inſertion of the tail. Indeed, that which is now in the Tower is not ſo large, being, as well as I could meaſure, ſix feet from the tip to the inſertion, and the tail was three feet more. Like all the reſt of its kind, its motions are irregular and deſultory; it bounds rather than runs; and, like them, rather chooſes to take its prey by ſurpriſe, than to be at the trouble of hunting it down." How large a leap it can take at once we may eaſily judge, by comparing what it might do, to what we ſee ſo ſmall an animal as the cat actually perform. The cat can leap ſeveral feet at a bound; and the tiger, who is ten times as long, can no doubt ſpring proportionably.

"The tiger is the only animal whoſe ſpirit ſeems untameable. Neither force nor conſtraint, neither violence nor flattery, can prevail in the leaſt on its ſtubborn nature. The careſſes of the keeper have no influence on their heart of iron; and time, instead of mollifying its diſpoſition, only ſerves to increaſe its fierceneſs and malignity. The tiger

ſnaps at the hand that feeds it, as well as that by which it is chaſtiſed; every object ſeems conſidered only as its proper prey, which it devours with a look; and, although confined by bars and chains, ſtill makes fruitleſs efforts, as if to ſhew its malignity, when incapable of exerting its force."

To give a ſtill more complete idea of the ſtrength of this terrible creature, we ſhall quote a paſſage from Father Tachard, who was an eye-witneſs of a combat between a tiger and three elephants at Siam. For this purpoſe, the king ordered a loſty palliſade to be built of bamboo canes about a hundred feet ſquare; and in the midſt of this were three elephants appointed for combating the tiger. Their heads, and a part of their trunk was covered with a kind of armour, like a maſk, which defended that part from the aſſaults of the fierce animal with which they were to engage. As ſoon, ſays this author, as we were arrived at the place, a tiger was brought forth from its den, of a ſize much larger than we had ever ſeen before. It was not at firſt let looſe, but held with cords, ſo that one of the elephants approaching, gave it three or four terrible blows, with its trunk on the back, with ſuch force, that the tiger was for ſome time ſtunned, and lay without motion, as if it had been dead. However, as ſoon as it was let looſe, and at full liberty, although the firſt blows had greatly abated its fury, it made at the elephant with a loud ſhriek, and aimed at ſeizing his trunk. But the elephant, wrinkling it up with great dexterity, received the tiger on his great teeth, and toſſed it up into the air. This ſo diſcouraged the furious animal, that it no more ventured to approach the elephant, but made ſeveral circuits round the palliſade, often attempting to fly at the ſpectators. Shortly after, three elephants were ſent againſt it, and they continued to ſtrike it ſo terribly with their trunks, that it once more lay for dead; and they would certainly have killed it, had not there been a ſtop put to the combat.

From this account, we may readily judge of the ſtrength of this animal, which, though reduced to captivity, and held by cords, though firſt diſabled, and ſet alone againſt three, yet ventured to continue the engagement, and even that againſt animals covered and protected from its fury.

"Captain Hamilton informs us, that in the Sundah Raijah's dominions there are three ſorts of tigers in the woods, and that the ſmalleſt are the fierceſt. This is not above two feet high, appears to be extremely cunning, and delights in human fleſh. The ſecond kind is about three feet high, and hunts deer and wild hogs, beſides the little animal which has been already deſcribed under the name of the *chevrotain*, or *Guinea deer*. The tiger of the largeſt ſort is above three feet and a half high; but, although endowed with greater powers, is, by no means, ſo rapacious as either of the former. This formidable animal, which is called the *royal tiger* (one of which we have at preſent in the Tower), does not ſeem ſo ravenous nor ſo dangerous, and is even more cowardly. A peaſant in that country, as this traveller informs us, had a buffalo fallen into a quagmire, and while he went for aſſiſtance, there came a large tiger that, with its ſingle ſtrength, drew forth the animal, which the united force of many men could not effect. When the people returned to the place, the firſt object they beheld was the tiger, who had thrown the buffalo over its ſhoulder, as a fox does a gooſe, and was carrying it away, with the feet upward, towards its den; however, as ſoon as it ſaw the men, it let fall its prey, and inſtantly fled to the woods: but it had previouſly killed the buffalo, and ſucked its blood; and, no doubt, the people were very well ſatisfied with its retreat.—It may be obſerved, that ſome Eaſt Indian buffaloes weigh above a thouſand pounds, which is twice as heavy as the ordinary run of our black cattle; ſo that from hence we may form a conception of the enormous ſtrength of this rapacious animal, that could thus run off with a weight at leaſt twice as great as that of itſelf.

"Were this animal as common as the panther, or even as the lion himſelf, thus furniſhed as it is with the power to deſtroy, and the appetite for ſlaughter, the country would be uninhabitable where it reſides. But luckily the ſpecies is extremely ſcarce; and has been ſo ſince the earlieſt accounts we have had of the tiger. About the times of Auguſtus, we are aſſured by Pliny*, that when panthers were brought to Rome by hundreds, a ſingle tiger was conſidered as an extraordinary ſight; and he tells us, that the emperor

* Plin. Hiſt. Nat. lib. viii. c. 17.

Claudius was able to procure four only; which ſhews how difficultly they were procured. The incredible fierceneſs of this animal may be, in ſome meaſure, the cauſe of the ſcarcity which was then at Rome, ſince it was the opinion of Varo, that the tiger was never taken alive *: but its being a native only of the Eaſt Indies, and that particularly of the warmer regions, it is not to be wondered that the ſpecies ſhould be ſo few."

We may, therefore, conſider the ſpecies of the true ſtreaked tiger, as one of the ſcarceſt of animals, and much leſs diffuſed than that of the lion. As to the number of its young, we have no certain accounts; however, it is ſaid, that it brings forth four or five at a time. Although furious at all times, the female, upon this occaſion, exceeds her uſual rapacity; and, if her young are taken from her, ſhe purſues the ſpoiler with incredible rage; he, to ſave a part, is contented to loſe a part, and drops one of her cubs, with which ſhe immediately returns to her den, and again purſues him; he then drops another, and by the time ſhe has returned with that, he generally eſcapes with the remainder. If ſhe loſes her young entirely, ſhe then becomes deſperate, boldly approaches even the towns themſelves, and commits incredible ſlaughter. The tiger expreſſes its reſentment in the ſame manner with the lion; it moves the muſcles and ſkin of its face, ſhews its teeth, and ſhrieks in the moſt frightful manner. Its note is very different from that of the lion; being rather a ſcream than a roar: and the ancients expreſſed it very well, when they ſaid that, *tigrides indomitæ rancant rugiuntque leones.*

The ſkin of theſe animals is much eſteemed all over the eaſt, particularly in China; the Mandarines cover their ſeats of juſtice in the public places with it, and convert it into coverings for cuſhions in winter. In Europe, theſe ſkins, though but ſeldom to be met with, are of no great value, thoſe of the panther and the leopard being held in much greater eſtimation. This is all the little benefit we derive from this dreadful animal, of which ſo many falſehoods have been reported; as, that its ſweat was poiſonous, and the hair of its whiſkers more dangerous than an envenomed arrow. But the real miſchiefs which the tiger occaſions

* Tigris vivus capi ad huc non potuit. Var de ling. Lat.

while living are ſufficient, without giving imaginary ones to the parts of its body when dead. In fact, the Indians ſometimes eat its fleſh, and find it neither diſagreeable nor unwholeſome.

There is an animal of America, which is uſually called the *red tiger*, but Mr. Buffon calls it the *cougar*, which, no doubt, is very different from the tiger of the eaſt. Some, however, have thought proper to rank both together, and I will take leave to follow their example, merely becauſe the cougar is more like a tiger in every thing, except the colour, than any other animal I know, having the head, the body, and the neck, ſhaped very much in the ſame manner. Of theſe ſlight differences, words would give but a very faint idea; it will be, therefore, ſufficient to obſerve, that they are both equally ſlender, and are ſmaller where the neck joins the head, than others of the panther kind. There is one at preſent in the Tower; and it ſeemed to me, as well as I could ſee it through the bars, that were it properly ſtreaked and coloured, it would in all things reſemble a ſmall tiger. It is, however, of a very different colour, being of a deep brown, and the tail very long and pointed. It is rather darker on the back; under the chin it is a little whitiſh, as alſo on the lower part of the belly.

Of all the American animals, this is the moſt formidable and miſchievous; even their pretended lion not excepted: It is ſaid, there are ſeveral ſorts of them; and, as well as I can remember, I have ſeen one or two here in England, both differing from the preſent, in ſize and conformation. It is, indeed, a vain endeavour to attempt to deſcribe all the leſs obvious varieties in the cat kind. If we examine them minutely, we ſhall find the differences multiply upon us ſo much, that inſtead of a hiſtory, we ſhall only be paid with a catalogue of diſtinctions. From ſuch of them as I have ſeen, within theſe laſt ſix years, I think I could add two animals of this ſpecies, that have not been hitherto deſcribed, and with the names of which he that ſhewed them was utterly unacquainted. But it is a poor ambition, that of being eager to find out new diſtinctions, or adding one noxious animal more, to a liſt that is already ſufficiently numerous. Were the knowing a new variety to open an unknown hiſtory, or in the leaſt to extend our knowledge,

The COUGAR

the inquiry would be then worth purſuing; but what ſignifies mentioning ſome trifling difference, and from thence becoming authors of a new name, when the difference might have originally proceeded either from climate, ſoil, or indiſcriminate copulation?

The cougars are extremely common in South America; and, where the towns border upon the foreſt, theſe make frequent incurſions by night into the midſt of the ſtreets, carrying off fowls, dogs, and other domeſtic creatures. They are, however, but weak and contemptible, compared to the great tiger, being found unable to cope with a ſingle man. The Negroes and Indians are very dexterous in encountering them; and ſome, even for the ſake of their ſkins, ſeek them in their retreats. The arms in this combat, ſeemingly ſo dangerous, are only a lance of two or three yards long, made of heavy wood, with the point hardened in the fire; and a kind of ſcymitar, of about three quarters of a yard in length. Thus armed, they wait till the tiger makes an aſſault againſt the left hand, which holds the lance, and is wrapped up in a ſhort cloak of baize. Sometimes the animal, aware of the danger, ſeems to decline the combat; but then its antagoniſt provokes it with a ſlight touch of the lance, in order, while he is defending himſelf, to ſtrike a ſure blow. As ſoon, therefore, as the creature feels the lance, it graſps it with one of its paws, and with the other ſtrikes at the arm which holds it. Then it is that the perſon nimbly aims a blow with his ſcymitar, which he kept concealed, with the other hand, and hamſtrings the creature, which immediately draws back enraged, but inſtantly returns to the charge. But then, receiving another ſtroke, it is totally deprived of the power of motion: and the combatant, killing it at his leaſure, ſtrips the ſkin, cuts off the head, and returns to his companions, diſplaying theſe as the trophies of his victory.

This animal, as we are aſſured, is often more ſucceſsful againſt the crocodile; and it is the only quadruped in that part of the world, that is not afraid of the engagement. It muſt be no unpleaſant ſight to obſerve, from a place of ſafety, this extraordinary combat, between animals ſo terrible and obnoxious to man. Such as have ſeen it, deſcribe it in the following manner. When the tiger, impelled by

thirſt, that ſeems continually to conſume it, comes down to the river ſide to drink, the crocodile which makes no diſtinction in its prey, lifts its head above water to ſeize it; the tiger, not leſs rapacious than the other, and unacquainted with the force of the enemy, boldly ventures to ſeize it, and plunges its claws into the eyes of the crocodile, which is the only vulnerable part of its body: upon this the crocodile inſtantly dives under water, and the tiger goes down with him, for it will ſooner die than let go its hold. In this manner the combat continues for ſome time, until the tiger is drowned, or eſcapes, as is ſometimes the caſe, from its diſabled enemy.

Theſe animals are common in Guiana*. They were formerly ſeen ſwimming over, in great numbers, into the iſland of Cayenne, to attack and ravage the flocks and herds of the inhabitants. In the beginning, they were a terrible ſcourge to the infant colony; but, by degrees, they were repulſed and deſtroyed, and are now ſeen no longer at that place. They are found in Brazil, in Paraguay, in the country of the Amazons, and in ſeveral other parts of South America. They often climb trees in queſt of prey, or to avoid their purſuers. They are deterred by fire, like all other animals of the cat kind; or, more properly ſpeaking, they ſeldom venture near thoſe places where they ſee it kindled, as they are always ſure of their enemies being near, and their nocturnal eyes are dazzled by the brightneſs of the blaze. From the deſcription of this animal, one would be hardly led to ſuppoſe, that its fleſh was good for food; and yet we have ſeveral accounts which allege the fact, ſome aſſerting it to be ſuperior even to mutton: however, what Monſieur Des Marchais obſerves, is moſt likely to be true; namely, That the moſt valuable part of this animal is its ſkin, and that its fleſh is but indifferent eating, being generally lean, and uſually having a ſtrong fumet.

THE PANTHER AND THE LEOPARD.

WE have hitherto found no great difficulty in diſtinguiſhing one animal from another, each carrying its own peculiar marks, which, in ſome meaſure, ſerve to ſeparate it from all the reſt. But it is otherwiſe, when we come to

* Buffon, vol. xix. p. 22.

The TIGER.

thefe of the cat kind, that fill up the chafm between the tiger and the cat. The fpots with which their fkins are diverfified, are fo various, and their fize fo equivocal, that it is no eafy matter to diftinguifh the fpecies, particularly as we have little elfe but the fpots and the fize to guide us in making the diftinction. If we regard the figure and diverfity of the fpots, we fhall find many varieties not taken notice of by any naturalift; if we are led by the fize, we fhall find an imperceptible gradation from the cat to the tiger. It would be vain, therefore, to make as many varieties in thefe animals as we fee differences in fpots or ftature; it will be fufficient to feize the moft general diftinctions, and leave the reft to fuch as are fond of more minute difquifitions.

Of all this tribe, whofe fkins are fo beautifully fpotted, and whofe natures are fo mifchievous, the panther may be confidered as the foremoft. This animal has been by many naturalifts miftaken for the tiger; and, in fact, it approaches next to it in fize, fiercenefs and beauty. It is diftinguifhed, however, by one obvious and leading character; that of being fpotted, not ftreaked; for, in this particular, the tiger differs from the panther, the leopard, and almoft all the inferior ranks of this mifchievous family.

This animal, which Mr. Buffon calls fimply the *panther*, Linnæus the *pard*, Gefner the *pardalis*, and the modern Latins the *leopardus*; this animal, I fay, which goes by too many names, and which the Englifh have indifcriminately called by the name of the PANTHER or the LEOPARD, may be confidered as the largeft of the kind, and is fpotted in a manner fomewhat different from thofe that are fmaller. As thofe fpots, however, make the principal difference between it and the leffer animals, which it otherwife refembles in fhape, fize, difpofition, and beauty, I will firft fhew thefe flight diftinctions, and mention the names each animal has received in confequence thereof; and then proceed to give their hiftory together, ftill marking any peculiarity obfervable in one of the fpecies, which is not found in the reft.

Next to the great panther, already mentioned, is the animal which Mr. Buffon calls the LEOPARD, a name which he acknowledges to be given arbitrarily, for the fake of diftinction. Other naturalifts have not much attended to the flight differences between this and the great panther, nor have

they considered its discriminations as sufficient to entitle it to another name. It has hitherto, therefore, gone under the name of the LEOPARD, or PANTHER of Senegal, where it is chiefly found. The differences between this animal and the former are these: the large panther is often found to be six feet long, from the tip of the nose to the insertion of the tail; the panther of Senegal is not above four. The large panther is marked with spots in the manner of a rose, that is, five or six make a kind of circle, and there is generally a large one in the middle. The leopard of Senegal has a much more beautiful coat, the yellow is more brilliant, and the spots are smaller, and not disposed in rings but in clusters. As to the rest, they are both whitish under the belly; the tail in both is pretty long, but rather longer in proportion in the latter, than the former. To these two animals, whose differences seem to be so very minute, we may add a third; namely the JAGUAR, or PANTHER of America. This, in every respect, resembles the two former, except in the disposition of its spots, and that its neck and head are rather streaked than spotted. The jaguar is also said to be lower upon its legs, and less than the leopard of Senegal. These three quadrupeds, as we see, have but very slight differences, and the principal distinction used by Mr. Buffon, is taken from the size; the first, as he says, is usually six feet long; the second, four feet; and the last, about three: however, it appears from the particular subjects of his description, that the panther in his possession was not above three feet seven inches long; that the leopard's skin which he describes, was about four; and that the jaguar, at two years old, was between two and three feet long, which, when come to its full growth, would, no doubt, be four feet long, as well as the two former. From hence, therefore, we may conclude, that the size in these animals is not sufficient to make a distinction among them; and that those who called them all three by the indiscriminate names of the leopard and the panther, if not right, were at least excuseable. Of those which are now to be seen in the Tower, the jaguar, or the American panther, is rather the largest of the three; and is by no means the contemptible animal which Mr. Buffon describes it to be: the leopard is the least of them, and has, by some travellers, been supposed to be an animal produced

The MALE PANTHER

The LYNX

between the panther and the ounce, an animal which resembles, but is less than any of the former. These three animals we may, therefore, rank together, as they agree pretty nearly in their robe, their size, their dispositions, and their ferocity.

We come next to an animal confessedly different from any of the former, being much smaller, and its colour more inclining to white. Its name, however, in our language, has caused no small confusion. It has been generally called by foreigners, the ONZA, or the OUNCE, and this name some of our own writers have thought proper to give it; but others of them, and these the most celebrated, such as Willoughby, have given this name to a different animal, with a short tail, and known to the ancients and moderns by the name of the *lynx*. I confess myself at a loss, in this case, whom to follow; the alteration of names should be always made with great caution, and never but in cases of necessity. If we follow Willoughby, there will be an animal of the panther kind, very distinguishable from all the rest, left without a name; and if we recede from him it will serve to produce some confusion among all the numerous class of readers and writers who have taken him for their guide: however, as he seems himself to have been an innovator, the name of the lynx having been long adopted into our language before, it was unnecessary to give the animal that bore it another name, and to call that creature an ounce, which our old writers had been accustomed to know by the Latin appellation, for this reason, therefore, we may safely venture to take a name that has been long misapplied, from the lynx, and restore it to the animal in question. We will, therefore, call that animal of the panther kind, which is less than the panther, and with a longer tail, the *ounce;* and the lynx may remain in possession of that name by which it was known among all our old English writers, as well as by all antiquity.

The OUNCE, or the ONCA of Linnæus, is much less than the panther, being not, at most, above three feet and a half long: however, its hair is much longer than that of the panther, and its tail still more so. The panther of four or five feet long, has a tail but of two feet, or two feet and a half. The ounce, which is but about three feet, has a tail often longer than the rest of its body. The colour of the ounce is also

apparently different, being rather more inclining to a cream-colour, which is deeper on the back, and whiter towards the belly. The hair on the back is an inch and a half long; and that on the belly two inches and a half, which is much longer than that of the panther. Its ſpots are diſpoſed pretty much in the ſame manner as the large panther, except that on the haunches it is rather marked with ſtripes than with ſpots.

Deſcending to animals of this kind that are ſtill ſmaller, we find the CATAMOUNTAIN, which is the ocelot of Mr. Buffon, or the tiger-cat of moſt of thoſe who exhibit as a ſhow. It is leſs than the ounce, but its robe more beautifully variegated. It is an American animal, and is about two feet and a half in length, from the noſe to the inſertion of the tail. It is extremely like a cat, except that it is larger and ſlenderer, that its colours are more beautiful and its tail rather ſhorter. The fur is of a reddiſh colour, the whole beautified with black ſpots, and ſtreaks of different figures. They are long on the back, and round on the belly and paws. On the ears are black ſtripes, which run acroſs; but, in other reſpects, they entirely reſemble thoſe of a cat.—Theſe colours, however, which naturaliſts have taken great pains minutely to deſcribe, are by no means permanent, being differently diſpoſed in different animals of the ſame ſpecies. I remember to have ſeen an animal of this ſize, but whether of this ſpecies I will not pretend to ſay, ſome years ago, that was entirely brown, and was ſaid alſo to have come from America.

From this tribe of the cat kind, with ſpotted ſkins and a long tail, we come to another, with ſkins diverſified in like manner, but with a ſhorter tail. The principal of theſe is the LYNX, the name by which the animal was known to Ælian, among the ancients; and to all our old Engliſh writers among thoſe of a more modern date. This name has been corrupted by the Portugueſe into the word *ouze*; and this corruption has been adopted by Ray, who has improperly called this animal the *ounce*, after ſome of the foreign travellers. The firſt ſtriking diſtinction between the lynx, and all thoſe of the panther kind, is in its tail, which is at leaſt half as ſhort in proportion, and black at the extremity. Its fur is much longer, the ſpots on the ſkin leſs vi-

The SYAGUSH

vid, and but confufedly mingled with the reft. Its ears are much longer, and tipped at the point with a black tuft of hair. The colour round the eyes is white, and the phyfiognomy more placid and gentle. Each hair of this animal is of three different colours: the root is of a greyifh brown; the middle red, or of an afh colour; and the ends white.—This whitenefs at the ends takes up fo fmall a part of the particular hair, that it does not prevent us from feeing the principal colour, which is that in the middle part; fo that it only makes the furface of the body appear as if it were filvered over: however, the hair of which the fpots confift has no white at the ends, and at the roots it is not quite fo black as the other part. This animal is not above the fize of the ounce, but is rather ftronger built, and it has but twenty-eight teeth; whereas all the reft of the cat kind already mentioned have thirty.

Another animal of this kind is called the SIAGUSH, or, as Mr. Buffon names it, the CARACAL. It is a native of the Eaft Indies, and refembles the lynx in fize, in form, and even in the fingularity of being tufted at the tips of the ears. However, the fiagufh differs in not being mottled as the lynx is; its fur, or rather hair, is rougher and fhorter; its tail is rather longer, its muzzle more lengthened; its phyfiognomy more fierce, and its nature more favage.

The third and laft animal that need be mentioned of this kind, is that which Mr. Buffon calls the SERVAL, and which he has firft defcribed. It is a native of Malabar, refembling the panther in its fpots, but the lynx in the fhortnefs of its tail, in its fize, and in its ftrong built form.

Thefe feem to be all the principal diftinctions among animals of the panther kind, from the largeft of this tribe down to the domeftic cat, which is the fmalleft of all thefe fierce and mifchievous varieties. In all, their nature feems pretty much the fame; being equally fierce, fubtle, cruel, and cowardly. The panther, including the leopard and the jaguar, or American panther, as they are the largeft, fo alfo are they the moft dangerous of this kind; for the whole race of cats are noxious in proportion to their power to do mifchief. They inhabit the moft torrid latitudes of India, Africa, and America, and have never been able to multiply beyond the torrid zone. They are generally found in the

thickeſt and the moſt entangled foreſts, and often near remote habitations, where they watch to ſurpriſe all kinds of domeſtic animals. They very ſeldom attack man, even tho' provoked by him; they rather ſeem deſirous of finding ſafety by flight, or by climbing trees, at which they are very expert. In this manner, alſo, they often purſue their prey; and, being expert at ſeizing it, as well above as below, they cauſe a vaſt deſtruction. Of all other animals, theſe are the moſt ſullen, and, even to a proverb, untameable. They ſtill preſerve their fierce and treacherous ſpirit; and at thoſe places where they are expoſed to be ſeen among others, we often obſerve that while their keeper is familiar with the lion or the bear, yet he is apprehenſive of the large panther, and keeps it bound with the ſhorteſt chain.

As the ounce differs from theſe in figure and ſize, ſo alſo it ſeems to differ in diſpoſition, being more mild, tractable, and tame. Theſe we frequently ſee as harmleſs and innocent as cats; and there is one at preſent in the Tower with which the keeper plays without the ſmalleſt apprehenſion.—I own I was not a little uneaſy, at firſt, for the man, when he put his hand through the bars, and called the animal by its name; but was a good deal ſurpriſed to ſee the creature, which one might ſuppoſe irritated by long confinement, come gently up to him, ſtroke his hand with its face, in the manner of a cat, and teſtify the utmoſt gentleneſs of diſpoſition. The ounce, therefore, is remarkable for being eaſily tamed; and, in fact, it is employed all over the Eaſt for the purpoſes of hunting. Not, indeed, but that panthers themſelves are ſometimes uſed for this purpoſe, but they are never thoroughly ſubdued like the former, being uſually brought to the field in a carriage, and kept chained and caged until they are ſhewn the gazelle, or the leveret, which is their prey. This they purſue rather by three or four great ſprings than by running. If they ſeize it by this ſudden effort, it finds no mercy; but if it eſcapes from their firſt effort, they never attempt to purſue, and appear quite diſappointed and confounded at their miſchance. It ſometimes happens that they are ſo much enraged at it, that they attack even their employer, and his only reſource to avoid their fury is to throw them ſome ſmall pieces of meat, which he has brought with him for that purpoſe.

The ounce, however, is not ſo dangerous; and is treated with more confidence and familiarity. It is uſually brought to the field hood-winked behind one of the horſemen. When the game appears, the ounce is inſtantly uncovered, and ſhewn where it lies; upon which the fierce creature darts like an arrow to the place, and ſeizes it at once, or, miſſing it, remains motionleſs on the place. It would be vain to attempt retrieving its diſgrace, by continuing the purſuit; for, although it bounds with greater agility than moſt other animals, yet it is ſlow and awkward in running, and has no means of finding the animal it purſues by the ſmell, as is common among theſe of the dog kind. From hence, therefore, it appears how much ſuperior the European method of hunting is to that of the Aſiatic; ſince whatever amuſement this exerciſe affords muſt ariſe from the continuance of the chaſe, and from the fluctuation of doubt and expectation, which raiſe and depreſs the purſuers by turns. All this an Aſiatic hunter is deprived of; and his greateſt pleaſure can ſcarcely be more than what among us is called *courſing*, in which the dog purſues the animal, and keeps it conſtantly in view.

But it muſt not be ſuppoſed that it is from choice the Aſiatics uſe this method of chaſe; for, no doubt, were dogs ſerviceable among them as they are in Europe, they would be employed for the ſame purpoſes. But the fact is, that the extreme heat of the tropical climates produces ſuch univerſal putrefaction, and ſends up ſuch various and powerful ſcents, that dogs are at firſt bewildered in the chaſe, and at laſt come to loſe the delicacy of their ſcent entirely. They are, therefore, but little uſed in thoſe warm countries; and what could they avail in places where almoſt every other animal of the foreſt is ſtronger and more rapacious? The lion, the tiger, the panther, and the ounce, are all natural enemies to the dog, and attack him wherever he appears with ungovernable fury. The breed, therefore, in thoſe places would quickly be deſtroyed; ſo that they are obliged to have recourſe to thoſe animals which are more fitted to ſerve them; and thus convert the ounce to thoſe purpoſes for which dogs are employed in Europe.

The CATAMOUNTAIN, or OCELOT, is one of the fierceſt, and, for its ſize, one of the moſt deſtructive animals in the

world. It is, as was before obſerved, a native of South America, and by no means capable of the ſame education as the ounce, which it more approaches in ſize than in diſpoſition. Two of theſe, from whom Mr. Buffon has taken his deſcription, were brought over from Carthagena, and having been taken from the dam when very young, were afterwards ſuckled by a bitch. But, before they were three months old, they had ſtrength and ingratitude enough to kill and devour their nurſe. Their ſucceeding fierceneſs and malignity ſeemed to correſpond with their firſt efforts; for no arts could tame or ſoften their natures; and while they continued in their cages, they ſtill teſtified an unceaſing diſpoſition for ſlaughter. When their food was given them, the male always ſerved himſelf before the female ventured to touch a bit; and it was not till he was ſatisfied that the other began. In their ſavage ſtate, theſe animals are ſtill more deſtructive; having great ſtrength and agility, they very eaſily find and overtake their prey, which they purſue among the tops of the trees, as well as on the ground; but what renders them ſtill more miſchievous is, their unceaſing appetite rather for the blood than the fleſh of their prey. They ſuck this with the greateſt avidity, but frequently leave the carcaſe otherwiſe untouched, in order to purſue other animals for the blood in like manner. They generally continue on the tops of trees, like our wild cats; where they make their neſt, and often bring forth their young. When they ſpy any animal they can maſter, and there are but few in the foreſt but what are inferior, they ſart down upon it with inevitable exactneſs.

The whole tribe of animals of the panther kind, with long tails, are chiefly inhabitants, as was ſaid, of the torrid zone; but thoſe of the ſhort tailed kind, and particularly the lynx, is principally found in the cold countries that are bordering on the pole. The lynx is chiefly to be met with in the north of Germany, Lithuania, Muſcovy, Siberia, and North America. Thoſe of the new continent, however, are rather ſmaller than in Europe, as is the caſe with almoſt all their quadrupeds; they are ſomewhat whiter alſo, but in other reſpects there is ſcarce any difference to be found among them*. This animal has been called by ſome *lupus cervarius*, or a creature compounded between a wolf and a stag;

* Buffon.

but for what reaſon is hard to gueſs; it no way reſembles either in ſhape or in diſpoſition. In its nature, it exactly reſembles the cat, except that, being bigger and nearly two feet long, it is bolder and fiercer. Like the cat, it climbs trees, and ſeeks its prey by ſurpriſe; like the cat it is delicate and cleanly, covering its urine with its paws; and it reſembles the wolf in nothing except its cry, which often deceives the hunters, and induces them to think they hear a wolf and not a lynx. This animal alſo is rather more delicate than the cat; and after having once feaſted upon its prey, will never return to it again, but hunts the woods for another. From hence may have ariſen the common report of the lynx having, of all other quadrupeds the ſhortêſt memory. This, however, is not the only idle ſtory that has been propagated of it: as of its ſeeing with ſuch perſpicuity, as to perceive objects through walls and mountains; as of having its urine of ſuch a quality, as to harden, and become a precious ſtone; with ſeveral others, propagated by ignorance or impoſture.

The SIAGUSH and the SERVAL are both ſo like all the reſt of the cat kind in diſpoſition, that it is but repeating the ſame account once more to give their diſtinct hiſtory. As the lynx is found only in cold countries, ſo the ſiaguſh is to be met with only in the warm tropical climates. It is uſed, in the ſame manner as the ounce, for hunting; but it ſeems to have a property which the other has not; namely, that of being able to overtake its prey by purſuing it. Whether this is performed by having a finer ſcent than the former or greater ſwiftneſs, we are not informed; being only told that when it overtakes either the gazelle or the antelope, it leaps upon their backs, and, getting forward to their ſhoulders, ſcratches their eyes out, by which means they become an eaſy prey to the hunters. Some have called this animal the *lion's provider*; and it is ſaid that when it calls him to purſue his prey, its voice very much reſembles that of one man calling another *. From hence we may conjecture that this animal purſues its prey in full cry, and that the lion only follows to partake or ſeize the ſpoil. The ſame account is given alſo of the jackal; and very probably it may be true, not only of theſe animals, but of ſome others, ſince it is

* Thevenot, vol. ii. p. 114.

natural enough to ſuppoſe that the lion will purſue whenever he is taught to diſcover his prey.

We had one of theſe animals a few years ago ſent over from the Eaſt Indies, but it was not able to endure the change of climate, and it died in a very ſhort time after it was brought to the Tower. Whether conſumed by diſeaſe or not I cannot tell, but it ſeemed to be much ſlenderer than the cat or the lynx, and its ears were much longer; however, it is a very ſtrong creature for its ſize, and has been known to kill a large dog in ſingle combat*: nevertheleſs, it is, like all of the cat kind, except the lion, remarkable for its cowardice, and will never, except in caſes of neceſſity, attack an animal that is its equal in ſtrength or activity. For this reaſon, when brought into the field, and put upon a ſervice of danger, it obſtinately refuſes, and is alert only in the purſuit of animals that are too feeble for reſiſtance, or too timid to exert their ſtrength.

From what has been ſaid of this rapacious tribe, we perceive a ſimilitude in the manners and diſpoſitions of them all, from the lion to the cat. The ſimilitude of their internal conformation, is ſtill more exact; the ſhortneſs of their inteſtines, the number of their teeth, and the ſtructure of their paws, The firſt of this claſs is the lion, diſtinguiſhable from all the reſt by his ſtrength, his magnitude, and his mane. The ſecond is the tiger, rather longer than the lion, but not ſo tall, and known by the ſtreaks and the vivid beauty of its robe; including alſo the American tiger or cougar; diſtinguiſhable by its ſize, next that of the tiger, its tawny colour, and its ſpots. The third is the panther and the leopard. The fourth is the ounce, not ſo large as any of the former, ſpotted like them, but diſtinguiſhable by the cream coloured ground of its hair, and the great length of its tail, being above the length of its body. The fifth is the catamountain or tiger cat, leſs than the ounce, but differing particularly in having a ſhorter tail, and being ſtreaked down the back like a tiger. The ſixth is the ſhort tailed kind; namely, the lynx, of the ſize of the former, but with a ſhort tail ſtreaked, and the tips of its ears tufted with black. The ſeventh is the ſiaguſh, differing from the lynx in not being mottled like it, in not being ſo large, and in having the ears longer, though tipped

* Buffon.

with black, as before. The eighth is the ſerval, reſembling the lynx in its form, and the ſhortneſs of its tail; ſtreaked alſo like it, but not having the tips of its ears tufted. Laſtly, the cat, wild and tame, with all its varieties; all leſs than any of the former, but, like them, equally inſiduous, rapacious, and cruel.

This whole race may be conſidered as the moſt formidable enemy of mankind; there are others indeed ſtronger, but they are gentle, and never offer injury till injured: there are others more numerous, but they are more feeble, and rather look for ſafety by hiding from man, than oppoſing him. Theſe are the only quadrupeds that make good their ground againſt him; and which may be ſaid to keep ſome kingdoms of the earth in their own poſſeſſion. How many extenſive countries are there in Africa, where the wild beaſts are ſo numerous, that man is deterred from living amongſt them; reluctantly giving up to the lion and the leopard, extenſive tracts, that ſeem formed only for his delight and convenience!

CHAP. II.

ANIMALS OF THE DOG KIND.

THE ſecond claſs of carnivorous quadrupeds may be denominated thoſe of the *dog kind*. This claſs is neither ſo numerous nor ſo powerful as the former, and yet neither ſo treacherous, rapacious, or cowardly. This claſs may be principally diſtinguiſhed by their claws, which have no ſheath, like thoſe of the cat kind, but ſtill continue at the point of each toe, without a capability of being ſtretched forward, or drawn back. The noſe alſo, as well as the jaw, of all the dog kind, is longer than in the cat; the body is, in proportion, more ſtrongly made, and covered with hair inſtead of fur. There are many internal diſtinctions alſo; as in the inteſtines, which are much longer in the dog kind, than in thoſe of the cat; the eye is not formed for night viſion; and the olfactory nerves are diffuſed, in the dog kinds, upon a very extenſive membrane within the ſkull.

If we compare the natural habitudes of this claſs with the former, we ſhall find that the dog kinds are not ſo ſolitary as thoſe of the cat, but love to hunt in company, and encourage each other with their mutual cries. In this manner the dog and the jackal purſue their prey; and the wolf and fox, which are of this kind, though more ſolitary and ſilent among us, yet, in countries where leſs perſecuted, and where they can more fearleſs diſplay their natural inclinations, they are found to keep together in packs, and purſue their game with alternate howlings.

Animals of the dog kind want ſome of the advantages of the cat kind, and yet are poſſeſſed of others in which the latter are deficient. Upon obſerving their claws, it will eaſily be perceived that they cannot, like cats, purſue their prey up the ſides of a tree, and continue the chaſe among the branches; their unmanageable claws cannot ſtick in the bark, and thus ſupport the body up along the trunk, as we ſee the cat very eaſily perform: whenever, therefore, their prey flies up a tree from them, they can only follow it with their eyes, or watch its motions till hunger again brings it to the ground. For this reaſon, the proper prey of the dog kind, are only thoſe animals, that, like themſelves, are unfitted for climbing; the hare, the rabbit, the gazelle, or the roebuck.

As they are, in this reſpect, inferior to the cat, ſo they exceed it in the ſenſe of ſmelling; by which alone they purſue their prey with certainty of ſucceſs, wind it through all its mazes, and tire it down by perſeverance. It often happens, however, in the ſavage ſtate, that their prey is either too much diminiſhed, or too wary to ſerve for a ſufficient ſupply. In this caſe, when driven to an extremity, all the dog kinds can live for ſome time upon fruits and vegetables, which, if they do not pleaſe the appetite, at leaſt ſerve to appeaſe their hunger.

Of all this tribe, the dog has every reaſon to claim the the preference, being the moſt intelligent of all known quadrupeds, and the acknowledged friend of mankind. The dog *, independent of the beauty of his form, his vivacity, force, and ſwiftneſs, is poſſeſſed of all thoſe internal qualifications that can conciliate the affections of man, and

* The reſt of this deſcription of the dog is taken from Mr. Buffon: what I have added, is marked as before.

make the tyrant a protector. A natural ſhare of courage, an angry and ferocious diſpoſition, renders the dog, in its ſavage ſtate, a formidable enemy to all other animals: but theſe readily give way to very different qualities in the domeſtic dog, whoſe only ambition ſeems the deſire to pleaſe; he is ſeen to come crouching along, to lay his force, his courage, and all his uſeful talents, at the feet of his maſter; he waits his orders, to which he pays implicit obedience; he conſults his looks, and a ſingle glance is ſufficient to put him in motion; he is more faithful even than the moſt boaſted among men; he is conſtant in his affections, friendly without intereſt, and grateful for the ſlighteſt favors; much more mindful of benefits received, than injuries offered; he is not driven off by unkindneſs; he ſtill continues humble, ſubmiſſive, and imploring; his only hope to be ſerviceable, his only terror to diſpleaſe; he licks the hand that has been juſt lifted to ſtrike him, and at laſt diſarms reſentment, by ſubmiſſive perſeverance.

More docile than man, more obedient than any other animal, he is not only inſtructed in a ſhort time, but he alſo conforms to the diſpoſitions and the manners of thoſe who command him. He takes his tone from the houſe he inhabits; like the reſt of the domeſtics, he is diſdainful among the great, and churliſh among clowns. Always aſſiduous in ſerving his maſter, and only a friend to his friends, he is indifferent to all the reſt, and declares himſelf openly againſt ſuch as ſeem to be dependent like himſelf. He knows a beggar by his clothes, by his voice, or his geſtures, and forbids his approach. When at night the guard of the houſe is committed to his care, he ſeems proud of the charge; he continues a watchful centinel, he goes his rounds, ſcents ſtrangers at a diſtance, and gives them warning of his being upon duty. If they attempt to break in upon his territories, he becomes more fierce, flies at them, threatens, fights, and either conquers alone, or alarms thoſe who have moſt intereſt in coming to his aſſiſtance; however, when he has conquered, he quietly repoſes upon the ſpoil, and abſtains from what he has deterred others from abuſing; giving thus at once a leſſon of courage, temperance, and fidelity.

From hence we ſee of what importance this animal is to us in a ſtate of Nature. Suppoſing, for a moment, that the

ſpecies had not exiſted, how could man, without the aſſiſtance of the dog, have been able to conquer, tame, and reduce to ſervitude, every other animal? How could he diſcover, chaſe, and deſtroy, thoſe that were noxious to him? In order to be ſecure, and to become maſter of all Animated Nature, it was neceſſary for him to begin by making a friend of a part of them; to attach ſuch of them to himſelf, by kindneſs and careſſes, as ſeem fitteſt for obedience and active purſuit. Thus the firſt art employed by man, was in conciliating the favour of the dog; and the fruits of this art were, the conqueſt and peaceable poſſeſſion of the earth.

The generality of animals have greater agility, greater ſwiftneſs, and more formidable arms, from Nature, than man; their ſenſes, and particularly that of ſmelling, are far more perfect: the having gained, therefore, a new aſſiſtant, particularly one whoſe ſcent is ſo exquiſite as that of the dog, was the gaining a new ſenſe, a new faculty, which before was wanting. The machines and inſtruments which we have imagined for perfecting the reſt of the ſenſes, do not approach to that already prepared by Nature, by which we are enabled to find out every animal, though unſeen, and thus deſtroy the noxious, and uſe the ſerviceable.

The dog, thus uſeful in himſelf, taken into a participation of empire, exerts a degree of ſuperiority over all animals that require human protection. The flock and the herd obey his voice more readily even than that of the ſhepherd or the herdſman; he conduct them, guards them, keeps them from capriciouſly ſeeking danger, and their enemies he conſiders as his own. Nor is he leſs uſeful in the purſuit; when the ſound of the horn, or the voice of the huntſman calls him to the field, he teſtifies his pleaſure by every little art, and purſues with perſeverance, thoſe animals, which, when taken, he muſt not expect to divide. The deſire of hunting is indeed natural to him, as well as to his maſter, ſince war and the chaſe are the only employment of ſavages. All animals that live upon fleſh hunt by nature; the lion and the tiger, whoſe force is ſo great that they are ſure to conquer, hunt alone and without art; the wolf, the fox, and the wild dog, hunt in packs, aſſiſt each other, and partake the ſpoil. But when education has perfected this talent in the domeſtic dog, when he has been taught by man

to repreſs his ardour, to meaſure his motions, and not to exhauſt his force by too ſudden an exertion of it, he then hunts with method, and always with ſucceſs.

"Although the wild dog, ſuch as he was before he came under the protection of mankind, is at preſent utterly unknown, no ſuch animal being now to be found in any part of the world, yet there are many that, from a domeſtic ſtate, have turned ſavage, and entirely purſue the dictates of Nature." In thoſe deſerted and uncultivated countries where the dog is found wild, they ſeem entirely to partake of the diſpoſition of the wolf; they unite in large bodies, and attack the moſt formidable animals of the foreſt, the cougar, the panther, and the biſon. In America, where they were originally brought by the Europeans, and abandoned by their maſters, they have multiplied to ſuch a degree, that they ſpread in packs over the whole country, attack all other animals, and even man himſelf does not paſs without inſult. They are there treated in the ſame manner as all other carnivorous animals, and killed wherever they happen to come: however, they are eaſily tamed: when taken home, and treated with kindneſs and lenity, they quickly become ſubmiſſive and familiar, and continue faithfully attached to their maſters. Different in this from the wolf or the fox, who, though taken never ſo young, are gentle only while cubs, and, as they grow older, give themſelves up to their natural appetites of rapine and cruelty. In ſhort, it may be aſſerted, that the dog is the only animal whoſe fidelity is unſhaken; the only one who knows his maſter, and the friends of the family; the only one who inſtantly diſtinguiſhes a ſtranger; the only one who knows his name, and anſwers to the domeſtic call; the only one who ſeems to underſtand the nature of ſubordination, and ſeeks aſſiſtance; the only one who, when he miſſes his maſter, teſtifies his loſs by his complaints; the only one who, carried to a diſtant place, can find the way home; the only one whoſe natural talents are evident, and whoſe education is always ſucceſsful.

In the ſame manner, as the dog is of the moſt complying diſpoſition, ſo alſo is it the moſt ſuſceptible of change in its form; the varieties of this animal being too many for even the moſt careful deſcriber to mention. The climate, the food, and the education, all make ſtrong impreſſions upon

the animal, and produce alterations in its ſhape, its colour, its hair, its ſize, and in every thing but its nature. The ſame dog, taken from one climate, and brought to another, ſeems to become another animal; but different breeds are as much ſeparated, to all appearance, as any two animals the moſt diſtinct in Nature. Nothing appears to continue conſtant with them, but their internal conformation; different in the figure of the body, in the length of the noſe, in the ſhape of the head, in the length and the direction of the ears and tail, in the colour, the quality, and the quantity of the hair; in ſhort, different in every thing but that make of the parts which ſerve to continue the ſpecies, and keep the animal diſtinct from all others. It is this peculiar conformation, this power of producing an animal that can reproduce, that marks the kind, and approximates forms that at firſt ſight ſeem never made for conjunction.

From this ſingle conſideration, therefore, we may at once pronounce all dogs to be of one kind; but which of them is the original of all the reſt, which of them is the ſavage dog from whence ſuch a variety of deſcendants have come down, is no eaſy matter to determine. We may eaſily, indeed, obſerve, that all thoſe animals which are under the influence of man, are ſubject to great variations. Such as have been ſufficiently independent, ſo as to chooſe their own climate, their own nouriſhment, and to purſue their own habitudes, preſerve the original marks of Nature, without much deviation; and it is probable, that the firſt of theſe is even at this day very well repreſented in their deſcendants. But ſuch as man has ſubdued, tranſported from one climate to another, controlled in their manner of living, and their food, have moſt probably been changed alſo in their forms; particularly the dog has felt theſe alterations more ſtrongly than any other of the domeſtic kinds; for living more like man, he may be thus ſaid to live more irregularly alſo, and, conſequently, muſt have felt all thoſe changes that ſuch variety would naturally produce. Some other cauſes alſo may be aſſigned for this variety in the ſpecies of the dog: as he is perpetually under the eye of his maſter, when accident has produced any ſingularity in its productions, man uſes all his art to continue this peculiarity unchanged; either by breeding from ſuch as had thoſe ſingularities, or by deſtroying ſuch

as happened to want them; beſides, as the dog produces much more frequently than ſome other animals; and lives a ſhorter time, ſo the chance for its varieties will be offered in greater proportion.

But which is the original animal, and which the artificial or accidental variety, is a queſtion which, as was ſaid, is not eaſily reſolved. If the internal ſtructure of dogs of different ſorts be compared with each other, it will be found, except in point of ſize, that in this reſpect they are exactly the ſame. This, therefore, affords no criterion. If other animals be compared with the dog internally, the wolf and the fox will be found to have the moſt perfect reſemblance; it is probable, therefore, that the dog, which moſt nearly reſembles the wolf or the fox externally, is the original animal of its kind: for it is natural to ſuppoſe, that as the dog moſt nearly reſembles them internally, ſo he may be near them in external reſemblance alſo, except where art or accident has altered his form. This being ſuppoſed, if we look among the number of varieties to be found in the dog, we ſhall not find one ſo like the wolf or the fox, as that which is called the *ſhepherd's dog*. This is that dog with long coarſe hair on all parts except the noſe, pricked ears, and a long noſe, which is common enough among us, and receives his name from being principally uſed in guarding and attending on ſheep. This ſeems to be the primitive animal of his kind; and we ſhall be the more confirmed in this opinion, if we attend to the different characters which climate produces in this animal, and the different races of dogs which are propagated in every country: and, in the firſt place, if we examine thoſe countries which are ſtill ſavage, or but half civilized, where it is moſt probable the dog, like his maſter, has received but few impreſſions from Art, we ſhall find the ſhepherd's dog, or one very like him, ſtill prevailing amongſt them. The dogs that have run wild in America, and in Congo, approach this form. The dog of Siberia, Lapland, and Iceland, of the Cape of Good Hope, of Madagaſcar, Madura, Calicut, and Malabar, have all a long noſe, pricked ears, and reſemble the ſhepherd's dog very nearly. In Guinea, the dog very ſpeedily takes this form; for, at the ſecond or third generation, the animal forgets to bark, his ears and his tail become pointed, and his hair drops off, while a coarſer, thinner

kind comes in the place. This ſort of dog is alſo to be found in the temperate climates in great abundance, particularly among thoſe who, preferring uſefulneſs to beauty, employ an animal that requires very little inſtruction to be ſerviceable. Notwithſtanding this creature's deformity, his melancholy and ſavage air, he is ſuperior to all the reſt of his kind in inſtinct; and without any teaching, naturally takes to tending flocks, with an aſſiduity and vigilance that at once aſtoniſhes, and yet relieves his maſter.

In more poliſhed and civilized places, the dog ſeems to partake of the univerſal refinement; and, like the men, becomes more beautiful, more majeſtic, and more capable of aſſuming an education foreign to his nature. The dogs of Albany, of Greece, of Denmark, and of Ireland, are larger and ſtronger than thoſe of any other kind. In France, Germany, Spain, and Italy, the dogs are of various kinds, like the men; and this variety ſeems formed by croſſing the breed of ſuch as are imported from various climates.

The ſhepherd's dog may, therefore, be conſidered as the primitive ſtock from whence theſe varieties are all derived. He makes the ſtem of that genealogical tree which has been branched out into every part of the world. This animal ſtill continues pretty nearly in its original ſtate among the poor in temperate climates; being tranſported into the colder regions, he grows leſs and more ugly among the Laplanders; but becomes more perfect in Iceland, Ruſſia, and Siberia, where the climate is leſs rigorous, and the people more civilized. Whatever differences there may be among the dogs of theſe countries, they are not very conſiderable, as they have all ſtraight ears, long and thick hair, a ſavage aſpect, and do not bark either ſo often or ſo loud as dogs of the more cultivated kind.

The ſhepherd's dog, tranſported into the temperate climates, and among people entirely civilized, ſuch as England, France, and Germany, will be diveſted of his ſavage air, his pricked ears, his rough, long, and thick hair, and from the ſingle influence of climate and food alone, will become either a matin, a maſtiff, or a hound. Theſe three ſeem the immediate deſcendants of the former; and from them the other varieties are produced.

The HOUND, the HARRIER, and the BEAGLE, ſeem all of the ſame kind; for although the bitch is covered but by one of them, yet in her litters are found puppies reſembling all the three. This animal, tranſported into Spain or Barbary, where the hair of all quadrupeds becomes ſoft and long, will be there converted into the land-ſpaniel, and the water-ſpaniel, and theſe of different ſizes.

The GREY MATIN HOUND, which is in the ſecond branch, tranſported to the north, becomes the great Daniſh dog; and this, ſent into the ſouth, becomes the grey-hound, of different ſizes. The ſame, tranſported into Ireland, the Ukraine, Tartary, Epirus, and Albania, becomes the great wolf dog, known by the name of the Iriſh wolf dog.

MASTIFF, which is the third branch, and chiefly a native of England, when tranſported into Denmark, becomes the little Daniſh dog; and this little Daniſh dog, ſent into the tropical and warm climates, becomes the animal called the TURKISH DOG, without hair. All theſe races, with their varieties, are produced by the influence of climate, joined to the different food, education, and ſhelter, which they have received among mankind. All other kinds may be conſidered as mongrel races, produced by the concurrence of theſe, and found rather by croſſing the breed than by attending to the individual. "As theſe are extremely numerous, and very different in different countries, it would be almoſt endleſs to mention the whole; beſides, nothing but experience can aſcertain the reality of theſe conjectures although they have ſo much the appearance of probability; and until that gives more certain information, we muſt be excuſed from entering more minutely into the ſubject.

"With regard to the dogs of our country in particular, the varieties are very great, and the number every day increaſing. And this muſt happen in a country ſo open by commerce to all others, and where wealth is apt to produce capricious predilection. Here the ugliest and the moſt uſeleſs of their kinds will be entertained merely for their ſingularity; and, being imported only to be looked at, they will loſe even that ſmall degree of ſagacity which they poſſeſſed in their natural climates. From this importation of foreign uſeleſs dogs, our own native breed is, I am informed, greatly degenerated, and the varieties now to be

found in England much more numerous than they were in the times of Queen Elizabeth, when Doctor Caius attempted their natural history. Some of these he mentions are no longer to be found among us, although many have since been introduced, by no means so serviceable as those which have been suffered to decay.

"He divides the whole race into three kinds. The first is, the generous kind, which consists of the terrier, the harier, and the blood-hound; the gaze-hound, the greyhound, the leymmer, and the tumbler; all these are used for hunting. Then the spaniel, the setter, and the water-spaniel, or finder, were used for fowling; and the spaniel gentle, or lap-dog, for amusement. The second is the farm kind; consisting of the shepherd's dog and the mastiff. And the third is the mongrel kind; consisting of the wappe, the turnspit and the dancer. To these varieties we may add at present, the bull-dog, the Dutch mastiff, the harlequin, the pointer, and the Dane, with a variety of lap-dogs, which, as they are perfectly useless, may be considered as unworthy of a name.

"The Terrier is a small kind of hound*, with rough hair, made use of to force the fox or the badger out of their holes; or rather to give notice, by their barking, in what part of their kennel the fox or badger resides, when the sportsmen intend to dig them out.

"The Harier, as well as the beagle and the fox-hound are used for hunting; of all other animals, they have the quickest and most distinguishing sense of smelling. The properly breeding, matching, and training these, make up the business of many men's lives.

"The Blood-hound was a dog of great use, and in high esteem among our ancestors. Its employ was to recover any game that had escaped from the hunter, or had been killed, and stolen out of the forest. But it was still more employed in hunting thieves and robbers by their footsteps. At that time, when the country was less peopled than at present, and when, consequently, the footsteps of one man were less crossed and obliterated by those of others, this animal was very serviceable in such pursuits; but at present, when the country is every where peopled, this variety is quite worn out; probably because it was found of less service than formerly.

* British Zoology.

"The gaze-hound hunted, like our grey-hounds, by the eye and not by the ſcent. It chaſed indifferently the fox, hare, or buck. It would ſelect from the herd the fatteſt and faireſt deer, purſue it by the eye, and if loſt recover it again with amazing ſagacity. This ſpecies is now loſt or unknown among us.

"The Grey-hound is very well known at preſent, and was formerly held in ſuch eſtimation, that it was the peculiar companion of a gentleman; who, in the times of ſemi-barbariſm, was known by his horſe, his hawk, and his grey-hound. Perſons under a certain rank of life are forbidden, by ſome late game-laws, from keeping this animal; wherefore, to diſguiſe it the better, they cut off its tail.

"The Leymmer is a ſpecies now unknown to us. It hunted both by ſcent and ſight, and was led in a leyme or thong, from whence it received its name.

"The Tumbler was leſs than the hound, more ſcraggy, and had pricked ears; ſo that by the deſcription it ſeems to anſwer to the modern lurcher. This took its prey by mere cunning, depending neither on the goodneſs of its noſe nor its ſwiftneſs. If it came into a warren, it neither barked nor ran on the rabbits; but, ſeemingly inattentive, approached ſufficiently near till it came within reach, and then ſeized them by a ſudden ſpring.

"The Land Spaniel, which probably had its name from Spain, where it might have acquired the ſoftneſs of its hair, is well known at preſent. There are two varieties of this kind; namely, the Slater, uſed in hawking to ſpring the game; and the Setter, that crouches down when it ſcents the birds, till the net be drawn over them. I have read ſomewhere that the famous poet, Lord Surry, was the firſt who taught dogs to ſet; it being an amuſement to this day only known in England.

"The Water Spaniel was another ſpecies uſed in fowling. This ſeems to be the moſt docile of all the dog kind; and this docility is particularly owning to his natural attachment to man. Many other kinds will not bear correction; but this patient creature, though very fierce to ſtrangers, ſeems unalterable in his affections; and blows and ill uſage ſeem only to increaſe his regard.

"The Lap-dog, at the time of Doctor Caius, was of Maltese breed; at present it comes from different countries; in general, the more awkward or extraordinary these are, the more they are prized.

"The Shepherd's dog has been already mentioned, and as for the mastiff he is too common to require a description. Doctor Caius tells us, that three of these were reckoned a match for a bear, and four for a lion. However, we are told that three of them overcame a lion in the time of King James the first; two of them being disabled in the combat, the third obliged the lion to seek for safety by flight.

"As to the last division, namely, of the Wappe, the Turnspit, and the Dancer, these were mongrels, of no certain shape, and made use of only to alarm the family, or, being taught a variety of tricks, were carried about as a shew.

"With regard to those of later importation, the Bull-dog, as Mr. Buffon supposes, is a breed between the small Dane and the English mastiff. The large Dane is the tallest dog that is generally bred in England It is somewhat between a mastiff and a grey-hound in shape, being more slender than the one and much stronger than the other. They are chiefly used rather for shew than service, being neither good in the yard nor the field. The highest are most esteemed; and they generally cut off their ears to improve their figure, as some absurdly suppose. The harlequin is not much unlike the small Dane, being an useless animal, somewhat between an Italian grey-hound and a Dutch mastiff. To these several others might be added, such as the pug-dog, the black breed, and the pointer; but, in fact, the varieties are so numerous as to fatigue even the most ardent curiosity."

Of these of the foreign kinds, I shall mention only three, which are more remarkable than any of the rest. The Lion Dog greatly resembles that animal, in miniature, from whence it takes the name. The hair of the fore-part of its body is extremely long, while that of the hinder part is as short. The nose is short, the tail long, and tufted at the point, so that in all these particulars it is entirely like the lion. However, it differs very much from that fierce animal in nature and disposition, being one of the smallest animals

of its kind, extremely feeble, timid, and inactive. It comes originally from Malta, where it is found ſo ſmall, that women carry it about in their ſleeves.

That animal falſely called the *Turkiſh dog*, differs greatly from the reſt of the kind, in being entirely without hair.—The ſkin, which is perfectly bare, is of a fleſh-colour, with brown ſpots; and their figure, at firſt view, is rather diſguſting. Theſe ſeem to be of the ſmall Daniſh breed, brought into a warm climate, and there, by a ſucceſſion of generations, diveſted of their hair. For this reaſon, they are extremely chilly, and unable to endure the cold of our climate; and even in the midſt of ſummer, they continue to ſhiver as we ſee men in a froſty day. Their ſpots are brown, as was ſaid, well-marked, and eaſily diſtinguiſhable in ſummer, but in the cold of winter they entirely diſappear. They are called the Turkiſh breed, although brought from a much warmer climate; for ſome of them have been known to come from the warmeſt parts of Africa and the Eaſt Indies.

"The laſt variety, and the moſt wonderful of all that I ſhall mention, is the Great Iriſh Wolf Dog, that may be conſidered as the firſt of the canine ſpecies. This animal, which is very rare, even in the only country in the world where it is to be found, is rather kept for ſhew than uſe, there being neither wolves nor any other formidable beaſts of prey in Ireland, that ſeem to require ſo powerful an antagoniſt. The wolf dog is therefore bred up in the houſes of the great, or ſuch gentlemen as chooſe to keep him as a curioſity, being neither good for hunting the hare, the fox, or the ſtag, and equally unſerviceable as a houſe-dog. Nevertheleſs he is extremely beautiful and majeſtic to appearance, being the greateſt of the dog kind to be ſeen in the world. The largeſt of thoſe I have ſeen, and I have ſeen above a dozen, was about four feet high, or as tall as a calf of a year old. He was made extremely like a greyhound, but rather more robuſt, and inclining to the figure of the French matin, or the great Dane. His eye was mild, his colour white, and his nature ſeemed heavy and phlegmatic. This I aſcribed to his having been bred up to a ſize beyond his nature; for we ſee in man, and all other animals, that ſuch as are overgrown are neither ſo vigorous nor alert as

thoſe of more moderate ſtature. The greateſt pains have been taken with theſe to enlarge the breed, both by food and matching. This end was effectually obtained, indeed, for the ſize was enormous; but, as it ſeemed to me, at the expence of the animal's fierceneſs, vigilance, and ſagacity.—However, I was informed otherwiſe; the gentlemen who bred them aſſuring me that a maſtiff would be nothing when oppoſed to one of them, who generally ſeized their antagoniſt by the back: he added, that they would worry the ſtrongeſt bull-dogs, in a few minutes, to death. But this ſtrength did not appear either in their figure or their inclinations; they ſeemed rather more timid than the ordinary race of dogs; and their ſkin was much thinner, and conſequently leſs fitted for combat. Whether, with theſe diſadvantages they were capable, as I was told, of ſingly coping with bears, others may determine; however, they have but few opportunities, in their own country, of exerting their ſtrength, as all wild carnivorous animals there are only of the vermin kind. Mr. Buffon ſeems to be of opinion that theſe are the true Moloſſian dogs of the ancients; he gives no reaſon for this opinion; and, I am apt to think, it ill-grounded. Not to trouble the reader with a tedious critical diſquiſition, which I have all along avoided, it will be ſufficient to obſerve, that Nemeſianus, in giving directions for the choice of a bitch, adviſes to have one of Spartan or Moloſſian breed; and, among ſeveral other perfections, he ſays, that the ears ſhould be dependent, and fluctuate as ſhe runs*. This, however, is by no means the caſe with the Iriſh wolf-dog, whoſe ears reſemble thoſe of the greyhound, and are far from fluctuating with the animal's motions. But of whatever kinds theſe dogs may be, whether known among the ancients, or whether produced by a later mixture, they are now almoſt quite worn away, and are very rarely to be met with even in Ireland. If carried to other countries, they ſoon degenerate; and even at home, unleſs great care be taken, they quickly alter. They were once employed in clearing the iſland of wolves, which infeſted it in great

* Elige tunc curſu facilem, facilemque recurſu,
In Lacedæmonio natam ſeu rure Moloſſo—
Renibus ampla ſatis validis, diductaque coxas
Cuique nimis molles fluitent in curſibus aures. NEMESIAN.

plenty; but these being destroyed, the dogs also are wearing away, as if Nature meant to blot out the species, when they had no longer any services to perform.

"In this manner several kinds of animals fade from the face of Nature, that were once well known, but are now seen no longer. The enormous elk of the same kingdom, that, by its horns, could not have been less than eleven feet high, the wolf, and even the wolf-dog, are extinct, or only continued in such a manner as to prove their former plenty and existence. From hence, it is probable, that many of the nobler kinds of dogs, of which the ancients have given us such beautiful descriptions, are now utterly unknown; since among the whole breed we have not one that will venture to engage the lion or the tiger in single combat.—The English bull-dog is perhaps the bravest of the kind; but what are his most boasted exploits to those mentioned of the Epirotic dogs by Pliny, or the Indian dogs by Ælian.—The latter gives us a description of a combat between a dog and a lion, which I will take leave to translate.

"When Alexander was pursuing his conquests in India, one of the principal men of that country was desirous of shewing him the value of the dogs which his country produced. Bringing his dog into the king's presence, he ordered a stag to be let loose before him, which the dog despised as an unworthy enemy, remained quite regardless of the animal, and never once stirred from his place. His master then ordered a wild boar to be set out; but the dog thought even this a despicable foe, and remained calm and regardless as before. He was next tried with a bear; but still despising his enemy, he only waited for an object more worthy of his courage and his force. At last they brought forth a tremendous lion, and then the dog acknowledged his antagonist, and prepared for combat. He instantly discovered a degree of ungovernable ardour; and, flying at the lion with fury, seized him by the throat, and totally disabled him from resistance. Upon this, the Indian, who was desirous of surprising the king, and knowing the constancy and bravery of his dog, ordered his tail to be cut off; which was easily performed as the bold animal was employed in holding the lion. He next ordered one of his legs to be broken; which, however, did not in the least abate the dog's ardour

but he ſtill kept his hold as before. Another leg was then broken; but the dog, as if he had ſuffered no pain, only preſſed the lion ſtill the more. In this cruel manner, all his legs were cut off, without abating his courage; and at laſt, when even his head was ſeparated from his body, the jaws ſeemed to keep their former hold. A ſight ſo cruel did not fail to affect the king with very ſtrong emotions, at once pitying the dog's fate, and admiring his fortitude. Upon which the Indian, ſeeing him thus moved, preſented him with four dogs of the ſame kind, which, in ſome meaſure, alleviated his uneaſineſs for the loſs of the former.

"The breed of dogs, however, in that country, is at preſent very much inferior to what this ſtory ſeems to imply; ſince, in many places, inſtead of dogs, they have animals of the cat kind for hunting. In other places, alſo, this admirable and faithful animal, inſtead of being applied to his natural uſes, is only kept to be eaten. All over China, there are dog-butchers, and ſhambles appointed for ſelling their fleſh. In Canton, particularly, there is a ſtreet appointed for that purpoſe; and, what is very extraordinary, wherever a dog-butcher appears, all the dogs of the place are ſure to be in full cry after him; they know their enemy, and perſecute him as far as they are able." Along the coaſts of Guinea, their fleſh is eſteemed a delicacy by the Negroes; and they will give one of their cows for a dog. But, among this barbarous and brutal people, ſcarce any thing that has life comes amiſs; and they may well take up with a dog, ſince they conſider toads, lizards, and even the fleſh of the tiger itſelf, as a dainty. It may, perhaps, happen that the fleſh of this animal, which is ſo indifferent in the temperate climates, may aſſume a better quality in thoſe which are more warm; but it is more than probable that the diverſity is rather in man than in the fleſh of the dog; ſince in the cold countries the fleſh is eaten with equal appetite by the ſavages; and they have their dog-feaſts in the ſame manner as we have ours for veniſon.

In our climate, the wild animals that moſt approach the dog are the wolf and the fox; theſe, in their internal conformation, greatly reſemble each other, and yet in their natures are very diſtinct. The ancients aſſerted that they bred together; and I am aſſured, by credible perſons, that there

are many animals in this country bred between a dog and a fox. However, all the endeavours of Mr. Buffon to make them engender, as he aſſures us, were ineffectual. For this purpoſe, he bred up a young wolf, taken in the woods, at two months old, with a matin dog of the ſame age. They were ſhut up together, without any other, in a large yard, where they had a ſhelter for retiring. They neither of them knew any other individual of their kind, nor even any other man but he who had the charge of feeding them. In this manner they were kept for three years; ſtill with the ſame attention, and without conſtraining or tying them up. During the firſt year the young animals played with each other continually, and ſeemed to love each other very much. In the ſecond year, they began to diſpute about their victuals, although they were given more than they could uſe. The quarrel always began on the wolf's ſide. They were brought their food, which conſiſted of fleſh and bones, upon a large wooden platter, which was laid on the ground. Juſt as it was put down, the wolf, inſtead of falling to the meat, began by driving off the dog; and took the platter in its teeth ſo expertly, that it let nothing of what it contained fall upon the ground, and in this manner carried it off; but as the wolf could not entirely eſcape, it was frequently ſeen to run with the platter round the yard five or ſix times, ſtill carrying it in a poſition that none of its contents could fall. In this manner it would continue running, only now and then ſtopping to take breath, until the dog coming up, the wolf would leave the victuals to attack him. The dog, however, was the ſtronger of the two, but as it was more gentle, in order to ſecure him from the wolf's attack, he had a collar put round his neck. In the third year, the quarrels of theſe ill-paired aſſociates were more vehement, and their combats more frequent; the wolf, therefore, had a collar put about its neck, as the well as the dog, who began to be more fierce and unmerciful. During the two firſt years, neither ſeemed to teſtify the leaſt tendency towards engendering; and it was not till the end of the third, that the wolf, which was the female, ſhewed the natural deſire, but without abating either in its fierceneſs or obſtinacy. This appetite rather increaſed than repreſſed their mutual animoſity; they became every day more untractable and ferocious,

and nothing was heard between them but the ſounds of rage and reſentment. They both, in leſs than three weeks, became remarkably lean, without ever approaching each other, but to combat. At length, their quarrels became ſo deſperate, that the dog killed the wolf, who was become more weak and feeble; and he was ſoon after himſelf obliged to be killed, for, upon being ſet at liberty, he inſtantly flew upon every animal he met, fowls, dogs, and even men themſelves, not eſcaping his ſavage fury.

The ſame experiment was tried upon foxes, taken young, but with no better ſucceſs, they were never found to engender with dogs; and our learned naturaliſt ſeems to be of opinion that their natures are too oppoſite ever to provoke mutual deſire. One thing however, muſt be remarked, that the animals on which he tried his experiments, were rather too old when taken, and had partly acquired their natural ſavage appetites, before they came into his poſſeſſion. The wolf, as he acknowledges, was two or three months old before it was caught, and the foxes were taken in traps. It may, therefore, be eaſily ſuppoſed, that nothing could ever after thoroughly tame thoſe creatures that had been ſuckled in the wild ſtate, and had caught all the habitudes of the dam. I have ſeen theſe animals, when taken earlier in the woods, become very tame; and, indeed, they rather were diſpleaſing by being too familiar than too ſhy. It were to be wiſhed that the experiment were tried upon ſuch as theſe; and it is more than probable that it would produce the deſired ſucceſs. Nevertheleſs, theſe experiments are ſufficient to prove that neither the wolf nor the fox are of the ſame nature with the dog, but each of a ſpecies perfectly diſtinct, and their joint produce moſt probably unfruitful.

The dog, when firſt whelped, is not a completely finiſhed animal. In this kind, as in all the reſt which bring forth many at a time, the young are not ſo perfect as in thoſe which bring forth one or two. They are always produced with the eyes cloſed, the lids being held together, not by ſticking, but by a kind of thin membrane, which is torn as ſoon as the upper eye-lid becomes ſtrong enough to raiſe it from the under. In general, their eyes are not opened till ten or twelve days old. During that time, the bones of the ſkull are not completed, the body is puffed up, the noſe is

ſhort, and the whole form but ill-ſketched out. In leſs than a month the puppy begins to uſe all its ſenſes; and from thence makes haſty advances to its perfection. At the fourth month, the dog loſes ſome of his teeth, as in other animals, and theſe are renewed by ſuch as never fall. The number of theſe amount to forty-two, which is twelve more than is found in any of the cat kind, which are known never to have above thirty. The teeth of the dog being his great and only weapon, are formed in a manner much more ſerviceable than thoſe of the former; and there is ſcarce any quadruped that has a greater facility in rending, cutting, or chewing its food. He cuts with his inciſors, or fore-teeth, he holds with his four great canine teeth, and he chews his meat with his grinders; theſe are fourteen in number, and ſo placed, that, when the jaws are ſhut, there remains a diſtance between them, ſo that the dog, by opening his mouth ever ſo wide, does not loſe the power of his jaws. But it is otherwiſe in the cat kind, whoſe inciſors or cutting-teeth are very ſmall, and whoſe grinding-teeth when brought together, touch more cloſely than thoſe of the dog, and, conſequently, have leſs power. Thus, for inſtance, I can ſqueeze any thing more forcibly between my thumb and fore-finger, where the diſtance is greater, than between any other two fingers, whoſe diſtance from each other is leſs.

This animal is capable of reproducing at the age of twelve months*, goes nine weeks with young, and lives to about the age of twelve. Few quadrupeds are leſs delicate in their food; and yet there are many kinds of birds which the dog will not venture to touch. He is even known, although in a ſavage ſtate, to abſtain from injuring ſome, which one might ſuppoſe he had every reaſon to oppoſe. The dogs and the vultures which live wild about Grand Cairo in Egypt (for the Mahometan law has expelled this uſeful animal from human ſociety), continue together in a very ſociable

* To this deſcription I will beg leave to add a few particulars from Linnæus, as I find them in the original. "Vomitua gramina purgatur: cacat ſupra lapidem. Album græcum antiſepticum ſummum. Mingit ad latus (this, however, not till the animal is nine months old) cum hoſpite ſæpe centies. Odorat anum alterius. Procis rixantibus crudelis. Menſtruans coitum variis. Mordet illa illos. Cohæret copula junctus."

and friendly manner*. As they are both uſeful in devouring ſuch carcaſes as might otherwiſe putrefy, and thus infect the air, the inhabitants ſupply them with proviſions every day, in order to keep them near the city. Upon theſe occaſions, the quadrupeds and birds are often ſeen together, tearing the ſame piece of fleſh, without the leaſt enmity; on the contrary, they are known to live together with a kind of affection, and bring up their young in the ſame neſt.

Although the dog is a voracious animal, yet he can bear hunger for a very long time. We have an inſtance, in the Memoirs of the Academy of Sciences, of this kind, in which a bitch that had been forgotten in a country-houſe, lived forty days, without any other nouriſhment than the wool of a quilt which ſhe had torn in pieces. It ſhould ſeem that water is more neceſſary to the dog than food; he drinks often, though not abundantly; and it is commonly believed, that when abridged in water, he runs mad. This dreadful malady, the conſequences of which are ſo well known, is the greateſt inconvenience that reſults from the keeping this faithful domeſtic. But it is a diſorder by no means ſo frequent as the terrors of the timorous would ſuppoſe; the dog has been often accuſed of madneſs, without a fair trial; and ſome perſons have been ſuppoſed to receive their deaths from his bite, when either their own ill-grounded fears, or their natural diſorders were the true cauſe.

THE WOLF.

The dog and the wolf are ſo very much alike internally, that the moſt expert anatomiſts can ſcarce perceive the difference; and it may be aſſerted alſo, that, externally, ſome dogs more nearly reſemble the wolf than they do each other. It was this ſtrong ſimilitude that firſt led ſome naturaliſts to conſider them as the ſame animal, and to look upon the wolf as the dog in its ſtate of ſavage freedom: however, this opinion is entertained no longer; the natural antipathy thoſe two animals bear to each other; the longer time which the wolf goes with young than the dog, the one going over a hundred days, and the other not quite ſixty; the longer period of life in the former than the latter, the wolf living twenty years, the dog not fifteen; all ſufficiently point out

* Haſſelquiſt Her. Palæſtin. p. 232.

a diſtinction, and draw a line that muſt for ever keep them aſunder.

The wolf, from the tip of the noſe to the inſertion of the tail, is about three feet ſeven inches long, and about two feet five inches high; which ſhews him to be larger than our great breed of maſtiffs, which are ſeldom found to be above three feet by two. His colour is a mixture of black, brown, and grey, extremely rough and hard, but mixed towards the roots with a kind of aſh-coloured fur. In comparing him to any of our well-known breed of dogs, the great Dane or mongrel greyhound, for inſtance, he will appear to have the legs ſhorter, the head larger, the muzzle thicker, the eyes ſmaller, and more ſeparated from each other, and the ears ſhorter and ſtraighter. He appears in every reſpect ſtronger than the dog; and the length of his hair contributes ſtill more to his robuſt appearance. The feature which principally diſtinguiſhes the viſage of the wolf from that of the dog is the eye, which opens ſlantingly upwards in the ſame direction with the noſe; whereas, in the dog, it opens more at right angles with the noſe, as in man. The tail, alſo, in this animal, is long and buſhy; and he carries it rather more between his hind legs than the dog is ſeen to do.—The colour of the eye-balls in the wolf are of a fiery green, and give his viſage a fierce and formidable air, which his natural diſpoſition does by no means contradict *.

The wolf is one of thoſe animals whoſe appetite for animal-food is the moſt vehement; and whoſe means of ſatisfying this appetite are the moſt various. Nature has furniſhed him with ſtrength, cunning, agility, and all thoſe requiſites which fit an animal for purſuing, overtaking, and conquering its prey; and yet, with all theſe, the wolf moſt frequently dies of hunger, for he is the declared enemy of man. Being long proſcribed, and a reward offered for his head, he is obliged to fly from human habitations, and to live in the foreſt, where the few wild animals to be found there eſcape him either by their ſwiftneſs or their art; or are ſupplied in too ſmall a proportion to ſatisfy his rapacity.

* The reſt of th's hiſtory of the wolf is taken from Mr. Buffon; and I look upon it as a complete model for natural hiſtory. If I add or differ, I mark it as uſual.

He is naturally dull and cowardly; but frequently disappointed, and as often reduced to the verge of famine, he becomes ingenious from want, and courageous from necessity. When pressed with hunger, he braves danger, and comes to attack those animals which are under the protection of man, particularly such as he can readily carry away, lambs, sheep, or even dogs themselves, for all animal-food becomes then equally agreeable. When this excursion has succeeded, he often returns to the charge, until having been wounded, or hard pressed by the dogs or the shepherds, he hides himself by day in the thickest coverts, and only ventures out at night; he then sallies forth over the country, keeps peering round the villages, carries off such animals as are not under protection, attacks the sheep-folds, scratches up and undermines the thresholds of doors where they are housed, enters furious, and destroys all before he begins to fix upon and carry off his prey. When these sallies do not succeed, he then returns to the thickest part of the forest, content to pursue those smaller animals, which, even when taken, afford him but a scanty supply. He there goes regularly to work, follows by the scent, opens to the view, still keeps following, hopeless himself of overtaking the prey, but expecting that some other wolf will come into his assistance, and then content to share the spoil. At last, when his necessities are very urgent, he boldly faces certain destruction; he attacks women and children, and sometimes ventures even to fall upon men, becomes furious by his continual agitations, and ends his life in madness.

The wolf, as well externally as internally, so nearly resembles the dog, that he seems modelled upon the same plan; and yet he only offers the reverse of the medal. If his form be like, his nature is so different, that he only preserves the ill qualities of the dog, without any of his good ones. Indeed, they are so different in their dispositions, that no two animals can have a more perfect antipathy to each other.—A young dog shudders at the sight of a wolf; he even shuns his scent, which, though unknown, is so repugnant to his nature, that he comes trembling to take protection near his master. A dog who is stronger, and who knows his strength, bristles up at the sight, testifies his animosity, attacks him with courage, endeavours to put him to flight, and

does all in his power to rid himſelf of a preſence that is hateful to him. They never meet without either flying or fighting; fighting for life and death, and without mercy on either ſide. If the wolf is the ſtronger, he tears and devours his prey: the dog, on the contrary, is more generous, and contents himſelf with his victory; he does not ſeem to think that *the body of a dead enemy ſmells well;* he leaves him where he falls, to ſerve as food for birds of prey, or for other wolves, ſince they devour each other; and when one wolf happens to be deſperately wounded, the reſt track him by his blood, and are ſure to ſhew him no mercy.

The dog, even in his ſavage ſtate, is not cruel; he is eaſily tamed, and continues firmly attached to his maſter. The wolf, when taken young, becomes tame, but never has an attachment: Nature is ſtronger in him than education; he reſumes, with age, his natural diſpoſitions, and returns, as ſoon as he can, to the woods from whence he was taken.—Dogs, even of the dulleſt kinds, ſeek the company of other animals; they are naturally diſpoſed to follow and accompany other creatures beſides themſelves; and even by inſtinct, without any education, take to the care of flocks and herds. The wolf, on the contrary, is the enemy of all ſociety; he does not even keep much company with thoſe of his kind. When they are ſeen in packs together, it is not to be conſidered as a peaceful ſociety, but a combination for war; they teſtify their hoſtile intentions by their loud howlings, and, by their fierceneſs, diſcover a project for attacking ſome great animal, ſuch as a ſtag or a bull, or to deſtroy ſome more redoubtable watch-dog. The inſtant their military expedition is completed their ſociety is at an end; they then part, and each returns in ſilence to his ſolitary retreat. There is not even any ſtrong attachments between the male and female; they ſeek each other only once a year, and remain but a few days together: they always couple in winter; at which time ſeveral males are ſeen following one female, and this aſſociation is ſtill more bloody than the former: they diſpute moſt cruelly, growl, bark, fight, and tear each other; and it ſometimes happens that the majority kill the wolf which has been chiefly preferred by the female. It is uſual for the ſhe wolf to fly from them all with him ſhe

has chofen; and watches this opportunity when the reft are afleep.

The feafon for coupling does not continue above twelve or fifteen days; and ufually commences among the oldeft, thofe which are young being later in their defires. The males have no fixed time for engendering, they pafs from one female to the other, beginning at the end of December, and ending at the latter end of February. The time of pregnancy is about three months and a half; and the young wolves are found from the latter end of April to the beginning of July. The long continuance of the wolf's pregnancy is fufficient to make a diftinction between it and the dog, did not alfo the fiery fiercenefs of the eyes, the howl inftead of barking, and the greater duration of its life, leave no doubt of its being an animal of its own particular fpecies. In other refpects, however, they are entirely alike; the wolf couples exactly like the dog, the parts are formed in the fame manner, and their feparation hindered by the fame caufe. When the fhe-wolves are near their time of bringing forth, they feek fome very tufted fpot, in the thickeft part of the foreft; in the middle of this they make a fmall opening, cutting away the thorns and briars with their teeth, and afterwards carry thither a great quantity of mofs, which they form into a bed for their young ones. They generally bring forth five or fix, and fometimes even to nine at a litter. The cubs are brought forth, like thofe of the bitch, with the eyes clofed; the dam fuckles them for fome weeks, and teaches them betimes to eat flefh, which fhe prepares for them, by chewing it firft herfelf. Some time after fhe brings them ftronger food, hares, partridges, and birds yet alive. The young wolves begin by playing with them, and end by killing them. The dam then ftrips them of their feathers, tears them in pieces, and gives to each of them a fhare. They do not leave the den where they have been littered, till they are fix weeks, or two months old. They then follow the old one, who leads them to drink to the trunk of fome old tree where the water has fettled, or at fome pool in the neighbourhood. If fhe apprehends any danger, fhe inftantly conceals them in the firft convenient place, or brings them back to their former retreat. In this manner they follow her for fome months; when they are

attacked, ſhe defends them with all her ſtrength, and more than uſual ferocity. Although, at other times, more timorous than the male, at that ſeaſon ſhe becomes bold and fearleſs; willing perhaps to teach the young ones future courage by her own example. It is not till they are about ten or twelve months old, and until they have ſhed their firſt teeth, and completed the new, that ſhe thinks them in a capacity to ſhift for themſelves. Then when they have acquired arms from Nature, and have learned induſtry and courage from her example, ſhe declines all future care of them, being again engaged in bringing up a new progeny.

The males and females are in a capacity to engender when two years old. It is probable that the females of this ſpecies, as well as of moſt others, are ſooner completed than the males; but this is certain, that they never deſire to copulate until their ſecond winter; from whence we may ſuppoſe that they live fifteen or twenty years; for allowing three years for their complete growth, this multiplied by ſeven, gives them a life of twenty-one; moſt animals, as has been obſerved, living about ſeven times the number of years which they take to come to perfection. Of this, however, there is as yet no certainty, no more than of what huntſmen aſſert, that in all the litters there are more males than females. From them alſo we learn, that there are ſome of the males who attach themſelves to the female, who accompany her during her geſtation, until the time of bringing forth, when ſhe hides the place of her retreat from the male, leſt he ſhould devour her cubs. But after this, when they are brought forth, that he then takes the ſame care of them as the female, carries them proviſions, and, if the dam ſhould happen to be killed, rears them up in her ſtead.

The wolf grows grey as he grows old, and his teeth wear, like thoſe of moſt other animals, by uſing. He ſleeps when his belly is full, or when he is fatigued, rather by day than night; and always, like the dog, is very eaſily waked. He drinks frequently; and in times of drought, when there is no water to be found in the trunks of old trees, or in the pools about the foreſt, he comes often, in the day, down to the brooks, or the lakes in the plain. Although very voracious, he ſupports hunger for a long time, and often lives

four or five days without food, provided he be ſupplied with water.

The wolf has great ſtrength, particularly in his fore parts, in the muſcles of his neck and jaws. He carries off a ſheep in his mouth without letting it touch the ground, and runs with it much ſwifter than the ſhepherds who purſue him; ſo that nothing but the dogs can overtake, and oblige him to quit his prey. He bites cruelly, and always with greater vehemenee in proportion as he is leaſt reſiſted; for he uſes precautions with ſuch animals as attempt to ſtand upon the defenſive. He is ever cowardly, and never fights but when under a neceſſity of ſatisfying hunger, or making good his retreat. When he is wounded by a bullet, he is heard to cry out; and yet, when ſurrounded by the peaſants, and attacked with clubs, he never howls as the dog under correction, but defends himſelf in ſilence, and dies as hard as he lived.

His nature is, in fact, more ſavage than that of the dog; he has leſs ſenſibility and greater ſtrength. He travels, runs, and keeps plundering for whole days and nights together. He is in a manner indefatigable; and perhaps of all animals he is the moſt difficult to be hunted down. The dog is good natured and courageous; the wolf, though ſavage, is ever fearful. If he happens to be caught in a pit-fall, he is for ſome time ſo frightened and aſtoniſhed, that he may be killed without offering to reſiſt, or taken alive without much danger. At that inſtant, one may clap a collar round his neck, muzzle him, and drag him along, without his ever giving the leaſt ſigns of anger or reſentment. At all other times he has his ſenſes in great perfection; his eye, his ear, and particularly his ſenſe of ſmelling, which is even ſuperior to the two former. He ſmells a carcaſe at more than a league's diſtance; he alſo perceives living animals a great way off, and follows them a long time upon the ſcent. Whenever he leaves the wood, he always takes care to go out againſt the wind. When juſt come to its extremity, he ſtops to examine, by his ſmell, on all ſides, the emanations that may come either from his enemy or his prey, which he very nicely diſtinguiſhes. He prefers thoſe animals which he kills himſelf to thoſe he finds dead; and yet he does not diſdain theſe when no better is to be had. He is

particularly fond of human flesh; and perhaps, if he was sufficiently powerful, he would eat no other. Wolves have been seen following armies, and arriving in numbers upon the field of battle, where they devoured such dead bodies as were left upon the field, or but negligently interred. These, when once accustomed to human flesh, ever after seek particularly to attack mankind, and chuse to fall upon the shepherd rather than his flock. We have had a late instance of two or three of these keeping a whole province, for more than a month, in a continual alarm.

It sometimes happens that a whole country is called out to extirpate these most dangerous invaders. The hunting the wolf is a favourite diversion among the great of some countries; and it must be confessed it seems to be the most useful of any. These animals are distinguished by the huntsmen into the *young wolf*, the *old wolf*, and the *great wolf*. They are known by the prints of their feet; the older the wolf the larger the track he leaves. That of the female is narrower and longer then that of the male. It is necessary to have a very good starter to put up the wolf; and it is even convenient to use every art to encourage him in his pursuit; for all dogs have a natural repugnance against this animal, and are but cold in their endeavours. When the wolf is once put up, it is then proper to have grey-hounds to let fly at him, in leashes, one after the other. The first leash is sent after him in the beginning, seconded by a man on horse-back; the second are let loose about half a mile farther, and the third when the rest of the dogs come up with, and begin to bait him. He for a long time keeps them off, stands his ground, threatens them on all sides, and often gets away; but usually the hunters arriving come in aid of the dogs, and help to despatch him with their cutlasses. When the animal is killed, the dogs testify no appetite to enjoy their victory, but leave him where he falls, a frightful spectacle, and even in death hideous.

The wolf is sometimes also hunted with hariers; but as he always goes straight forward, and often holds his speed for a whole day together, this kind of chase is tedious and disagreeable, at least if the hariers are not assisted by grey-hounds, who may harass him at every view. Several other arts have been also used to take and destroy this noxious

animal. He is ſurrounded and wounded by men and large houſe-dogs; he is ſecured in traps; he is poiſoned by carcaſſes, prepared and placed for that purpoſe, and is caught in pit-falls. "Geſner tells us of a friar, a woman, and a wolf, being taken in one of theſe, all in the ſame night. The woman loſt her ſenſes with the fright, the friar his reputation, and the wolf his life." All theſe diſaſters, however, do not prevent this animal's multiplying in great numbers, particularly in countries where the woods are plenty. France, Spain, and Italy are greatly infeſted with them; but England, Ireland, and Scotland, are happily ſet free.

King Edgar is ſaid to be the firſt who attempted to rid this kingdom of ſuch diſagreeable inmates, by commuting the puniſhment for certain crimes into the acceptance of a number of wolf's tongues from each criminal*. However, ſome centuries after, theſe animals were again increaſed to ſuch a degree, as to become the object of royal attention; accordingly Edward the Firſt iſſued out his mandate to one Peter Corbet to ſuperintend and aſſiſt in the deſtruction of them. They are ſaid to have infeſted Ireland long after they were extirpated in England; however, the oldeſt men in that country remember nothing of theſe animals; and it is probable that there have been none there for more than a century paſt. Scotland alſo is totally free.

The colour of this animal differs according to the different climates where it is bred, and often changes even in the ſame country. Beſide the common wolves, which are found in France and Germany, there are others with thicker hair, inclining to yellow. Theſe are more ſavage and leſs noxious than the former, neither approaching the flocks nor habitations, and living rather by the chaſe than rapine. In the nothern climates they are found ſome quite black, and ſome white all over. The former are larger and ſtronger than thoſe of any other kinds.

The ſpecies is very much diffuſed in every part of the world, being found in Aſia, Africa, and in America, as well as Europe. The wolves of Senegal reſemble thoſe of France, except that they are larger and much fiercer than thoſe of Europe. Thoſe of Egypt are ſmaller than thoſe of

* Britiſh Zoology, p. 62.

The WOLF

Greece. In the eaſt, the wolf is trained up for a ſhew, being taught to dance and play tricks; and one of theſe thus educated often ſells for four or five hundred crowns. "It is ſaid that in Lapland the wolf will never attack a reindeer that is ſeen haltered; for this wary animal, being well acquainted with the nature of a trap, ſuſpects one whenever it perceives a rope. However, when he ſees the deer entirely at liberty, he ſeldom fails to deſtroy it.

"The wolf of North America is blacker and much leſs than thoſe in other parts of the world, and approaches nearer in form to the dog than thoſe of the ordinary kind*. In fact, they were made uſe of as ſuch by the ſavages till the Europeans introduced others; and even now, on the remoter ſhores, or the more inland parts of the country, the ſavages ſtill make uſe of theſe animals in hunting. They are very tame and gentle; and thoſe of this kind that are wild, are neither ſo large nor ſo fierce as an European wolf, nor do they ever attack mankind. They go together in large packs by night to hunt the deer, which they do as well as any dogs in England; and it is confidently aſſerted that one of them is ſufficient to run down a deer*. Whenever they are ſeen along the banks of thoſe rivets near which the wandering natives pitch their huts, it is taken for granted that the biſon or the deer are not far off: and the ſavages affirm that the wolves come with the tidings, in order to have the garbage, after the animal has been killed by the hunters. Cateſby adds a circumſtance relative to theſe animals, which, if true, invalidates many of Mr. Buffon's obſervations in the foregoing hiſtory. He aſſerts, that theſe being the only dogs uſed by the Americans, before the arrival of the Europeans among them, they have ſince engendered together, and that their breed has become prolific; which proves the dog and the wolf to be of the ſame ſpecies. It were to be wiſhed that this fact were better aſcertained; we ſhould then know to a certainty in what a degree the dog and wolf reſemble each other, as well in nature as in conformation; we might then, perhaps, be enabled to improve the breed of our dogs, by bringing them back to their native forms and inſtincts; we

* Brooke's Natural Hiſtory, vol. i. p. 198.

† Dictionaire Raiſonée. Loup.

might, by croſſing the ſtrain, reſtore that race of thoſe bold animals, which the ancients aſſure us were more than a match for the lion."

However, this animal may be uſeful in North America, the wolf of Europe is a very noxious animal, and ſcarce any thing belonging to him is good, except his ſkin. Of this the furriers make a covering that is warm and durable, though courſe and unſightly. His fleſh is very indifferent, and ſeems to be diſliked by all other animals, no other creature being known to eat the wolf's fleſh except the wolf himſelf. He breathes a moſt fœtid vapour from his jaws, as his food is indiſcriminate, often putrid, and ſeldom cleanly. In ſhort, every way offenſive, a ſavage aſpect, a frightful howl, an unſupportable odour, a perverſe diſpoſition, fierce habits, he is hateful while living, and uſeleſs when dead.

THE FOX.

THE Fox very exactly reſembles the wolf and the dog internally; and although he differs greatly from both in ſize and carriage, yet when we come to examine his ſhapes minutely, there will appear to be very little difference in the deſcription. Were, for inſtance, a painter to draw from a natural hiſtorian's exacteſt deſcription the figure of a dog, a wolf, and a fox, without having ever ſeen either, he would be very apt to confound all theſe animals together; or rather he would be unable to catch thoſe peculiar out-lines that no deſcription can ſupply. Words will never give any perſon an exact idea of forms any way irregular; for although they be extremely juſt and preciſe, yet the numberleſs diſcriminations to be attended to will confound each other, and we ſhall no more conceive the preciſe form, than we ſhould be able to tell when one pebble more was added or taken away from a thouſand. To conceive, therefore, how the fox differs in form from the wolf or the dog, it is neceſſary to ſee all three, or at leaſt to ſupply the defects of deſcription by examining the difference in a print.

The fox is of a ſlenderer make than the wolf, and not near ſo large; for as the former is above three feet and a half long, ſo the other is not above two feet three inches. The tail of the fox alſo is longer in proportion and more

bushy; its nose is smaller and approaching more nearly to that of the grey-hound, and its hair softer. On the other hand, it differs from the dog in having its eyes obliquely situated, like those of the wolf; its ears are directed also in the same manner as those of the wolf, and its head is equally large in proportion to its size. It differs still more from the dog in its strong offensive smell, which is peculiar to the species, and often the cause of their death. However, some are ignorantly of opinion that it will keep off infectious diseases, and they preserve this animal near their habitations for that very purpose.

The fox has since the beginning been famous for his cunning and his arts, and he partly merits his reputation*. Without attempting to oppose either the dogs or the shepherds, without attacking the flock, or alarming the village, he finds an easier way to subsist, and gains by his address what is denied to his strength or courage. Patient and prudent, he waits the opportunity of depredation, and varies his conduct with every occasion. His whole study is his preservation; although nearly as indefatigable, and actually more swift than the wolf, he does not entirely trust to either, but makes himself an asylum, to which he retires in case of necessity; where he shelters himself from danger, and brings up his young.

As among men, those who lead a domestic life are more civilized and more endued with wisdom than those who wander from place to place; so, in the inferior ranks of animated nature, the taking possession of a home supposes a degree of instinct which others are without†. The choice of the situation for this domicil, the art of making it convenient, of hiding its entrance, and securing it against more powerful animals, are all so many marks of superior skill and industry. The fox is furnished with both, and turns them to his advantage. He generally keeps his kennel at the edge of the wood, and yet within an easy journey of some neighbouring cottage. From thence he listens to the crowing of the cock, and the cackling of the domestic fowls. He scents them at a distance; he seizes his opportunity, conceals his approaches, creeps slyly along, makes the attack, and seldom returns without his booty. If he be

* Buffon, Renard. † Ibid.

able to get into the yard, he begins by levelling all the poultry without remorſe, and carrying off a part of the ſpoil, hides it at ſome convenient diſtance, and again returns to the charge. Taking off another fowl in the ſame manner, he hides that alſo, but not in the ſame place; and this he practiſes for ſeveral times together, until the approach of day, or the noiſe of the domeſtics, give him warning to retire. The ſame arts are practiſed when he finds birds entangled in ſpringes laid for them by the fowler; the fox takes care to be beforehand, very expertly takes the bird out of the ſnare, hides it for three or four days, and knows very exactly when and where to return to avail himſelf of hidden treaſure. He is equally alert in ſeizing the young hares and rabbits, before they have ſtrength enough to eſcape him, and when the old ones are wounded and fatigued he is ſure to come upon them in their moments of diſtreſs, and to ſhew them no mercy. In the ſame manner he finds out birds' neſts, ſeizes the partridge and the quail while ſitting, and deſtroys a large quantity of game. The wolf is moſt hurtful to the peaſant, but the fox to the gentleman. In ſhort, nothing that can be eaten ſeems to come amiſs; rats, mice, ſerpents, toads, and lizards. He will, when urged by hunger, eat vegetables and inſects; and thoſe that live near the ſea-coaſts will, for want of other food, eat crabs, ſhrimps, and ſhell-fiſh. The hedge-hog, in vain rolls itſelf up into a ball to oppoſe him, this determined glutton teizes it until it is obliged to appear uncovered, and then he devours it. The waſp and the wild bee are attacked with equal ſucceſs. Although at firſt they fly out upon the invader, and actually oblige him to retire, this is but for a few minutes, until he has rolled himſelf upon the ground, and thus cruſhed ſuch as ſtick to his ſkin; he then returns to the charge, and at laſt, by perſeverance, obliges them to abandon their combs; which he greedily devours, both wax and honey.

The chaſe of the fox requires leſs preparation than that of the wolf, and it is alſo more pleaſant and amuſing. As dogs have a natural repugnance to purſue the wolf, ſo they are equally alert in following the fox; which they prefer even to the chaſe of the hare or the buck. The huntſmen, as upon other occaſions, have their cant terms for every part of this chaſe. The fox the firſt year is called *a cub;* the ſe-

cond, *a fox*; and the third an *old fox*; his tail is called the *brush* or *drag*, and his excrement the *billiting*. He is usually pursued by a large kind of harier or hound, assisted by terriers, or a smaller breed, that follow him into his kennel, and attack him there. The instant he perceives himself pursued, he makes to his kennel, and takes refuge at the bottom of it, where for a while he loses the cry of his enemies; but the whole pack coming to the mouth, redouble their vehemence and rage, and the little terrier boldly ventures in. It often happens that the kennel is made under a rock, or among the roots of old trees; and in such cases the fox cannot be dug out, nor is the terrier able to contend with him at the bottom of his hole. By this contrivance he continues secure; but when he can be dug out, the usual way is to carry him in a bag to some open country, and there set him loose before the hounds. The hounds and the men follow, barking and shouting wherever he runs; and the body being strongly employed, the mind has not time to make any reflection on the futility of the pursuit. What adds to this entertainment is the strong scent which the fox leaves, that always keeps up a full cry; although as his scent is stronger than that of the hare, it is much sooner evaporated. His shifts to escape when all retreat is cut off to his kennel are various and surprising. He always chooses the most woody country, and takes those paths that are most embarrassed with thorns and briars. He does not double, nor use the unavailing shifts of the hare; but flies in a direct line before the hounds, though at no very great distance; manages his strength; takes to the low and plashy grounds, where the scent will be less apt to lie; and at last, when overtaken, he defends himself with desperate obstinacy, and fights in silence to the very last gasp.

The fox, though resembling the dog in many respects, is nevertheless very distinct in his nature, refusing to engender with it; and though not testifying the antipathy of the wolf, yet discovering nothing more than indifference. This animal also brings forth a fewer at a time than the dog, and that but once a year. Its litter is generally from four to six, and seldom less than three. The female goes with young about six weeks, and seldom stirs out while pregnant, but makes a bed for her young, and takes every precaution to

prepare for their production. When ſhe finds the place of their retreat diſcovered, and that her young have been diſturbed during her abſence, ſhe removes them one after the other in her mouth, and endeavours to find them out a place of better ſecurity. A remarkable inſtance of this animal's parental affection happened while I was writing this hiſtory in the county of Eſſex. A ſhe-fox that had, as it ſhould ſeem, but one cub, was unkennelled by a gentleman's hounds near Chelmsford, and hotly purſued. In ſuch a caſe, when her own life was in imminent peril, one would think it was not a time to conſult the ſafety of her young; however, the poor animal, braving every danger, rather than leave her cub behind to be worried by the dogs, took it up in her mouth, and ran with it in this manner for ſome miles. At laſt, taking her away through a farmer's yard, ſhe was aſſaulted by a maſtiff, and at laſt obliged to drop her cub, which was taken up by the farmer. I was not diſpleaſed to hear that this faithful creature eſcaped the purſuit, and at laſt got off in ſafety. The cubs of the fox are born blind, like thoſe of the dog; they are eighteen months or two years in coming to perfection, and live about twelve or fourteen years.

As the fox makes war upon all animals, ſo all others ſeem to make war upon him. The dog hunts him with peculiar acrimony; the wolf is ſtill a greater and more neceſſitous enemy, who purſues him to his very retreat. Some pretend to ſay, that, to keep the wolf away, the fox lays at the mouth of its kennel a certain herb, to which the wolf has a particular averſion. This, which no doubt is a fable, at leaſt ſhews that theſe two animals are as much enemies to each other as to all the reſt of Animated Nature. But the fox is not hunted by quadrupeds alone; for the birds, who know him for their mortal enemy, attend him in his excurſions, and give each other warning of their approaching danger. The daw, the magpye, and the blackbird conduct him along, perching on the hedges as he creeps below, and, with their cries and notes of hoſtility, apprize all other animals to beware; a caution which they perfectly underſtand, and put into practice. The hunters themſelves are often informed by the birds of the place of his retreat, and ſet the dogs into thoſe thickets where they ſee them particularly noiſy and

The FOX

querulous. So that it is the fate of this petty plunderer to be deteſted by every rank of animals; all the weaker claſſes ſhun, and all the ſtronger purſue him.

The fox, of all wild animals, is moſt ſubject to the influence of climate; and there are found as many varieties in this kind almoſt as in any of the domeſtic animals*. The generality of foxes, as is well known, are red; but there are ſome, though not in England, of a greyiſh caſt; and Mr. Buffon aſſerts, that the tip of the tail in all foxes is white; which, however, is not ſo in thoſe of this country. There are only three varieties of this animal in Great Britain, and theſe are rather eſtabliſhed upon a difference of ſize than of colour or form. The grey-hound fox is the largeſt, talleſt, and boldeſt; and will attack a grown ſheep. The maſtiff fox is leſs, but more ſtrongly built. The cur fox is the leaſt and moſt common; he lurks about hedges and out-houſes, and is the moſt pernicious of the three to the peaſant and the farmer.

In the colder countries round the pole, the foxes are of all colours; black, blue, grey, iron grey, ſilver grey, white, white with red legs, white with black heads, white with tip the of the tail black, red, with the throat and belly entirely white, and laſtly, with a ſtripe of black running along the back, and another croſſing it at the ſhoulders†. The common kind, however, is more univerſally diffuſed than any of the former, being found in Europe, in the temperate climates of Aſia, and alſo in America; they are very rare in Africa, and in the countries lying under the torrid zone. Thoſe travellers who talk of having ſeen them at Calicut, and other parts of Southern India, have miſtaken the jackal for the fox. The fur of the white fox is held in no great eſtimation, becauſe the hair falls off. The blue fox ſkins are bought up with great avidity, from their ſcarceneſs; but the black fox ſkin is of all others the moſt eſteemed, a ſingle ſkin often ſelling for forty or fifty crowns. The hair of theſe is ſo diſpoſed, that it is impoſſible to tell which way the grain lies; for if we hold the ſkin by the head, the hair hangs to the tail, and if we hold it by the tail, it hangs down equally ſmooth and even to the head. Theſe are often made into men's muffs, and are at once very beautiful and

* Buffon, Renard. † Ibid.

warm. In our temperate climate, however, furs are of very little ſervice, there being ſcarce any weather ſo ſevere in England from which our ordinary clothes may not very well defend us.

THE JACKAL.

The jackal is one of the commoneſt wild animals in the Eaſt; and yet there is ſcarce any leſs known in Europe, or more confuſedly deſcribed by natural hiſtorians. In general, we are aſſured that it reſembles the fox in figure and diſpoſition, but we are ſtill ignorant of thoſe nice diſtinctions by which it is known to be of a different ſpecies. It is ſaid to be of the ſize of a middling dog, reſembling the fox in the hinder parts, particularly the tail; and the wolf in the fore-parts, eſpecially the noſe. Its legs are ſhorter than thoſe of the fox, and its colour is of a bright yellow, or ſorrel, as we expreſs it in horſes. This is the reaſon it has been called in Latin the *golden wolf*; a name, however, which is entirely unknown in the countries where they are moſt common.

The ſpecies of the jackal is diffuſed all over Aſia, and is found alſo in moſt parts of Africa, ſeeming to take up the place of the wolf, which in thoſe countries is not ſo common. There ſeem to be many varieties among them; thoſe of the warmeſt climates appear to be the largeſt, and their colour is rather of a reddiſh brown, than of that beautiful yellow by which the ſmaller jackals are chiefly diſtinguiſhed.

Although the ſpecies of the wolf approaches very near to that of the dog, yet the jackal ſeems to be placed between them; to the ſavage fierceneſs of the wolf, it adds the impudent familiarity of the dog*. Its cry is a howl, mixed with barking, and a lamentation reſembling that of human diſtreſs. It is more noiſy in its purſuits even than the dog, and more voracious than the wolf. The jackal never goes alone, but always in a pack of forty or fifty together. Theſe unite regularly every day to form a combination againſt the reſt of the foreſt. Nothing then can eſcape them; they are content to take up with the ſmalleſt animals; and yet, when thus united, they have courage to face the largeſt. They ſeem very little afraid of mankind, but purſue their game to the very doors, without teſtifying either attachment or apprehenſion.

* Buffon, vol. xxvii. p. 52.

They enter insolently into the sheepfolds, the yards, and the stables, and, when they can find nothing else, devour the leather harness, boots, and shoes, and run off with what they had not time to swallow.

They not only attack the living but the dead. They scratch up with their feet the new-made graves, and devour the corpse how putrid soever. In those countries, therefore, where they abound, they are obliged to beat the earth over the grave, and mix it with thorns, to prevent the jackals from scraping it away. They always assist each other, as well in this employment of exhumation, as in that of the chase. While they are at this dreary work, they exhort each other by a most mournful cry, resembling that of children under chastisement; and when they have thus dug up the body, they share it amicably between them. These, like all other savage animals, when they have once tasted of human flesh, can never after remain from pursuing mankind. They watch the burying-grounds, follow armies, and keep in the rear of caravans. They may be considered as the vulture of the quadruped kind; every thing that once had animal life, seems equally agreeable to them; the most putrid substances are greedily devoured; dried leather, and any thing that has been rubbed with grease, how insipid soever in itself, is sufficient to make the whole go down.

They hide themselves in holes by day, and seldom appear abroad till night-fall, when the jackal that has first hit upon the scent of some larger beast gives notice to the rest by a howl, which it repeats as it runs; while all the rest that are within hearing, pack in to its assistance. The gazelle, or whatever other beast it may be, finding itself pursued, makes off towards the houses and the towns; hoping, by that means, to deter its pursuers from following: but hunger gives the jackal the same degree of boldness that fear gives the gazelle, and it pursues even to the verge of the city, and often along the streets. The gazelle, however, by this means, most frequently escapes; for the inhabitants sallying out, often disturb the jackal in the chase; and as it hunts by the scent, when once driven off, it never recovers it again. In this manner we see how experience prompts the the gazelle, which is naturally a very timid animal, and particularly fearful of man, to take refuge near him, consider-

ing him as the leaſt dangerous enemy, and often eſcaping by his aſſiſtance.

But man is not the only intruder upon the jackal's induſtry and purſuits. The lion, the tiger, and the panther, whoſe appetites are ſuperior to their ſwiftneſs, attend to its call, and follow in ſilence at ſome diſtance behind*. The jackal purſues the whole night with unceaſing aſſiduity, keeping up the cry, and with great perſeverance at laſt tires down its prey; but juſt at the moment it ſuppoſes itſelf going to ſhare the fruits of its labour, the lion or the leopard comes in, ſatiates himſelf upon the ſpoil, and his poor provider muſt be content with the bare carcaſs he leaves behind. It is not to be wondered at, therefore, if the jackal be voracious, ſince it ſo ſeldom has a ſufficiency; nor that it feeds on putrid ſubſtances, ſince it is not permitted to feaſt on what it has newly killed. Beſide theſe enemies, the jackal has another to cope with, for between him and the dog there is an irreconcileable antipathy; and they never part without an engagement. The Indian peaſants often chaſe them as we do foxes; and have learned, by experience, when they have got a lion or a tiger in their rear. Upon ſuch occaſions they keep their dogs cloſe, as they would be no match for ſuch formidable animals, and endeavour to put them to flight with their cries. When the lion is diſmiſſed, they more eaſily cope with the jackal, who is as ſtupid as it is impudent, and ſeems much better fitted for purſuing than retreating. It ſometimes happens that one of them ſteals ſilently into an out-houſe to ſeize the poultry, or devour the furniture, but hearing others in full cry, at a diſtance, without thought, it inſtantly anſwers the call, and thus betrays its own depredations. The peaſants ſally out upon it, and the fooliſh animal finds, too late, that its inſtinct was too powerful for its ſafety.

THE ISATIS.

AS the jackal is a ſort of intermediate ſpecies between the dog and the wolf†, ſo the iſatis may be conſidered as placed between the dog and the fox. This animal has hitherto

* Linnæi Syſtema, p. 60.

† In this deſcription I have followed Mr. Buffon.

been ſuppoſed to be only a variety of the latter; but from the lateſt obſervations, there is no doubt of their being perfectly diſtinct. The iſatis is very common in all the northern countries bordering upon the Icy Sea; and is ſeldom found, except in the coldeſt countries. It extremely reſembles a fox, in the form of its body, and the length of its tail; and a dog, in the make of its head, and the poſition of its eyes. The hair of theſe animals is ſofter than that of a common fox; ſome are blue, ſome are white at one ſeaſon, and at another of a ruſſet brown. Although the whole of its hair be two inches long, thick, tufted, and gloſſy, yet the under jaw is entirely without any, and the ſkin appears bare in that part.

This animal can bear only the coldeſt climates, and is chiefly ſeen along the coaſts of the Icy Sea, and upon the banks of the great rivers that diſcharge themſelves therein. It is chiefly fond of living in the open country, and ſeldom ſeen in the foreſt, being moſtly found in the mountainous and naked regions of Norway, Siberia, and Lapland. It burrows like the fox; and, when with young, the female retires to her kennel, in the ſame manner as the fox is ſeen to do. Theſe holes, which are very narrow, and extremely deep, have many outlets. They are kept very clean, and are bedded at the bottom with moſs, for the animal to be more at its eaſe. Its manner of coupling, time of geſtation, and number of young, are all ſimilar to what is found in the fox; and it uſually brings forth at the end of May or the beginning of June.

Such are the particulars in which this animal differs from thoſe of the dog kind, and in which it reſembles them: but its moſt ſtriking peculiarity remains ſtill to be mentioned; namely, its changing its colour, and being ſeen at one time brown, and at another perfectly white. As was already ſaid, ſome are naturally blue, and their colour never changes; but ſuch as are to be white, are, when brought forth, of a yellow hue, which, in the beginning of September is changed to white, all except along the top of the back, along which runs a ſtripe of brown, and another croſſing it down the ſhoulders, at which time, the animal is called the *croſſed fox*; however, this brown croſs totally diſappears before winter, and then the creature is all over

white, and its fur is two inches long: this, about the beginning of May again begins to fall; and the moulting is completed about the middle of July, when the isatis becomes brown once more. The fur of this animal is of no value, unless it be killed in winter.

THE HYÆNA.

THE hyæna is the last animal I shall mention among those of the dog kind, which it, in many respects, resembles, although too strongly marked to be strictly reduced to any type. The hyæna is nearly of the size of a wolf; and has some similitude to that animal in the shape of its head and body. The head, at first sight, does not appear to differ, except that the ears of the hyæna are longer, and more without hair; but, upon observing more closely, we shall find the head broader, the nose flatter, and not so pointed.—The eyes are not placed obliquely, but more like those of a dog. The legs, particularly the hinder, are longer than those either of the dog or the wolf, and different from all other quadrupeds, in having but four toes, as well on the fore-feet as on the hinder. Its hair is of a dirty greyish, marked with black, disposed in waves down its body. Its tail is short, with pretty long hair; and immediately under it, above the anus, there is an opening into a kind of glandular pouch, which separates a substance of the consistence, but not of the odour, of civet. This opening might have given rise to the error of the ancients, who asserted, that this animal was every year, alternately, male and female. Such are the most striking distinctions of the hyæna, as given us by naturalists; which, nevertheless, convey but a very confused idea of the peculiarity of its form. Its manner of holding the head seems remarkable; somewhat like a dog, pursuing the scent, with the nose near the ground. The head being held thus low, the back appears elevated, like that of the hog, which, with a long bristly band of hair that runs all along, gives it a good deal theair of that animal; and, it is probable, that from this similitude it first took its name; the word *huoina* being Greek, and derived from *hus*, which signifies a *sow*.

But no words can give an adequate idea of this animal's figure, deformity, and fierceness, more savage and untame-

The HYÆNA

able than any other quadruped, it ſeems to be for ever in a ſtate of rage or rapacity, for ever growling, except when receiving its food. Its eyes then gliſten, the briſtles of its back all ſtand upright, its head hangs low, and yet its teeth appear; all which give it a moſt frightful aſpect, which a dreadful howl tends to heighten. This, which I have often heard, is very peculiar: its beginning reſembles the voice of a man moaning, and its latter part as if he were making a violent effort to vomit. As it is loud and frequent, it might, perhaps, have been ſometimes miſtaken for that of a human voice in diſtreſs, and have given riſe to the accounts of the ancients, who tell us, that the hyæna makes its moan, to attract unwary travellers, and then to deſtroy them; however this be, it ſeems the moſt untractable, and, for its ſize, the moſt terrible of all other quadrupeds; nor does its courage fall ſhort of its ferocity; it defends itſelf againſt the lion, is a match for the panther, attacks the ounce, and ſeldom fails to conquer.

It is an obſcene and ſolitary animal, to be found chiefly in the moſt deſolate and uncultivated parts of the torrid zone, of which it is a native*. It reſides in the caverns of mountains, in the clefts of rocks, or in dens that it has formed for itſelf under the earth. Though taken never ſo young, it cannot be tamed; it lives by depredation, like the wolf, but is much ſtronger, and more courageous. It ſometimes attacks man, carries off cattle, follows the flock, breaks open the ſheep cots by night, and ravages with inſatiable voracity. Its eyes ſhine by night; and it is aſſerted, not without great appearance of truth, that it ſees better by night than by day. When deſtitute of other proviſion, it ſcrapes up the graves, and devours the dead bodies, how putrid ſoever. To theſe diſpoſitions, which are ſufficiently noxious and formidable, the ancients have added numberleſs others, which are long ſince known to be fables: as, for inſtance, that the hyæna was male and female alternately; that having brought forth and ſuckled its young, it then changed ſexes for a year, and became a male. This, as was mentioned above, could only proceed from the opening under the tail, which all animals of this ſpecies are found to have; and which is found in the ſame manner in no other quadru-

* Buffon.

ped, except the badger. There is, in the weasel kind indeed, an opening, but it is lower down, and not placed above the anus, as in the badger and the hyæna. Some have said that this animal changed the colour of its hair at will; others, that a stone was found in its eye, which, put under a man's tongue, gave him the gift of prophecy; some have said that it had no joints in the neck, which, however, all quadrupeds are known to have; and some, that the shadow of the hyæna kept dogs from barking. These, among many other absurdities, have been asserted of this quadruped; and which I mention to shew the natural disposition of mankind, to load those that are already but too guilty, with accumulated reproach.

CHAP. III.

OF ANIMALS OF THE WEASEL KIND.

HAVING described the bolder ranks of carnivorous animals, we now come to a minuter and more feeble class, less formidable indeed than any of the former, but far more numerous, and in proportion to their size, more active and enterprising. The weasel kind may be particularly distinguished from other carnivorous animals, by the length and slenderness of their bodies, which are so fitted as to wind, like worms, into very small openings, after their prey; and hence also they have received the name of vermin, from their similitude to the worm in this particular. These animals differ from all of the cat kind, in the formation and disposition of their claws, which, as in the dog kinds, they can neither draw nor extend at pleasure, as cats are known to do. They differ from the dog kind, in being clothed rather with fur than hair; and although some varieties of the fox may resemble them in this particular, yet the coat of the latter is longer, stronger, and always more resembling hair. Beside these distinctions, all animals of the weasel kind have glands placed near the anus, that either open into or beneath it, furnishing a substance that, in some, has the most offensive smell in nature, in others, the most pleasing perfume. All of this kind are still more marked by their habi-

tudes and diſpoſitions, than their external form; cruel, voracious, and cowardly, they ſubſiſt only by theft, and find their chief protection in their minuteneſs. They are all, from the ſhortneſs of their legs, ſlow in purſuit; and, therefore, owe their ſupport to their patience, aſſiduity, and cunning. As their prey is precarious, they live a long time without food; and if they happen to fall in where it is in plenty, they inſtantly deſtroy all about them before they begin to ſatisfy their appetite, and ſuck the blood of every animal before they begin to touch its fleſh.

Theſe are the marks common to this kind, all the ſpecies of which have a moſt ſtriking reſemblance to each other; and he that has ſeen one, in ſome meaſure, may be ſaid to have ſeen all. The chief diſtinction in this numerous claſs of animals, is to be taken from the ſize; for no words can give the minute irregularities of that outline by which one ſpecies is to be diſtinguiſhed from that which is next it. I will begin, therefore, with the leaſt and the beſt known of this kind, and ſtill marking the ſize, will proceed gradually to larger and larger, until we come from the weaſel to the glutton, which I take to be the largeſt of all. The weaſel will ſerve as a model for all the reſt; and, indeed the points in which they differ from this little animal, are but very inconſiderable.

The WEASEL *, as was ſaid, is the ſmalleſt of this numerous tribe; its length not exceeding ſeven inches, from the tip of the noſe to the inſertion of the tail. This length, however, ſeems to be very great, if we compare it with the height of the animal, which is not above an inch and a half. In meaſuring the wolf, we find him to be not above once and a half as long as he is high; in obſerving the weaſel, we find it near five times as long as it is high, which ſhews an amazing diſproportion. The tail alſo, which is buſhy, is two inches and a half long, and adds to the apparent length of this little animal's body. The colour of the weaſel is of a bright red on the back and ſides, but white under the throat and the belly. It has whiſkers like a cat; and thirty two teeth, which is two more than any of the cat kind; and theſe alſo ſeem better adapted for tearing and chewing, than thoſe of the cat kind are. The eyes are little and black. The ears

* Britiſh Zoology, vol. i. p. 83.

ſhort, broad, and roundiſh; and have a fold at the lower part, which makes them look as if they were double. Beneath the corners of the mouth, on each jaw, is a ſpot of brown.

This animal, though very diminutive to appearance, is, nevertheleſs, a very formidable enemy to quadrupeds an hundred times its own ſize. It is very common and well known in moſt parts of this country; but ſeems held in very different eſtimation, in different parts of it. In thoſe places where ſheep or lambs are bred, the weaſel is a moſt noxious inmate, and every art is uſed to deſtroy it; on the contrary, in places where agriculture is chiefly followed, the weaſel is conſidered as a friend that thins the number of ſuch vermin as chiefly live upon corn: however, in all places, it is one of the moſt untameable and untractable animals in the world *. When kept in a cage, either for the purpoſes of amuſement or inſpection, it will not touch any part of its victuals while any body looks on. It keeps in a continual agitation, and ſeems frighted ſo much at the ſight of mankind, that it will die, if not permitted to hide itſelf from their preſence. For this purpoſe, it muſt be provided, in its cage, with a ſufficient quantity of wool or hay, in which it may conceal itſelf, and where it may carry whatever it has got to eat; which, however, it will not touch until it begins to putrefy. In this ſtate it is ſeen to paſs three parts of the day in ſleeping; and reſerves the night for its times of exerciſe and eating.

In its wild ſtate, the night is likewiſe the time during which it may be properly ſaid to live. At the approach of evening, it is ſeen ſtealing from its hole, and creeping about the farmer's yard for its prey. If it enters the place where poultry are kept, it never attacks the cocks or the old hens, but immediately aims at the young ones. It does not eat its prey on the place, but, after killing it by a ſingle bite near the head, and with a wound ſo ſmall that the place can ſcarcely be perceived, it carries it off to its young, or its retreat. It alſo breaks and ſucks the eggs, and ſometimes kills the hen, that attempts to defend them. It is remarkably active; and, in a confined place, ſcarce any animal can eſcape it. It will run up the ſides of walls with ſuch facili-

* Buffon, vol. xv. p. 37.

ty, that no place is ſecure from it; and its body is ſo ſmall, that there is ſcarce any hole but what it can wind through. During the ſummer, its excurſions are more extenſive; but in winter, it chiefly confines itſelf in barns and farm-yards, where it remains till ſpring, and where it brings forth its young. All this ſeaſon it makes war upon the rats and mice, with ſtill greater ſucceſs than the cat; for being more active and ſlender, it purſues them into their holes, and, after a ſhort reſiſtance, deſtroys them. It creeps alſo into pigeon holes, deſtroys the young, catches ſparrows, and all kinds of ſmall birds; and, if it has brought forth its young, hunts with ſtill greater boldneſs and avidity. In ſummer, it ventures farther from the houſe; and particularly goes into thoſe places where the rat, its chiefeſt prey, goes before it. Accordingly, it is found in the lower grounds, by the ſide of waters, near mills, and often is ſeen to hide its young in the hollow of a tree.

The female takes every precaution to make any eaſy bed for her little ones: ſhe lines the bottom of her hole with graſs, hay, leaves, and moſs, and generally brings forth from three to five a time. All animals of this, as well as thoſe of the dog kind, bring forth their young with cloſed eyes: but they very ſoon acquire ſtrength ſufficient to follow the dam in her excurſions, and aſſiſt in her projects of petty rapine. The weaſel, like all others of its kind, does not run on equably, but moves by bounding; and when it climbs a tree, by a ſingle ſpring it gets a good way from the ground. It jumps in the ſame manner upon its prey; and, having an extremely limber body, evades the attempts of much ſtronger animals to ſize it.

This animal, like all of its kind, has a very ſtrong ſmell; and that of the weaſel is peculiarly fœtid. This ſcent is very diſtinguiſhable in thoſe creatures, when they void their excrement; for the glands which furniſh this fœtid ſubſtance, which is of the conſiſtence of ſuet, open directly into the orifice of the anus, and taint the excrement with the ſtrong effluvia. The weaſel ſmells more ſtrongly in ſummer than in winter; and more abominably when irritated or purſued, than when at its eaſe. It always preys in ſilence, and never has a cry except when ſtruck, and then it has a rough kind of ſqueaking, which at once

expreſſes reſentment and pain. Its appetite for animal food never forſakes it; and it ſeems even to take a pleaſure int he vicinity of putrefaction. Mr. Buffon tells us of one of them being found, with three young ones, in the carcaſs of a wolf that was grown putrid, and that had been hung up, by the hind legs, as a terror to others. Into this horrid retreat the weaſel thought proper to retire to bring forth her young; ſhe had furniſhed the cavity with hay, graſs, and leaves; and the young were juſt brought forth when they were diſcovered by a peaſant paſſing that way.

THE ERMINE, OR STOAT.

NEXT to the Weaſel in ſize, and perfectly alike in figure, is the Ermine. The difference between this and the former animal is ſo very ſmall, that many, and among the reſt Linnæus, who gives but one deſcription of both, have confounded the two kinds together. However, their differences are ſufficient to induce later naturaliſts to ſuppoſe the two kinds diſtinct; and as their lights ſeem preferable, we chooſe to follow their deſcriptions*.

The ſtoat, or ermine, differs from the weaſel in ſize, being uſually nine inches long; whereas the former is not much above ſix. The tail of the ermine is always tipped with black, and is longer in proportion to the body and furniſhed with hair. The edges of the ears and the ends of the toes in this animal are of a yellowiſh white; and although it is of the ſame colour with the weaſel, being of a lightiſh brown, and though both this animal, as well as the weaſel, in the moſt northern parts of Europe, changes its colour in winter, and becomes white; yet even then the weaſel may be eaſily diſtinguiſhed from the ermine by the tip of the tail, which in the latter is always black.

It is well known that the fur of the ermine is the moſt valuable of any hitherto known; and it is in winter only that this little animal has it of the proper colour and conſiſtence. In ſummer, the ermine, as was ſaid before, is brown, and it may at that time more properly be called the *ſtoat*. There are few ſo unacquainted with quadrupeds as not to perceive this change of colour in the hair, which in ſome degree obtains in them all. The horſe, the cow, and

* Buffon. Britiſh Zoology.

the goat, all manifeſtly change colour in the beginning of ſummer, the old long hair falling off, and a ſhorter coat of hair appearing in its room, generally of a darker colour, and yet more gloſſy. What obtains in our temperate climite, is ſeen to prevail ſtill more ſtrongly, in thoſe regions where the winters are long and ſevere, and the ſummers ſhort and yet generally hot in an extreme degree. The animal has ſtrength enough during that ſeaſon, to throw off a warm coat of fur, which would but incommode it, and continues for two or three months in ſtate ſomewhat reſembling the ordinary quadrupeds of the milder climates. At the approach of winter, however, the cold increaſing, the coat of hair ſeems to thicken in proportion; from being coarſe and ſhort, it lengthens and grows finer, while multitudes of ſmaller hairs grow up between the longer, thicken the coat, and give it all that warmth and ſoftneſs which are ſo much valued in the furs of the northern animals.

It is no eaſy matter to account for this remarkable warmth of the furs of northern quadrupeds, or how they come to be furniſhed with ſuch an abundant covering. It is eaſy enough indeed, to ſay that Nature fits them thus for the climate; and like an indulgent mother, when ſhe expoſes them to the rigour of an intemperate winter, ſupplies them with a covering againſt its inclemency. But this is only flouriſhing: it is not eaſy, I ſay, to tell how Nature comes to furniſh them in this manner. A few particulars on this ſubject are all that we yet know. It is obſervable among quadrupeds, as well as even among the human ſpecies itſelf, that a thin ſparing diet is apt to produce hair; children that have been ill fed, famiſhed dogs and horſes, are more hairy than others whoſe food has been more plentiful. This may, therefore, be one cauſe that the animals of the north, in winter, are more hairy than thoſe of the milder climates. At that ſeaſon, the whole country is covered with deep ſnow, and the proviſions which theſe creatures are able to procure can be but precarious and ſcanty. Its becoming finer may alſo proceed from the ſeverity of the cold, that contracts the pores of the ſkin, and the hair conſequently takes the ſhape of the aperture through which it grows, as wires are made ſmaller by being drawn through a ſmaller orifice. However this may

be, all the animals of the artic climates may be ſaid to have their winter and ſummer garments, except very far to the north, as in Greenland, where the cold is ſo continually intenſe and the food ſo ſcarce, that neither the bears nor foxes change colour*.

The ermine, as was ſaid, is remarkable among theſe for the ſoftneſs, the cloſeneſs, and the warmth of its fur. It is brown in ſummer, like the weaſel, and changes colour before the winter is begun, becoming a beautiful cream colour, all except the tip of the tail, as was ſaid before, which ſtill continues black. Mr. Daubenton had one of theſe brought him with its white winter fur, which he put into a cage and kept, in order to obſerve the manner of moulting its hair. He received it in the beginning of March: in a very ſhort time it began to ſhed its coat, and a mixture of brown was ſeen to prevail among the white, ſo that at the ninth of the ſame month its head was nearly become of a reddiſh brown. Day after day this colour appeared to extend at firſt along the neck and down the back, in the manner of a ſtripe of about half an inch broad. The fore-part of the legs then aſſumed the ſame colour; a part of the head, the thighs, and the tail, were the laſt that changed; but at the end of the month there was no white remaining, except on thoſe parts which are always white in this ſpecies, particularly the throat and the belly. However, he had not the pleaſure of ſeeing this animal reſume its former whiteneſs although he kept it for above two years; which, without doubt, was owing to its impriſoned ſtate; this colour being partly owing to its ſtinted food, and partly to the rigour of the ſeaſon. During its ſtate of confinement, this little animal always continued very wild and untractable; for ever in a ſtate of violent agitation, except when aſleep, which it often continued for three parts of the day. Except for its moſt diſagreeable ſcent, it was an extremely pretty creature, its eyes ſprightly, its phyſiognomy pleaſant, and its motions ſo ſwift that the eye could ſcarce attend them. It was fed with eggs and fleſh, but it always let them putrefy before it touched either. As ſome of this kind are known to be fond of honey, it was tried to feed this animal with ſuch food for a while; after having for three or four days deprived it of

* Krant's Hiſtory of Greenland, vol. i. p. 72.

other food, it ate of this, and died ſhortly after; a ſtrong proof of its being a diſtinct ſpecies from the polecat or the martin, who feed upon honey, but otherwiſe pretty much reſemble the ermine in their figure and diſpoſitions.

In the north of Europe and Siberia, their ſkins make a valuable article of commerce, and they are found there much more frequently than among us. In Siberia they burrow in the fields, and are taken in traps baited with fleſh. In Norway they are either ſhot with blunt arrows or taken in traps made of two flat ſtones, one being propped with a ſtick, to which is faſtened a baited ſtring, and when the animals attempt to pull this away, the ſtone drops and cruſhes them to death. This animal is ſometimes found white in Great Britain, and is then called a white weaſel. Its furs, however, among us are of no value, having neither the thickneſs, the cloſeneſs, nor the whiteneſs of thoſe which come from Siberia. The fur of the ermine, in every country, changes by time; for, as much of its beautiful whiteneſs is given it by certain arts known to the furriers, ſo its natural colour returns, and its former whiteneſs can never be reſtored again.

THE FERRET.

The animal next in ſize to the ermine, is the ferret; which is a kind of domeſtic in Europe, though ſaid to be originally brought from Africa into Spain, which being a country abounding in rabbits, required an animal of this kind, more than any other: however this be, it is not to be found at preſent among us except in its domeſtic ſtate; and it is chiefly kept tame, for the purpoſes of the warren.

The ferret is about one foot long, being nearly four inches longer than the weaſel. It reſembles that animal in the ſlenderneſs of its body, and the ſhortneſs of its legs; but its noſe is ſharper, and its body more ſlender, in proportion to its length. The ferret is commonly of a cream colour; but they are alſo found of all the colours of the weaſel kind; white, blackiſh, brown, and party-coloured. Thoſe that are of the whitiſh kind, have their eyes red, as is almoſt general with all animals entirely of that colour. But its principal diſtinction from the weaſel, is the length of the hair on its tail, which is much longer in the ferret than the

weasel. Words will not well express the other distinctions; and what might take up a page in dull discrimination, a single glance of the eye, when the animals themselves are presented, can discover.

As this animal is a native of the torrid zone*, so it cannot bear the rigours of our climate, without care and shelter; and it generally repays the trouble of its keeping, by its great agility in the warren. It is naturally such an enemy of the rabbit kind, that if a dead rabbit be presented to a young ferret, although it has never seen one before, it instantly attacks and bites it with an appearance of rapacity. If the rabbit be living, the ferret, is still more eager, seizes it by the neck, winds itself round it, and continues to suck its blood, till it be satiated.

Their chief use in warrens, is to enter the holes, and drive the rabbits into the nets that are prepared for them at the mouth. For this purpose, the ferret is muzzled; otherwise, instead of driving out the rabbit, it would content itself with killing and sucking its blood at the bottom of the hole; but, by this contrivance, being rendered unable to seize its prey, the rabbit escapes from its claws, and instantly makes to the mouth of the hole with such precipitation, that it is inextricably entangled in the net placed there for its reception. It often happens, however, that the ferret disengages itself of its muzzle, and then it is most commonly lost, unless it be dug out; for, finding all its wants satisfied in the warren, it never thinks of returning to the owner, but continues to lead a rapacious solitary life while the summer continues, and dies with the cold of the winter. In order to bring the ferret from his hole, the owners often burn straw and other substances at the mouth; they also beat above to terrify it; but this does not always succeed; for as there are often several issues to each hole, the ferret is affected neither by the noise nor the smoke, but continues secure at the bottom, sleeping the greatest part of the time, and waking only to satisfy the calls of hunger.

The female of this species†, is sensibly less than the male, whom she seeks with great ardour, and, it is said, often dies, without being admitted. They are usually kept in boxes, with wool, of which they make themselves a warm bed,

* Buffon. † Ibid.

that ſerves to defend them from the rigour of the climate. They ſleep almoſt continually; and the inſtant they awake, they ſeem eager for food. They are uſually fed with bread and milk. They breed twice a year. Some of them devour their young as ſoon as brought forth; and then become fit for the male again. Their number is uſually from five to ſix at a litter; and this is ſaid to conſiſt of more females than males. Upon the whole, this is an uſeful, but a diſagreeable and offenſive animal; its ſcent is fœtid, its nature voracious, it is tame without any attachment, and ſuch is its appetite for blood, that it has been known to attack and kill children in the cradle. It is very eaſy to be irritated; and, although at all times its ſmell is very offenſive, it then is much more ſo; and its bite is very difficult of cure.

To the ferret kind we may add an animal which Mr. Buffon calls the *vanſire*, the ſkin of which was ſent him ſtuffed, from Madagaſcar. It was thirteen inches long, a good deal reſembling the ferret in figure, but differing in the number of its grinding teeth, which amounted to twelve; whereas in the ferret, there are but eight: it differed alſo in colour, being of a dark brown, and exactly the ſame on all parts of its body. Of this animal, ſo nearly reſembling the ferret, we have have no other hiſtory but the mere deſcription of its figure; and in a quadruped whoſe kind is ſo ſtrongly marked, perhaps this is ſufficient to ſatisfy curioſity.

THE POLECAT.

THE Polecat is larger than the weaſel, the ermine, or the ferret, being one foot five inches long; whereas, the weaſel is but ſix inches, the ermine nine, and the ferret eleven inches. It ſo much reſembles the ferret in form, that ſome have been of opionion they were one and the ſame animal; nevertheleſs, there are a ſufficient number of diſtinctions between them: it is, in the firſt place, larger than the ferret; it is not quite ſo ſlender, and has a blunter noſe; it differs alſo internally, having but fourteen ribs, whereas the ferret has fifteen; and wants one of the breaſt bones, which is found in the ferret: however, warreners aſſert, that the polecat will mix with the ferret; and they

are ſometimes obliged to procure an intercourſe between theſe two animals, to improve the breed of the latter, which, by long confinement, is ſometimes ſeen to abate of its rapacious diſpoſition. Mr. Buffon denies that the ferret will admit the polecat; yet gives a variety, under the name of both animals, which may very probably be a ſpurious race between the two.

However this be, the polecat ſeems by much the more pleaſing animal of the two; for although the long ſlender ſhape of all theſe vermin tribes gives them a very diſagreeable appearance, yet the ſoftneſs and colour of the hair in ſome of them, atones for the defect, and renders them, if not pretty, as leaſt not frightful. The polecat, for the moſt part, is of a deep chocolate colour; it is white about the mouth; the ears are ſhort, rounded, and tipped with white; a little beyond the corners of the mouth a ſtripe begins, which runs backward, partly white and partly yellow: its hair, like that of all this claſs, is of two ſorts; the long and the furry: but in this animal, the two kinds are of different colours; the longeſt is black, and the ſhorter yellowiſh *: the throat, feet, and tail, are blacker than any other parts of the body; the claws are white underneath, and brown above; and its tail is about two inches and a half.

It is very deſtructive to young game of all kinds †: but the rabbit ſeems to be its favourite prey; a ſingle polecat is often ſufficient to deſtroy a whole warren; for, with that inſatiable thirſt for blood which is natural to all the weaſel kind, it kills much more than it can devour; and I have ſeen twenty rabbits at a time taken out dead, which they had deſtroyed, and that by a wound which was hardly perceptible. Their ſize, however, which is ſo much larger than the weaſel, renders their retreats near houſes much more precarious; although I have ſeen them burrow near a village, ſo as ſcarcely to be extirpated. But, in general, they reſide in woods or thick brakes, making holes under ground of about two yards deep, commonly ending among the roots of large trees, for greater ſecurity. In winter they frequent houſes, and make a common practice of robbing the hen-rooſt and the dairy.

The polecat is particularly deſtructive among pigeons ‡, when it gets into a dove-houſe; without making ſo much

* Ray's Synopſis. † Britiſh Zoology, vol. i. p. 78. ‡ Buffon.

The POLE CAT

noiſe as the weaſel, it does a great deal more miſchief; it deſpatches each with a ſingle wound in the head; and, after killing a great number, and ſatiating itſelf with their blood, it then begins to think of carrying them home. This it carefully performs, going and returning, and bringing them one by one to its hole; but if it ſhould happen that the opening by which it got into the dove-houſe be not large enough for the body of the pigeon to get through, this miſchievous creature contents itſelf with carrying away the heads, and makes a moſt delicious feaſt upon the brains.

It is not leſs fond of honey, attacking the hives in winter, and forcing the bees away. It does not remove far from houſes in winter, as its prey is not ſo eaſily found in the woods during that ſeaſon. The female brings forth her young in ſummer, to the number of five or ſix at a time; theſe ſhe ſoon trains to her own rapacious habits, ſupplying the want of milk, which no carnivorous quadruped has in plenty, with the blood of ſuch animals as ſhe happens to ſeize. The fur of this animal is conſidered as ſoft and warm; yet it is in leſs eſtimation than ſome of a much inferior kind, from its offenſive ſmell, which can never be wholly removed, or ſuppreſſed. The polecat ſeems to be an inhabitant of the temperate climates*, ſcarce any being found towards the north, and but very few in the warmer latitudes. The ſpecies appears to be confined in Europe, from Poland to Italy. It is certain, that theſe animals are afraid of the cold, as they are often ſeen to come into houſes in winter, and as their tracks are never found in the ſnow, near their retreats. It is probable, alſo, that they are afraid of heat, as they are but thinly ſcattered in the ſouthern climates.

THE MARTIN.

THE Martin is a larger animal than any of the former, being generally eighteen inches long, and the tail ten more. It differs from the polecat, in being about four or five inches longer; its tail alſo is longer in proportion, and more buſhy at the end; its noſe is flatter; its cry is ſharper and more piercing; its colours are more elegant; and, what ſtills adds to their beauty, its ſcent is very unlike the for-

* Buffon.

mer, instead of being offensive, is considered as a most pleasing perfume. The martin, in short, is the most beautiful of all British beasts of prey: its head is small, and elegantly formed; its eyes lively; its ears are broad, rounded, and open; its back, its sides, and tail, are covered with a fine thick downy fur, with longer hair intermixed; the roots are ash colour, the middle of a bright chesnut, the points black; the head is brown, with a slight cast of red; the legs, and upper sides of the feet, are of a chocolate colour; the palms, or under sides, are covered with a thick down, like that of the body; the feet are broad, the claws white, large, and sharp, well adapted for the purposes of climbing, but, as in others of the weasel kind, incapable of being sheathed or unsheathed at pleasure; the throat and breast are white; the belly of the same colour with the back, but rather paler; the hair on the tail is very long, especially at the end, where it appears much thicker than near the insertion.

There is also a variety of this animal, called *the yellow breasted martin*, which in no respect differs for the former, except that this has a yellow breast, whereas the other has a white one: the colour of the body also is darker; and, as it lives more among trees than the other martin, its fur is more valuable, beautiful, and glossy. The former of these Mr. Buffon calls the *fouine;* the latter, simply the *martin;* and he supposes them to be a distinct species: but as they differ only in colour, it is unnecessary to embarrass history by a new distinction, where there is only so minute a difference.

Of all animals of the weasel kind, the martin is the most pleasing; all its motions shew great grace, as well as agility; and there is scarce an animal in our woods that will venture to oppose it. Quadrupeds five times as big are easily vanquished; the hare, the sheep, and even the wild cat itself, though much stronger, is not a match for the martin: and although carnivorous animals, are not fond of engaging each other, yet the wild cat and the martin seldom meet without a combat. Gesner tells us of one of this kind that he kept tame, which was extremely playful and pretty; it went among the houses of the neighbourhood, and always returned home when hungry: it was extremely

fond of a dog that had been bred up with it, and uſed to play with it as cats are ſeen to play, lying on its back, and biting without anger or injury. That which was kept tame by Mr. Buffon, was not quiet ſo ſocial: it was diveſted of its ferocity, but continued without attachment; and was ſtill ſo wild as to be obliged to be held by a chain. Whenever a cat appeared, it prepared for war; and if any of the poultry came within its reach, it flew upon them with avidity. Though it was tied by the middle of the body, it frequently eſcaped: at firſt is returned after ſome hours, but without ſeeming pleaſed, as if it only came to be fed; the next time it continued abroad longer; and, at laſt, went away without ever returning. It was a female, and was, when it went off, a year and a half old; and Mr. Buffon ſuppoſes it to have gone in queſt of the male. It ate every thing that was given it, except ſalad or herbs; and it was remarkably fond of honey. It was remarked, that it drank often, and often ſlept for two days together; and that, in like manner, it was often two or three days without ſleeping. Before it went to ſleep, it drew itſelf up into a round, hide its head, and covered it with its tail. When awake it was in continual agitation, and was obliged to be tied up, not leſs to prevent its attacking the poultry than to hinder it from breaking whatever it came near, by the capricious wildneſs of its motions.

The yellow-breaſted martin is much more common in France than in England; and yet even there this variety is much ſcarcer than that with the white breaſt. The latter keeps nearer houſes and villages to make its petty ravages among the ſheep and the poultry; the other keeps in the woods, and leads in every reſpect a ſavage life, building its neſt on the tops of trees, and living upon ſuch animals as are entirely wild like itſelf. About night-fall it uſually quits its ſolitude to ſeek its prey, hunts after ſquirrels, rats, and rabbits; deſtroys great numbers of birds and their young, takes the eggs from the neſt, and often removes them to its own without breaking*. The inſtant the martin finds itſelf purſued by dogs, for which purpoſe there is a peculiar breed, that ſeem fit for this chaſe only, it immediately makes to its retreat, which is generally in the hol-

* Brook's Natural Hiſtory.

low of ſome tree, towards the top, and which it is impoſſible to come at without cutting it down. Their neſt is generally the original tenement of the ſquirrel, which that little animal beſtowed great pains in completing; but the martin having killed and diſpoſſeſſed the little architect, takes poſſeſſion of it for its own uſe, enlarges its dimenſions, improves the ſoftneſs of the bed, and in that retreat brings forth its young. Its litter is never above three or four at a time; they are brought forth with the eyes cloſed, as in all the reſt of this kind, and very ſoon come to a ſtate of perfection. The dam compenſates for her own deficiency of milk, by bringing them eggs and live birds, accuſtoming them from the beginning to a life of carnage and rapine. When ſhe leads them from the neſt into the woods, the birds at once diſtinguiſh their enemies and attend them, as we before obſerved of the fox, with all the marks of alarm and animoſity. Wherever the martin conducts her young, a flock of ſmall birds are ſeen threatening and inſulting her, alarming every thicket, and often directing the hunter in his purſuit. The martin is more common in North America than in any part of Europe. Theſe animals are found in all the northern parts of the world, from Siberia to China and Canada. In every country they are hunted for their furs, which are very valuable, and chiefly ſo when taken in the beginning of winter. The moſt eſteemed part of the martin's ſkin is that part of it which is browner than the reſt, and ſtretches along the back-bone. Above twelve thouſand of theſe ſkins are annually imported into England from Hudſon's Bay, and above thirty thouſand from Canada.

THE SABLE.

Most of the claſſes of the weaſel kind would have continued utterly unknown and diſregarded were it not for their furs, which are finer, more gloſſy, and ſoft, than thoſe of any other quadruped. Their diſpoſitions are fierce and untameable; their ſcent generally offenſive; and their figure diſproportioned and unpleaſing. The knowledge of one or two of them would, therefore, have ſufficed curioſity; and the reſt would probably have been confounded together, under one common name, as things uſeleſs and unintereſting, had not their ſkins been coveted by the vain, and

conſidered as capable of adding to human magnificence or beauty.

Of all theſe, however, the ſkin of the ſable is the moſt coveted, and held in the higheſt eſteem. It is of a browniſh black; and the darker it is it becomes the more valuable.—A ſingle ſkin, though not above four inches broad, is often valued at ten or fifteen pounds*; the fur differing from others in this, that it has no grain; ſo that rub it which way you will, it is equally ſmooth and unreſiſting. Nevertheleſs, though this little animal's robe was ſo much coveted by the great, its hiſtory till of late was but very little known; and we are obliged to Mr. Jonelin for the firſt accurate deſcription of its form and nature†. From him we learn that the ſable reſembles the martin in form and ſize, and the weaſel in the number of its teeth; for it is to be obſerved, that whereas the martin has thirty-eight teeth, the weaſel has but thirty-four; in this reſpect, therefore, the ſable ſeems to make the ſhade between theſe two animals; being ſhaped like the one, and furniſhed with teeth like the other. It is alſo furniſhed with very large whiſkers about the mouth; its feet are broad, and, as in the reſt of its kind, furniſhed with five claws on each foot. Theſe are its conſtant marks; but its fur, for which it is ſo much valued, is not always the ſame. Some of theſe ſpecies are of a dark brown over all the body, except the ears and the throat, where the hair is rather yellow; others are more of a yellowiſh tincture, their ears and throat being alſo much paler. Theſe, in both, are the colours they have in winter, and which they are ſeen to change in the beginning of the ſpring; the former becoming of a yellow brown, and the latter of a pale yellow. In other reſpects they reſemble their kind, in vivacity, agility, and inquietude; in ſleeping by day, and ſeeking their prey by night; in living upon ſmaller animals, and in the diſagreeable odour that chiefly characterizes their race.

They generally inhabit along the banks of rivers, in ſhady places, and in the thickeſt woods. They leap with great eaſe from tree to tree, and are ſaid to be afraid of the ſun, which tarniſhes the luſtre of their robes. They are chiefly hunted in winter for their ſkins, during which part of the

* Regnard. † Buffon, vol. xxvii. p. 113.

year they are only in ſeaſon. They are moſtly found in Siberia, and but very few in any other country of the world; and this ſcarcity it is which enhances their value. The hunting of the ſable chiefly falls to the lot of the condemned criminals, who are ſent from Ruſſia into theſe wild and extenſive foreſts that, for a great part of the year, are covered with ſnow; and, in this inſtance, as in many others, the luxuries and ornaments of the vain, are wrought out of the dangers and the miſeries of the wretched. Theſe are obliged to furniſh a certain number of ſkins every year, and are puniſhed if the proper quantity be not provided.

The ſable is alſo killed by the Ruſſian ſoldiers, who are ſent into thoſe parts to that end. They are taxed a certain number of ſkins yearly, like the former, and are obliged to ſhoot with only a ſingle ball, to avoid ſpoiling the ſkin, or elſe with a croſs-bow, and blunt arrows. As an encouragement to the hunters, they are allowed to ſhare among themſelves the ſurplus of thoſe ſkins which they thus procure; and this, in the proceſs of ſix or ſeven years, amounts to a very conſiderable ſum. A colonel, during his ſeven years ſtay, gains about four thouſand crowns for his ſhare, and the common men ſix or ſeven hundred each for theirs.

THE ICHNEUMON.

The ichneumon, which ſome have injudiciouſly denominated the *cat of Pharaoh*, is one of the boldeſt and moſt uſeful animals of all the weaſel kind. In the kingdom of Egypt, where it is chiefly bred, it is uſed for the ſame purpoſes that cats are in Europe, and is even more ſerviceable, as being more expert in catching mice than they. This animal is uſually of the ſize of the martin, and greatly reſembles it in appearance, except that the hair, which is of a griſly black, is much rougher, and leſs downy. The tail, alſo, is not ſo buſhy at the end; and each hair in particular has three or four colours, which are ſeen in different diſpoſitions of its body. Under its rougher hairs, there is a ſofter fur of a browniſh colour, the rough hair being about two inches long, but that of the muzzle extremely ſhort, as likewiſe that on the legs and paws. However, being long ſince brought into a domeſtic ſtate, there are many varieties in this animal; ſome being much larger than the martin,

others much leſs; ſome being of a lighter mixture of colours, and ſome being ſtreaked in the manner of a cat.

The ichneumon, with all the ſtrength of a cat, has more inſtinct and agility; a more univerſal appetite for carnage, and a greater variety of powers to procure it*. Rats, mice, birds, ſerpents, lizards, and inſects, are all equally purſued; it attacks every living thing which it is able to overcome, and indiſcriminately preys on fleſh of all kinds. Its courage is equal to the vehemence of its appetites. It fears neither the force of the dog, nor the inſidious malice of the cat; neither the claws of the vulture, nor the poiſon of the viper. It makes war upon all kinds of ſerpents with great avidity, ſeizes and kills them, how venomous ſoever they be; and, we are told, that when it begins to perceive the effects of their rage, it has recourſe to a certain root, which the Indians call after its name, and aſſert to be an antidote for the bite of the aſp or the viper.

But what this animal is particularly ſerviceable to the Egyptians for, is, that it diſcovers and deſtroys the eggs of the crocodile. It alſo kills the young ones that have not as yet been able to reach the water; and, as fable uſually goes hand in hand with truth, it is ſaid that the ichneumon ſometimes enters the mouth of the crocodile, when it is found ſleeping on the ſhore, boldly attacks the enemy in the inſide, and at length, when it has effectually deſtroyed it, it eats its way out again.

The ichneumon when wild generally reſides along the banks of rivers; and in times of inundation makes to the higher ground, often approaching inhabited places in queſt of prey. It goes forward ſilently and cautiouſly, changing its manner of moving according to its neceſſities. Sometimes it carries the head high, ſhortens its body, and raiſes itſelf upon its legs; ſometimes it lengthens itſelf and ſeems to creep along the ground; it is often obſerved to ſit upon its hind legs, like a dog when taught to beg; but more commonly it is ſeen to dart like an arrow upon its prey, and ſeize it with inevitable certainty. Its eyes are ſprightly and full of fire, its phyſiognomy ſenſible, its body nimble, its tail long, and its hair rough and various. Like all of its

* The reſt of this deſcription is extracted from Mr. Buffon, except where marked with commas.

kind, it has glands that open behind and furnish an odorous substance. Its nose is too sharp and its mouth too small to permit its seizing things that are large; however, it makes up by its courage and activity its want of arms; it easily strangles a cat though stronger and larger than itself; and often fights with dogs, which, though never so bold, learn to dread the ichneumon as a formidable enemy. It also takes the water like the otter, and, as we are told, will continue under it much longer.

This animal grows fast and dies soon. It is found in great numbers in all the southern parts of Asia, from Egypt to Java; and it is also found in Africa, particularly at the Cape of Good Hope. It is domestic, as was said, in Egypt; but in our colder climates, it is not easy to breed or maintain them, as they are not able to support the rigour of our winters. Nevertheless they take every precaution that instinct can dictate to keep themselves warm; they wrap themselves up into a ball, hiding the head between the legs, and in this manner continue to sleep all day long. "Seba had one sent him from the island of Ceylon, which he permitted to run for some months about the house. It was heavy and slothful by day, and often could not be awakened even with a blow; but it made up this indolence by its nocturnal activity, smelling about without either being wholly tame or wholly mischievous. It climbed up the walls and the trees with very great ease, and appeared extremely fond of spiders and worms, which it preferred, probably from their resemblance to serpents, its most natural food. It was also particularly eager to scratch up holes in the ground; and, this added to its wildness and uncleanliness, obliged our naturalist to smother it in spirits, in order to preserve, and added it to the rest of his collection."

This animal was one of those formerly worshipped by the Egyptians, who considered every thing that was serviceable to them as an emanation of the Deity, and worshipped such as the best representives of God below. Indeed, if we consider the number of eggs which the crocodile lays in the sand at a time, which often amount to three or four hundred, we have reason to admire this little animal's usefulness as well as industry in destroying them, since otherwise the

The SQUASH

crocodile might be produced in ſufficient numbers to overrun the whole earth.

THE STINKARDS.

THIS is a name which our ſailors give to one or two animals of the weaſel kind, which are chiefly found in America. All the weaſel kind, as was already obſerved, have a very ſtrong ſmell; ſome of them indeed approaching to a perfume, but the greateſt number moſt inſupportably fœtid. But the ſmell of our weaſels, and ermines, and polecats, is fragrance itſelf when compared to that of the *ſquaſh* and the *ſkink*, which have been called the *polecats* of America. Theſe two are found in different parts of America, both differing in colour and fur, but both obviouſly of the weaſel kind, as appears not only from their figure and odour, but alſo from their diſpoſition. The ſquaſh is about the ſize of a polecat, its hair of a deep brown, but principally differing from all of this kind in having only four toes on the feet before, whereas all other weaſels have five. The ſkink, which I take to be Cateſby's Virginia polecat, reſembles a polecat in ſhape and ſize, but particularly differs in the length of its hair and colour. The hair is above three inches and a half long, and that at the end of the tail above four inches. The colour is partly black and partly white, variouſly diſpoſed over the body, very gloſſy, long and beautiful. There ſeem to be two varieties more of this animal, which Mr. Buffon calls the *conepate* and the *zorille*. He ſuppoſes each to be a diſtinct ſpecies: but as they are both ſaid to reſemble the polecat in form, and both to be clothed with long fur of a black and white colour, it ſeems needleſs to make a diſtinction. The conepate reſembles the ſkink in all things except in ſize, being ſmaller, and in the diſpoſition of its colours, which are more exact, having five white ſtripes upon a black ground, running longitudinally from the head to the tail. The zorille reſembles the ſkink, but is rather ſmaller and more beautifully coloured, its ſtreaks of black and white being more diſtinct, and the colours of its tail being black at its inſertion and white at the extremity; whereas in the ſkink they are all of one grey colour.

But whatever differences there may be in the figure or colour of theſe little animals, they all agree in one common

affection, that of being intolerably fœtid and loathſome. I have already obſerved that all the weaſel kind have glands furniſhing an odorous matter, near the anus, the conduits of which generally have their aperture juſt at its opening. That ſubſtance which is ſtored up in theſe receptacles, is in ſome of this kind, ſuch as in the martin, already mentioned, and alſo in the genet and the civet, to be deſcribed hereafter, a moſt grateful perfume; but in the weaſel, the ermine, the ferret, and the polecat, it is extremely fœtid and offenſive. Theſe glands in the animals now under conſideration are much larger, and furniſh a matter ſublimed to a degree of putreſcence that is truly amazing. As to the perfumes of muſk and civet, we know that a ſingle grain will diffuſe itſelf over a whole houſe, and continue for months to ſpread an agreeable odour, without diminution. However, the perfume of the muſk or the civet is nothing, either for ſtrength or duration, to the inſupportable odour of theſe. It is uſually voided with their excrement; and if but a ſingle drop happens to touch any part of a man's garment, it is more than probable that he can never wear any part of it more.

In deſcribing the effects produced by the excrement of theſe animals, we often hear of its raiſing this diabolical ſmell by its urine. However, of this I am apt to doubt; and it ſhould ſeem to me, that, as all the weaſel kind have their excrements ſo extremely fœtid from the cauſe above-mentioned, we may conſider theſe alſo as being fœtid from the ſame cauſes. Beſides, they are not furniſhed with glands to give their urine ſuch a ſmell; and the analogy between them and the weaſel kind being ſo ſtrong in other reſpects, we may ſuppoſe they reſemble each other in this. It has alſo been ſaid that they take this method of ejecting their excrement to defend themſelves againſt their purſuers; but it is much more probable that this ejection is the convulſive effect of terror, and that it ſerves as their defence without their own concurrence. Certain it is that they never ſmell thus horridly except when enraged or afrighted, for they are often kept tame about the houſes of the planters of America without being very offenſive.

The habitudes of all theſe animals are the ſame, living like all the reſt of the weaſel kind, as they prey upon ſmaller

animals and birds' eggs. The ſquaſh, for inſtance, burrows like the polecat in the clefts of rocks, where it brings forth its young. It often ſteals into farm-yards, and kills the poultry, eating only their brains. Nor is it ſafe to purſue or offend it, for then it calls up all its ſcents, which are its moſt powerful protection. At that time neither men nor dogs will offer to approach it; the ſcent is ſo ſtrong that it reaches for half a mile round, and more near at hand is almoſt ſtifling. If the dogs continue to purſue, it does all in its power to eſcape, by getting up a tree, or by ſome ſuch means; but, if driven to an extremity, it then lets fly upon the hunters; and if it ſhould happen that a drop of this fœtid diſcharge falls in the eye, the perſon runs the riſk of being blinded for ever*.

The dogs themſelves inſtantly abate of their ardour when they find this extraordinary battery played off againſt them; they inſtantly turn tail, and leave the animal undiſputed maſter of the field; and no exhortations can ever bring them to rally. "In the year 1749," ſays Kalm, "one of theſe animals came near the farm where I lived. It was in winter time, during the night; and the dogs that were upon the watch, purſued it for ſome time, until it diſcharged againſt them. Although I was in my bed a good way off, I thought I ſhould have been ſuffocated; and the cows and oxen, by their lowings, ſhewed how much they were affected by the ſtench. About the end of the ſame year, another of theſe animals crept into our cellar, but did not exhale the ſmalleſt ſcent, becauſe it was not diſturbed. A fooliſh woman, however, who perceived it at night, by the ſhining of its eyes, killed it, and at that moment its ſtench began to ſpread. The whole cellar was filled with it to ſuch a degree, that the woman kept her bed for ſeveral days after; and all the bread, meat, and other proviſions, that were kept there, were ſo infected, that they were obliged to be thrown out of doors." Nevertheleſs, many of the planters and the native Americans keep this animal tame about their houſes; and ſeldom perceive any diſagreeable ſcents, except it is injured or frighted. They are alſo known to eat its fleſh, which ſome aſſert to be tolerable food; how-

* Voyage de Kalm, as quoted by Buffon, vol. xxvii. p. 93.

ever, they take care to deprive it of thoſe glands which are ſo horridly offenſive.

THE GENET.

From the ſquaſh, which is the moſt offenſive animal in nature, we come to the genet, which is one of the moſt beautiful and pleaſing. Inſtead of the horrid ſtench with which the former affects us, this has a moſt grateful odour; more ſaint than civet, but to ſome, for that reaſon, more agreeable. This animal is rather leſs than the martin; though there are genets of different ſizes, and I have ſeen one rather larger. It alſo differs ſomewhat in the form of its body. It is not eaſy, in words, to give an idea of the diſtinction. It reſembles all thoſe of the weaſel kind, in its length, compared to its height; it reſembles them in having a ſoft, beautiful fur, in having its feet armed with claws that cannot be ſheathed, and in its appetite for petty carnage. But then it differs from them in having the noſe much ſmaller and longer, rather reſembling that of a fox than a weaſel. The tail, alſo, inſtead of being buſhy, tapers to a point, and is much longer; its ears are larger, and its paws ſmaller. As to its colours, and figure in general, the genet is ſpotted with black, upon a ground mixed with red and grey. It has two ſorts of hair, the one ſhorter and ſofter, the other longer and ſtronger, but not above half an inch long on any part of its body except the tail. Its ſpots are diſtinct and ſeparate upon the ſides, but unite towards the back, and form black ſtripes, which run longitudinally from the neck backwards. It has alſo along the back a kind of mane or longiſh hair, which forms a black ſtreak from the head to the tail, which laſt is marked with rings, alternately black and white, its whole length.

The genet, like all the reſt of the weaſel kinds, has glands, that ſeparate a kind of perfume, reſembling civet, but which ſoon flies off. Theſe glands open differently from thoſe of other animals of this kind; for, as the latter have their apertures juſt at the opening of the anus, theſe have their aperture immediately under it; ſo that the male ſeems, for this reaſon, to the ſuperficial obſerver, to be of two ſexes.

It reſembles the martin very much in its habits and diſpoſition*; except, that it ſeems tamed much more eaſily. Be-

* Buffon, vol. xix. p. 187.

lonius aſſures us, that he has ſeen them in the houſes at Conſtantinople as tame as cats; and that they were permitted to run every where about, without doing the leaſt miſchief. For this reaſon they have been called the *cats of Conſtantinople*; although they have little elſe in common with that animal, except their ſkill in ſpying out and deſtroying vermin. Naturaliſts pretend that it inhabits only the moiſter grounds, and chiefly reſides along the banks of rivers, having never been found in mountains, nor dry places. The ſpecies is not much diffuſed; it is not to be found in any part of Europe, except Spain and Turkey; it requires a warm climate to ſubſiſt and multiply in; and yet it is not to be found in the warmer regions either of India or Africa From ſuch as have ſeen its uſes at Conſtantinople, I learn, that it is one of the moſt beautiful, cleanly, and induſtrious animals in the world; that it keeps whatever houſe it is in perfectly free from mice and rats, which cannot endure its ſmell. Add to this, its nature is mild and gentle, its colours various and gloſſy, its fur valuable; and, upon the whole, it ſeems to be one of thoſe animals that, with proper care, might be propagated amongſt us, and might become one of the moſt ſerviceable of our domeſtics.

THE CIVET.

Proceeding from the ſmaller to the greater of this kind, we come, in the laſt place, to the Civet, which is much larger than any of the former; for as the martin is not above ſixteen inches long, the civet is found to be above thirty. Mr. Buffon diſtinguiſhes this ſpecies into two kinds; one of which he calls the *civet*, and the other the *zibet*. The latter principally differs from the former in having the body longer and more ſlender, the noſe ſmaller, the ears longer and broader: no mane or long hair running down the back in the latter; and the tail is longer and better marked with rings of different colours, from one end to the other. Theſe are the differences which have induced this great naturaliſt to ſuppoſe them animals of diſtinct ſpecies; and to allot each a ſeparate deſcription. How far future experience may confirm this conjecture, time muſt diſcover; but certain it is, that if ſuch ſmall varieties make a ſeparate claſs, there may be many other animals equally entitled to peculiar

diſtinction that now are claſſed together. We ſhall, therefore, content ourſelves, at preſent, with conſidering, as former naturaliſts have done, theſe two merely as varieties of the ſame animal, and only altered in figure, by climate, food, or education.

The civet reſembles animals of the weaſel kind in the long ſlenderneſs of its body, the ſhortneſs of its legs, the odorous matter that exudes from the glands behind, the ſoftneſs of its fur, the number of its claws, and their incapacity of being ſheathed. It differs from them in being much larger than any hitherto deſcribed; in having the noſe lengthened, ſo as to reſemble that of the fox; the tail long, and tapering to a point; and its ears ſtraight, like thoſe of a cat. The colour of the civet varies: it is commonly aſh, ſpotted with black; though it is whither in the female, tending to yellow; and the ſpots are much larger like thoſe of a panther. The colour on the belly, and under the throat, is black; whereas the other parts of the body are black or ſtreaked with grey. This animal varies in its colour, being ſometimes ſtreaked, as in our kind of cats called *tabbies*. It has whiſkers, like the reſt of its kind; and its eye is black and beautiful.

The opening of the pouch or bag, which is the receptacle of the civet, differs from that of the reſt of the weaſel kind, not opening into but under the anus. Beſides this opening, which is large, there is ſtill another lower down; but for what purpoſes deſigned, is not known. The pouch itſelf is about two inches and an half broad, and two long; its opening makes a chink, from the top downwards, that is about two inches and an half long; and it is covered on the edges and within, with ſhort hair: when the two ſides are drawn aſunder, the inward cavity may be ſeen, large enough to hold a ſmall pullet's egg; all round this are ſmall glands, opening and furniſhing that ſtrong perfume which is ſo well known, and is found in this pouch, of the colour and conſiſtence of pomatum. Thoſe who make it their buſineſs to breed theſe animals for their perfume, uſually take it from them twice or thrice a week, and ſometimes oftener. The animal is kept in a long ſort of a box, in which it cannot turn round. The perſon, therefore, opens this box behind, drags the animal backwards by the tail, keeps it in this poſition by a bar before, and, with a wooden ſpoon, takes the

civet from the pouch, as carefully as he can; then lets the tail go, and ſhuts the box again. The perfume, thus procured, is put into a veſſel, which he takes care to keep ſhut; and when a ſufficient quantity is procured, it is ſold to very great advantage

The civet*, although a native of the warmeſt climates is found yet to live in temperate, and even cold countries, provided it be defended carefully from the injuries of the air. Wherefore, it is not only bred among the Turks, the Indians, and Africans, but great numbers of theſe animals are alſo bred in Holland, where this ſcraping people make no ſmall gain of its perfume. The perfume of Amſterdam is reckoned the pureſt of any; the people of other countries adulterating it with gums, and other matters, which diminiſh its value, but increaſe its weight. The quantity which a ſingle animal affords generally depends upon its health and nouriſhment. It gives more in proportion as it is more delicately and abundantly fed. Raw fleſh haſhed ſmall, eggs, rice, birds, young fowls, and particularly fiſh, are the kinds of food the civet moſt delights in. Theſe are to be changed and altered, to ſuit and entice its appetite, and continue its health. It gets but very little water; and although it drinks but rarely, yet it makes urine very frequently; and, upon ſuch occaſions, we cannot, as in other animals, diſtinguiſh the male from the female.

The perfume of the civet is ſo ſtrong that it communicates itſelf to all parts of the animal's body; the fur is impregnated thereby, and the ſkin penetrated to ſuch a degree that it continues to preſerve the odour for a long time after it is ſtript off. If a perſon be ſhut up with one of them in a cloſe room, he cannot ſupport the perfume, which is ſo copiouſly diffuſed. When the animal is irritated, as in all the weaſel kind, its ſcent is much more violent than ordinary; and if it be tormented ſo as to make it ſweat, this alſo is a ſtrong perfume, and ſerves to adulterate or increaſe what is otherwiſe obtained from it. In general, it is ſold in Holland, for about fifty ſhillings an ounce: though, like all other commodities, its value alters in proportion to the demand. Civet muſt be choſen new, of a good conſiſtence, a whitiſh colour, and a ſtrong, diſagreeable ſmell. There is

* Buffon, vol. xix.

ſtill a very conſiderable traffic carried on from Buſſerah, Calicut, and other places in India, where the animal that produces it is bred; from the Levant alſo, from Guinea, and eſpecially from Braſil, in South America, although Mr. Buffon is of opinion that the animal is a native only of the Old Continent, and not to be found wild in the New. The beſt civet, however, is furniſhed, as was obſerved, by the Dutch, though not in ſuch quantities at preſent as ſome years paſt, when this perfume was more in faſhion Civet is a much more grateful perfume than muſk, to which it has ſome reſemblance; and was ſome years ago uſed for the ſame purpoſes in medicine. But, at preſent, it is quite diſcontinued in preſcription; and perſons of taſte or elegance ſeem to proſcribe it even from the toilet. Perfumes, like dreſs, have their viciſſitudes; muſk was in peculiar repute, until diſplaced by civet; both gave ground, upon diſcovering the manner of preparing ambergris; and even this is now diſuſed for the leſs powerful vegetable kinds of fragrance, ſpirit of lavender, or otter of roſes.

As to the reſt, the civet is ſaid to be a wild fierce animal; and, although ſometimes tamed, is never thoroughly familiar. Its teeth are ſtrong and cutting, although its claws be feeble and inflexible. It is light and active, and lives by prey, as the reſt of its kind, purſuing birds, and other ſmall animals that it is able to overcome. They are ſometimes ſeen ſtealing into the yards and outhouſes, to ſeize upon the poultry: their eyes ſhine in the night, and it is very probable that they ſee better in the dark than by day. When they fail of animal food, they are found to ſubſiſt upon roots and fruits, and very ſeldom drink; for which reaſon they are never found near great waters. They breed very faſt in their native climates, where the heat ſeems to conduce to their propagation; but in our temperate latitudes, although they furniſh their perfume in great quantities, yet they are not found to multiply.—A proof that their perfume has no analogy with their appetite for generation.

THE GLUTTON.

I WILL add but one animal more to this numerous claſs of the weaſel kind; namely, the glutton; which, for ſeveral reaſons, ſeems to belong to this tribe, and this only. We

The CIVET

have hitherto had no precise description of this quadruped; some resembling it to a badger, some to a fox, and some to a hyæna. Linnæus places it among the weasels, from the similitude of its teeth; it should seem to me to resemble this animal still more, from the great length of its body, and the shortness of its legs, from the softness of its fur, its disagreeable scent, and its insatiable appetite for animal food. Mr. Klein, who saw one of them, which was brought alive from Siberia, assures us, that it was about three feet long*, and about a foot and a half high. If we compare these dimensions with those of other animals, we shall find that they approach more nearly to the class we are at present describing than any other; and that the glutton may very justly be conceived under the form of a great, overgrown weasel.—Its nose, its ears, its teeth, and its long bushy tail, are entirely similar; and as to what is said of its being rather corpulent than slender, it is most probable that those who described it thus saw it after eating, at which time, its belly, we are assured, is most monstrously distended: however, suspending all certainty upon this subject, I will take leave rather to follow Linnæus than Buffon, in describing this animal; and leave future experience to judge between them.

The glutton, which is so called from its voracious appetite, is an animal found as well in the north of Europe and Siberia, as in the north parts of America, where it has the name of the *carcajou*. Amidst the variety of descriptions which have been given of it, no very just idea can be formed of its figure; and, indeed, some naturalists, among whom was Ray, entirely doubted of its existence. From the best accounts, however, we have of it, the body is thick and long, the legs short; it is black along the back, and of a reddish brown on the sides; its fur is held in the highest estimation, for its softness and beautiful gloss; the tail is bushy, like that of the weasel, but rather shorter; and its legs and claws are better fitted for climbing trees, than for running along the ground. Thus far it entirely resembles the weasel; and its manner of taking its prey is also by surprise, and not by pursuit.

* He says, it was an ell, eight inches long: I have, therefore, given its length, as supposing it to be a Flemish ell, which is twenty-seven inches.

Scarce any of the animals with ſhort legs and long bodies purſue their prey; but, knowing their own incapacity to overtake it by ſwiftneſs, either creep upon it in its retreats, or wait in ambuſh and ſeize it with a bound. The glutton, from the make of its legs, and the length of its body, muſt be particularly ſlow; and, conſequently, its only reſource is in taking its prey by ſurpriſe. All the reſt of the weaſel kind from the ſmallneſs of their ſize, are better fitted for a life of inſidious rapine than this; they can purſue their prey into its retreats, they can lurk unſeen among the branches of trees, and hide themſelves with eaſe under the leaves: but the glutton is too large to follow ſmall prey into their retreats; nor would ſuch, even if obtained, be ſufficient to ſuſtain it. For theſe reaſons, therefore, this animal ſeems naturally compelled to the life for which it has long been remarkable. Its only reſource is to climb a tree, which it does with great eaſe, and there it waits with patience until ſome large animal paſſes underneath, upon which it darts down with unerring certainty, and deſtroys it.

It is chiefly in North America that this voracious creature is ſeen lurking among the thick branches of trees, in order to ſurpriſe the deer, with which the extenſive foreſts of that part of the world abound. Endued with a degree of patience equal to its rapacity, the glutton ſingles out ſuch trees as it obſerves marked by the teeth or the antlers of the deer; and is known to remain there watching for ſeveral days together. If it has fixed upon a wrong tree, and finds that the deer have either left that part of the country, or cautiouſly ſhun the place, it reluctantly deſcends, purſues the beaver to its retreat, or even ventures into the water, in purſuit of fiſhes. But if it happens that, by long attention, and keeping cloſe, at laſt the elk or the rein-deer happens to paſs that way, it at once darts down upon them, ſticks its claws between their ſhoulders, and remains there unalterably firm. It is in vain that the large, frighted animal increaſes its ſpeed, or threatens with its branching horns; the glutton having taken poſſeſſion of its poſt, nothing can drive it off; its enormous prey drives rapidly along amongſt the thickeſt wood, rubs itſelf againſt the largeſt trees, and tears down the branches with its expanded horns; but ſtill its inſatiable foe ſticks behind, eating its neck, and digging its paſſage to

the great blood-veſſels that lie in that part. Travellers who wander through thoſe deſerts, often ſee pieces of the glutton's ſkin ſticking to the trees, againſt which it was rubbed by the deer. But the animal's voracity is greater than its feelings, and it never ſeizes without bringing down its prey. When, therefore, the deer, wounded, and feeble with the loſs of blood, falls, the glutton is ſeen to make up for its former abſtinence, by its preſent voracity. As it is not poſſeſſed of a feaſt of this kind every day, it reſolves to lay in a ſtore to ſerve it for a good while to come. It is, indeed, amazing how much one of theſe animals can eat at a time! That which was ſeen by Mr. Klein, although without exerciſe or air, although taken from its native climate, and enjoying but an indifferent ſtate of health, was yet ſeen to eat thirteen pounds of fleſh every day, and yet remain unſatisfied. We may, therefore, eaſily conceive how much more it muſt devour at once, after a long faſt, of a food of its own procuring, and in the climate moſt natural to its conſtitution. We are told, accordingly, that from being a lank, thin animal, which it naturally is, it then gorges in ſuch quantities, that its belly is diſtended, and its whole figure ſeems to alter. Thus voraciouſly it continues eating till, incapable of any other animal function, it lies totally torpid by the animal it has killed; and in this ſituation continues for two or three days. In this loathſome and helpleſs ſtate, it finds its chief protection from its horrid ſmell, which few animals care to come near*; ſo that it continues eating and ſleeping till its prey be devoured, bones and all, and then it mounts a tree, in queſt of another adventure.

The glutton, like many others of the weaſel kind, ſeems to prefer the moſt putrid fleſh to that newly killed; and ſuch is the voraciouſneſs of this hateful creature, that, if its ſwiftneſs and ſtrength were equal to its rapacity, it would ſoon thin the foreſt of every other living creature. But, fortunately, it is ſo ſlow that there is ſcarce a quadruped that cannot eſcape it, except the beaver. This, therefore, it very frequently purſues upon land; but the beaver generally makes good its retreat by taking to the water, where the glutton has no chance to ſucceed. This purſuit only

* Linnæi Syſtema, p. 67.

happens in ſummer; for in winter all that remains is to attack the beaver's houſe, as at that time it never ſtirs from home. This attack, however, ſeldom ſucceeds; for the beaver has a covert way bored under the ice, and the glutton has only the trouble and diſappointment of ſacking an empty town.

A life of neceſſity generally produces a good fertile invention. The glutton continually preſſed by the call of appetite, and having neither ſwiftneſs nor activity to ſatisfy it, is obliged to make up by ſtratagem the defects of Nature. It is often ſeen to examine the traps and the ſnares laid for other animals, in order to anticipate the fowlers. It is ſaid to practiſe a thouſand arts to procure its prey, to ſteal upon the retreats of the rein-deer, the fleſh of which animal it loves in preference to all others; to lie in wait for ſuch animals as have been maimed by the hunters; to purſue the ifatis while it is hunting for itſelf; and when that animal has run down its prey, to come in and ſeize upon the whole, and ſometimes to devour even its poor provider; when theſe purſuits fail, even to dig up the graves, and fall upon the bodies interred there, devouring them bones and all. For theſe reaſons, the natives of the countries where the glutton inhabits, hold it in utter deteſtation, and uſually term it the vulture of quadrupeds. And yet, it is extraordinary enough, that, being ſo very obnoxious to man, it does not ſeem to fear him*. We are told by Gemelin of one of theſe coming up boldly and calmly where there were ſeveral perſons at work, without teſtifying the ſmalleſt apprehenſion, or attempting to run until it had received ſeveral blows, that at laſt totally diſabled it. In all probability it came among them ſeeking its prey; and, having been uſed to attack animals of inferior ſtrength, it had no idea of a force ſuperior to its own. The glutton, like all the reſt of its kind, is a ſolitary animal; and is never ſeen in company except with its female, with which it couples in the midſt of winter. The latter goes with young about four months, and brings forth two or three at a time†. They burrow in holes as the weaſel; and the male and female are generally found together, both equally reſolute in defence of their young. Upon this occaſion the boldeſt

* Buffon. † Linnæi Syſtem. p. 67.

dogs are afraid to approach them; they fight obſtinately, and bite moſt cruelly. However, as they are unable to eſcape by flight, the hunters come the aſſiſtance of the dogs, and eaſily overpower them. Their fleſh, it may readily be ſuppoſed, is not fit to be eaten; but the ſkins amply recompence the hunters for their toil and danger. The fur has the moſt beautiful luſtre that can be imagined, and is preferred before all others, except that of the Siberian fox, or the ſable. Among other peculiarities of this animal, Linnæus informs us, that it is very difficult to be ſkinned; but from what cauſe, whether its abominable ſtench, or the ſkin's tenacity to the fleſh, he has not thought fit to inform us.

BOOK V.

ANIMALS OF THE HARE KIND.

INTRODUCTION.

HAVING defcribed in the laft chapter a tribe of minute, fierce, rapacious animals, I come now to a race of minute animals of a more harmlefs and gentle kind, that, without being enemies to any, are preyed upon by all. As Nature has fitted the former for hoftility, fo it has entirely formed the latter for evafion; and as the one kind fubfift by their courage and activity, fo the other find fafety from their fwiftnefs and their fears. The hare is the fwifteft animal in the world for the time it continues; and few quadrupeds can overtake even the rabbit when it has but a fhort way to run. To this clafs alfo we may add the fquirrel, fomewhat refembling the hare and rabbit in its form and nature, and equally pretty, inoffenfive, and pleafing.

If we were methodically to diftinguifh animals of the hare kind from all others, we might fay that they have but two cutting teeth above and two below, that they are covered with a foft downy fur, and that they have a bufhy tail. The combination of thefe marks might perhaps diftinguifh them tolerably well; whether from the rat, the beaver, the otter, or any other moft nearly approaching in form. But, as I have declined all method that rather tends to embarrafs hiftory than enlighten it, I am contented to clafs thefe animals together for no very precife reafon, but becaufe I find a general refemblance between them in their natural habits, and in the fhape of their heads and body. I call a fquirrel an animal of the hare kind, becaufe it is fomething like a hare. I call the paca of the fame kind, merely becaufe it is more like a rabbit than any other ani-

mal I know of. In ſhort, it is fit to erect ſome particular ſtandard in the imagination of the reader, to refer him to ſome animal that he knows, in order to direct him in conceiving the figure of ſuch as he does not know. Still, however, he ſhould be apprized that his knowledge will be defective without an examination of each particular ſpecies; and that ſaying an animal is of this or that particular kind is but a very trifling part of its hiſtory.

Animals of the hare kind, like all others that feed entirely upon vegetables, are inoffenſive and timorous. As Nature furniſhes them with a moſt abundant ſupply, they have not that rapacity after food remarkable in ſuch as are often ſtinted in their proviſion. They are extremely active and amazingly ſwift, to which they chiefly owe their protection; for being the prey of every voracious animal, they are inceſſantly purſued. The hare, the rabbit, and the ſquirrel, are placed by Pyerius, in his Treatiſe of Ruminating Animals, among the number of thoſe that chew the cud; but how far this may be true I will not pretend to determine. Certain it is that their lips continually move whether ſleeping or waking. Nevertheleſs they chew their meat very much before they ſwallow it, and for that reaſon I ſhould ſuppoſe that it does not want a ſecond maſtication. All theſe animals uſe their fore-paws like hands; they are remarkably ſalacious, and are furniſhed by Nature with more ample powers than moſt others for the buſineſs of propagation. They are ſo very prolific, that were they not thinned by the conſtant depredations made upon them by moſt other animals, they would quickly over-run the earth.

THE HARE.

Of all theſe the hare is the largeſt, the moſt perſecuted, and the moſt timorous; all its muſcles are formed for ſwiftneſs; and all its ſenſes ſeem only given to direct its flight. It has very large prominent eyes, placed backwards in its head, ſo that it can almoſt ſee behind it as it runs. Theſe are never wholly cloſed; but as the animal is continually upon the watch, it ſleeps with them open. The ears are ſtill more remarkable for their ſize; they are moveable, and capable of being directed to every quarter; ſo that the

ſmalleſt ſounds are readily received, and the animal's motions directed accordingly. The muſcles of the body are very ſtrong, and without fat, ſo that it may be ſaid to carry no ſuperfluous burthen of fleſh about it; the hinder feet are longer than the fore, which ſtill adds to the rapidity of its motions; and almoſt all animals that are remarkable for their ſpeed, except the horſe, are formed in the ſame manner.

An animal ſo well formed for a life of eſcape might be ſuppoſed to enjoy a ſtate of tolerable ſecurity; but as every rapacious creature is its enemy, it but very ſeldom lives out its natural term. Dogs of all kinds purſue it by inſtinct, and follow the hare more eagerly than any other animal. The cat and the weaſel kinds are continually lying in ambuſh, and practiſing all their little arts to ſeize it; birds of prey are ſtill more dangerous enemies, as againſt them no ſwiftneſs can avail, nor retreat ſecure; but man, an enemy far more powerful than all, prefers its fleſh to that of other animals, and deſtroys greater numbers than all the reſt. Thus purſued and perſecuted on every ſide, the race would long ſince have been totally extirpated, did it not find a reſource in its amazing fertility.

The hare multiplies exceedingly; it is in a ſtate of engendering at a few months old; the females go with young but thirty days, and generally bring forth three or four at a time *. As ſoon as they have produced their young they are again ready for conception, and thus do not loſe any time in continuing the breed. But they are in another reſpect fitted in an extraordinary manner for multiplying their kind; for the female, from the conformation of her womb, is often ſeen to bring forth, and yet to continue pregnant at the ſame time; or, in other words, to have young ones of different ages in her womb together. Other animals never receive the male when pregnant, but bring forth their young at once. But it is frequently different with the hare; the female often, though already impregnated, admitting the male, and thus receiving a ſecond impregnation. The reaſon of this extraordinary circumſtance is, that the womb in theſe animals is divided in ſuch a manner that it may be conſidered as a double organ, one ſide of which may be filled while the other remains empty. Thus theſe animals may be ſeen to

* Buffon, vol. xiii. p. 12.

couple at every period of their pregnancy, and even, while they are bringing forth young, laying the foundation of another brood.

The young of these animals are brought forth with their eyes open, and the dam suckles them for twenty days, after which they leave her, and seek out for themselves *. From this we observe, that the education these animals receive is but trifling, and the family connection but of a short duration. In the rapacious kinds the dam leads her young forth for months together; teaches them the arts of rapine; and, although she wants milk to supply them, yet keeps them under her care until they are able to hunt for themselves. But a long connection of this kind would be very unnecessary as well as dangerous to the timid animals we are describing; their food is easily procured; and their associations, instead of protection, would only expose them to their pursuers. They seldom, however, separate far from each other, or from the place where they were produced; but make each a form at some distance, having a predilection rather for the place than each other's society. They feed during the night rather than by day, chusing the more tender blades of grass, and quenching their thirst with the dew. They live also upon roots, leaves, fruits, and corn, and prefer such plants as are furnished with a milky juice. They also strip the bark of trees during the winter, there being scarce any that they will not feed on, except the lime or the alder. They are particularly fond of birch, pinks, and parsley. When they are kept tame, they are fed with lettuce and other garden herbs; but the flesh of such as are thus brought up is always indifferent.

They sleep or repose in their forms by day, and may be said to live only by night †. It is then that they go forth to feed and couple. They do not pair, however, but in the rutting season, which begins in February; the male pursues and discovers the female by the sagacity of its nose. They are then seen, by moon-light, playing, skipping, and pursuing each other; but the least motion, the slightest breeze, the falling of a leaf is sufficient to disturb their revels; they instantly fly off, and each takes a separate way.

* Buffon, vol. xiii. p. 12. † Ibid.

As their limbs are made for running, they eafily outftrip all other animals in the beginning; and could they preferve their fpeed, it would be impoffible to overtake them; but as they exhauft their ftrength at their firft efforts, and double back to the place they were ftarted from, they are more eafily taken than the fox, which is a much flower animal than they. As their hind legs are longer than the fore, they always chufe to turn up hill, by which the fpeed of their purfuers is diminifhed, while theirs remains the fame. Their motions are alfo without any noife, as they have the fole of the foot furnifhed with hair; and they feem the only animals that have hair on the infide of their mouths.

They feldom live above feven or eight years at the utmoft; they come to their full perfection in a year; and this multiplied by feven, as in other animals, gives the extent of their lives*. It is faid, however, that the females live longer than the males: of this Mr. Buffon makes a doubt; but I am affured that it is fo. They pafs their lives, in our climate, in folitude and filence; and they feldom are heard to cry, except when they are feized or wounded. Their voice is not fo fharp as the note of fome other animals, but more nearly approaching that of the fqualling of a child. They are not fo wild as their difpofitions and their habits feem to indicate; but are of a complying nature, and eafily fufceptible of a kind of education. They are eafily tamed. They even become fond and careffing, but they are incapable of attachment to any particular perfon, and never can be depended upon; for, though taken never fo young, they regain their native freedom at the firft opportunity. As they have a remarkable good ear, and fit upon their hind legs, and ufe their fore-paws as hands, they have been taught to beat the drum, to dance to mufic, and go through the manual exercife.

But their natural inftincts for their prefervation are much more extraordinary than thofe artificial tricks that are taught them. They make themfelves a form, particularly in thofe places where the colour of the grafs moft refembles that of their fkin; it is open to the fouth in winter and to the north in fummer. The hare, when it hears the hounds at a diftance, flies for fome time through a natural impulfe,

* Buffon, vol. xiii. p. 12.

without managing its ſtrength, or conſulting any other means but ſpeed for its ſafety. Having attained ſome hill or riſing ground, and left the dogs ſo far behind that it no longer hears their cries, it ſtops, rears on its hinder legs, and at length looks back to ſee if it has not loſt its purſuers. But theſe, having once fallen upon the ſcent, purſue ſlowly and with united ſkill, and the poor animal ſoon again hears the fatal tidings of their approach. Sometimes when ſore hunted it will ſtart a freſh hare, and ſquat in the ſame form; ſometimes it will creep under the door of a ſheep-cot, and hide among the ſheep; ſometimes it will run among them, and no vigilance can drive it from the flock; ſome will enter holes like the rabbit, which the hunters call going to *vault*; ſome will go up one ſide of the hedge and come down the other; and it has been known that a hare ſorely hunted has got upon the top of a cut quick-ſet hedge, and run a good way thereon, by which it has effectually evaded the hounds. It is no unuſual thing alſo for them to betake themſelves to furz buſhes, and to leap from one to another, by which the dogs are frequently miſled. However, the firſt doubling a hare makes is generally a key to all its future attempts of that kind, the latter being exactly like the former. The young hares tread heavier, and leave a ſtronger ſcent than the old, becauſe their limbs are weaker; and the more this forlorn creature tires, the heavier it treads, and the ſtronger is the ſcent it leaves. A buck, or male hare, is known by its chuſing to run upon hard highways, feeding farther from the wood-ſides, and making its doublings of a greater compaſs than the female. The male having made a turn or two about its form, frequently leads the hounds five or ſix miles on a ſtretch; but the female keeps cloſe by ſome covert ſide, turns, croſſes, and winds among the buſhes like a rabbit, and ſeldom runs directly forward. In general, however, both male and female regulate their conduct according to the weather. In a moiſt day they hold by the highways more than at any other time, becauſe the ſcent is then ſtrongeſt upon the graſs. If they come to the ſide of a grove or ſpring they forbear to enter, but ſquat down by the ſide thereof until the hounds have overſhot them; and then, turning along their former path, make to their old form, from which they vainly hope for protection.

Hares are divided, by the hunters, into mountain and meafled hares. The former are more fwift, vigorous, and have their flefh better tafted; the latter chiefly frequent the marfhes, when hunted keep among low grounds, and their flefh is moift, white, and flabby. When the male and female keep one particular fpot, they will not fuffer any ftrange hare to make its form in the fame quarter, fo that it is ufually faid, that the more you hunt, the more hares you fhall have; for, having killed one hare, others come and take poffeffion of its form. Many of thefe animals are found to live in woods and thickets, but they are naturally fonder of the open country, and are conftrained only by fear to take fhelter in places that afford them neither a warm fun nor an agreeable pafture. They are therefore, ufually feen ftealing out of the edges of the wood to tafte the grafs that grows fhorter and fweeter in the open fields than under the fhade of the trees; however, they feldom mifs of being purfued; and every excurfion is a new adventure. They are fhot at by poachers; traced by their footfteps in the fnow; caught in fpringes; dogs, birds, and cats, are all combined againft them; ants, fnakes, and adders, drive them from their forms, efpecially in fummer; even fleas, from which moft other animals are free, perfecute this poor creature; and, fo various are its enemies, that it is feldom permitted to reach even that fhort term to which it is limited by Nature.

The foil and climate have their influence upon this animal as well as on moft others. In the countries bordering on the north pole, they become white in winter, and are often feen in great troops of four or five hundred, running along the banks of the river Irtifh, or the Jenifca, and are white as the fnow they tread on. They are caught in traps for the fake of their fkins, which, on the fpot, are fold for lefs than feven fhillings a hundred. Their fur is well known to form a confiderable article in the hat manufacture; and we accordingly import vaft quantities of it from thofe countries where the hare abounds in fuch plenty. They are found alfo entirely black, but thefe in much lefs quantities than the former*; and even fome have been feen with horns, though thefe but rarely†.

* Klein. Difp. Quadrup. p. 52.

† Johnfton de Quadrup. L. ii. C. 2.

The hares of the hot countries, particularly in Italy, Spain, and Barbary, are ſmaller than ours: thoſe bred in the Milaneſe country are ſaid to be the beſt in Europe *. There is ſcarce a country where this animal is not to be found, from the torrid zone to the neighbourhood of the polar circle. The natives of Guinea knock them on the head as they come down to the ſides of the rivers to drink. They alſo ſurround the place where they are ſeen in numbers, and clattering a ſhort ſtick, which every man carries, againſt that which the perſon next him carries, they diminiſh their circle gradually, till the hares are cooped up in the midſt. They then altogether throw their ſticks in among them, and with ſuch deadly force, that they ſeldom fail of killing great numbers at a time †.

The fleſh of this animal has been eſteemed as a delicacy among ſome nations, and is held in deteſtation by others.—The Jews, the ancient Britons, and the Mahometans, all conſidered it as an unclean animal, and religiouſly abſtained from it. On the contrary, there are ſcarce any other people, however barbarous at preſent, that do not conſider it as the moſt agreeable food. Faſhion ſeems to preſide and govern all the ſenſes; what mankind at one time conſider as beautiful, fragrant, or ſavoury, may at another time, or among other nations, be regarded as deformed, diſguſtful, or ill-taſted. That fleſh which the ancient Romans ſo much admired as to call it the food of the wiſe, was among the Jews and the Druids, thought unfit to be eaten; and even the moderns, who, like the Romans, conſider the fleſh of this animal as a delicacy, have very different ideas as to dreſſing it. With us it is ſimply ſerved up without much ſeaſoning; but Apicius ſhews us the manner of dreſſing a hare in true Roman taſte, with parſley, rice, vinegar, cummin ſeed, and coriander ‡.

THE RABBIT.

THE hare and the rabbit, though ſo very nearly reſembling each other in form and diſpoſition, are yet diſtinct kinds, as they refuſe to mix with each other. Mr. Buffon

* Dictionaire Raiſonée Liever.

† Hiſt. Gen. des Voyages, tom. iv. p. 171.

‡ Vid. Apicii, &c.

bred up ſeveral of both kinds in the ſame place; but from being at firſt indifferent, they ſoon became enemies; and their combats were generally continued until one of them was diſabled or deſtroyed. However, though theſe experiments were not attended with ſucceſs, I am aſſured that nothing is more frequent than an animal bred between theſe two, but which, like the mule, is marked with ſterility.—Nay, it has been actually known that the rabbit couples with animals of a much more diſtant nature; and there is at preſent in the Muſeum at Bruſſels, a creature covered with feathers and hair, and ſaid to be bred between a rabbit and a hen. The fecundity of the rabbit is ſtill greater than that of the hare; and if we ſhould calculate the produce from a ſingle pair in one year, the number would be amazing. They breed ſeven times in a year, and bring eight young ones each time. On a ſuppoſition, therefore, that this happens regularly, at the end of four years, a couple of rabbits ſhall ſee a progeny of almoſt a million and a half. From hence we muſt juſtly apprehend being overſtocked by their increaſe; but, happily for mankind, their enemies are numerous, and their nature inoffenſive; ſo that their deſtruction bears a near proportion to their fertility.

But although their numbers be diminiſhed by every beaſt and bird of prey, and ſtill more by man himſelf, yet there is no danger of their extirpation. The hare is a poor, defenceleſs animal, that has nothing but its ſwiftneſs to depend on for ſafety; its numbers are, therefore, every day decreaſing; and in countries that are well peopled, the ſpecies are ſo much kept under, that laws are made for their preſervation. Still, however, it is moſt likely that they will be at laſt totally deſtroyed; and, like the wolf or the elk in ſome countries, be only kept in remembrance. But it is otherwiſe with the rabbit, its fecundity being greater, and its means of ſafety more certain. The hare ſeems to have more various arts and inſtincts to eſcape its purſuers, by doubling, ſquatting, and winding; the rabbit has but one art of defence alone, but in that one finds ſafety; by making itſelf a hole, where it continues a great part of the day, and breeds up its young; there it continues ſecure from the fox, the hound, the kite, and every other enemy.

Nevertheleſs, though this retreat be ſafe and convenient, the rabbit does not ſeem to be naturally fond of keeping there. It loves the ſunny field and the open paſture; it ſeems to be a chilly animal, and diſlikes the coldneſs of its underground habitation. It is, therefore, continually out, when it does not fear diſturbance; and the female often brings forth her young at a diſtance from the warren, in a hole, not above a foot deep at the moſt. There ſhe ſuckles them for about a month, covering them over with moſs and graſs, whenever ſhe goes to paſture, and ſcratching them up at her return. It has been ſaid, indeed, that this ſhallow hole without the warren, is made leſt the male ſhould attack and deſtroy her young; but I have ſeen the male himſelf attend the young there, lead them out to feed, and conduct them back upon the return of the dam. This external retreat ſeems a kind of country houſe, at a diſtance from the general habitation; it is uſually made near ſome ſpot of excellent paſture, or in the midſt of a field of ſprouting corn. To this both male and female often retire from the warren; lead their young by night to the food which lies ſo convenient, and, if not diſturbed, continue there till they are grown up. There they find a greater variety of paſture than near the warren, which is generally eaten bare; and enjoy a warmer ſun, by covering themſelves up in a ſhallower hole. Whenever they are diſturbed, they then forſake their retreat of pleaſure for one of ſafety; they fly to the warren with their utmoſt ſpeed; and if the way be ſhort, there is ſcarce any dog, how ſwift ſoever, that can overtake them.

But it does not always happen that theſe animals are poſſeſſed of one of theſe external apartments; they moſt uſually bring forth their young in the warren, but always in a hole, ſeparate from the male. On theſe occaſions, the female digs herſelf a hole*, different from the ordinary one, by being more intricate; at the bottom of which ſhe makes a more ample apartment. This done, ſhe pulls off from her belly a good quantity of her hair, with which ſhe makes a kind of bed for her young. During the two firſt days ſhe never leaves them; and does not ſtir out but to procure nouriſhment, which ſhe takes with the utmoſt deſpatch; in this manner ſuckling her young for near ſix weeks, until they are

* Buffon.

ſtrong, and able to go abroad themſelves. During all this time, the male ſeldom viſits their ſeparate apartment; but when they are grown up, ſo as to come to the mouth of the hole, he then ſeems to acknowledge them as his offſpring, takes them between his paws, ſmooths their ſkin, and licks their eyes; all of them, one after the other, have an equal ſhare in his careſſes.

In this manner the rabbit, when wild, conſults its pleaſure and its ſafety: but thoſe that are bred up tame, do not take the trouble of digging a hole, conſcious of being already protected. It has alſo been obſerved*, that when people, to make a warren, ſtock it with tame rabbits, theſe animals, having been unaccuſtomed to the art of ſcraping a hole, continue expoſed to the weather, and every other accident without ever burrowing. Their immediate offſpring alſo are equally regardleſs of their ſafety: and it is not till after two or three generations, that theſe animals begin to find the neceſſity and convenience of an aſylum, and practiſe an art which they could only learn from Nature.

Rabbits of the domeſtic breed, like all other animals that are under the protection of man, are of various colours; white, brown, black, and mouſe-colour. The black are the moſt ſcarce; the brown, white, and mouſe-colour, are in greater plenty. Moſt of the wild rabbits are of a brown, and it is the colour which prevails among the ſpecies; for in every neſt of rabbits, whether the parents be black or white, there are ſome brown ones found of the number. But, in England, there are many warrens ſtocked with the mouſe-colour kinds, which ſome ſay came originally from an iſland in the river Humber, and which ſtill continue their original colour, after a great number of ſucceſſive generations. A gentleman†, who bred up tame rabbits for his amuſement, gives the following account of their production: "I began," ſays he, "by having but one male and female only; the male was entirely white, and the female brown; but, in their poſterity, the number of the brown by far exceeded thoſe of any other colour: there were ſome white, ſome party-coloured, and ſome black. It is ſurpriſing how much the deſcendants were obedient and ſubmiſſive to their com-

* Buffon. † Mr. Moutier, as quoted by Mr. Buffon.

mon parent; he was eafily diftinguifhed from the reft by his fuperior whitenefs; and, however numerous the other males were, this kept them all in fubjection. Whenever they quarrelled among each other, either for their females or provifions, as foon as he heard the noife he ran up to them with all defpatch, and, upon his appearance, all was inftantly reduced to peace and order. If he caught any of them in the fact, he inftantly punifhed them, as an example to the reft. Another inftance of his fuperiority was, that having accuftomed them to come to me with the call of a whiftle, the inftant this fignal was given, I faw him marfhalling them up, leading them the foremaft, and then fuffering them all to file off before him."

The rabbit*, though lefs than the hare, generally lives longer. As thefe animals pafs the greater part of their lives in their burrow, where they continue at eafe and unmolefted, they have nothing to prevent the regularity of their health, or the due courfe of their nourifhment. They are, therefore, generally found fatter than the hare; but their flefh is, notwithftanding, much lefs delicate. That of the old ones, in particular, is hard, tough, and dry; but it is faid, that in warmer countries, they are better tafted. This may very well be, as the rabbit, though fo very plenty in Great Britain and Ireland, is nevertheleefs, a native of the warmer climates; and has been originally imported into thefe kingdoms, from Spain. In that country, and in fome of the iflands in the Mediterranean, we are told, that they once multiplied in fuch numbers as to prove the greateft nuifance to the natives. They at firft demanded military aid to deftroy them; but foon after they called in the affiftance of ferrets, which originally came from Africa, and thefe, with much more eafe and expedition, contrived to leffen the calamity. In fact, rabbits are found to love a warm climate, and to be incapable of bearing the cold of the north; fo that in Sweden they are obliged to be littered in the houfes. It is otherwife in all the tropical climates, where they are extremely common, and where they feldom burrow, as with us. The Englifh countries that are moft noted for thefe animals, are Lincolnfhire, Norfolk, and Cambridgefhire. They delight in grounds of a fandy foil,

* Mr. Moutier, as quoted by Mr. Buffon.

which are warmer than thoſe of clay; and which alſo furniſh a ſofter and finer paſture.

The tame rabbits are larger than the wild ones, from their taking more nouriſhment, and uſing leſs exerciſe; but their fleſh is not ſo good, being more inſipid and ſofter. In order to improve it, they are chiefly fed upon bran, and are ſtinted in their water; for if indulged in too great plenty of moiſt food, they are apt, as the feeders expreſs it, to grow rotten. The hair or fur is a very uſeful commodity, and is employed in England for ſeveral purpoſes, as well when the ſkin is dreſſed with it on, as when it is pulled off. The ſkins, eſpecially the white, are uſed for lining clothes, and are conſidered as a cheap imitation of ermine. The ſkin of the male is uſually preferred, as being the moſt laſting, but it is coarſer; that on the belly in either ſex, is the beſt and fineſt. But the chief uſe made of rabbit's fur, is in the manufacture of hats; it is always mixed, in certain proportions, with the fur of the beaver; and it is ſaid to give the latter more ſtrength and conſiſtence.

The Syrian rabbit, like all other animals bred in that country, is remarkable for the length of its hair; it falls along the ſides in wavy wreaths, and is in ſome places, curled at the end, like wool; it is ſhed once a year in large maſſes; and it often happens that the rabbit, dragging a part of its robe on the ground, appears as if it had got another leg, or a longer tail. There are no rabbits naturally in America; however, thoſe that have been carried from Europe, are found to multiply in the Weſt India iſlands in great abundance. In other parts of that continent, they have animals that in ſome meaſure reſemble the rabbits of Europe; and which moſt European travellers have often called *hares or rabbits*, as they happened to be large or ſmall. Their giving them even the name will be a ſufficient excuſe for my placing them among animals of the hare kind; although they may differ in many of the moſt eſſential particulars. But before we go to the new continent, we will firſt examine ſuch as bear even a diſtant reſemblance to the hare kind at home.

THE SQUIRREL.

THERE are few readers that are not as well acquainted with the figure of a Squirrel as that of the rabbit; but ſuppoſing it unknown to any, we might give them ſome idea of its form, by comparing it to a rabbit, with ſhorter ears, and a longer tail. The tail indeed, is alone ſufficient to diſtinguiſh it from all others, as it is extremely long, beautiful, and buſhy, ſpreading like a fan, and which, when thrown up behind, covers the whole body. This ſerves the little animal for a double purpoſe; when erected, it ſerves, like an umbrella, as a ſecure protection from the injuries of the heat and cold; and when extended, it is very inſtrumental in promoting theſe vaſt leaps that the ſquirrel takes from tree to tree; nay, ſome aſſert that it anſwers ſtill a third purpoſe, and when the ſquirrel takes to the water, which it ſometimes does upon a piece of bark, that its tail ſerves it inſtead of a ſail *.

There are few wild animals in which there are ſo many varieties as in the ſquirrel. The *common ſquirrel* is of the ſize of a ſmall rabbit, and is rather of a more reddiſh brown. The belly and breaſt are white; and the ears beautifully ornamented with long tufts of hair, of a deeper colour than that on the body. The eyes are large, black, and lively; the legs are ſhort and muſcular, like thoſe of the rabbit; but the toes longer, and the claws ſharper, ſo as to fit it for climbing. When it eats, or dreſſes itſelf, it ſits erect, like the hare or rabbit, making uſe of its fore legs as hands; and chiefly reſides in trees. The *grey Verginian ſquirrel*, which Mr. Buffon calls the *petit gris*, is larger than a rabbit, and of a greyiſh colour. Its body and limbs are thicker than thoſe of the common ſquirrel; and its ears are ſhorter, and without tufts at the point. The upper part of the body, and external part of the legs, are of a fine whitiſh grey, with a beautiful red ſtreak on each ſide lengthways. The tail is covered with very long grey hair, variegated with black and white towards the extremity. This variety ſeems to be common to both continents; and in Sweden is ſeen to change colour in winter. The *Barbary ſquirrel*, o fwhich Mr. Buffon makes three varieties, is of a mixed colour, between

* Klein. Linnæus.

red and black. Along the ſides there are white and brown lines, which render this animal very beautiful; but what ſtill adds to its elegance is, that the belly is of a ſky blue, ſurrounded with white. Some of theſe hold up the tail erect; and others throw it forward over their body. The *Siberian white ſquirrel* is of the ſize of a common ſquirrel. The *Carolina black ſquirrel* is much bigger than the former, and ſometimes tipped with white at all the extremities. The *Braſilian ſquirrel*, which Mr. Buffon calls the *coquallin*, is a beautiful animal of this kind, and very remarkable for the variety of its colours. Its belly is of a bright yellow; its head and body variegated with white, black, brown, and orange colour. It wants the tufts at the extremity of its ears; and does not climb trees, as moſt of the kind are ſeen to do. To this liſt may be added the *little ground ſquirrel of Carolina*, of a reddiſh colour, and blackiſh ſtripes on each ſide; and, like the former, not delighting in trees. Laſtly, the *ſquirrel of New Spain*, which is of a deep iron-grey colour, with ſeven longitudinal whitiſh ſtreaks along the ſides of the male, and five along thoſe of the female. As for the flying ſquirrels, they are a diſtinct kind, and ſhall be treated of by themſelves.

Theſe, which I ſuppoſe to be but a few of the numerous varieties of the ſquirrel, ſufficiently ſerve to ſhew how extenſively this animal is diffuſed over all parts of the world. It is not to be ſuppoſed, however, that every variety is capable of ſuſtaining every climate; for few animals are ſo tender, or ſo little able to endure a change of abode, as this. Thoſe bred in the tropical climates, will only live near a warm ſun; while, on the contrary, the ſquirrel of Siberia will ſcarce endure the temperature of ours. Theſe varieties do not only differ in their conſtitutions and colour, but in their diſpoſitions alſo; for while ſome live on the tops of trees, others feed, like rabbits, on vegetables below. Whether any of theſe, ſo variouſly coloured, and ſo differently diſpoſed, would breed among each other, we cannot tell: and ſince, therefore, we are left in uncertainty upon this point, we are at liberty either to conſider each as a diſtinct ſpecies by itſelf; or only a variety, that accident might have originally produced, and that the climate or ſoil might have continued. For own part, as the original

character of the ſquirrel is ſo ſtrongly marked upon them all, I cannot help conſidering them in the latter point of view; rather as the common deſcendants of one parent, than originally formed with ſuch diſtinct ſimilitudes.

The ſquirrel is a beautiful little animal *, which is but half ſavage; and which, from the gentleneſs and innocence of its manners, deſerves our protection. It is neither carnivorous nor hurtful: its uſual food is fruits, nuts, and acorns; it is cleanly, nimble, active, and induſtrious; its eyes are ſparkling, and its phyſiognomy marked with meaning. It generally, like the hare and rabbit, ſits up on its hinder legs; and uſes the fore paws as hands; theſe have five *claws* or *toes*, as they are called, and one of them is ſeparated from the reſt like a thumb. This animal ſeems to approach the nature of birds, from its lightneſs, and ſurpriſing agility on the tops of trees. It ſeldom deſcends to the ground, except in caſe of ſtorm, but jumps from one branch to another; feeds, in ſpring, on the buds and young ſhoots; in ſummer, on the ripening fruits; and particularly the young cones of the pine-tree. In autumn it has an extenſive variety to feaſt upon; the acorn, the philberd, the cheſnut, and the wilding. This ſeaſon of plenty, however, is not ſpent in idle enjoyment; the provident little animal gathers at that time its proviſions for the winter; and cautiouſly foreſees the ſeaſon when the foreſt ſhall be ſtripped of its leaves and fruitage.

Its neſt is generally formed among the large branches of a great tree, where they begin to fork off in ſmall ones. After chuſing the place where the timber begins to decay, and an hollow may the more eaſily be formed, the ſquirrel begins by making a kind of a level between the forks; and then bringing moſs, twigs, and dry leaves, it binds them together with great art, ſo as to reſiſt the moſt violent ſtorm. This is covered up on all ſides; and has but a ſingle opening at top, which is juſt large enough to admit the little animal; and this opening is itſelf defended from the weather by a kind of canopy, made in the faſhion of a cone, ſo that it throws off the rain, though never ſo heavy. The neſt thus formed, with a very little opening above, is, nevertheleſs, very commodious and roomy below; ſoft, well

* Buffon.

knit together, and every way convenient and warm. In this retreat the little animal brings forth its young, ſhelters itſelf from the ſcorching heat of the ſun, which it ſeems to fear, and from the ſtorms and the inclemency of winter, which it is ſtill leſs capable of ſupporting. Its proviſion of nuts and acorns is ſeldom in its neſt, but in the hollows of the tree, laid up carefully together, and never touched but in caſes of neceſſity. Thus one ſingle tree ſerves for a retreat and a ſtore-houſe; and without leaving it during the winter, the ſquirrel poſſeſſes all thoſe enjoyments that its nature is capable of receiving. But it ſometimes happens that its little manſion is attacked by a deadly and powerful foe. The martin goes often in queſt of a retreat for its young, which it is incapable of making for itſelf; for this reaſon it fixes upon the neſt of a ſquirrel, and, with double injuſtice, deſtroys the tenant, and then takes poſſeſſion of the manſion.

However, this is a calamity that but ſeldom happens: and, of all other animals, the ſquirrel leads the moſt frolickſome playful life, being ſurrounded with abundance, and having few enemies to fear. They are in heat early in the ſpring; when, as a modern naturaliſt ſays *, it is very diverting to ſee the female feigning an eſcape from the purſuit of two or three males, and to obſerve the various proofs which they give of their agility, which is then exerted in full force. Nature ſeems to have been particular in her formation of theſe animals for propagation: however, they ſeldom bring forth above four or five young at a time; and that but once a year. The time of their geſtation ſeems to be about ſix weeks; they are pregnant in the beginning of April, and bring forth about the middle of May.

The ſquirrel is never found in the open fields, nor yet in copſes or underwoods; it always keeps in the midſt of the talleſt trees, and, as much as poſſible, ſhuns the habitations of men. It is extremely watchful; if the tree in which it reſides be but touched at the bottom, the ſquirrel inſtantly takes the alarm, quits its neſt, at once flies off to another tree, and thus travels, with great eaſe, along the tops of the foreſt, until it finds itſelf perfectly out of danger. In this manner it continues for ſome hours at a diſtance from home, until the alarm be paſt away; and then it returns, by paths

* Britiſh Zoology.

The SQUIRREL

that to all quadrupeds but itſelf are utterly impaſſable. Its uſual way of moving is by bounds; theſe it takes from one tree to another, at forty feet diſtance; and if at any time it is obliged to deſcend, it runs up the ſide of the next tree with amazing facility. It has an extremely ſharp piercing note, which moſt uſually expreſſes pain; it has another, more like the purring of a cat, which it employs when pleaſed; at leaſt it appeared ſo in that from whence I have taken a part of this deſcription.

In Lapland, and the extenſive foreſts to the north, the ſquirrels are obſerved to change their habitation, and to remove in vaſt numbers from one country to another. In theſe migrations they are generally ſeen by thouſands, travelling directly forward; while neither rocks, foreſts, nor even the broadeſt waters can ſtop their progreſs. What I am going to relate, appears ſo extraordinary, that were it not atteſted by numbers of the moſt credible hiſtorians, among whom are Klein and Linnæus, it might be rejected, with that ſcorn with which we treat impoſture or credulity: however, nothing can be more true than, that when theſe animals, in their progreſs, meet with broad rivers, or extenſive lakes, which abound in Lapland, they take a very extraordinary method of croſſing them. Upon approaching the banks, and perceiving the breadth of the water, they return, as if by common conſent, into the neighbouring foreſt, each in queſt of a piece of bark, which anſwers all the purpoſes of boats for wafting them over. When the whole company are fitted in this manner, they boldly commit their little fleet to the waves; every ſquirrel ſitting on its own piece of bark, and fanning the air with its tail, to drive the veſſel to its deſired port. In this orderly manner they ſet forward, and often croſs lakes ſeveral miles broad. But it too often happens that the poor mariners are not aware of the dangers of their navigation; for although at the edge of the water it is generally calm, in the midſt it is always more turbulent. There the ſlighteſt additional guſt of wind overſets the little ſailor and his veſſel together. The whole navy, that but a few minutes before rode proudly and ſecurely along, is now overturned, and a ſhipwreck of two or three thouſand ſail enſues. This, which is ſo unfortunate for the little animal, is generally the moſt lucky accident in the world for

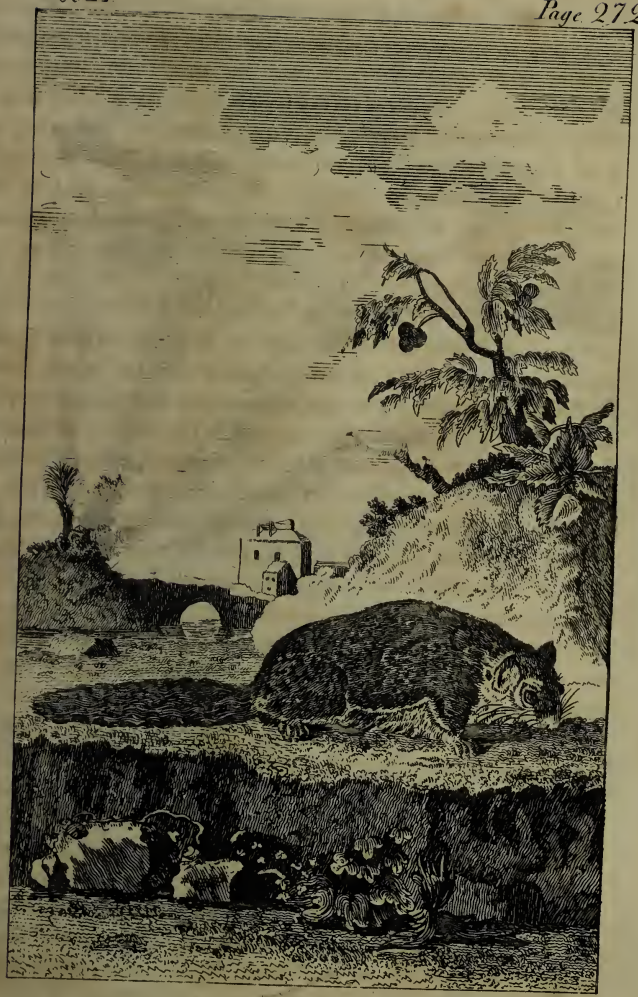
the Laplander on the ſhore; who gathers up the dead bodies as they are thrown in by the waves, eat the fleſh, and ſells the ſkins for about a ſhilling the dozen*.

The ſquirrel is eaſily tamed, and it is then a very familiar animal. It loves to lie warm, and will often creep into a man's pocket or his boſom. It is uſually kept in a box, and fed with hazle nuts. Some find amuſement in obſerving with what eaſe it bites the nut open and eats the kernel. In ſhort, it is a pleaſing pretty little domeſtic; and its tricks and habitudes may ſerve to entertain a mind unequal to ſtronger operations.

THE FLYING SQUIRREL.

Mr. RAY was juſtly of opinion that the Flying Squirrel might more properly be ſaid to be of the rat kind, becauſe its fur is ſhorter than in other ſquirrels, and its colours alſo more nearly approach the former. However, as mankind have been content to claſs it among the ſquirrels, it is ſcarcely worth making a new diſtinction in its favour. This little animal, which is frequently brought over to England, is leſs than a common ſquirrel and bigger than a field mouſe. Its ſkin is very ſoft, and elegantly adorned with a dark fur in ſome places, and light grey in others. It has large prominent black and very ſparkling eyes, ſmall ears, and very ſharp teeth, with which it gnaws any thing quickly. When it does not leap, its tail, which is pretty enough, lies cloſe to its back; but when it takes its ſpring, the tail is moved backwards and forwards from ſide to ſide. It is ſaid to partake ſomewhat of the nature of the ſquirrel, of the rat, and of the dormouſe; but that in which it is diſtinguiſhed from all other animals, is its peculiar conformation for taking thoſe leaps that almoſt look like flying. It is indeed, amazing to ſee it at one bound dart above an hundred yards, from one tree to another. They are aſſiſted in this ſpring by a very peculiar formation of the ſkin, that extends from the fore-feet to the hinder; ſo that when the animal ſtretches its fore-legs forward and its hind-legs backward, this ſkin is ſpread out between them, ſomewhat like that between the legs of a bat. The ſurface of the body being thus increaſed, the little animal keeps buoyant in the air until the force of

* Oeuvres de Regnard.



The FLYING SQUIRREL

The Squirrel in the act of Flying

its firſt impulſion is expired, and then it deſcends. This ſkin, when the creature is at reſt, or walking, continues wrinkled upon its ſides; but when its limbs are extended, it forms a kind of web between them of above an inch broad on either ſide, and gives the whole body the appearance of a ſkin floating in the air. In this manner the flying ſquirrel changes place, not like a bird, by repeated ſtrokes of its wings, but rather like a paper kite, ſupported by the expanſion of the ſurface of its body; but with this difference, however, that, being naturally heavier than the air, inſtead of mounting it deſcends; and that jump, which upon the ground would not be above forty yards, when from a higher tree to a lower may be above a hundred.

This little animal is more common in America than in Europe, but not very commonly to be ſeen in either. It is uſually found, like the ſquirrel, on the tops of trees; but, though better fitted for leaping, it is of a more torpid diſpoſition, and is ſeldom ſeen to exert its powers; ſo that it is often ſeized by the polecat and the martin. It is eaſily tamed, but apt to break away whenever it finds an opportunity. It does not ſeem fond of nuts or almonds, like other ſquirrels, but is chiefly pleaſed with the ſprouts of the birch, and the cones of the pine. It is fed in its tame ſtate with bread and fruits; it generally ſleeps by day, and is always moſt active by night. Some naturaliſts gravely caution us not to let it get among our corn fields, where they tell us it will do a great deal of damage, by cropping the corn as ſoon as it begins to ear*!

THE MARMOUT.

FROM the deſcription of the ſquirrel and its varieties, we proceed to a different tribe of animals, no way indeed reſembling the ſquirrel, but ſtill ſomething like the rabbit and the hare. We are to keep theſe two animals ſtill in view as the centre of our compariſon; as objects to which many others may bear ſome ſimilitude, though they but little approach each other. Among the hare kind is the Marmout, which naturaliſts have placed either among the

* He may eaſily be made tame; but he is apt to do a great deal of damage in the corn fields, becauſe he will crop the corn as ſoon as it begins to ear.

BROOKE'S NAT. HIST.

hare kind or the rat kind, as it ſuited their reſpective ſyſtems. In fact, it bears no great reſemblance to either; but of the two it approaches much nearer the hare, as well in the make of its head as in its ſize, in its buſhy tail, and particularly in its chewing the cud, which alone is ſufficient to determine our choice in giving it its preſent ſituation. How it ever came to be degraded into the rat or mouſe I cannot conceive, for it no way reſembles them in ſize, being near as big as a hare; or in its diſpoſition, ſince no animal is more tractable nor more eaſily tamed.

The marmout is, as was ſaid, almoſt as big as a hare, but it is more corpulent than a cat, and has ſhorter legs. Its head pretty nearly reſembles that of a hare, except that its ears are much ſhorter. It is clothed all over with very long hair, and a ſhorter fur below. Theſe are of different colours, black and grey. The length of the hair gives the body the appearance of greater corpulence than it really has, and at the ſame ſhortens the feet, ſo that its belly ſeems touching the ground. Its tail is tufted and well furniſhed with hair, and it is carried in a ſtraight direction with its body. It has five claws behind, and only four before. Theſe it uſes as the ſquirrel does, to carry its food to its mouth; and it uſually ſits upon its hinder parts to feed in manner of that little animal.

The marmout is chiefly a native of the Alps; and when taken young is tamed more eaſily than any other wild animal, and almoſt as perfectly as any of thoſe that are domeſtic*. It is readily taught to dance, to wield a cudgel, and to obey the voice of its maſter. Like the cat, it has an antipathy to the dog; and when it becomes familiar to the family, and is ſure of being ſupported by its maſter, it attacks and bites even the largeſt maſtiff. From its ſquat muſcular make, it has great ſtrength joined to great agility. It has four large cutting teeth, like all thoſe of the hare kind, but it uſes them to much more advantage, ſince in this animal they are very formidable weapons of defence. However, it is in general a very inoffenſive animal; and, except its enmity to dogs, ſeems to live in friendſhip with every creature, unleſs when provoked. If not prevented, it is very apt to

* Buffon, from whence the remainder of this deſcription is taken. *N. B.* He takes it from Geſner, vol. xvii.

The MARMOUT

gnaw the furniture of a houſe, and even to make holes through wooden partitions; from whence, perhaps, it has been compared to the rat. As its legs are very ſhort, and made ſomewhat like thoſe of a bear, it is often ſeen ſitting up, and even walking on its hind legs in like manner; but with the fore-paws, as was ſaid, it uſes to feed itſelf in the manner of a ſquirrel. Like all of the hare kind, it runs much ſwifter up hill than down; it climbs trees with great eaſe, and runs up the clifts of rocks or the contiguous walls of houſes with great facility. It is ludicrouſly ſaid that the Savoyards, who are the only chimney-ſweepers of Paris, have learned this art from the marmout, which is bred in the ſame country.

Theſe animals eat indiſcriminately of whatever is preſented to them; fleſh, bread, fruits, herbs, roots, pulſe, and inſects. But they are particularly fond of milk and butter. Although leſs inclined to petty thefts than the cat, yet they always try to ſteal into the dairy, where they lap up the milk like a cat, purring all the while like that animal, as an expreſſion of their being pleaſed. As to the reſt, milk is the only liquor they like. They ſeldom drink water, and refuſe wine. When pleaſed or careſſed, they often yelp like puppies; but when irritated or frighted, they have a piercing note that hurts the ear. They are very cleanly animals, and like the cat retire upon neceſſary occaſions; but their bodies have a diſagreeable ſcent, particularly in the heat of ſummer. This tinctures their fleſh, which, being very fat and firm, would be very good, were not this flavour always found to predominate.

We have hitherto been deſcribing affections in this animal which it has in common with many others; but we now come to one which particularly diſtinguiſhes it from all others of this kind, and, indeed, from every other quadruped, except the bat and the dormouſe: this is its ſleeping during the winter. The marmout, though a native of the higheſt mountains, and where the ſnow is never wholly melted, nevertheleſs ſeems to feel the influence of the cold more than any other, and in a manner has all its faculties chilled up in winter. This extraordinary ſuſpenſion of life and motion for more than half the year, deſerves our wonder, and excites our attention to conſider the manner of ſuch

a temporary death, and the ſubſequent revival. But firſt to deſcribe, before we attempt to diſcuſs.

The marmout, uſually at the end of September, or the beginning of October, prepares to fit up its habitation for the winter, from which it is never ſeen to iſſue till about the beginning or the middle of April. This animal's little retreat is made with great precaution, and fitted up with art. It is an hole on the ſide of a mountain, extremely deep, with a ſpacious apartment at the bottom, which is rather longer than it is broad. In this ſeveral marmouts can reſide at the ſame time, without crowding each other, or injuring the air they breathe. The feet and claws of this animal ſeem made for digging; and, in fact, they burrow into the ground with amazing facility, ſcraping up the earth like a rabbit, and throwing back what they have thus looſened behind them. But the form of their hole is ſtill more wonderful; it reſembles the letter Y; the two branches being two openings, which conduct into one channel which terminates in their general apartment that lies at the bottom. As the whole is made on the declivity of a mountain, there is no part of it on a level but the apartment at the end. One of the branches or openings iſſues out, ſloping downwards; and this ſerves as a kind of ſink or drain to the whole family, where they make their excrements, and where the moiſture of the place is drawn away. The other branch, on the contrary, ſlopes upwards; and this ſerves as their door upon which to go out and in. The apartment at the end is very warmly ſtuccoed round with moſs and hay, of both which they make an ample proviſion during the ſummer. As this is a work of great labour, ſo it is undertaken in common; ſome cut the fineſt graſs, others gather it, and others take their turns to drag it into their hole. Upon this occaſion, as we are told, one of them lies on its back, permits the hay to be heaped upon its belly, keeps its paws upright to make greater room; and in this manner, laying ſtill upon its back, it is dragged by the tail, hay and all, to their common retreat. This alſo ſome give as a reaſon for the hair being generally worn away on their backs, as is uſually the caſe; however, a better reaſon for this may be aſſigned, for their continually rooting up holes and paſſing through narrow openings. But, be this as it will, certain it is that they all live

together, and work in common to make their habitation as ſnug and convenient as poſſible. In it they paſs three parts of their lives; into it they retire when the ſtorm is high; in it they continue while it rains; there they remain when apprehenſive of danger, and never ſtir out except in fine weather, never going far from home even then. Whenever they venture abroad, one is placed as a centinel, ſitting upon a lofty rock, while the reſt amuſe themſelves in playing along the green fields, or are employed in cutting graſs and making hay for their winter's convenience. Their truſty centinel, when an enemy, a man, a dog, or a bird of prey approaches, apprizes its companions with a whiſtle, upon which they all make home, the centinel himſelf bringing up the rear.

But it muſt not be ſuppoſed that this hay is deſigned for proviſion; on the contrary, it is always found in as great plenty in their holes at the end as at the beginning of winter; it is only ſought for the convenience of their lodging, and the advantages of their young. As to proviſion, they ſeem kindly apprized by Nature that during the winter they ſhall not want any, ſo that they make no preparations for food, though ſo diligently employed in fitting up their abode. As ſoon as they perceive the firſt approaches of the winter, during which their vital motions are to continue in ſome meaſure ſuſpended, they labour very diligently to cloſe up the two entrances of their habitation, which they effect with ſuch ſolidity, that it is eaſier to dig up the earth any where elſe than where they have cloſed it. At that time they are very fat, and ſome of them are found to weigh above twenty pounds; they continue ſo for even three months more; but by degrees their fleſh begins to waſte, and they are uſually very lean by the end of winter. When their retreat is opened, the whole family is then diſcovered, each rolled into a ball, and covered up under the hay. In this ſtate they ſeem entirely lifeleſs; they may be taken away, and even killed without their teſtifying any great pain; and thoſe who find them in this manner carry them home in order to breed up the young and eat the old ones. A gradual and gentle warmth revives them; but they would die if too ſuddenly brought near the fire, or if their juices were too quickly liquefied.

Strictly ſpeaking, ſays Mr. Buffon, theſe animals cannot be ſaid to ſleep during the winter; it may be called rather a *torpor*, a ſtagnation of all the faculties*. This torpor is produced by the congelation of their blood, which is naturally much colder than that of all other quadrupeds. The uſual heat of man and other animals is about thirty degrees above congelation; the heat of theſe is not above ten degrees. Their internal heat is ſeldom greater than that of the temperature of the air. This has been often tried by plunging the ball of the thermometer into the body of a living dormouſe, and it never roſe beyond its uſual pitch in air, and ſometimes it ſunk above a degree. It is not ſurpriſing, therefore, that theſe animals, whoſe blood is ſo cold naturally, ſhould become torpid, when the external cold is too powerful for the ſmall quantity of heat in their bodies, yet remaining; and this always happens when the thermometer is not more than ten degrees above congelation. This coldneſs Mr. Buffon has experienced in the blood of the bat, the dormouſe, and the hedge-hog, and with great juſtice he extends the analogy to the marmout, which, like the reſt, is ſeen to ſleep all the winter. This torpid ſtate continues as long as the cauſe which produces it continues; and it is very probable that it might be lengthened out beyond its uſual term, by artificially prolonging the cold; if, for inſtance, the animal were rolled up in wool, and placed in a cold cellar, nearly approaching to, but not quite ſo cold as an ice-houſe, for that would kill them outright, it would remain perhaps a whole year in its ſtate of inſenſibility. However this be, if the heat of the air be above ten degrees, theſe animals are ſeen to revive; and, if it be continued in that degree of temperature, they do not become torpid, but eat and ſleep at proper intervals like all other quadrupeds whatever.

From the above account we may form ſome conception of the ſtate in which theſe animals continue during the winter. As in ſome diſorders where the circulation is extremely languid, the appetite is diminiſhed in proportion, ſo in theſe the blood ſcarcely moving, or only moving in the greater veſſels, they want no nouriſhment to repair what is worn away by its motions. They are ſeen, indeed, by ſlow degrees to become leaner in proportion to the ſlow attrition of

* Buffon, vol. xvi. Loirs.

The AGOUTI

their fluids; but this is not perceptible except at the end of ſome months. Man is often known to gather nouriſhment from the ambient air; and theſe alſo may in ſome meaſure be ſupplied in the ſame manner; and, having ſufficient motion in their fluids to keep them from putrefaction, and juſt ſufficient nouriſhment to ſupply the waſte of their languid circulation, they continue rather feebly alive than ſleeping.

Theſe animals produce but once a year, and uſually bring forth but three or four at a time. They grow very faſt, and the extent of their lives is not above nine or ten years; ſo that the ſpecies is neither numerous nor very much diffuſed. They are chiefly found in the Alps, where they ſeem to prefer the brow of the higheſt mountains to the loweſt ranges, and the ſunny ſide to that in the ſhade. The inhabitants of the country where they chiefly reſide, when they obſerve the hole, generally ſtay till winter before they think proper to open it; for if they begin too ſoon, the animal wakes, and, as it has a ſurpriſing faculty of digging, makes its hole deeper in proportion as they follow. Such as kill it for food, uſe every art to improve the fleſh, which is ſaid to have a wild taſte and to cauſe vomitings *. They, therefore, take away the fat, which is in great abundance, and ſalt the remainder, drying it ſomewhat in the manner of bacon. Still however, it is ſaid to be very indifferent eating. This animal is found in Poland under the denomination of the *boback*, entirely reſembling that of the Alps, except that the latter has a toe more upon its fore-foot than the former. It is found alſo in Siberia under the name of the *Jevraſka*, being rather ſmaller than either of the other two. Laſtly, it is found in Canada by the appellation of the *monax*, differing only from the reſt in having a bluiſh ſnout and a longer tail.

THE AGOUTI.

From the marmout, which differs from the hare ſo much in the length of its fur, we go to the Agouti, another ſpecies equally differing in the ſhortneſs of its hair. Theſe bear ſome rude reſemblance to the hare and the rabbit in their form and manner of living, but ſufficiently differing to re-

* Dictionaire Raiſonée, vol. iii. p. 29.

quire a particular deſcription. The firſt of theſe, and that the largeſt, as was hinted above, is called the *agouti*. This animal is found in great abundance in the ſouthern parts of America, and has by ſome been called the *rabbit* of that continent. But, though in many reſpects it reſembles the rabbit, yet ſtill in many more it differs, and is, without all doubt, an animal peculiar to the new world only. The agouti is about the ſize of a rabbit, and has a head very much reſembling it, except that the ears are very ſhort in compariſon. It reſembles the rabbit alſo in the arched form of its back, in the hind legs being longer than the fore, and in having four great cutting teeth, two above and two below; but then it differs in the nature of its hair, which is not ſoft and downy as in the rabbit, but hard and briſtly like that of a ſucking pig, and of a reddiſh brown colour. It differs alſo in the tail, which is even ſhorter than in the rabbit, and entirely deſtitute of hair. Laſtly, it differs in the number of its toes, having but three on the hinder feet, whereas the rabbit has five. All theſe diſtinctions, however, do not countervail againſt its general form, which reſembles that of a rabbit, and moſt travellers have called it by that name.

As this animal differs in form, it differs ſtill more in habitudes and diſpoſition. As it has the hair of a hog, ſo alſo it has its voraciouſneſs *. It eats indiſcriminately of all things; and, when ſatiated, hides the remainder, like the dog or the fox, for a future occaſion. It takes a pleaſure in gnawing and ſpoiling every thing it comes near. When irritated, its hair ſtands erect along the back, and, like the rabbit, it ſtrikes the ground violently with its hind feet. It does not dig a hole in the ground, but burrows in the hollows of trees. Its ordinary food conſiſts of the roots of the country, potatoes and yams, and ſuch fruits as fall from the trees in autumn. It uſes its fore-paws like the ſquirrel, to carry its food to its mouth; and as its hind feet are longer than the fore, it runs very ſwiftly upon plain ground or up a hill, but upon a deſcent it is in danger of falling. Its ſight is excellent, and its hearing equals that of any other animal; whenever it is whiſtled to, it ſtops to hearken. The fleſh of ſuch as are fat and well fed is tolerable food, although it has a peculiar taſte and is a little

* Buffon.

tough. The French dreſs it like a ſucking pig, as we learn from Mr. Buffon's account; but the Engliſh dreſs it with a pudding in its belly, like a hare. It is hunted by dogs; and whenever it has got into a ſugar-ground, where the canes cover the place, it is eaſily overtaken, for it is embarraſſed every ſtep it takes, ſo that a man may eaſily come up with it without any other aſſiſtance. When in the open country, it uſually runs with great ſwiftneſs before the dogs until it gains its retreat, within which it continues to hide, and nothing but filling the hole with ſmoke can force it out. For this purpoſe, the hunter burns faggots or ſtraw at the entrance, and conducts the ſmoke in ſuch a manner that it fills the whole cavity. While this is doing the poor little animal ſeems ſenſible of its danger, and begs for quarter with a moſt plaintive cry, ſeldom quitting its hole till the utmoſt extremity. At laſt, when half-ſuffocated, it iſſues out, and truſts one more to its ſpeed for protection. When ſtill forced by the dogs, and incapable of making good a retreat, it turns upon the hunters, and with its hair briſtling like a hog, and ſtanding upon its hind-feet, it defends itſelf very obſtinately. Sometimes it bites the legs of thoſe that attempt to take it, and will take out the piece wherever it fixes its teeth *.

Its cry when diſturbed or provoked reſembles that of a ſucking pig. If taken young, it is eaſily tamed, continues to play harmleſsly about the houſe, and goes out and returns of its own accord. In a ſavage ſtate it uſually continues in the woods, and the female generally chooſes the moſt obſcure parts to bring forth her young. She there prepares a bed of leaves and dry graſs, and generally brings forth two at a time. She breeds twice or thrice a-year, and carries her young from one place to another, as convenience requires, in the manner of a cat. She generally lodges them, when three days old, in the hollow of a tree, ſuckling them but for a very ſhort time, for they ſoon come to perfection, and it ſhould conſequently follow that they ſoon grow old.

THE PACA.

THE paca is an animal alſo of South America, very much reſembling the former, and like it has received the name of

* Ray's Synop.

the *American rabbit*, but with as little propriety. It is about the ſize of a hare, or rather larger, and in figure ſomewhat like a ſucking pig, which it alſo reſembles in its grunting and its manner of eating. It is, however, moſt like the agouti, although it differs in ſeveral particulars. Like the agouti, it is covered rather with coarſe hare than a downy fur. But then it is beautifully marked along the ſides with ſmall aſh-coloured ſpots, upon an amber-coloured ground; whereas the agouti is pretty much of one reddiſh colour. The paca is rather more thick and corpulent than the agouti; its noſe is ſhorter, and its hind-feet have five toes; whereas the agouti has but three. As to the reſt, this animal bears ſome diſtant reſemblance to a rabbit, the ears are naked of hair, and ſomewhat ſharp, the lower jaw is ſomewhat longer than the upper, the teeth, the ſhape of the head, and the ſize of it, are like to thoſe of a rabbit. It has a ſhort tail likewiſe, though not tufted; and its hinder legs are longer than the fore. It alſo burrows in the ground like that animal, and from this ſimilitude alone travellers might have given it the name.

The paca does not make uſe of its fore-paws, like the ſquirrel or the agouti, to carry its food to the mouth, but hunts for it on the ground, and roots like a hog. It is generally ſeen along the banks of rivers, and is only to be found in the moiſt and warm countries of South America. It is a very fat animal, and in this reſpect much preferable to the agouti, that is moſt commonly found lean. It is eaten ſkin and all, like a young pig, and is conſidered as a great delicacy. Like the former little animal, it defends itſelf to the laſt extremity, and is very ſeldom taken alive. It is perſecuted not only by man, but by every beaſt and bird of prey, who all watch its motions, and, if it ventures at any diſtance from its hole, are ſure to ſeize it. But although the race of theſe little animals is thus continually deſtroyed, it finds ſome refuge in its hole, from the general combination; and breeds in ſuch numbers, that the diminution is not perceptible.

To theſe animals may be added others, very ſimilar, both in form and diſpoſition; each known by its particular name in its native country, but which travellers have been contented to call rabbits or hares; of which we have but indiſ-

The PACA

tinct notice. The TAPETI, or the BRASILIAN RABBIT, is in ſhape like our Engliſh ones, but is much leſs, being ſaid to be not above twice the ſize of a dormouſe. It is reddiſh on the forehead, and a little whitiſh under the throat. It is remarkable for having no tail; but it has long ears and whiſkers, like our rabbits, and black eyes. It does not burrow, like ours; but lives at large like the hare.

The APEREA is alſo called by ſome the BRASILIAN RABBIT, being an animal that ſeems to partake of the nature of a rabbit and a rat. The ears are like thoſe of a rat, being ſhort and round; but the other parts are like thoſe of a rabbit, except that it has but three toes on the hinder legs like the agouti.

To theſe imperfect ſketches of animals little known, others leſs known might be added; for as Nature becomes more diminutive, her operations are leſs attentively regarded. I ſhall only, therefore, add one animal more to this claſs, and that very well known; I mean the Guinea-pig; which Briſſon places among thoſe of the rabbit kind; and as I do not know any other ſet of animals with which it can be ſo well compared, I will take leave to follow his example.

THE GUINEA-PIG.

THE Guinea-pig is a native of the warmer climates; but has been ſo long rendered domeſtic, and ſo widely diffuſed, that it has now become common in every part of the world. There are few unacquainted with the figure of this little animal; in ſome places it is conſidered as the principal favourite; and is often found even to diſplace the lap-dog. It is leſs than a rabbit, and its legs are ſhorter; they are ſcarce ſeen, except when it moves; and the neck, alſo is ſo ſhort, that the head ſeems ſtuck upon the ſhoulders. The ears are ſhort, thin, and tranſparent; the hair is like that of a ſucking-pig, from whence it has taken the name; and it wants even the veſtiges of a tail. In other reſpects, it has ſome ſimilitude to the rabbit. When it moves, its body lengthens like that animal; and when it is at reſt, it gathers up in the ſame manner. Its noſe is formed with the rabbit lip, except that its noſtrils are much farther aſunder. Like all other animals in a domeſtic ſtate, its colours are different; ſome are white, ſome are red, and others both red and

white. It differs from the rabbit in the number of its toes, having four toes on the feet before, and but three on those behind. It strokes its head with the fore-feet, like the rabbit; and, like it, sits upon the hind-feet; for which purpose there is a naked callous skin on the back part of the legs and feet.

These animals are of all others the most helpless and inoffensive*. They are scarce possessed of courage sufficient to defend themselves against the meanest of all quadrupeds, a mouse. Their only animosity is exerted against each other; for they will often fight very obstinately; and the stronger is often known to destroy the weaker. But against all other aggressors, their only remedy is patience and non-resistance. How, therefore, these animals in a savage state, could contrive to protect themselves, I have not been able to learn; as they want strength, swiftness, and even the natural instinct so common to almost every other creature.

As to their manner of living among us, they owe their lives entirely to our unceasing protection. They must be constantly attended, shielded from the excessive colds of the winter, and secured against all other domestic animals, which are apt to attack them, from every motive, either of appetite, jealousy, or experience of their pusillanimous nature. Such, indeed, is their stupidity, that they suffer themselves to be devoured by the cats without resistance; and, differing from all other creatures, the female sees her young destroyed without once attempting to protect them. Their usual food is bran, parsley, or cabbage leaves; but there is scarce a vegetable cultivated in our gardens that they will not gladly devour. The carrot-top is a peculiar dainty; as also salad; and those who would preserve their healths, would do right to vary their food; for if they be continued on a kind too succulent or too dry, the effects are quickly perceived upon their constitutions. When fed upon recent vegetables, they seldom drink. But it often happens that, conducted by Nature, they seek dryer food, when the former disagrees with them. They then gnaw clothes, paper, or whatever of this kind they meet with; and on these occasions they are seen to drink like most other animals,

* This history is partly taken from the Amænitates Academicæ, vol. iv. p. 202.

which they do by lapping. They are chiefly fond of new milk; but, in cafe of neceffity, are contented with water.

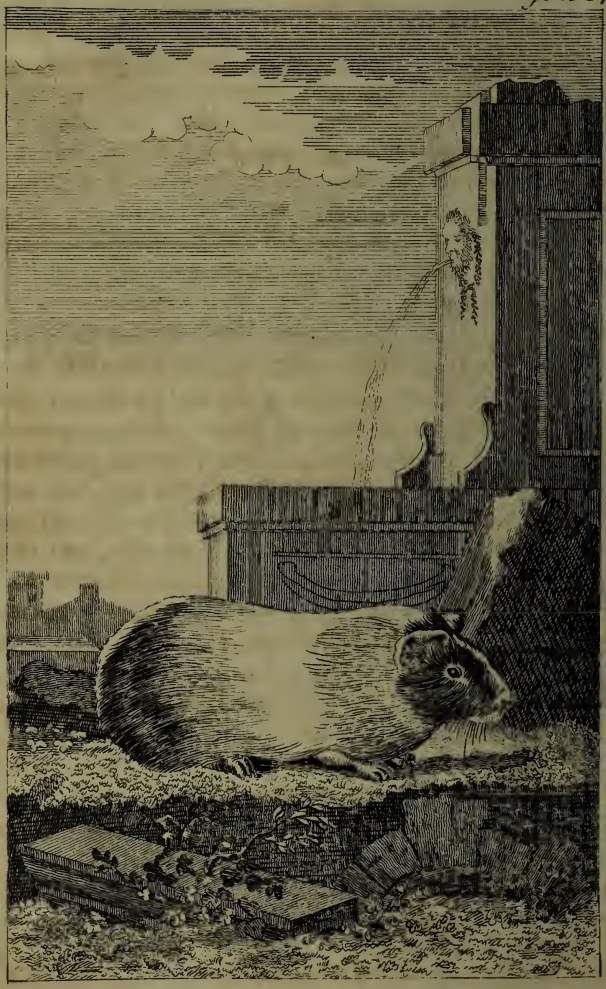
They move pretty much in the manner of rabbits, though not near fo fwiftly; and when confined in a room, feldom crofs the floor, but generally keep along the wall. The male ufually drives the female on before him, for they never move a-breaft together, but conftantly the one feems to tread in the footfteps of the preceding. They chiefly feek for the darkeft receffes, and the moft intricate retreats; where, if hay be fpread as a bed for them, they continue to fleep together, and feldom venture out but when they fuppofe all interruption removed. On thefe occafions they act as rabbits; they fwiftly move forward from their bed, ftop at the entrance, liften, look round, and if they perceive the flighteft approach of danger, they run back with precipitation. In very cold weather, however, they are more active, and run about in order to keep themfelves warm.

They are a very cleanly animal, and very different from that whofe name they go by. If the young ones happen to fall into the dirt, or be any other way difcompofed, the female takes fuch an averfion to them, that fhe never permits them to vifit her more. Indeed, her whole employment, as well as that of the male, feems to confift in fmoothing their fkins, in difpofing their hair, and improving its glofs. The male and female take this office by turns; and when they have thus brufhed up each other, they then beftow all their concern upon their young, taking particular care to make their hair lie fmooth, and biting them if they appear refractory. As they are fo folicitous for elegance themfelves, the place where they are kept muft be regularly cleaned, and a new bed of hay provided for them at leaft every week. Being natives of a warm climate, they are naturally chilly in ours: cleanlinefs, therefore, affifts warmth, and expels moifture. They may be thus reared, without the aid of any artificial heat; but, in general, there is no keeping them from the fire in winter, if they be once permitted to approach it.

When they go to fleep, they lie flat on their bellies, pretty much in their ufual pofture; except that they love to have their fore feet higher than their hinder. For this purpofe they turn themfelves feveral times round before they lie

down to find the moſt convenient ſituation. They ſleep like the hare, with their eyes half open; and continue extremely watchful, if they ſuſpect danger. The male and female are never ſeen both aſleep at the ſame time; but while he enjoys his repoſe, ſhe remains upon the watch, ſilently continuing to guard him, and her head turned towards the place where he lies. When ſhe ſuppoſes that he has had his turn, ſhe then awakes him with a kind of murmuring noiſe, goes to him, forces him from his bed, and lies down in his place. He then performs the ſame good turn for her; and continues watchful till ſhe alſo has done ſleeping.

Theſe animals are exceedingly ſalacious, and generally are capable of coupling at ſix weeks old. The female never goes with young above five weeks; and uſually brings forth from three to five at a time; and this not without pain. But what is very extraordinary, the female admits the male the very day ſhe has brought forth, and becomes again pregnant; ſo that their multiplication is aſtoniſhing. She ſuckles her young but about twelve or fifteen days; and during that time does not ſeem to know her own; for if the young of any other be brought, though much older, ſhe never drives them away, but ſuffers them even to drain her, to the diſadvantage of her own immediate offſpring. They are produced with the eyes open, like all others of the hare kind; and in about twelve hours, equal even to the dam in agility. Although the dam has but two teats, yet ſhe abundantly ſupplies them with milk; and they are alſo capable of feeding upon vegetables, almoſt from the very beginning. If the young ones are permitted to continue together, the ſtronger, as in all other ſocieties, ſoon begins to govern the weak. Their contentions are often long and obſtinate; and their jealouſies very apparent. Their diſputes are uſually for the warmeſt place, or the moſt agreeable food. If one of them happens to be more fortunate in this reſpect than the reſt, the ſtrongeſt generally comes to diſpoſſeſs it of its advantageous ſituation. Their manner of fighting, though terrible to them, is ridiculous enough to a ſpectator. One of them ſeizes the hair on the nape of the other's neck with its fore teeth, and attemps to tear it away; the other, to retaliate, turns its hinder parts to the enemy, and kicks up behind like a horſe, and with its hinder claws ſcratches



The GUINEA PIG

the ſides of its adverſary; ſo that ſometimes they cover each other with blood. When they contend in this manner, they gnaſh their teeth pretty loudly, and this is often a denunciation of mutual reſentment.

Theſe, though ſo formidable to each other, yet are the moſt timorous creatures upon earth, with reſpect to the reſt of Animated Nature: a falling leaf diſturbs them, and every animal overcomes them. From hence they are difficultly tamed; and will ſuffer none to approach them, except the perſon by whom they are fed. Their manner of eating is ſomething like that of the rabbit; and, like it, they appear alſo to chew the cud. Although they ſeldom drink, they make water every minute. They grunt ſomewhat like a young pig; and have a more piercing note to expreſs pain. In a word, they do no injury; but then, except the pleaſure they afford the ſpectator, they are of very little benefit to mankind. Some, indeed, dreſs and eat them; but their fleſh is indifferent food, and by no means a reward for the trouble of rearing them. This, perhaps, might be improved, by keeping them in a proper warren, and not ſuffering them to become domeſtic: however, the advantages that would reſult from this, would be few, and the trouble great; ſo that it is is likely they would continue an uſeleſs, inoffenſive dependent, rather propagated to ſatisfy caprice than ſupply neceſſity.

BOOK VI.

ANIMALS OF THE RAT, HEDGEHOG, &c. KINDS.

CHAP. I.

THE RAT KIND.

WERE it neceſſary to diſtinguiſh animals of the rat kind from all others, we might deſcribe them as having two large cutting teeth, like the hare kind, in each jaw; as covered with hair; and as not ruminating. Theſe diſtinctions might ſerve to guide us, had we not too near an acquaintance with this noxious race to be miſtaken in their kind. Their numbers, their minuteneſs, their vicinity, their vaſt multiplication, all ſufficiently contribute to preſs them upon our obſervation, and remind us of their exiſtence. Indeed, if we look through the different ranks of animals, from the largeſt to the ſmalleſt, from the great elephant to the diminitive mouſe, we ſhall find that we ſuffer greater injuries from the contemptible meanneſs of the one, than the formidable invaſions of the other. Againſt the elephant, the rhinocerous, or the lion, we can oppoſe united ſtrength; and by art make up the deficiencies of natural power: theſe we have driven into their native ſolitudes, and obliged to continue at a diſtance, in the moſt inconvenient regions and unhealthful climates. But it is otherwiſe with the little teizing race I am now deſcribing: no force can be exerted againſt their unreſiſting timidity; no arts can diminiſh their amazing propagation; millions may be at once deſtroyed, and yet the breach be repaired in the ſpace of a very few weeks; and, in proportion as Nature has denied them force, it has ſupplied the defect by their fecundity.

THE GREAT RAT.

THE animal beſt known at preſent, and in every reſpect the moſt miſchievous, is the GREAT RAT; which, though but a new comer into this country, has taken too ſecure a poſſeſſion to be ever removed. This hateful and rapacious creature, though ſometimes called the *rat of Norway*, is utterly unknown in all the northern countries, and, by the beſt accounts I can learn, comes originally from the Levant. Its firſt arrival, as I am aſſured, was upon the coaſts of Ireland, in thoſe ſhips that traded in proviſions to Gibraltar; and perhaps we owe to a ſingle pair of theſe animals, the numerous progeny that now infeſts the whole extent of the Britiſh Empire.

This animal, which is called by Mr. Buffon the *ſurmalot*, is in length about nine inches; its eyes are large and black; the colour of the head, and the whole upper part of the body, is of a light brown, mixed with a tawny and aſh colour. The end of the noſe, the throat and belly, are of a dirty white, inclining to grey; the feet and legs are almoſt bare, and of a dirty pale fleſh colour; the tail is as long as the body, covered with minute duſky ſcales, mixed with a few hairs, and adds to the general deformity of its deteſtable figure. It is chiefly in the colour that this animal differs from the *black rat*, or the *common rat*, as it was once called; but now common no longer. This new invader, in a very few years after its arrival, found means to deſtroy almoſt the whole ſpecies, and to poſſeſs itſelf of their retreats.

But it was not againſt the black rat alone that its rapacity was directed; all other animals of inferior ſtrength ſhared the ſame miſfortunes. The conteſt with the black rat was of ſhort continuance. As it was unable to contend, and had no holes to fly to for retreat, but where its voracious enemy could purſue, the whole race was ſoon extinguiſhed. The frog alſo was an animal equally incapable of combat or defence. It had been deſignedly introduced into the kingdom of Ireland ſome years before the Norway rat; and it was ſeen to multiply amazingly. The inhabitants were pleaſed with the propagation of a harmleſs animal, that ſerved to rid their fields of inſects; and even

the prejudices of the people were in its favour, as they ſuppoſed that the frog contributed to render their waters more wholeſome. But the Norway rat ſoon put a ſtop to their increaſe; as theſe animals were of an amphibious nature, they purſued the frog to its lakes, and took it even in its own natural element. I am, therefore, aſſured, that the frog is once more almoſt extinct in that kingdom; and that the Norway rat, having no more enemies left there to deſtroy, is grown leſs numerous alſo.

We are not likely, therefore, to gain by the deſtruction of our old domeſtics, ſince they are replaced by ſuch miſchievous ſucceſſors. The Norway rat has the ſame diſpoſition to injure us, with much greater power of miſchief. It burrows in the banks of rivers, ponds, and ditches; and and is every year known to do incredible damage to thoſe mounds that are raiſed to conduct ſtreams, or to prevent rivers from overflowing. In theſe holes, which it forms pretty near the edge of the water, it chiefly reſides during the ſummer, where it lives upon ſmall animals, fiſh, and corn. At the approach of winter, it comes nearer the farm houſes; burrows in their corn, eats much, and damages ſtill more than it conſumes. But nothing that can be eaten, ſeems to eſcape its voracity. It deſtroys rabbits, poultry, and all kinds of game; and, like the polecat, kills much more than it can carry away. It ſwims with great eaſe, dives with great celerity, and eaſily thins the fiſh-pond. In ſhort, ſcarce any of the feebler animals eſcape its rapacity, except the mouſe, which ſhelters itſelf in its little hole, where the Norway rat is too big to follow.

Theſe animals frequently produce from fifteen to thirty at a time*; and uſually bring forth three times a year. This great increaſe would quickly be found to over-run the whole country, and render our aſſiduity to deſtroy them fruitleſs, were it not, happily for us, that they eat and deſtroy each other. The ſame itſatiable appetite that impels them to indiſcriminate carnage, alſo incites the ſtrongeſt to devour the weakeſt, even of their own kind. The large male rat generally keeps in a hole by itſelf, and is dreaded by its own ſpecies, as the moſt formidable enemy. In

* Buffon, vol. xvii. p. 2.

this manner the number of these vermin is kept within due bounds; and when their increase becomes injurious to us, it is repressed by their own rapacity.

But beside their own enmities among each other, all the stronger carnivorous quadrupeds have natural antipathies against them. The dog, though he detests their flesh, yet openly declares his alacrity to pursue them; and attacks them with great animosity. Such as are trained up to killing these vermin, despatch them often with a single squeeze: but those dogs that shew any hesitation, are sure to come off but indifferently; for the rat always takes the advantage of a moment's delay, and instead of waiting for the attack, becomes the aggressor, seizing its pursuer by the lip, and inflicting a very painful and dangerous wound. From the inflammation, and other angry symptoms that attend this animal's bite, some have been led to think that it was in some measure venomous; but it is likely that the difficulty of the wound's healing, arises merely from its being deep and lacerated by the teeth, and is rather a consequence of the figure of the instruments that inflict it, than any venom they may be supposed to possess.

The cat is another formidable enemy of this kind; and yet the generality of our cats neither care to attack it, nor to feed upon it when killed. The cat is a more prudent hunter than the dog, and will not be at the pains to take or combat with an enemy that is not likely to repay her time and danger. Some cats, however, will pursue and take the rat; though often not without an obstinate resistance. If hungry, the cat will sometimes eat the head; but, in general, she is merely content with her victory.

A foe much more dangerous to these vermin is the weasel. This animal pursues them with avidity; and being pretty nearly of their own size, follows them into their holes, where a desperate combat ensues. The strength of each is pretty near equal; but the arms are very different. The rat, furnished with four long tusks at the extremity of its jaw, rather snaps than bites; but the weasel, where it once fastens, holds, and continuing also to suck the blood at the same time, weakens its antagonist, and always obtains the victory. Mankind have contrived several other methods of destroying these noxious intruders; ferrets, traps, and

particularly poiſon; but of all other poiſons, I am told that the nux vomica, ground and mixed with meal, is the moſt certain, as it is the leaſt dangerous.

To this ſpecies I will ſubjoin as a variety, the BLACK RAT, mentioned above, greatly reſembling the former in figure; but very diſtinct in Nature, as appears from their mutual antipathy. This animal was formerly as miſchievous as it was common; but at preſent it is almoſt utterly extirpated by the great rat, one malady often expelling another. It is become ſo ſcarce, that I do not remember ever to have ſeen one. It is ſaid to be poſſeſſed of all the voracious and unnatural appetites of the former; though, as it is leſs, they may probably be leſs noxious. Its length is about ſeven inches; and the tail is near eight inches long. The colour of the body is of a deep iron grey, bordering upon black, except the belly, which is of a dirty cinereous hue. They have propagated in America in great numbers, being originally introduced from Europe; and as they ſeem to keep their ground wherever they get footing, they are now become the moſt noxious animals in that part of the world.

To this alſo we may ſubjoin the Black Water Rat, about the ſame ſize with the latter, with a larger head, a blunter noſe, leſs eyes, and ſhorter ears, and the tip of its tail a little white. It was ſuppoſed by Ray to be web footed; but this has been found to be a miſtake, its toes pretty much reſembling thoſe of its kind. It never frequents houſes; but is uſually found on the banks of rivers, ditches, and ponds, where it burrows and breeds. It feeds on fiſh, frogs, and inſects; and in ſome countries it is eat on faſting days.

THE MOUSE.

AN animal equally miſchievous, and equally well known with the former is the mouſe. Timid, cautious, and active, all its diſpoſitions are ſimilar to thoſe of the rat, except with fewer powers of doing miſchief*. Fearful by nature, but familiar from neceſſity, it attends upon mankind, and comes an unbidden gueſt to his moſt delicate entertainments. Fear and neceſſity ſeem to regulate all its motion; it never leaves its hole but to ſeek proviſion, and ſeldom ventures above a

* Buffon, vol. xv. p. 145.

few paces from home. Different from the rat, it does not go from one houſe to another, unleſs it be forced; and as it is more eaſily ſatisfied, it does much leſs miſchief.

Almoſt all animals are tamed more difficultly in proportion to the cowardice of their natures. The truly bold and courageous eaſily become familiar, but thoſe that are always fearful are ever ſuſpicious. The mouſe being the moſt feeble, and conſequently the moſt timid of all quadrupeds, except the Guinea-pig, is never rendered thoroughly familiar; and, even though fed in a cage, retains its natural apprehenſions. In fact, it is to theſe alone that it owes its ſecurity*. No animal has more enemies, and few ſo incapable of reſiſtance. The owl, the cat, the ſnake, the hawk, the weaſel, the rat itſelf, deſtroys this ſpecies by millions, and it only ſubſiſts by its amazing fecundity.

The mouſe brings forth at all ſeaſons, and ſeveral times in a year. Its uſual number is from ſix to ten. Theſe, in leſs than a fortnight are ſtrong enough to run about and ſhift for themſelves. They are chiefly found in farmers' yards, and among their corn, but are ſeldom in thoſe ricks that are much infeſted with rats. They generally chooſe the ſouth-weſt ſide of the rick, from whence moſt rain is expected; and from thence they often, of an evening, venture forth to drink the little drops either of rain or dew that hangs at the extremities of the ſtraw†. Ariſtotle gives us an idea of their prodigious fecundity, by aſſuring us, that having put a mouſe with young into a veſſel of corn, in ſome time after he found a hundred and twenty mice, all ſprung from one original. The early growth of this animal implies alſo the ſhort duration of its life, which ſeldom laſts above two or three years. This ſpecies is very much diffuſed, being found in almoſt all parts of the ancient continent, and having been exported to the new‡. They are animals that, while they fear human ſociety, cloſely attend it; and, although enemies to man, are never found but near thoſe places where he has fixed his habitation. Numberleſs ways have been found for deſtroying them; and Geſner has minutely deſcribed the variety of traps by which they are taken.

* E volucribus hirundines ſunt indociles, e terreſtibus mures. PLIN.

† Buffon, vol. xv. p. 147.

‡ Liſle's Huſbandry, vol. ii. p. 391.

Our Society for the Encouragement of Arts and Manufactures propoſed a reward for the moſt ingenious contrivance for that purpoſe; and I obſerved almoſt every candidate paſſing off deſcriptions as inventions of his own. I thought it was cruel to detect the plagiariſm, or fruſtrate the humble ambition of thoſe who would be thought the inventors of a mouſe-trap.

To this ſpecies, merely to avoid teizing the reader with a minute deſcription of animals very inconſiderable and very nearly alike, I will add that of the LONG-TAILED FIELD MOUSE, which is larger than the former, of a colour very nearly reſembling the Norway rat, and chiefly found in fields and gardens. They are extremely voracious, and hurtful in gardens and young nurſeries, where they are killed in great numbers. However, their fecundity quickly repairs the deſtruction.

Nearly reſembling the former, but larger, (for it is ſix inches long) is the SHORT-TAILED FIELD MOUSE; which, as its name implies, has the tail much ſhorter than the former, it being not above an inch and a half long, and ending in a ſmall tuft. Its colour is more inclining to that of the domeſtic mouſe, the upper part being blackiſh, and the under of an aſh-colour. This, as well as the former, are remarkable for laying up proviſion againſt winter; and Mr. Buffon aſſures us they ſometimes have a ſtore of above a buſhel at a time.

We may add alſo the SHREW MOUSE to this ſpecies of minute animals, being about the ſize of the domeſtic mouſe, but differing greatly from it in the form of its noſe, which is very long and ſlender. The teeth alſo are of a very ſingular form, and twenty-eight in number; whereas the common number in the rat kind is uſually not above ſixteen. The two upper fore-teeth are very ſharp, and on each ſide of them there is a kind of wing or beard, like that of an arrow, ſcarce viſible but on a cloſe inſpection. The other teeth are placed cloſe together, being very ſmall, and ſeeming ſcarce ſeparated; ſo that with reſpect to this part of its formation, the animal has ſome reſemblance to the viper. However, it is a very harmleſs little creature, doing ſcarce any injury.—On the contrary, as it lives chiefly in the fields, and feeds more upon inſects than corn, it may be conſidered rather as

a friend than an enemy. It has a ſtrong, diſagreeable ſmell, ſo that the cat, when it is killed, will refuſe to eat it. It is ſaid to bring four or five young at a time.

THE DORMOUSE.

THESE animals may be diſtinguiſhed into three kinds; the GREATER DORMOUSE, which Mr. Buffon calls the LOIR; the MIDDLE, which he calls the LEROT; the LESS, which he denomiuates the MUSCARDIN. They differ from each other in ſize, the largeſt being equal to a rat, the leaſt being no bigger than a mouſe. They all differ from the rat in having the tail tufted with hair, in the manner of a ſquirrel, except that the ſquirrel's tail is flat, reſembling a fan; and theirs round, reſembling a bruſh. The lerot differs from the loir by having two black ſpots near the eyes; the muſcardin differs from both in the whitiſh colour of its hair on the back. They all three agree in having black ſparkling eyes, and the whiſkers partly white and partly black. They agree in their being ſtupefied like the marmout during the winter, and in their hoarding up proviſions to ſerve them in caſe of a temporary revival.

They inhabit the woods or very thick hedges, forming their neſts in the hollow of ſome tree, or near the bottom of a cloſe ſhrub, humbly content with continuing at the bottom, and never aſpiring to ſport among the branches. Towards the approach of the cold ſeaſon, they form a little magazine of nuts, beans, or acorns; and having laid in their hoard, ſhut themſelves up with it for the winter. As ſoon as they feel the firſt advances of the cold, they prepare to leſſen its effect, by rolling themſelves up in a ball, and thus expoſing the ſmalleſt ſurface to the weather. But it often happens that the warmth of a ſunny day, or an accidental change from cold to heat, thaws their nearly ſtagnant fluids, and they revive. On ſuch occaſions they have their proviſions laid in, and they have not far to ſeek for their ſupport In this manner they continue uſually aſleep, but ſometimes waking, for about five months in the year, ſeldom venturing from their retreats, and, conſequently, but rarely ſeen. Their neſts are lined with moſs, graſs, and dead leaves; they uſually bring forth three or four young at a time, and that but once a year, in the ſpring.

THE MUSK RAT.

OF these animals of the rat kind, but with a musky smell, there are also three distinctions, as of the former; the ONDATRA, the DESMAN, and the PILORI. The ondatra is a native of Canada, the desman of Lapland, and the pilori of the West India islands. The ondatra differs from all others of its kind, in having the tail flatted and carried edge-ways. The desman has a long extended snout, like the shrew-mouse; and the pilori a short tail, as thick at one end as the other. They all resemble each other in being fond of the water, but particularly in that musky odour from whence they have taken their name.

Of these, the ONDATRA is the most remarkable, and has been the most minutely described*. This animal is about the size of a small rabbit, but has the hair, the colour, and the tail of a rat, except that it is flatted on the sides as mentioned above. But it is still more extraordinary upon other accounts, and different from all other animals whatever. It is so formed that it can contract and enlarge its body at pleasure. It has a muscle like that of horses, by which they move their hides, lying immediately under the skin, and that furnished with such a power of contraction, together with such an elasticity in the false ribs, that this animal can creep into a hole where others, seemingly much less, cannot follow. The female is remarkable also for two distinct apertures, one for urine, the other for propagation. The male is equally observable for a peculiarity of conformation; the musky smell is much stronger at one particular season of the year than any other; and the marks of the sex seem to appear and disappear in the same manner.

The ondatra in some measure resembles the beaver in its nature and disposition. They both live in society during winter; they both form houses of two feet and an half wide, in which they reside several families together. In these they do not assemble to sleep as the marmout, but purely to shelter themselves from the rigour of the season. However, they do not lay up magazines of provision like the beaver; they only form a kind of covert way to and round their dwelling, from whence they issue to procure water

* Buffon, vol. xx. p. 4.

and roots, upon which they ſubſiſt. During winter their houſes are covered under a depth of eight or ten feet of ſnow; ſo that they muſt lead but a cold, gloomy, and neceſſitous life, during its continuance During ſummer they ſeparate two by two, and feed upon the variety of roots and vegetables that the ſeaſon offers. They then become extremely fat, and are much ſought after, as well for their fleſh as their ſkins, which are very valuable. They then alſo acquire a very ſtrong ſcent of muſk, ſo pleaſing to an European, but which the ſavages of Canada cannot abide. What we admire as a perfume, they conſider as a moſt abominable ſtench, and call one of their rivers, on the banks of which this animal is ſeen to burrow in numbers, by the name of the *ſtinking river*, as well as the rat itſelf, which is denominated by them the *ſtinkard*. This is a ſtrange diverſity among mankind; and, perhaps, may be aſcribed to the different kinds of food among different nations. Such as chiefly feed upon rancid oils, and putrid fleſh will often miſtake the nature of ſcents; and, having been long uſed to ill ſmells, will by habit conſider them as perfumes. Be this as it will, although theſe nations of northern ſavages conſider the muſk rat as intolerably fœtid, they nevertheleſs regard it as very good eating; and, indeed, in this they imitate the epicures of Europe very exactly, whoſe taſte ſeldom reliſhes a diſh till the noſe gives the ſtrongeſt marks of diſapprobation. As to the reſt, this animal a good deal reſembles the beaver in its habits and diſpoſition; but, as its inſtincts are leſs powerful, and its economy leſs exact, I will reſerve for the deſcription of that animal a part of what may be applicable to this.

THE CRICETUS.

The Cricetus, or German Rat, which Mr. Buffon calls the *hamſter*, greatly reſembles the water rat in its ſize, ſmall eyes, and the ſhortneſs of its tail. It differs in colour, being rather browner, like the Norway rat, with the belly and legs of a dirty yellow. But the marks by which it may be diſtinguiſhed from all others are two pouches, like thoſe of a baboon, on each ſide of its jaw, under the ſkin, into which it can cram a large quantity of proviſion. Theſe bags are oblong, and of the ſize, when filled, of a large walnut. They open into the mouth, and fall back along the neck to

the ſhoulder. Into theſe the animal can thruſt the ſurplus of thoſe fruits or grains it gathers in the fields, ſuch as wheat, peas, or acorns. When the immediate calls of hunger are ſatisfied, it then falls to filling theſe; and thus loaded with two great bunches on each ſide of the jaw, it returns home to its hole to depoſit the ſpoil as a ſtore for the winter. The ſize, the ſecundity, and the voracioufneſs of this animal render it one of the greateſt peſts in the countries where it is found, and every method is made uſe of to deſtroy it.

But although this animal is very noxious with reſpect to man, yet, conſidered with regard to thoſe inſtincts which conduce to its own ſupport and convenience, it deſerves our admiration*. Its hole offers a very curious object for contemplation, and ſhews a degree of ſkill ſuperior to the reſt of the rat kind. It conſiſts of a variety of apartments, fitted up for the different occaſions of the little inhabitant. It is generally made on an inclining ground, and always has two entrances, one perpendicular, and the other oblique; though, if there be more than one in a family, there are as many perpendicular holes as there are individuals below. The perpendicular hole is uſually that through which they go in and out: the oblique ſerves to give a thorough air to keep the retreat clean, and, in caſe one hole is ſtopped, to give an exit at this. Within about a foot of the perpendicular hole the animal makes two more, where are depoſited the family's proviſions. Theſe are much more ſpacious than the former, and are large in proportion to the quantity of the ſtore. Beſide theſe, there is ſtill another apartment warmly lined with graſs and ſtraw, where the female brings forth her young; all theſe communicate with each other, and all together take up a ſpace of ten or twelve feet in diameter. Theſe animals furniſh their ſtore-houſes with dry corn well cleaned; they alſo lay in corn in the ear, and beans and peas in the pod. Theſe, when occaſion requires, they afterwards ſeparate, carrying out the pods and empty ears by their oblique paſſage. They uſually begin to lay in at the latter end of Auguſt; and, as each magazine is filled, they carefully cover up the mouth with earth, and that ſo neatly that it is no eaſy matter to diſcover where the earth has been removed. The only means of finding out their retreats are, therefore, to obſerve the oblique entrance, which generally

* Buffon, vol. xxvi. p. 159.

has a ſmall quantity of earth before it; and this, though often ſeveral yards from their perpendicular retreat, leads thoſe who are ſkilled in the ſearch to make the diſcovery. Many German peaſants are known to make a livelihood by finding out and bringing off their hoards, which, in a fruitful ſeaſon, often furniſh two buſhels of good grain in each apartment.

Like moſt others of the rat kind, they produce twice or thrice a year, and bring five or ſix at a time. Some years they appear in alarming numbers, at other times they are not ſo plenty. The moiſt ſeaſons aſſiſt their propagation; and it often happens on ſuch years that their devaſtations produce a famine all over the country. Happily, however, for mankind, theſe, like the reſt of their kind, deſtroy each other; and of two that Mr. Buffon kept in a cage, male and female, the latter killed and devoured the former. As to the reſt, their fur is conſidered as very valuable; the natives are invited by rewards to deſtroy them; and the weaſel kind ſeconds the wiſhes of government with great ſucceſs. Although they are uſually found brown on the back and white on the belly, yet many of them are obſerved to be grey, which may probably ariſe from the difference of age.

THE LEMING.

Having conſidered various kinds of theſe noxious little animals that elude the indignation of mankind, and ſubſiſt by their number, not their ſtrength, we come to a ſpecies more bold, more dangerous, and more numerous than any of the former. The leming, which is a native of Scandinavia, is often ſeen to pour down in myriads from the northern mountains, and, like a peſtilence, deſtroy all the productions of the earth. It is deſcribed as being larger than a dormouſe, with a buſhy tail, though ſhorter. It is covered with thin hair of various colours. The extremity of the upper part of the head is black, as are likewiſe the neck and ſhoulders, but the reſt of the body is reddiſh, intermixed with ſmall black ſpots of various figures, as far as the tail, which is not above half an inch long. The eyes are little and black, the ears round and inclining towards the back, the legs before are ſhort, and thoſe behind longer, which gives it a great degree of ſwiftneſs. But what it is much

more remarkable for than its figure are, its amazing fecundity and extraordinary migrations.

In wet feafons, all of the rat kind are known to propagate more than in dry; but this fpecies in particular is fo affifted in multiplying by the moifture of the weather, that the inhabitants of Lapland fincerely believe that they drop from the clouds, and that the fame magazines that furnifh hail and fnow pour the leming alfo upon them. In fact, after long rain, thefe animals fet forward from their native mountains, and feveral millions in a troop deluge the whole plain with their numbers *. They move, for the moft part, in a fquare, marching forward by night, and lying ftill by day. Thus, like an animated torrent, they are often feen more than a mile broad covering the ground, and that fo thick that the hindmoft touches its leader. It is in vain that the poor inhabitant refifts or attempts to ftop their progrefs, they ftill keep moving forward, and though thoufands are deftroyed, myriads are feen to fucceed and make their deftruction impracticable. They generally move in lines, which are about three feet from each other, and exactly parallel. Their march is always directed from the northweft to the fouth-eaft, and regularly conducted from the beginning. Wherever their motions are turned, nothing can ftop them; they go directly forward, impelled by fome ftrange power; and, from the time they firft fet out, they never once think of retreating. If a lake or a river happens to interrupt their progrefs, they all together take the water and fwim over it; a fire, a deep well, or a torrent, does not turn them out of their ftraight lined direction; they boldly plunge into the flames, or leap down the well, and are fometimes feen climbing up on the other fide. If they are interrupted by a boat acrofs a river while they are fwimming, they never attempt to fwim round it, but mount directly up its fides; and the boat-men, who know how vain refiftance in fuch a cafe would be, calmly fuffer the living torrent to pafs over, which it does without further damage. If they meet with a ftack of hay or corn that interrupts their paffage, inftead of going over it, they gnaw their way through; if they are ftopped by a houfe in their courfe, if they cannot go through it, they continue there till they die. It is happy,

* Phil. Tranf. vol. ii. p. 872.

however, for mankind that they eat nothing that is prepared for human ſubſiſtence; they never enter an houſe to deſtroy the proviſions, but are contented with eating every root and vegetable that they meet. If they happen to paſs through a meadow, they deſtroy it in a very ſhort time, and give it an appearance of being burnt up and ſtrewed with aſhes. If they are interrupted in their courſe, and a man ſhould imprudently venture to attack one of them, the little animal is no way intimidated by the diſparity of ſtrength, but furiouſly flies up at its opponent, and, barking ſomewhat like a puppy, wherever it faſtens does not eaſily quit the hold. If at laſt the leader be forced out of its line, which it defends as long as it can, and be ſeparated from the reſt of its kind, it ſets up a plaintive cry different from that of anger, and, as ſome pretend to ſay, gives itſelf a voluntary death, by hanging itſelf on the fork of a tree.

An enemy ſo numerous and deſtructive would quickly render the countries where they appear utterly uninhabitable, did it not fortunately happen that the ſame rapacity that animates them to deſtroy the labours of mankind, at laſt impels them to deſtroy and devour each other *. After committing incredible devaſtations, they are at laſt ſeen to ſeparate into two armies, oppoſed with deadly hatred, along the coaſt of the larger lakes and rivers. The Laplanders, who obſerve them thus drawn up to fight, inſtead of conſidering their mutual animoſities as an happy riddance of the moſt dreadful peſt, form ominous prognoſtics from the manner of their arrangement. They conſider their combats as a preſage of war, and expect an invaſion from the Ruſſians or the Swedes, as the ſides next thoſe kingdoms happen to conquer. The two diviſions, however, continue their engagements and animoſity until one party overcomes the other. From that time they utterly diſappear, nor is it well known what becomes of either the conquerors or the conquered. Some ſuppoſe that they ruſh headlong into the ſea, others that they kill themſelves, as ſome are found hanging on the forked branches of a tree, and others ſtill that they are deſtroyed by the young ſpring herbage. But the moſt probable opinion is, that, having devoured the vegetable productions of the country, and having nothing more to ſubſiſt on,

* Dictionaire Raiſonée, vol. ii. p. 610.

they then fall to devouring each other; and, having habituated themſelves to that kind of food, continue it. However this be, they are often found dead by thouſands, and their carcaſes have been known to infect the air for ſeveral miles round, ſo as to produce very malignant diſorders. They ſeem alſo to infect the plants they have gnawed, for the cattle often die that afterwards feed in the places where they paſſed.

As to the reſt, the male is larger and more beautifully ſpotted than the female. They are extremely prolific; and, what is extraordinary, their breeding does not hinder their march; for ſome of them have been obſerved to carry one young one in their mouth and another on their back. They are greatly preyed upon by the ermine, and, as we are told, even by the rein-deer. The Swedes and Norwegians, who live by huſbandry, conſider an invaſion from theſe vermin as a terrible viſitation; but it is very different with reſpect to the Laplanders, who lead a vagrant life, and who, like the lemings themſelves, if their proviſions be deſtroyed in one part of the country, can eaſily retire to another. Theſe are never ſo happy as when an army of lemings come down amongſt them; for then they feaſt upon their fleſh; which, though horrid food, and which, though even dogs and cats are known to deteſt, theſe little ſavages eſteem very good eating, and devour greedily. They are glad of their arrival alſo upon another account, for they always expect a great plenty of game the year following, among thoſe fields which the lemings have deſtroyed.

THE MOLE.

TO theſe minute animals of the rat kind, a great part of whoſe lives is paſt in holes under ground, I will ſubjoin one little animal more, no way reſembling the rat, except that its whole life is ſpent there. As we have ſeen ſome quadrupeds formed to crop the ſurface of the fields, and others to live upon the tops of trees, ſo the mole is formed to live wholly under the earth, as if Nature meant that no place ſhould be left wholly untenanted. Were we from our own ſenſations to pronounce upon the life of a quadruped that was never to appear above ground, but was always condemned to hunt for its prey underneath, obliged, whenever

The MOLE

it removed from one place to another, to bore its way thro' a refisting body, we fhould be apt to affert that fuch an exiftence muft be the moft frightful and folitary in nature. However, in the prefent animal, though we find it condemned to all thofe feeming inconveniencies, we fhall difcover no figns of wretchednefs or diftrefs. No quadruped is fatter, none has a more fleek or gloffy fkin; and, though denied many advantages that moft animals enjoy, it is more liberally poffeffed of others, which they have in a more fcanty proportion.

This animal, fo well known in England, is however, utterly a ftranger in other places, and particularly in Ireland. For fuch, therefore, as have never feen it, a fhort defcription will be neceffary. And, in the firft place, though fomewhat of a fize between the rat and the moufe, it no way refembles either, being an animal entirely of a fingular kind, and perfectly unlike any other quadruped whatever. It is bigger than a moufe, with a coat of fine, fhort, gloffy, black hair. Its nofe is long and pointed, refembling that of a hog, but much longer. Its eyes are fo fmall, that it is fcarce poffible to difcern them. Inftead of ears, it has only holes in the place. Its neck is fo fhort that the head feems ftuck upon the fhoulders. The body is thick and round, terminating by a very fmall fhort tail, and its legs alfo are fo very fhort, that the animal feems to lie flat on its belly. From under its belly, as it refts in this pofition, the four feet appear juft as if they immediately grew out of the body. Thus the animal appears to us at firft view as a mafs of flefh covered with a fine fhining, black fkin, with a little head, and fcarce any legs, eyes, or tail. On a clofer infpection, however, two little, black points may be difcerned, that are its eyes. The ancients, and fome of the moderns, were of opinion that the animal was utterly blind; but Derham, by the help of a microfcope, plainly difcovered all the parts of the eye that are known in other animals, fuch as the pupil, the vitreous and cryftaline humours. The fore-legs appear very fhort and ftrong, and furnifhed with five claws to each. Thefe are turned outwards and backwards, as the hands of a man when fwimming. The hind-legs are longer and weaker than the fore, being only ufed fo affift its motions;

whereas the others are continually employed in digging. The teeth are like thofe of a fhrew-moufe, and there are five on both fides of the upper-jaw, which ftand out; but thofe behind are divided into points. The tongue is as large as the mouth will hold.

Such is the extraordinary figure and formation of this animal; which, if we compare with its manner of living, we fhall find a manifeft attention in Nature to adapt the one to the other*. As it is allotted a fubterraneous abode, the feeming defects of its formation vanifh, or rather are turned to its advantage. The breadth, ftrength, and fhortnefs of the fore-feet, which are inclined outwards, anfwer the purpofes of digging, ferving to throw back the earth with greater eafe, and to purfue the worms and infects which are its prey: had they been longer, the falling in of the earth would have prevented the quick repetition of its ftrokes in working; or have obliged it to make a large hole in order to give room for their exertion. The form of the body is not lefs admirably contrived for its way of life. The fore-part is thick, and very mufcular, giving great ftrength to the action of the fore-feet, enabling it to dig its way with amazing force and rapidity, either to purfue its prey, or elude the fearch of the moft active enemy. By its power of boring the earth, it quickly gets below the furface; and I have feen it, when let loofe in the midft of a field, like the ghoft on a theatre, inftantly fink into the earth; and the moft active labourer, with a fpade, in vain attempted to purfue.

The fmallnefs of its eyes, which induced the ancients to think it was blind, is, to this animal, a peculiar advantage. A fmall degree of vifion is fufficient for a creature that is ever deftined to live in darknefs. A more extenfive fight would only have ferved to fhew the horrors of its prifon, while Nature had denied it the means of an efcape. Had this organ been larger, it would have been perpetually liable to injuries, by the falling of the earth into it; but Nature, to prevent that inconvenience, has not only made them very fmall, but very clofely covered them with hair. Anatomifts mention, befide thefe advantages, another that contributes to their fecurity; namely, a certain mufcle, by

* Britifh Zoology.

which the animal can draw back the eye whenever it is neceſſary or in danger.

As the eye is thus perfectly fitted to the animal's ſituation, ſo alſo are the ſenſes of hearing and ſmelling. The firſt gives it notice of the moſt diſtant appearance of danger; the other directs it, in the midſt of darkneſs, to its food. The wants of a ſubterraneous animal can be but few; and theſe are ſufficient to ſupply them: to eat, and to produce its kind, are the whole employment of ſuch a life; and for both theſe purpoſes it is wonderfully adapted by Nature *.

Thus admirably is this animal fitted for a life of darkneſs and ſolitude; with no appetites but what it can eaſily indulge, with no enemies but what it can eaſily evade or conquer. As ſoon as it has once buried itſelf in the earth, it ſeldom ſtirs out, unleſs forced by violent rains in ſummer, or, when in purſuit of its prey, it happens to come too near the ſurface, and thus gets into the open air, which may be conſidered as its unnatural element. In general, it chooſes the looſer ſofter grounds, beneath which it can travel with greater eaſe; in ſuch alſo, it generally finds the greateſt number of worms and inſects, upon which it chiefly preys. It is obſerved to be moſt active, and to caſt up moſt earth, immediately before rain; and, in winter, before a thaw: at thoſe times the worms and inſects begin to be in motion; and approach the ſurface, whither this induſtrious animal purſues them. On the contrary, in very dry weather, the mole ſeldom or never forms any hillocks; for then it is obliged to penetrate deeper after its prey, which at ſuch ſeaſons retire far into the ground.

As the moles very ſeldom come above ground †, they have but few enemies; and very readily evade the purſuit of ani-

* Teſtes habet maximos, paraſtatas ampliſſimas, novum corpus ſeminale ab his diverſum ac ſeparatum. Penem etiam facile omnium, ni fallor, animalium longiſſimum, ex quibus colligere eſt maximam præ reliquis omnibus animalibus voluptatem in coitu, hoc abjectum et vile animalculum percipere ut habeant quod ipſi invideant qui in hoc ſupremas vitæ ſuæ delicias collocant: Raii Synopſ. Quadrup. p. 239. Huic opinioni aſſentitur D. Buffon, attamen non mihi apparet magnitudinem partium talem voluptatem augere. Maribus enim ſalaciſſimis contrarium obtinet.

† Buffon.

mals ſtronger and ſwifter than themſelves. Their greateſt calamity is an inundation; which, wherever it happens, they are ſeen in numbers attempting to ſave themſelves by ſwimming, and uſing every effort to reach the higher grounds. The greateſt part, however, periſh, as well as their young, which remain in the holes behind. Were it not for ſuch accidents, from their great fecundity, they would become extremely troubleſome; and, as it is, in ſome places, they are conſidered by the farmer as his greateſt peſt. They couple towards the approach of ſpring; and their young are found about the beginning of May. They generally have four or five at a time; and it is eaſy to diſtinguiſh among other mole-hills, that in which the female has brought forth her young. Theſe are made with much greater art than the reſt; and are uſually larger. The female, in order to form this retreat, begins by erecting the earth into a tolerably ſpacious apartment, which is ſupported within by partitions, at proper diſtances, that prevent the roof from falling. All round this ſhe works, and beats the earth very firm, ſo as to make it capable of keeping out the rain, let it be never ſo violent. As the hillock, in which this apartment is thus formed, is raiſed above ground, the apartment itſelf is conſequently above the level of the plain, and, therefore, leſs ſubject to accidental ſlight inundations. The place being thus fitted, ſhe then procures graſs and dry leaves, as a bed for her young. There they lie ſecure from wet, and ſhe continues to make their retreat equally ſo from danger; for all round this hill of her own raiſing, are holes running into the earth, that part from the middle apartment, like rays from a centre, and extend about fifteen feet in every direction: theſe reſemble ſo many walks or chaſes, into which the animal makes her ſubterraneous, excurſions, and ſupplies her young with ſuch roots or inſects as ſhe can provide: but they contribute ſtill more to the general ſafety; for as the mole is very quick of hearing, the inſtant ſhe perceives her little habitation attacked, ſhe takes to her burrow, and unleſs the earth be dug away by ſeveral men at once, ſhe and her young always make a good retreat.

The mole is ſcarcely found, except in cultivated countries: the varieties are but few. That which is found in

Virginia, resembles the common mole, except in colour, which is black, mixed with a deep purple. There are sometimes white moles, seen particularly in Poland, rather larger than the former. As their skin is so very soft and beautiful, it is odd that it has not been turned to any advantage. Agricolatells us, that he saw hats made from it, the finest and the most beautiful that could be imagined.

CHAP. II.

THE HEDGEHOG, OR PRICKLY KIND.

ANIMALS of the Hedgehog kind require but very little accuracy to distinguish them from all others. That hair which serves the generality of quadrupeds for warmth and ornament, is partly wanting in these; while its place is supplied by sharp spines or prickles, that serve for their defence This general characteristic, therefore, makes a much more obvious distinction than any that can be taken from their teeth or their claws. Nature, by this extraordinary peculiarity, seems to have separated them in a very distinguished manner; so that, instead of classing the hedgehog among the moles, or the porcupine with the hare, as some have done, it is much more natural and obvious to place them, and others approaching them, in this strange peculiarity, in a class by themselves: nor let it be supposed, that while I thus alter their arrangement, and separate them from animals with which they have been formerly combined, that I am destroying any secret affinities that exist in Nature. It is natural, indeed, for readers to suppose, when they see two such opposite animals as the hare and the porcupine assembled together in the same group, that there must be some material reason, some secret connection, for thus joining animals so little resembling each other in appearance. But the reasons for this union were very slight, and merely arose from a similitude in the fore-teeth: no likeness in the internal conformation, no similitude in Nature, in habitudes, or disposition; in short, nothing to fasten the link that combines

them, but the ſimilitude in the teeth: this, therefore, may be eaſily diſpenſed with; and, as was ſaid, it will be moſt proper to claſs them according to their moſt ſtriking ſimilitudes.

The hedgehog, with an appearance the moſt formidable, is yet one of the moſt harmleſs animals in the world: unable or unwilling to offend, all its precautions are only directed to its own ſecurity; and it is armed with a thouſand points, to keep off the enemy, but not to invade him. While other creatures truſt to their force, their cunning, or their ſwiftneſs, this animal, deſtitute of all, has but one expedient for ſafety; and from this alone it often finds protection. As ſoon as it perceives itſelf attacked, it withdraws all its vulnerable parts, rolls itſelf into a ball, and preſents nothing but its defenſive thorns to the enemy; thus, while it attempts to injure no other quadruped, they are equally incapable of injuring it: like thoſe knights, we have ſomewhere read of, who were armed in ſuch a manner, that they could neither conquer others, nor be themſelves overcome.

This animal is of two kinds; one with a noſe like the ſnout of a hog; the other more ſhort and blunt, like that of a dog. That with the muzzle of a dog is the moſt common, being about ſix inches in length, from the tip of the noſe to the inſertion of the tail. The tail is little more than an inch long; and ſo concealed by the ſpines, as to be ſcarce viſible: the head, back, and ſides, are covered with prickles; the noſe, breaſt, and belly, are covered with fine ſoft hair *; the legs are ſhort, of a duſky colour, and almoſt bare; the toes on each foot are five in number, long and ſeparated; the prickles are about an inch in length, and very ſharp pointed; their lower part is white, the middle black, and the points white: the eyes are ſmall, and placed high in the head; the ears are round, pretty large, and naked; the mouth is ſmall, but well furniſhed with teeth; theſe, however, it only uſes in chewing its food, but neither in attacking or defending itſelf againſt other animals. Its only reliance in caſes of danger, is on its ſpines; the inſtant it perceives an enemy, it puts itſelf into a poſture of defence, and

* Præputium propendens. Linnæi Syſt. 75. And of the female he might have ſaid, reſupina copulatur.

keeps upon its guard until it ſuppoſes the danger over. On ſuch occaſions, it immediately alters its whole appearance: from its uſual form, ſomewhat reſembling a ſmall animal, with a bunch on its back, the animal begins to bend its back, to lay its head upon its breaſt, to ſhut its eyes, to roll down the ſkin of its ſides towards the legs, to draw theſe up, and laſtly, to tuck them in every ſide, by drawing the ſkin ſtill cloſer. In this form, which the hedgehog always puts on when diſturbed, it no way reſembles an animal, but rather a roundiſh maſs of prickles, impervious on every ſide. The ſhape of the animal thus rolled up, ſomewhat reſembles a cheſnut in the huſk; there being, on one ſide, a kind of flat ſpace, which is that on which the head and legs have been tucked in.

Such is the uſual appearance of the hedgehog, upon the approach of any danger. Thus rolled up in a lump, it patiently waits till its enemy paſſes by, or is fatigued with fruitleſs attempts to annoy it. The cat, the weaſel, the ferret, and the martin, quickly decline the combat; and the dog himſelf generally ſpends his time in empty menaces, rather than in effectual efforts. Every increaſe of danger only increaſes the animal's precautions to keep on its guard; its aſſailant vainly attempts to bite, ſince he thus more frequently feels than inflicts a wound; he ſtands enraged and barking, and rolls it along with the paws; ſtill, however, the hedgehog patiently ſubmits to every indignity, but continues ſecure; and ſtill more to diſguſt its enemy with the conteſt, ſheds its urine, the ſmell of which is alone ſufficient to ſend him away. In this manner the dog, after barking for ſome time, leaves the hedgehog where he found him, who, perceiving the danger paſt, at length peeps out from its ball, and, if not interrupted, creeps ſlowly to its retreat.

The hedgehog, like moſt other wild animals, ſleeps by day, and ventures out by night. It generally reſides in ſmall thickets, in hedges, or in ditches covered with buſhes; there it makes a hole of about ſix or eight inches deep, and lies well wrapped up, in moſs, graſs, or leaves. Its food is roots, fruits, worms, and inſects. It is alſo ſaid to ſuck cattle, and hurt their udders; but the ſmallneſs of its mouth will ſerve to clear it from this reproach. It is ſaid alſo to be very hurtful in gardens and orchards, where it will roll itſelf in an heap of fruit, and ſo carry a large quantity away

upon its prickles; but this imputation is as ill grounded as the former, ſince the ſpines are ſo diſpoſed, that no fruit will ſtick upon them, even if we ſhould try to fix them on. It rather appears to be a very ſerviceable animal, in ridding our fields of inſects and worms, which are ſo prejudicial to vegetation.

Mr. Buffon, who kept theſe animals tame about his houſe, acquits them of the reproach of being miſchievous in the garden, but then he accuſes them of tricks, of which, from the form and habits of this animal, one would be never led to ſuſpect them. "I have often," ſays he, "had the female and her young brought me about the beginning of June: they are generally from three to five in number: they are white in the beginning, and only the marks of their ſpines appear: I was willing to rear ſome of them, and accordingly put the dam and her young into a tub, with abundant proviſion beſide them; but the old animal, inſtead of ſuckling her young, devoured them all, one after another. On another occaſion, an hedgehog that had made its way into the kitchen, diſcovered a little pot, in which there was meat prepared for boiling; the miſchievous animal drew out the meat, and left its excrements in the ſtead. I kept males and females in the ſame apartment, where they lived together, but never coupled. I permitted ſeveral of them to go about my garden, they did very little damage; and it was ſcarcely perceiveable that they were there: they lived upon the fruits that fell from the trees; they dug the earth into ſhallow holes; they eat catterpillars, beetles, and worms; they were alſo very fond of fleſh, which they devoured boiled or raw."

They couple in ſpring, and bring forth about the beginning of ſummer. They ſleep during the winter, and what is ſaid of their laying up proviſions for that ſeaſon, is conſequently falſe. They at no time eat much, and can remain very long without any food whatſoever. Their blood is cold, like all other animals that ſleep during the winter. Their fleſh is not good for food; and their ſkins are converted to ſcarce any uſe, except to muzzle calves, to keep them from ſucking.

The HEDGE HOG
Fig: 1 without the Bristles

The TANREC

THE TANREC AND TENDRAC.

THE Tanrec and Tendrac, are two little animals, described by Mr. Buffon, of the hedgehog kind; but yet sufficiently different from it, to constitute a different species. Like the hedgehog they are covered with prickles, though mixed in a greater proportion with hair; but unlike that animal, they do not defend themselves by rolling up in a ball. Their wanting this last property is alone sufficient to distinguish them from an animal in which it makes the most striking peculiarity: as also, that in the East Indies, where only they are found, the hedgehog exists separately also: a manifest proof that this animal is not a variety caused by the climate.

The Tanrec is much less than the hedgehog *, being about the size of a mole, and covered with prickles, like that animal, except that they are shorter and smaller. The Tendrac is still less than the former, and is defended only with prickles upon the head, the neck, and the shoulders; the rest being covered with a coarse hair, resembling a hog's bristles. These little animals, whose legs are very short, move but slowly. They grunt like a hog; and wallow, like it, in the mire. They love to be near water, and spend more of their time there than upon land. They are chiefly in creeks and harbours of salt water. They multiply in great numbers, make themselves holes in the ground, and sleep for several months. During this torpid state, their hairs (and I should also suppose their prickles) fall; and they are renewed upon their revival. They are usually very fat; and although their flesh be insipid, soft, and stringy, yet the Indians find it to their taste, and consider it as a very great delicacy.

THE PORCUPINE.

THOSE arms which the hedgehog possesses in miniature, the Porcupine has in a more enlarged degree. The short prickles of the hedgehog are, in this animal, converted into shafts. In the one, the spines are about an inch long; in the other, a foot. The porcupine is about two feet long, and fifteen inches high. Like the hedgehog, it appears a mass of misshapen flesh, covered with quills, from ten to

* Buffon, vol. xxv. p. 254.

fourteen inches long, resembling the barrel of a goose-quill in thickness; but tapering and sharp at both ends. These, whether considered separately or together, afford sufficient subject to detain curiosity. Each quill is thickest in the middle; and inserted into the animal's skin, in the same manner as feathers are found to grow upon birds. It is within-side spongy, like the top of a goose-quill; and of different colours, being white and black alternately, from one end to the other. The biggest are often found fifteen inches long, and a quarter of an inch in diameter; extremely sharp, and capable of inflicting a mortal wound. They seem harder than common quills, being difficult to be cut and solid at that end which is not fixed in the skin. If we examine them in common, as they grow upon the animal, they appear of two kinds; the one such as I have already described; the other, long, flexible, and slender, growing here and there among the former. There is still another sort of quills, that grow near the tail, white and transparent, like writing quills, and that seem to be cut short at the end. All these quills, of whatever kind, incline backwards, like the bristles of an hog; but when the animal is irritated, they rise, and stand upright, as bristles are seen to do.

Such is the formation of this quadruped, in those parts in which it differs from most others: as to the rest of its figure, the muzzle bears some resemblance to that of a hare, but black; the legs are very short, and the feet have five toes, both before and behind; and these, as well as the belly, the head, and all other parts of the body, are covered with a sort of short hair, like prickles, there being no part, except the ears and the sole of the foot, that is free from them: the ears are thinly covered with very fine hair; and are in shape like those of mankind: the eyes are small, like those of a hog, being only one third of an inch from one corner to the other. After the skin is taken off, there appears a kind of paps on those parts of the body from whence the large quills proceed; these are about the size of a small pea, each answering to as many holes which appear on the outward surface of the skin, and which are about half an inch deep, like as many hollow pipes, wherein the quills are fixed, as in so many sheaths.

The PORCUPINE

This animal ſeems to partake very much of the nature of the hedgehog; having this formidable apparatus of arms rather to defend itſelf, than annoy the enemy. There have been, indeed, many naturaliſts who ſuppoſed that it was capable of diſcharging them at its foes, and killing at a great diſtance off. But this opinion has been entirely diſcredited of late; and it is now univerſally believed that its quills remain firmly fixed in the ſkin, and are then only ſhed when the animal moults them, as birds do their feathers. It is true, we are told by Ellis, that a wolf at Hudſon's Bay was found dead, with the quills of a porcupine fixed within its mouth; which might have very well happened, from the voracioufneſs of the former, and not the reſentment of the latter. That rapacious creature, in the rage of appetite, might have attempted to devour the porcupine, quills and all, and very probably paid the forfeit, by its life. However this be, of all the porcupines that have been brought into Europe, not one was ever ſeen to launch their quills; and yet the irritations they received were ſufficient to have provoked their utmoſt indignation. Of all the porcupines that Dr. Shaw obſerved in Africa, and he ſaw numbers, not one ever attempted to dart its quills; their uſual manner of defence being, to lie on one ſide, and when the enemy approaches very near, by ſuddenly riſing, to wound him with the points on the other.

It is probable, therefore, that the porcupine is ſeldom the aggreſſor; and when attacked by the bolder animals, it only directs its quills ſo as to keep always pointing towards the enemy. Theſe are an ample protection; and, as we are aſſured by Kolben, at ſuch times, even the lion himſelf will not venture to make an attack. From ſuch, therefore, the porcupine can defend itſelf; and chiefly hunts for ſerpents, and all other reptiles, for ſubſiſtence. Travellers univerſally aſſure us that, between the ſerpent and the porcupine there exiſts an irreconcileable enmity, and that they never meet without a mortal engagement *. The porcupine, on theſe occaſions, is ſaid to roll itſelf upon the ſerpent, and thus deſtroy and devour it. This may be true; while, what we are informed by Monſieur Sarraſin, of the porcupine of Canada chiefly ſubſiſting on vegetables, may be equally ſo.

* Boſman. Smith. L. P. Vincent Marie, &c.

Thofe which are brought to this country to be fhewn, are ufually fed on bread, milk, and fruits; but they will not refufe meat when it is offered them; and it is probable, they prefer it in a wild ftate, when it is to be had *. The porcupine is alfo known to be extremely hurtful to gardens; and, where it enters, does incredible damage.

The Americans, who hunt this animal, affure us, that the porcupine lives from twelve to fifteen years. During the time of coupling, which is in the month of September, the males become very fierce and dangerous, and often are feen to deftroy each other with their teeth. The female goes with young feven months, and brings forth but one at a time; this fhe fuckles but about a month, and accuftoms it betimes to live, like herfelf, upon vegetables and the bark of trees; fhe is very fierce in its defence; but, at other feafons, fhe is fearful, timid, and harmlefs. The porcupine never attempts to bite, nor any way to injure its purfuers: if hunted by a dog or a wolf, it inftantly climbs up a tree, and continues there until it has wearied out the patience of its adverfary; the wolf knows by experience how fruitlefs it would be to wait, he therefore leaves the porcupine above, and feeks out for a new adventure.

The porcupine does not efcape fo well from the Indian hunter, who eagerly purfues it, in order to make embroidery of its quills, and to eat its flefh. This, as we are commonly told, is very tolerable eating: however, we may expect wretched provifions when the favages are to be our caterers; for they eat every thing that has life. But they are very ingenious with regard to their embroidery: if I underftand the accounts rightly, they dye the quills of various colours, and then fplittling them into flips, as we fee in the making of a cane-chair, they embroider, with thefe, their belts, bafkets, and feveral other neceffary pieces of furniture.

As to the reft, there are many things related concerning this animal that are fabulous; but there are ftill many circumftances more, that yet remain to be known. It were curious to inquire whether this animal moults its quills when wild, for it is never feen to fhed them in a domeftic ftate; whether it fleeps all the winter, as we are told by fome naturalifts, which we are fure it does not when brought into our country; and, laftly, whether its quills can be fent

* Buffon.

off with a ſhake; for no leſs a naturaliſt than Reaumur was of that opinion.

All that we can learn of an animal expoſed as a ſhew, or even by its diſſection, is but merely its conformation; and that makes one of the leaſt intereſting parts of its hiſtory. We are naturally led, when preſented with an extraordinary creature, to expect ſomething extraordinary in its way of living, ſomething uncommon, and correſponding with its figure; but of this animal we know little with any preciſion, except what it offers in a ſtate of captivity. In ſuch a ſituation, that which I ſaw, appeared to very little advantage: it was extremely dull and torpid, though very wakeful; and extremely voracious, though very capable of ſuſtaining hunger; as averſe to any attachment, as to being tamed: it was kept in an iron cage, and the touching one of the bars was ſufficient to excite its reſentment, for its quills were inſtantly erected; and the poet was right in his epithet of *fretful;* for it appeared to me the moſt iraſcible creature upon earth.

The porcupines of America differ very much from that of the ancient continent, which we have been deſcribing; and, ſtrictly ſpeaking, may be conſidered as animals of a different ſpecies: however, from their being covered with quills, we will only add them as varieties of the former, ſince we know very little concerning them, except their difference of figure. They are of two kinds; the one called the *couando;* and the other, firſt named by Mr. Buffon, the *urſon:* the one a native of the northern parts of America; the other of the ſouth; and both differing from the former, in having long tails, whereas that has a very ſhort one.

The COUANDO is much leſs than the porcupine; its quills are four times ſhorter, its ſnout more unlike that of a hare; its tail is long enough to catch by the branches of trees, and hold by them. It may be eaſily tamed, and is to be found chiefly in the ſouthern parts of America; yet is not wanting alſo in the northern.

The URSON, which Mr. Buffon calls after our countryman Hudſon, is a native of Hudſon's Bay. The make of the body of this animal is not ſo round as that of the two former, but ſomewhat reſembling the ſhape of a pig. It is covered with long, briſtly hair, with a ſhorter hair underneath; and under this the quills lie concealed very thick; they

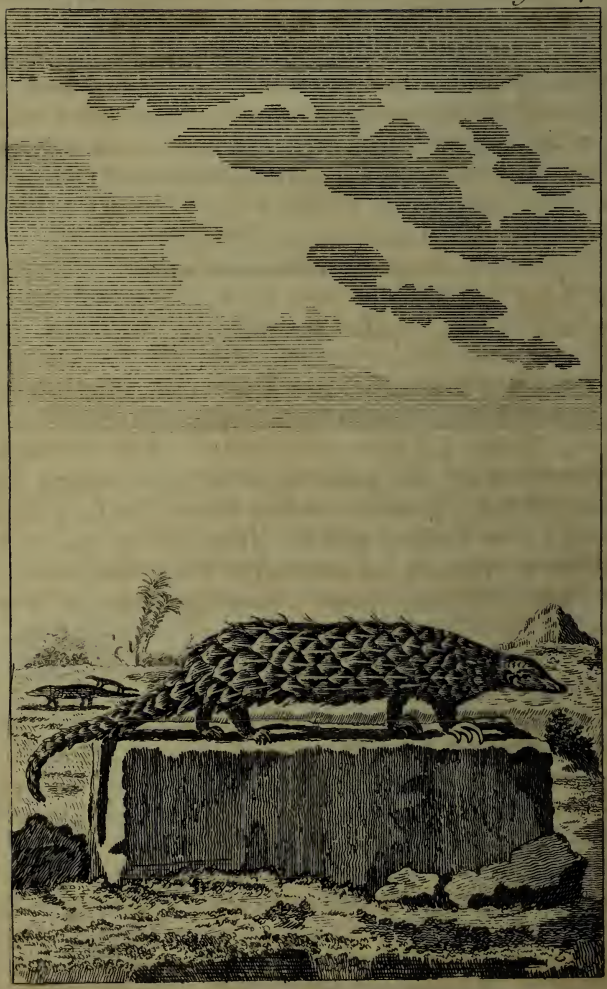
are white, with a brown point, and bearded, and the longeſt do not exceed four inches; they ſtick to the hand when the animal is ſtroked on the back; and likewiſe, when the hand is taken away, they ſtick ſo faſt as to follow it. They make their neſt under the roots of great trees, ſleep very much, and chiefly feed upon the bark of the juniper. In winter the ſnow ſerves them for drink; and in ſummer they lap water, like a dog. They are very common in the country lying to the eaſt of Hudſon's Bay; and ſeveral of the trading Americans depend on them for food, at ſome ſeaſons of the year.

CHAP. III.

OF QUADRUPEDS COVERED WITH SCALES OR SHELLS INSTEAD OF HAIR*.

WHEN we talk of a quadruped, the name ſeems to imply an animal covered with hair; when we mention a bird, it is natural to conceive a creature covered with feathers; when we hear of a fiſh, its ſcales are generally the firſt part that ſtrikes our imagination Nature, however, owns none of our diſtinctions; various in all her operations, ſhe mixes her plans, groupes her pictures, and excites our wonder, as well by her general laws as by her deviations. Quadrupeds, which we have conſidered as making the firſt general claſs in Animated Nature, and next to man the moſt dignified tenants of the earth, are yet, in many reſpects, related to the claſſes beneath them, and do not in every reſpect preſerve their uſual diſtinctions. Their firſt character, which conſiſts in having four feet, is common to the lizard kind as well as to them. The ſecond prerogative, which is that of bringing forth living young, is found in the cetaceous tribe of fiſhes, and alſo in inſects without number. Their third and laſt attribute, which ſeems more general and conſtant than the former, that of being covered with hair, is yet found in various other animals, and is deficient in quadru-

* This chapter is chiefly extracted from Mr. Buffon, which I mention at once, to ſave the trouble of repeated quotation.



The PANGOLIN

peds themſelves. Thus we muſt be cautious of judging of the nature of animals from one ſingle character, which is always found incomplete; for it often happens that three or four of the moſt general characters will not ſuffice. It muſt be by a general enumeration of the parts that we can determine preciſely of the works of the creation; and inſtead of definitions, learn to deſcribe. Had this method been followed, much of the diſguſt and the intricacy of hiſtory might have been avoided, and that time, which is now employed in combating error, laid out in the promoting of ſcience.

Were we to judge of Nature from definitions only, we ſhould never be induced to ſuppoſe that there exiſted races of viviparous quadrupeds deſtitute of hair, and furniſhed with ſcales and ſhells in their ſtead. However, Nature, every way various, ſupplies us with many inſtances of theſe extraordinary creatures; the old world has its quadrupeds covered with ſcales, and the new with a ſhell. In both, they reſemble each other, as well in the ſtrangeneſs of their appetites, as in their awkward conformation. Like animals but partially made up, and partaking of different natures, they want thoſe inſtincts which animals formed but for one element alone are found to poſſeſs. They ſeem to be a kind of ſtrangers in Nature; creatures taken from ſome other element, and capriciouſly thrown to find a precarious ſubſiſtence upon land.

THE PANGOLIN.

THE pangolin, which has been uſually called the *ſcaly lizard*, Mr. Buffon very judiciouſly reſtores to that denomination by which it is known in the countries where it is found. The calling it a lizard, he juſtly obſerves, might be apt to produce error, and occaſion its being confounded with an animal which it reſembles only in its general form, and in its being covered with ſcales. The lizard may be conſidered as a reptile, produced from an egg; the pangolin is a quadruped, and brought forth alive, and perfectly formed.—The lizard is all over covered with the marks of ſcales; the pangolin has ſcales neither on the throat, the breaſt, nor the belly. The ſcales of the lizard ſeem ſtuck upon the body even cloſer than thoſe of fiſhes; the ſcales of the pangolin are only fixed at one end, and capable of being erected, like

thoſe of the porcupine at the will of the animal. The lizard is a defenceleſs creature; the pangolin can roll itſelf into a ball, like the hedgehog, and preſents the points of its ſcales to the enemy, which effectually defend it.

The pangolin, which is a native of the torrid climates of the ancient continent, is, of all other animals, the beſt protected from external injury by Nature. It is about three or four feet long; or, taking in the tail, from ſix to eight.—Like the lizard, it has a ſmall head, a very long noſe, a ſhort thick neck, a long body, legs very ſhort, and a tail extremely long, thick at the inſertion, and terminating in a point. It has no teeth, but is armed with five toes on each foot, with long white claws. But what it is chiefly diſtinguiſhed by, is its ſcaly covering, which, in ſome meaſure, hides all the proportions of its body. Theſe ſcales defend the animal on all parts, except the under part of the head and neck, under the ſhoulders, the breaſt, the belly, and the inner ſide of the legs; all which parts are covered with a ſmooth, ſoft ſkin, without hair. Between the ſhells of this animal, at all the interſtices, are ſeen hairs like briſtles, brown at the extremity, and yellow towards the root. The ſcales of this extraordinary creature are of different ſizes and different forms, and ſtuck upon the body ſomewhat like the leaves of an artichoke. The largeſt are found near the tail, which is covered with them like the reſt of the body. Theſe are above three inches broad, and about two inches long, thick in the middle and ſharp at the edges, and terminated in a roundiſh point. They are extremely hard, and their ſubſtance reſembles that of horn. They are convex on the outſide, and a little concave on the inner; one edge ſticks in the ſkin, while the other laps over that immediately behind it. Thoſe that cover the tail, conform to the ſhape of that part, being of a duſky brown colour, and ſo hard, when the animal has acquired its full growth, as to turn a muſket-ball.

Thus armed, this animal fears nothing from the efforts of all other creatures, except man. The inſtant it perceives the approach of an enemy, it rolls itſelf up like the hedgehog, and preſents no part but the cutting edges of its ſcales to the aſſailant. Its long tail, which, at firſt view, might be thought eaſily ſeparable, ſerves ſtill more to increaſe the ani-

mal's ſecurity. This is lapped round the reſt of the body, and, being defended with ſhells even more cutting than any other part, the creature continues in perfect ſecurity. Its ſhells are ſo large, ſo thick, and ſo pointed, that they repel every animal of prey; they make a coat of armour that wounds while it reſiſts, and at once protects and threatens. The moſt cruel, the moſt famiſhed quadruped of the foreſt, the tiger, the panther, and the hyæna, make vain attempts to force it. They tread upon, they roll it about, but all to no purpoſe; the pangolin remains ſafe within, while its invader almoſt always feels the reward of its raſhneſs. The fox often deſtroys the hedgehog by preſſing it with his weight, and thus obliges it to put forth its noſe, which he inſtantly ſeizes, and ſoon after the whole body; but the ſcales of the pangolin effectually ſupport it under any ſuch weight, while nothing that the ſtrongeſt animals are capable of doing can compel it to ſurrender. Man alone ſeems furniſhed with arms to conquer its obſtinacy. The Negroes of Africa, when they find it, beat it to death with clubs, and conſider its fleſh as a very great delicacy.

But, although this animal be ſo formidable in its appearance, there cannot be a more harmleſs, inoffenſive creature when unmoleſted. It is even unqualified by Nature to injure larger animals, if it had the diſpoſition, for it has no teeth. It ſhould ſeem that the bony matter, which goes in other animals to ſupply the teeth, is exhauſted in this in ſupplying the ſcales that go to the covering of its body. However this be, its life ſeems correſpondent to its peculiar conformation. Incapable of being carnivorous, ſince it has no teeth, nor of ſubſiſting on vegetables, which require much chewing, it lives entirely upon inſects, for which Nature has fitted it in a very extraordinary manner. As it has a long noſe, ſo it may naturally be ſuppoſed to have a long tongue; but, to increaſe its length ſtill more, it is doubled in the mouth, ſo that when extended it is ſhot out to above a quarter of a yard beyond the tip of the noſe. This tongue is round, extremely red, and covered with an unctuous and ſlimy liquor, which gives it a ſhining hue. When the pangolin, therefore, approaches an ant-hill, for theſe are the inſects on which it chiefly feeds, it lies down near it, concealing as much as poſſible the place of its retreat, and ſtretch-

ing out its long tongue among the ants, keeps it for some time quite immoveable. These little animals, allured by its appearance, and the unctuous substance with which it is smeared, instantly gather upon it in great numbers; and when the pangolin supposes a sufficiency, it quickly withdraws the tongue and swallows them at once. This peculiar manner of hunting for its prey is repeated, either till it be satisfied, or till the ants, grown more cautious, will be allured to their destruction no longer. It is against these noxious insects, therefore, that its only force or cunning is exerted; and were the Negroes but sufficiently sensible of its utility in destroying one of the greatest pests to their country, they would not be so eager to kill it. But it is the nature of savage men to pursue the immediate good, without being solicitous about the more distant benefit they remove. They, therefore, hunt this animal with the utmost avidity, for its flesh; and as it is slow and unable to escape in an open place, they seldom fail of destroying it. However, it chiefly keeps in the most obscure parts of the forest, and digs itself a retreat in the clefts of rocks, where it brings forth its young, so that it is but rarely met with, and continues a solitary species, and an extraordidary instance of the varying of Nature.

Of this animal, there is a variety which is called the PHATAGIN, much less than the former, being not above a foot long from the head to the tail, with shells differently formed, with its belly, breast, and throat covered with hair, instead of a smooth skin, as in the former; but that by which it is peculiarly distinguished is the extent of its tail, which is above twice the length of its body. Both are found in the warm latitudes of the East, as well as in Africa; and, as their numbers are but few, it is to be supposed their fecundity is not great.

THE ARMADILLO, OR TATOU.

HAVING mentioned quadrupeds of the ancient continent covered with scales, we come next to quadrupeds of the new continent, covered with shells. It would seem that Nature had reserved all the wonders of her power for these remote and thinly inhabited countries, where the men are savage, and the quadrupeds various. It would seem that she

The ARMADILLO

becomes more extraordinary in proportion as ſhe retires from human inſpection. But the real fact is, that wherever mankind are poliſhed, or thickly planted, they ſoon rid the earth of theſe odd and half-formed productions, that in ſome meaſure encumber the ſoil. They ſoon diſappear in a cultivated country, and continue to exiſt only in thoſe remote deſerts where they have no enemies but ſuch as they are enabled to oppoſe.

The Armadillo is chiefly an inhabitant of South America; a peaceful harmleſs creature, incapable of offending any other quadruped, and furniſhed with a peculiar covering for its own defence. The pangolin, deſcribed above, ſeems an inactive helpleſs being, indebted for ſafety more to its patience than its power; but the armadillo is ſtill more expoſed and helpleſs. The pangolin is furniſhed with an armour that wounds while it reſiſts, and that is never attacked with impunity; but the armadillo is obliged to ſubmit to every inſult, without any power of repelling its enemy; it is attacked without danger, and is conſequently liable to more various perſecutions.

This animal being covered, like a tortoiſe, with a ſhell, or rather a number of ſhells, its other proportions are not eaſily diſcerned. It appears, at firſt view, a round misſhapen maſs, with a long head, and a very large tail ſticking out at either end, as if not of a piece with the reſt of the body. It is of different ſizes, from a foot to three feet long, and covered with a ſhell divided into ſeveral pieces, that lap over each other like the plates in a coat of armour, or in the tail of a lobſter. The difference in the ſize of this animal, and alſo the different diſpoſition and number of its plates, have been conſidered as conſtituting ſo many ſpecies, each marked with its own particular name. In all, however, the animal is partially covered with this natural coat of mail; the conformation of which affords one of the moſt ſtriking curioſities in natural hiſtory. This ſhell, which in every reſpect reſembles a bony ſubſtance, covers the head, the neck, the back, the ſides, the rump, and the tail to the very point. The only parts to which it does not extend are, the throat, the breaſt, and the belly, which are covered with a white ſoft ſkin, ſomewhat reſembling that of a fowl ſtripped of its feathers. If theſe naked parts be obſerved with attention,

they will be found covered with the rudiments of ſhells, of the ſame ſubſtance with thoſe which cover the back. The ſkin, even in the parts that are ſofteſt, ſeems to have a tendency to oſſify; but a complete oſſification takes place only on thoſe parts which have the leaſt friction, and are the moſt expoſed to the weather. The ſhell, which covers the upper part of the body, differs from that of the tortoiſe, in being compoſed of more pieces than one, which lie in bands over the body, and, as in the tail of the lobſter, ſlide over each other, and are connected by a yellow membrane in the ſame manner. By this means the animal has a motion in its back, and the armour gives way to its neceſſary inflections These bands are of various numbers and ſizes, and from them theſe animals have been diſtinguiſhed into various kinds. In general, however, there are two large pieces that cover, one the ſhoulders and the other the rump. In the back, between theſe, the bands are placed in different numbers, that lap over each other, and give play to the whole. Beſides their opening croſs-ways, they alſo open down along the back, ſo that the animal can move in every direction. In ſome there are but three of theſe bands between the large pieces; in others there are ſix; in a third kind there are eight; in a fourth kind, nine; in a fifth kind, twelve; and, laſtly, in the ſixth kind there is but one large piece, which covers the ſhoulders, and the reſt of the body is covered with bands all down to the tail. Theſe ſhells are differently coloured in different kinds, but moſt uſually they are of a dirty grey. This colour, in all, ariſes from another peculiar circumſtance in their conformation, for the ſhell itſelf is covered with a ſoftiſh ſkin, which is ſmooth and tranſparent.

But, although theſe ſhells might eaſily defend this animal from a feeble enemy, yet they could make but a ſlight reſiſtance againſt a more powerful antagoniſt; Nature, therefore, has given the armadillo the ſame method of protecting itſelf with the hedge-hog or the pangolin. The inſtant it perceives itſelf attacked, it withdraws the head under its ſhells, and lets nothing be ſeen but the tip of the noſe; if the danger increaſes, the animal's precautions increaſe in proportion; it then tucks up its feet under its belly, unites its two extremities together, while the tail ſeems as a band to ſtrengthen the connection; and it thus becomes like a

ball, a little flattish on each side. In this position it continues obstinately fixed, while the danger is near, and often long after it is over. In this situation it is tossed about at the pleasure of every other quadruped, and very little resembling a creature endowed with life and motion. Whenever the Indians take it, which is in this form, by laying it close to the fire, they soon oblige the poor animal to unfold itself, and to face a milder death to escape a more severe.

This animal is a native only of America, for they were utterly unknown before the discovery of that continent. It is an inoffensive harmless creature, unless it finds the way into a garden, where it does a great deal of mischief, by eating the melons, the potatoes, and other vegetables. Although a native of the warmest parts of America, yet it bears the cold of our climate without any inconvenience. We have often seen them shewn among other wild beasts, which is a proof they are not difficult to be brought over. Their motion seems to be a swift walk, but they can neither run, leap, nor climb trees; so that, if found in an open place, they have no method of escaping from their pursuers. Their only resource in such an extremity is to make towards their hole as fast as they can; or, if this be impracticable, to make a new hole before the enemy arrives. For this they require but a very few moments advantage; the mole itself does not burrow swifter than they can. For this purpose, they are furnished with claws extremely large, strong, and crooked, and usually four upon each foot They are sometimes caught by the tail as they are making their way into the earth; but such is their resistance, and so difficult is it to draw them backward, that they leave their tail in the hand of their pursuer, and are very well contented to save their lives with its loss. The pursuers, sensible of this, never drag the tail with all their force, but hold it while another digs the ground about them, and thus these animals are taken alive. The instant the armadillo perceives itself in the power of its enemies, it has but one last resource, to roll itself up, and thus patiently wait whatever tortures they think proper to inflict. The flesh of the smaller kinds is said to be delicate eating; so that we may suppose they receive no mercy. For this reason, they are pursued with unceasing industry; and, although they burrow very deep in the earth,

there have been many expedients uſed to force them out. The hunters ſometimes contrive to fill the hole with ſmoke, which is often ſucceſsful; they at other times force it by pouring in water. They alſo bring up a ſmall kind of dogs to the chaſe that quickly overtake them, if at any diſtance from their burrow, and oblige them to roll themſelves up in a ball, in which figure the hunters carry them home. If, however, the armadillo be near a precipice, it often eſcapes by rolling itſelf up, and then tumbling down from rock to rock, without the leaſt danger or inconvenience. They are ſometimes taken in ſnares laid for them by the ſides of rivers and low moiſt places, which they particularly frequent; and this method, in general, ſucceeds better than any of the former, as their burrows are very deep, and they ſeldom ſtir out except in the night. At no time are they found at any great diſtance from their retreats, ſo that it requires ſome patience and ſkill to intercept their retreat.

There are ſcarce any of theſe that do not root the ground, like a hog, in ſearch of ſuch roots as make a principal part of their food. They live alſo upon melons and other ſucculent vegetables, and all will eat fleſh when they can get it. They frequent water and watery places, where they feed upon worms, ſmall fiſh, and water inſects. It is pretended that there is a kind of friendſhip between them and the rattle-ſnake, that they live peaceably and commodiouſly together, and are frequently found in the ſame hole. This, however, may be a friendſhip of neceſſity to the armadillo; the rattle-ſnake takes poſſeſſion of its retreats, which neither are willing to quit, while each is incapable of injuring the other.

As to the reſt, theſe animals, though they all reſemble each other in the general character of being clothed with a ſhell, yet differ a good deal in their ſize, and in the parts into which their ſhell is divided. The firſt of this kind, which has but three bands between the two large pieces that cover the back, is called the TATU APARA. I will not enter into an exact deſcription of its figure, which, how well written ſoever, no imagination could exactly conceive; and the reader would be more fatigued to underſtand than I to write it. The tail is ſhorter in this than any other kind, being not more than two inches long, while the ſhell, taking all the

pieces together, is a foot long and eight inches broad. The second is the TATOU of Ray, or the ENCOUBERT of Buffon; this is distinguished from the rest by six bands across the back; it is about the size of a pig of a month old, with a small long head and a very long tail. The third is the TATUETTE, furnished with eight bands, and not by a great deal so big as the former. Its tail is longer also, and its legs shorter in proportion. Its body, from the nose to the insertion of the tail, is about ten inches long, and the tail seven. The fourth is the PIG-HEADED ARMADILLO, with nine bands. This is much larger than the former, being about two feet long from the nose to the tail. The fifth is the KABASSOU, or CATAPHRACTUS, with twelve bands, and still bigger than the former, or any other of its kind. This is often found above three feet long, but is never eaten as the rest are. The sixth is the WEASEL-HEADED ARMADILLO, with eighteen bands, with a large piece before, and nothing but bands backward. This is above a foot long, and the tail five inches. Of all these, the kabassou and the encoubert are the largest; the rest are of a much smaller kind. In the larger kinds, the shell is much more solid than in the others, and the flesh is much harder and unfit for the table. These are generally seen to reside in dry upland grounds, while the small species are always found in moist places, and in the neighbourhood of brooks and rivers. They all roll themselves into a ball; but those whose bands are fewest in number are least capable of covering themselves up completely. The tatu apara, for instance, when rolled up, presents two great interstices between its bands, by which it is very easily vulnerable, even by the feeblest of quadrupeds.

CHAP. IV.

ANIMALS OF THE BAT KIND.

HAVING in the last chapter described a race of animals that unite the boundaries between quadrupeds and insects, I come in this to a very different class, that serve to fill up the chasm between quadrupeds and birds. Some naturalists, indeed, have found animals of the bat kind so much par-

taking of the nature of both, that they have been at a loſs in which rank to place them, and have doubted, in giving the hiſtory of the bat, whether it was a beaſt or a bird they were deſcribing. Theſe doubts, however, no longer exiſt; they are now univerſally made to take their place among quadrupeds, to which their bringing forth their young alive, their hair, their teeth, as well as the reſt of their habitudes and conformation, evidently entitle them. Pliny, Geſner, and Aldrovandus, who placed them among birds, did not conſider that they wanted every character of that order of animals, except the power of flying. Indeed, when this animal is ſeen with an awkward and ſtruggling motion, ſupporting itſelf in the air at the duſk of the evening, it preſents in ſome meaſure the appearance of a bird; but naturaliſts, whoſe buſineſs it is to examine it more cloſely, to watch its habitudes, and inſpect into its formation, are inexcuſable for concurring in the miſtake.

The bat in ſcarce any particular reſembles the bird, except in its power of ſuſtaining itſelf in the air. It brings forth its young alive; it ſuckles them; its mouth is furniſhed with teeth; its lungs are formed like thoſe of quadrupeds; its inteſtines, and its ſkeleton, have a complete reſemblance, and even are, in ſome meaſure, ſeen to reſemble thoſe of mankind *.

The bat moſt common in England, is about the ſize of a mouſe; or nearly two inches and a half long. The membranes that are uſually called wings, are properly ſpeaking, an extenſion of the ſkin all round the body, except the head, which, when the animal flies, is kept ſtretched on every ſide, by the four interior toes of the fore feet, which are enormouſly long, and ſerve like maſts that keep the canvas of a ſail ſpread, and regulate its motions†. The firſt toe is quite looſe, and ſerves as a heel when the bat walks, or as a hook, when it would adhere to any thing. The hind feet are diſengaged from the ſurrounding ſkin, and divided into five toes, ſomewhat reſembling thoſe of a mouſe. The ſkin by which it flies is of a duſky colour. The body is covered with a ſhort fur, of a mouſe colour, tinged with red. The eyes are very ſmall; the ears like thoſe of a mouſe.

* Penis propendens. † Britiſh Zoology.

This ſpecies of the bat is very common in England. It makes its firſt appearance early in ſummer, and begins its flight in the duſk of the evening. It principally frequents the ſides of woods, glades, and ſhady walks; and is frequently obſerved to ſkim along the ſurface of pieces of water. It purſues gnats, moths, and nocturnal inſects of every kind. It feeds upon theſe; but will not refuſe meat, wherever it can find it. Its flight is a laborious, irregular movement; and if it happens to be interrupted in its courſe, it cannot readily prepare for a ſecond elevation: ſo that if it ſtrikes againſt any object, and falls to the ground, it is uſually taken. It appears only in the moſt pleaſant evenings, when its prey is generally abroad, and flies in purſuit with its mouth open. At other times it continues in its retreat; the chink of a ruined building, or the hollow of a tree. Thus this little animal, even in ſummer, ſleeps the greateſt part of its time, never venturing out by day-light, nor in rainy weather; never hunting in queſt of prey, but for a ſmall part of the night, and then returning to its hole. But its ſhort life is ſtill more abridged by continuing in a torpid ſtate during the winter. At the approach of the cold ſeaſon, the bat prepares for its ſtate of lifeleſs inactivity, and ſeems rather to chooſe a place where it may continue ſafe from interruption, than were it may be warmly or conveniently lodged. For this reaſon it is uſually ſeen hanging by its hooked claws to the roofs of caves, regardleſs of the eternal damps that ſurround it. The bat ſeems the only animal that will venture to remain in theſe frightful ſubterranean abodes, where it continues in a torpid ſtate, unaffected by every change of the weather. Such of this kind as are not provident enough to procure themſelves a deep retreat, where the cold and heat ſeldom vary, are ſometimes expoſed to great inconveniences, for the weather often becomes ſo mild in the midſt of winter as to warm them prematurely into life, and to allure them from their holes in queſt of food, when Nature has not provided a ſupply. Theſe, therefore, have ſeldom ſtrength to return; but, having exhauſted themſelves in a vain purſuit, after inſects which are not be found, are deſtroyed by the owl, or any other animal that follows ſuch petty prey.

The bat couples and brings forth in ſummer, generally

from two to five at a time: of this I am certain, that I have found five young ones in a hole together; but whether they were the iſſue of one parent, I cannot tell. The ſemale has but two nipples, and thoſe forward on the breaſt, as in the human kind. This was a ſufficient motive for Linnæus to give it the title of a *primas*, to rank it in the ſame order with mankind; and to puſh this contemptible animal among the chiefs of the creation. Such arbitrary aſſociations produce rather ridicule than inſtruction, and render even method contemptible: however, we are to forgive too ſtrong an attachment to ſyſtem in this able naturaliſt, ſince his application to the particular hiſtory of the animal counterbalances the defect*.

From Linnæus we learn, that the female makes no neſt for her young, as moſt birds and quadrupeds are known to do. She is barely content with the firſt hole ſhe meets, where ſticking herſelf by her hooks againſt the ſides of her apartment, ſhe permits her young to hang at the nipple, and in this manner to continue for the firſt or ſecond day. When, after ſome time, the dam begins to grow hungry, and finds a neceſſity of ſtirring abroad, ſhe takes her little ones and ſticks them to the wall, in the manner ſhe before hung herſelf; there they immoveably cling, and patiently wait till her return.

Thus far this animal ſeems cloſely allied to the quadruped race. Its ſimilitude to that of birds is leſs ſtriking. As Nature has furniſhed birds with extremely ſtrong pectoral muſcles, to move the wings, and direct their flight, ſo has it alſo furniſhed this animal. As birds alſo have their legs weak, and unfit for the purpoſes of motion, the bat has its legs faſhioned in the ſame manner, and is never ſeen to walk, or, more properly ſpeaking, to puſh itſelf forward with its hind legs, but in caſes of extreme neceſſity. The toes of the fore legs, or, if we may uſe the expreſſion, its extremely long fingers, extend the web like a membrane that lies between them; and this, which is extremely thin, ſerves to lift the little body into the air: in this manner, by an unceaſing percuſſion, much ſwifter than that of birds, the animal continues, and directs its flight; however, the great labour required in flying, ſoon fatigues it; for, unlike birds, which

* Fauna Suecia, p. 8.

continue for days together upon the wing, the bat is tired in leſs than an hour, and then returns to its hole, ſatisfied with its ſupply, to enjoy the darkneſs of its retreat.

If we conſider the bat as it is ſeen in our own country, we ſhall find it a harmleſs, inoffenſive creature. It is true that it now and then ſteals into a larder, and, like a mouſe, commits its petty thefts upon the fatteſt parts of the bacon. But this happens ſeldom; the general tenor of its induſtry is employed in purſuing inſects that are much more noxious to us than itſelf can poſſibly be; while its evening flight, and its unſteady wabbling motion, amuſe the imagination, and add one figure more to the pleaſing group of Animated Nature.

The varieties of this animal, eſpecially in our country, are but few; and the differences ſcarce worth enumeration. Naturaliſts mention the Long-eared Bat, much leſs than that generally ſeen, and with much longer ears; the Horſe-ſhoe Bat, with an odd protuberance round its upper lip, ſomewhat in the form of a horſe-ſhoe; the Rhinoceros Bat, with a horn growing from the noſe, ſomewhat ſimilar to that animal from whence it has the name. Theſe, with ſeveral others, whoſe varieties are too numerous, and differences too minute for a detail, are all inoffenſive, minute, and contemptible; incapable, from their ſize, of injuring mankind, and not ſufficiently numerous much to incommode him. But there is a larger race of bats, found in the Eaſt and Weſt Indies, that are truly formidable; each of theſe is ſingly a dangerous enemy; but when they unite in flocks, they then become dreadful. Were the inhabitants of the African coaſts*, ſays Des Marchais, to eat animals of the bat kind, as they do in the Eaſt Indies, they would never want a ſupply of proviſions. They are there in ſuch numbers, that when they fly, they obſcure the ſetting ſun. In the morning, at peep of day, they are ſeen ſticking upon the tops of the trees, and clinging to each other, like bees when they ſwarm, or like large cluſters of cocoa. The Europeans often amuſe themſelves with ſhooting among this huge maſs of living creatures, and obſerving their embarraſſment when wounded. They ſometimes enter the houſes and the Negroes are expert at killing them; but although theſe

* Des Marchais, vol. ii. p. 208.

people ſeem for ever hungry, yet they regard the bat with horror, and will not eat it, though ready to ſtarve.

Of foreign bats, the largeſt we have any certain accounts of, is the Roúſette, or the Great Bat of Madagaſcar. This formidable creature is near four feet broad, when the wings are extended; and a foot long, from the tip of the noſe to the inſertion of the tail. It reſembles our bat in the form of its wings, in its manner of flying, and in its internal conformation. It differs from it in its enormous ſize; in its colour, which is red, like that of a fox; in its head and noſe alſo, which reſemble thoſe of that animal, and which have induced ſome to call it the flying fox; it differs alſo in the number of its teeth; and in having a claw on the fore foot, which is wanting in ours. This formidable creature is found only in the ancient continent; particularly in Madagaſcar, along the coaſts of Africa and Malabar, where it is uſually ſeen about the ſize of a large hen. When they repoſe, they ſtick themſelves to the tops of the talleſt trees, and hang with their heads downward. But when they are in motion, nothing can be more formidable: they are ſeen in clouds, darkening the air, as well by day as by night, deſtroying the ripe fruits of the country, and ſometimes ſettling upon animals, and man himſelf: they devour indiſcriminately, fruits, fleſh, and inſects, and drink the juice of the palm-tree: they are heard at night in the foreſts at more than two miles diſtance, with an horrible din; but at the approach of day, they uſually begin to retire; nothing is ſafe from their depredations; they deſtroy fowls and domeſtic animals, unleſs preſerved with the utmoſt care, and often faſten upon the inhabitants themſelves, attack them in the face, and inflict very terrible wounds. In ſhort, as ſome have already obſerved, the ancients ſeem to have taken their ideas of harpies from theſe fierce and voracious creatures, as they both concur in many parts of the deſcription, being equally deformed, greedy, unclearly, and cruel.

An animal not ſo formidable, but ſtill more miſchievous than theſe, is the American Vampyre. This is ſtill leſs than the former; but more deformed, and ſtill more numerous. It is furniſhed with a horn like the rhinoceros bat; and its ears are extremely long. The other kinds generally reſort to the foreſt, and the moſt deſerted places; but theſe

BATS

Fig 1 the Great Madagascar Bat

come into towns and cities, and, after ſun-ſet, when they begin to fly, cover the ſtreets like a canopy*. They are the common peſt both of men and animals; they effectually deſtroy the one, and often diſtreſs the other. "They are," ſays Ulloa, "the moſt expert blood-letters in the world. The inhabitants of thoſe warm latitudes being obliged, by the exceſſive heats, to leave open the doors and windows of the chambers where they ſleep, the vampyres enter, and if they find any part of the body expoſed, they never fail to faſten upon it. There they continue to ſuck the blood; and it often happens that the perſon dies under the operation. They inſinuate their tooth into a vein, with all the art of the moſt experienced ſurgeon, continuing to exhauſt the body until they are ſatiated. I have been aſſured," continues he, "by perſons of the ſtricteſt veracity, that ſuch an accident has happened to them; and that, had they not providentially awaked, their ſleep would have been their paſſage into eternity; and having loſt ſo large a quantity of blood as hardly to find ſtrength to bind up the orifice. The reaſon why the puncture is not felt is, beſides the great precaution with which it is made, the gentle refreſhing agitation of the bat's wings, which contribute to encreaſe ſleep, and ſoften the pain."

The purport of this account has been confirmed by various other travellers; who all agree that this bat is poſſeſſed of a faculty of drawing the blood from perſons ſleeping; and thus often deſtroying them before they awake. But ſtill a very ſtrong difficulty remains to be accounted for; the manner in which they inflict the wound. Ulloa, as has been ſeen, ſuppoſes that it is done by a ſingle tooth; but this we know to be impoſſible, ſince the animal cannot infix one tooth without all the reſt accompanying its motions; the teeth of the bat kind being pretty even, and the mouth but ſmall. Mr. Buffon therefore ſuppoſes the wound to be inflicted by the tongue; which, however, appears to me too large to inflict an unpainful wound; and even leſs qualified for that purpoſe than the teeth. Nor can the tongue, as Mr. Buffon ſeems to ſuppoſe, ſerve for the purpoſes of ſuction, ſince for this it muſt be hollow, like a ſyringe, which it is not found to be. I ſhould therefore ſuppoſe, that the

* Ulloa, vol. i. p. 58.

animal is endowed with a ſtrong power of ſuction; and that, without inflicting any wound whatſoever, by continuing to draw, it enlarges the pores of the ſkin in ſuch a manner that the blood at length paſſes, and that more freely the longer the operation is continued; ſo that, at laſt, when the bat goes off, the blood continues to flow. In confirmation of this opinion we are told, that where beaſts have a thick ſkin, this animal cannot injure them; whereas, in horſes, mules, and aſſes, they are very liable to be thus deſtroyed. As to the reſt, theſe animals are conſidered as one of the great peſts of South America; and often prevent the peopling of many parts of that continent: having deſtroyed at Barja, and ſeveral other places, ſuch cattle as were brought there by the miſſionaries, in order to form a ſettlement.

CHAP. V.

OF AMPHIBIOUS QUADRUPEDS.

THE gradations of Nature from one claſs of beings to another are made by imperceptible deviations. As we ſaw in the foregoing chapters quadrupeds almoſt degraded into the inſect tribe, or mounted among the inhabitants of the air, we are at preſent to obſerve their approach to fiſhes, to trace the degrees by which they become more unlike terreſtrial animals, till the ſimilitude of the fiſh prevails over that of the quadruped.

As in oppoſite armies the two bodies are diſtinct and ſeparated from each other, while yet between them are various troops that plunder on both ſides and are friends to neither; ſo between terreſtrial and aquatic animals there are tribes that can ſcarce be referred to any rank, but lead an amphibious life between them. Sometimes in water, ſometimes on land, they ſeem fitted for each element, and yet completely adapted to neither. Wanting the agility of quadrupeds upon land, and the perſeverance of fiſhes in the deep, the variety of their powers only ſeems to diminiſh their force; and, though poſſeſſed of two different methods of living, they are more inconveniently provided than ſuch as have but one.

All quadrupeds of this kind, though covered with hair in

The OTTER

the uſual manner, are furniſhed with membranes between the toes, which aſſiſt their motion in the water. Their paws are broad and their legs ſhort, by which they are more completely fitted for ſwimming; for, taking ſhort ſtrokes at a time, they make them oftener and with greater rapidity. Some, however, of theſe animals are more adapted to live in the water than others; but, as their power encreaſes to live in the deep, their unfitneſs for living upon land encreaſes in the ſame proportion. Some, like the otter, reſemble quadrupeds in every thing except in being in ſome meaſure web-footed; others depart ſtill further, in being, like the beaver, not only web-footed, but having the tail covered with ſcales, like thoſe of a fiſh. Others depart yet farther, as the ſeal and the morſe, by having the hind feet ſtuck to the body like fins; and others, as the lamentin, almoſt entirely reſemble fiſhes, by having no hind feet whatſoever. Such are the gradations of the amphibious tribe. They all, however, get their living in the water, either by habit or conformation; they all continue a long time under water; they all conſider that element as their proper abode; whenever preſſed by danger they fly to the water for ſecurity; and, when upon land, appear watchful, timorous, and unwieldy.

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In the firſt ſtep of the progreſſion from land to amphibious animals, we find the Otter, reſembling thoſe of the terreſtrial kind in ſhape, hair, and internal conformation; reſembling the aquatic tribes in its manner of living, and in having membranes between the toes to aſſiſt it in ſwimming. From this peculiar make of its feet, which are very ſhort, it ſwims even faſter than it runs, and can overtake fiſhes in their own element. The colour of this animal is brown; and it is ſomewhat of the ſhape of an overgrown weaſel, being long, ſlender, and ſoft-ſkinned. However, if we examine its figure in detail, we ſhall find it unlike any other animal hitherto deſcribed, and of ſuch a ſhape as words can but weakly convey. Its uſual length is about two feet long, from the tip of the noſe to the inſertion of the tail; the head and noſe are broad and flat; the mouth bears ſome ſimilitude to that of a fiſh; the neck is ſhort, and equal in thickneſs to the head; the body long; the tail broad at the inſertion, but tapering off to a point at the end; the eyes are very ſmall,

and placed nearer the nose than usual in quadrupeds. The legs are very short, but remarkably strong, broad, and muscular. The joints are articulated so loosely, that the animal is capable of turning them quite back, and bringing them on line with the body, so as to perform the office of fins. Each foot is furnished with five toes, connected by strong broad webs like those of water-fowl. Thus Nature, in every part, has had attention to the life of an animal whose food is fish, and whose haunts must necessarily be about water.

This voracious animal is never found but at the sides of lakes and rivers, but particularly the former, for it is seldom fond of fishing in a running stream, for the current of the water having more power upon it than the fishes it pursues, if it hunts against the stream, it swims too slow; and if with the stream, it overshoots its prey. However, when in rivers, it is always observed to swim against the stream, and to meet the fishes it preys upon rather than to pursue them. In lakes it destroys much more than it devours, and is often seen to spoil a pond in the space of a few nights. But the damage they do by destroying fish is not so great as their tearing in pieces the nets of the fishers, which they infallibly do whenever they happen to be entangled. The instant they find themselves caught; they go to work with their teeth, and in a few minutes destroy nets of a very considerable value.

The otter has two different methods of fishing; the one by catching its prey from the bottom upward, the other by pursuing it into some little creek, and seizing it there. In the former case, as this animal has longer lungs than most other quadrupeds, upon taking in a quantity of air, it can remain for some minutes at the bottom; and whatever fish passes over at that time is certainly taken; for as the eyes of fish are placed so as not to see under them, the otter attacks them off their guard from below; and, seizing them at once by the belly, drags them on shore, where it often leaves them untouched, to continue the pursuit for hours together. The other method is chiefly practised in lakes and ponds, where there is no current; the fish thus taken are rather of the smaller kind, for the great ones will never be driven out of deep water.

In this manner, the otter usually lives during the summer, being furnished with a supply much greater than its consumption; killing for its amusement, and infecting the edges of the lake with quantities of dead fish, which it leaves there as trophies rather of its victory than its necessities. But in winter, when the lakes are frozen over, and the rivers pour with a rapid torrent, the otter is often greatly distressed for provisions; and is then obliged to live upon grass, weeds, and even the bark of trees. It then comes upon land, and, grown courageous from necessity, feeds upon terrestrial animals, rats, insects, and even sheep themselves. Nature, however, has given it the power of continuing a long time without food; and although, during that season, it is not rendered quite torpid, like the marmout or the dormouse, yet it keeps much more within his retreat, which is usually the hollow of a bank, worn under by the water. There it often forms a kind of gallery, running for several yards along the edge of the water; so that when attacked at one end, it flies to the other, and often evades the fowler by plunging into the water at forty or fifty paces distance, while he expects to find it just before him.

We learn from Mr. Buffon that this animal in France, couples in winter and brings forth in the beginning of spring. But it is certainly different with us, for its young are never found till the latter end of summer; and I have frequently, when a boy, discovered their retreats, and pursued them at that season. I am, therefore, more inclined to follow the account given us of this animal by Mr. Isots, of the Academy of Stockholm, who assures us that it couples about the middle of summer, and brings forth at the end of nine weeks, generally three or four at a time. This, as well as the generality of his other remarks on this subject, agrees so exactly with what I remember concerning it, that I will beg leave to take him for my guide, assuring the reader that, however extraordinary the account may seem, I know it to be certainly true.

In the rivers and the lakes frequented by the otter, the bottom is generally stony and uneven, with many trunks of trees, and long roots stretching underneath the water*. The shore also is hollow and scooped inward by the waves.

* Journal Etranger, Juin. 1755. p. 14.

Thefe are the places the otter chiefly choofes for its retreat; and there is fcarce a ftone which does not bear the mark of its refidence, as upon them its excrements are always made. It is chiefly by this mark that its lurking places are known, as well as by the quantity of dead fifh that are found lying here and there upon the banks of the water. To take the old ones alive is no eafy tafk, as they are extremely ftrong, and there are few dogs that will dare to encounter them. They bite with great fierceneefs, and never let go their hold when they have once faftened. The beft way, therefore, is to fhoot them at once, as they never will be thoroughly tamed; and, if kept for the purpofes of fifhing are always apt to take the firft opportunity of efcaping. But the young ones may be more eafily taken, and converted to very ufeful purpofes. The otter brings forth its young generally under the hollow banks, upon a bed of rufhes, flags, or fuch weeds as the place affords it in the greateft quantities. I fee in the Britifh Zoology a defcription of its habitation, where that naturalift obferves, "that it burrows under ground, on the banks of fome river or lake, and always makes the entrance of its hole under water, then works up to the furface of the earth, and there makes a minute orifice for the admiffion of air, and this little air-hole is often found in the middle of fome thicket." In fome places this may be true, but I have never obferved any fuch contrivance; the retreat, indeed, was always at the edge of the water, but it was only fheltered by the impending bank; and the otter itfelf feemed to have but a fmall fhare in its formation. But be this as it may, the young ones are always found at the edge of the water; and, if under the protection of the dam, fhe teaches them inftantly to plunge, like herfelf, into the deep, and efcape among the rufhes or weeds that fringe the ftream. At fuch times, therefore, it is very difficult to take them; for, though never fo young, they fwim with great rapidity, and in fuch a manner that no part of them is feen above water, except the tip of the nofe. It is only when the dam is abfent that they can be taken; and, in fome places, there are dogs purpofely trained for difcovering their retreats. Whenever the dog comes to the place, he foon, by his barking, fhews that the otter is there; which, if there be an old one, inftantly plunges into the water, and the young all follow. But, if

the old one be abſent, they continue terrified, and will not venture forth but under her guidance and protection. In this manner they are ſecured, and taken home alive, where they are carefully fed with ſmall fiſh and water. In proportion, however, as they gather ſtrength, they have milk mixed among their food, the quantity of their fiſh proviſion is retrenched, and that of vegetables is increaſed, until at length, they are fed wholly upon bread, which perfectly agrees with their conſtitution. The manner of training them up to hunt for fiſh requires not only aſſiduity but patience; however, their activity and uſe, when taught, greatly repays the trouble of teaching; and, perhaps, no other animal is more beneficial to his maſter. The uſual way, is, firſt to learn them to fetch as dogs are inſtructed; but, as they have not the ſame docility, ſo it requires more art and experience to teach them. It is uſually performed by accuſtoming them to take a truſs ſtuffed with wool, of the ſhape of a fiſh, and made of leather, in their mouths, and to drop it at the word of command; to run after it when thrown forward, and to bring it to their maſter. From this they proceed to real fiſh, which are thrown dead into the water, and which they are taught to fetch from thence. From the dead they proceed to the live, until at laſt the animal is perfectly inſtructed in the whole art of fiſhing. An otter thus taught is a very valuable animal, and will catch fiſh enough to ſuſtain not only itſelf but a whole family. I have ſeen one of theſe go to a gentleman's pond at the word of command, drive up the fiſh into a corner, and ſeizing upon the largeſt of the whole, bring it off, in its mouth, to its maſter.

Otters are to be met with in moſt parts of the world, and rather differ in ſize and colour from each other, than in habitudes or conformation*. In North America and Carolina they are uſually found white, inclining to yellow. The Braſilian otter is much larger than ours, with a roundiſh head, almoſt like a cat. The tail is ſhorter, being but five inches long; and the hair is ſoft, ſhort, and black, except on the head, where it is of a dark brown, with a yellowiſh ſpot under the throat.

* Ray.

THE BEAVER.

IN all countries, as man is civilized and improved, the lower ranks are repreſſed and degraded*. Either reduced to ſervitude, or treated as rebels, all their ſocieties are diſſolved, and all their united talents rendered ineffectual. Their feeble arts quickly diſappear, and nothing remains but their ſolitary inſtincts, or thoſe foreign habitudes which they receive from human education. For this reaſon there remain no traces of their ancient talents and induſtry, except in thoſe countries where man himſelf is a ſtranger; where, unviſited by his controlling power, for a long ſucceſſion of ages, their little talents have had time to come to their limited perfection, and their common deſigns have been capable of being united.

The beaver ſeems to be now the only remaining monument of brutal ſociety. From the reſult of its labours, which are ſtill to be ſeen in the remote parts of America, we learn how far inſtinct can be aided by imitation. We from thence perceive to what a degree animals without language or reaſon, can concur for their mutual advantage, and attain by numbers thoſe advantages which each in a ſtate of ſolitude, ſeems unfitted to poſſeſs.

If we examine the beaver merely as an individual, and unconnected with others of its kind, we ſhall find many other quadrupeds to exceed it in cunning, and almoſt all in the powers of annoyance and defence. The beaver, when taken from its fellows, and kept in a ſtate of ſolitude or domeſtic tamenefs, appears to be a mild gentle creature, familiar enough, but ſomewhat dull, and even melancholy; without any violent paſſions or vehement appetities, moving but ſeldom, making no efforts to attain any good, except, in gnawing the wall of its priſon, in order to regain its freedom; yet this, however, without anger or precipitation, but calm and indifferent to all about, without attachment or antipathies, neither ſeeking to offend, nor deſiring to pleaſe. It appears inferior to the dog in thoſe qualities which render animals of ſervice to man; it ſeems made neither to ſerve, to command, nor to have connections with

* Buffon.

The BEAVER

any other ſet of beings, and is only adapted for living among its kind. Its talents are entirely repreſſed in ſolitude, and are only brought out by ſociety. When alone, it has but little induſtry, few tricks, and without cunning ſufficient to guard it againſt the moſt obvious and bungling ſnares laid for it by the hunter. Far from attacking any other animal, it is ſcarce poſſeſſed of the arts of defence. Preferring flight to combat, like all wild animals, it only reſiſts when driven to an extremity, and fights only when its ſpeeds can no longer avail.

But this animal is rather more remarkable for the ſingularity of its conformation, than any intellectual ſuperiorities it may be ſuppoſed, in a ſtate of ſolitude to poſſeſs. The beaver is the only creature among quadrupeds that has a flat broad tail, covered with ſcales, which ſerves as a rudder to direct its motions in the water. It is the ſole quadruped that has membranes between the toes on the hind feet only, and none on the fore feet, which ſupply the place of hands, as in the ſquirrel. In ſhort, it is the only animal that in its fore parts entirely reſembles a quadruped, and in its hinder parts ſeems to approach the nature of fiſhes, by having a ſcaly tail. In other reſpects, it is about two feet long and near one foot high; it is ſomewhat ſhaped like a rat, except the tail, which, as has been obſerved, is flat and ſcaly, ſomewhat reſemling a neat's tongue at the point. Its colour is of a light brown, the hair of two ſorts; the one longer and coarſer; the other ſoft, fine, ſhort, and ſilky. The teeth are like thoſe of a rat or a ſquirrel, but longer and ſtronger, and admirably adapted to cutting timber or ſtripping bark, to which purpoſes they are conſtantly applied. One ſingularity more may be mentioned in its conformation; which is, that, like birds, it has but one and the ſame vent for the emiſſion of its excrements and its urine; a ſtrange peculiarity, but which anatomiſts leave us no room to doubt of.

The beavers begin to aſſemble about the months of June and July, to form a ſociety that is to continue for the greateſt part of the year. They arrive in numbers from every ſide, and generally form a company of above two hundred. The place of meeting is commonly the place where they fix their abode, and this is always by the ſide of ſome lake or river.

If it be a lake in which the waters are always upon a level, they dispense with building a dam; but if it be a running stream, which is subject to floods and falls, they then set about building a dam, or pier, that crosses the river, so that it forms a dead water in that part which lies above and below. This dam, or pier, is often fourscore or a hundred feet long, and ten or twelve feet thick at the base. If we compare the greatness of the work with the powers of the architect, it will appear enormous; but the solidity with which it is built is still more astonishing than its size. The part of the river over which this dam is usually built, is where it is most shallow, and where some great tree is found growing by the side of the stream. This they pitch upon as proper for making the principal part in their building; and, although it is often thicker than a man's body, they instantly set about cutting it down. For this operation they have no other instrument but their teeth, which soon lay it level, and that also on the side they wish it to fall, which is always across the stream. They then fall about cutting off the top branches, to make it lie close and even, and serve as the principal beam of their fabric *.

This dike, or causey, is sometimes ten, and sometimes twelve feet thick at the foundation. It descends in a declivity or slope, on that side next the water, which gravitates upon the work in proportion to the height, and presses it with a prodigious force towards the earth. The opposite side is erected perpendicular, like our walls; and that declivity, which, at the bottom, or basis, is about twelve feet broad, diminishes towards the top, where it is no more than two feet broad, or thereabouts. The materials whereof this mole consists, are wood and clay. The beavers cut, with surprising ease, large pieces of wood, some as thick as one's arm or thigh, and about four, five, or six feet in length, or sometimes more, according as the slope ascends. They drive one end of these stakes into the ground, at a small distance one from the other, intermingling a few with them that are smaller and more pliant. As the water, however, would find a passage through the intervals or spaces between them, and leave the reservoir dry, they have recourse to a clay, which they know where to find, and with which they stop up all the cavities both within and without,

* Spectacle de la Nature.

ſo that the water is duly confined. They continue to raiſe the dike in proportion to the elevation of the water and the plenty which they have of it. They are conſcious likewiſe that the conveyance of their materials by land would not be ſo eaſily accompliſhed as by water; and therefore they take the advantage of its increaſe, and ſwim with their mortar on their tails, and their ſtakes between their teeth, to the places where there is moſt occaſion for them. If their works are, either by the force of the water or the feet of the huntſmen, who run over them, in the leaſt damnified, the breach is inſtantly made up; every nook and corner of the habitation is reviewed, and, with the utmoſt diligence and application, perfectly repaired. But when they find the huntſmen viſit them too often, they work only in the night-time, or elſe abandon their works entirely, and ſeek out for ſome ſafer ſituation.

The dike, or mole, being thus completed, their next care is to erect their ſeveral apartments which are either round or oval, and divided into three ſtories, one raiſed above the other: the firſt below the level of the cauſey, which is for the moſt part full of water; the other two above it. This little fabric is built in a very firm and ſubſtantial manner, on the edge of their reſervoir, and always in ſuch diviſions or apartments as above-mentioned; that, in caſe of the water's increaſe, they may move up a ſtory higher, and be no ways incommoded. If they find any little iſland contiguous to their reſervoir, they fix their manſion there, which is then more ſolid, and not ſo frequently expoſed to the overflowing of the water, in which they are not able to continue for any length of time. In caſe they cannot pitch upon ſo commodious a ſituation, they drive piles into the earth, in order to fence and fortify their habitation againſt the wind as well as the water. They make two apertures, at the bottom, to the ſtream; one is a paſſage to their bagnio, which they always keep neat and clean; the other leads to that part of the building where every thing is conveyed, that will either ſoil or damage their upper apartments. They have a third opening or door-way, much higher, contrived for the prevention of their being ſhut up and confined, when the froſt and ſnow has cloſed the apertures of the lower floors. Sometimes they build their houſes altogether upon

dry land; but then they ſink trenches five or ſix feet deep, in order to deſcend into the water when they ſee convenient. They make uſe of the ſame materials; and are equally induſtrious in the erection of their lodges, as their dikes. Their walls are perpendicular, and about two feet thick. As their teeth are more ſerviceable than ſaws, they cut off all the wood that projects beyond the wall. After this, when they have mixed up ſome clay and dry graſs together, they work it into a kind of mortar, with which, by the help of their tails, they plaiſter all their works, both within and without.

The inſide is vaulted, and is large enough for the reception of eight or ten beavers. In caſe it riſes in an oval figure, it is for the generality above twelve feet long, and eight or ten feet broad. If the number of inhabitants increaſe to fifteen, twenty, or thirty, the edifice is enlarged in proportion. I have been credibly informed, that four hundred beavers have been diſcovered to reſide in one large manſion-houſe, divided into a vaſt number of apartments, that had a free communication one with another.

All theſe works, more eſpecially in the northern parts, are finiſhed in Auguſt, or September at fartheſt; at which time they begin to lay in their ſtores. During the ſummer, they are perfect epicures; and regale themſelves every day on the choiceſt fruits and plants the country affords. Their proviſions, indeed, in the winter ſeaſon, principally conſiſt of the wood of the birch, the plane, and ſome few other trees, which they ſteep in water, from time to time, in ſuch quantities as are proportioned to the number of inhabitants. They cut down branches from three to ten feet in length. Thoſe of the largeſt dimenſions are conveyed to their magazines by a whole body of beavers; but the ſmalleſt by one only: each of them, however, takes a different way, and has his proper walk aſſigned him, in order that no one labourer ſhould interrupt another in the proſecution of his work. Their wood-yards are larger or ſmaller, in proportion to the number in the family: and, according to the obſervation of ſome curious naturaliſts, the uſual ſtock of timber, for the accommodation of ten beavers, conſiſts of about thirty feet in a ſquare ſurface, and ten in depth. Theſe logs are not

thrown up in one continued pile, but laid one acrefs the other, with intervals, or fmall fpaces between them, in order to take out, with the greater facility, but jaft fuch a quantity as they fhall want for their immediate confumption, and thofe parcels only, which lie at the bottom in the water, and have been duly fteeped. This timber is cut again into fmall particles, and conveyed to one of their largeft lodges, where the whole family meet, to confume their refpective dividends, which are made impartially, in even and equal portions. Sometimes they traverfe the woods, and regale their young with a more novel and elegant entertainment.

Such as are ufed to hunt thefe animals, know perfectly well that green wood is much more acceptable to them than that which is old and dry; for which reafon they plant a confiderable quantity of it round their lodgments; and as they come out to partake of it, they either catch them in fnares, or take them by furprife. In the winter, when the frofts are very fevere, they fometimes break a large hole in the ice; and when the beavers refort thither for the benefit of a little frefh air, they either kill them with their hatchets, or cover them with a large fubftantial net. After this, they undermine and fubvert the whole fabric: whereupon the beavers, in hopes to make their efcape in the ufual way, fly with the utmoft preciptation to the water; and plunging into the aperture, fall directly into the net, and are inevitably taken.

THE SEAL.

Every ftep we proceed in the defcription of amphibious quadrupeds, we make nearer advances to the tribe of fifhes. We firft obferved the otter with its feet webbed, and formed for an aquatic life; we next faw the beaver with the hinder parts covered with fcales, refembling thofe of fifhes; and we now come to a clafs of animals in which the fhape and habitude of fifhes ftill more apparently prevail, and whofe internal conformation attaches them very clofely to the water. The feal, in general, refembles a quadruped in fome refpects, and a fifh in others. The head is round, like that of a man; the nofe broad, like that of the otter; the teeth like thofe of a dog; the eyes large and fparkling; no external

ears, but holes that ſerve for that purpoſe; the neck is well-proportioned, and of a moderate length; but the body thickeſt where the neck is joined to it. From thence the animal tapers down to the tail, growing all the way ſmaller like a fiſh. The whole body is covered with a thick, briſtly ſhining hair, which looks as if it were entirely rubbed over with oil; and thus far the quadruped prevails over the aquatic. But it is in the feet that this animal greatly differs from all the reſt of the quadruped kind; for though furniſhed with the ſame number of bones with other quadrupeds, yet they are ſo ſtuck on the body, and ſo covered with a membrane, that they more reſemble fins than feet; and might be taken for ſuch, did not the claws with which they are pointed ſhew their proper analogy. In the fore feet, or rather hands, all the arm and the cubit are hid under the ſkin, and nothing appears but the hand from the wriſt downwards; ſo that if we imagine a child with its arms ſwathed down, and nothing appearing but its hands at each ſide of the body, towards the breaſt, we may have ſome idea of the formation of this animal in that part. Theſe hands are covered in a thick ſkin, which ſerves like a fin for ſwimming; and are diſtinguiſhed by five claws, which are long, black, and piercing. As to the hind-feet, they are ſtretched out on each ſide of the ſhort tail, covered with a hairy ſkin like the former, and both together almoſt joining at the tail; the whole looks like the broad, flat tail of a fiſh; and, were it not for five claws which appear, might be conſidered as ſuch. The dimenſions of this animal are various, being found from four feet long to nine. They differ alſo in their colours; ſome being black, others ſpotted, ſome white, and many more yellow. It would, therefore, be almoſt endleſs to mention the varieties of this animal.—Buffon deſcribes three; and Krantz mentions five, all different from thoſe deſcribed by the other. I might, were I fond of ſuch honours, claim the merit of being a firſt deſcriber myſelf; but, in fact, the varieties in this animal are ſo many, that were they all deſcribed, the catalogue would be as extenſive as it would be uſeleſs and unentertaining. It is ſufficient to obſerve, that they agree in the general external characters already mentioned, and internally in two or three more, which are ſo remarkable as to deſerve peculiar attention.

It has been often remarked, that all animals are ſagacious in proportion to the ſize of their brain. It has, in ſupport of this opinion, been alleged, that man, with reſpect to his bulk, has of all others, the largeſt. In purſuance of this aſſumption, ſome erroneous ſpeculations have been formed. But, were the ſize of the brain to determine the quantity of the underſtanding, the ſeal would, of all other animals, be the moſt ſagacious; for it has, in proportion, the largeſt brain of any, even man himſelf not excepted. However, this animal is poſſeſſed of but very few advantages over other quadrupeds; and the ſize of its brain furniſhes it with few powers that contribute to its wiſdom or its preſervation.

This animal differs alſo in the formation of its tongue from all other quadrupeds. It is forked or ſlit at the end, like that of ſerpents; but for what purpoſe it is thus ſingularly contrived we are at a loſs to know. We are much better informed with reſpect to a third ſingularity in its conformation, which is, that the *foramen ovale* in the heart is open. Thoſe who are in the leaſt acquainted with anatomy, know, that the veins uniting bring their blood to the heart, which ſends it into the lungs, and from thence it returns to the heart again to be diſtributed through the whole body.—Animals, however, before they are born, make no uſe of their lungs; and therefore their blood, without entering their lungs, takes a ſhorter paſſage through the very partition of the heart, from one of its chambers to the other, thus paſſing from the veins directly into thoſe veſſels that drive it through the whole frame. But the moment the animal is brought forth, the paſſage through the partition, which paſſage is called the *foramen ovale*, cloſes up, and continues cloſed for ever; for the blood then takes its longeſt courſe through the lungs to return to the other chamber of the heart again. Now the ſeal's heart reſembles that of an infant in the womb, for the *foramen ovale* never cloſes; and although the blood of this animal commonly circulates through the lungs, yet it can circulate without their aſſiſtance, as was obſerved above, by a ſhorter way*. From

* I have followed the uſual obſervations of naturaliſts with reſpect to the *foramen ovale* in this animal: I have many reaſons, however, to incline me to think that the *foramen* is not entirely open. But this is not the place for a critical inquiry of this kind.

hence, therefore, we fee the manner in which this animal is adapted for continuing under water; for, being under no immediate neceffity of breathing, the vital motions are ftill carried on while it continues at the bottom; fo that it can purfue its prey in that element, and yet enjoy all the delights and advantages of ours.

The water is the feal's ufual habitation, and whatever fifh it can catch its food. Though not equal in inftinct and cunning to fome terreftrial animals, it is greatly fuperior to the mute tenants of that element in which it chiefly refides. Although it can continue for feveral minutes under water, yet it is not able, like fifhes, to remain there for any length of time; and a feal may be drowned, like any other terreftrial animal. Thus it feems fuperior, in fome refpects, to the inhabitants of both elements, and inferior in many more. Although furnifhed with legs, it is in fome meafure deprived of all the advantages of them*. They are fhut up within its body, while nothing appears but the extremities of them, and thefe furnifhed with very little motion, but to ferve them as fins in the water. The hind-feet, indeed, being turned backwards, are entirely ufelefs upon land; fo that when the animal is obliged to move, it drags itfelf forward like a reptile, and with an effort more painful. For this purpofe it is obliged to ufe its fore-feet, which, though very fhort, ferve to give it fuch a degree of fwiftnefs that a man cannot readily overtake it; and it runs towards the fea. As it is thus awkwardly formed for going upon land, it is feldom found at any diftance from the fea-fhore, but continues to bafk upon the rocks; and when difturbed always plunges down at once to the bottom.

The feal is a focial animal, and wherever it frequents numbers are generally feen together. They are found in every climate, but in the north and icy feas they are particularly numerous. It is on thofe fhores, which are lefs inhabited than ours, and where the fifh refort in greater abundance, that they are feen by thoufands, like flocks of fheep, bafking on the rocks, and fuckling their young.—There they keep watch like other gregarious animals; and, if an enemy appear, inftantly plunge altogether into the water. In fine weather they more ufually employ their

* Buffon.

time in fishing; and generally come on shore in tempests and storms. The seal seems the only animal that takes delight in these tremendous conflicts of Nature. In the midst of thunders and torrents, when every other creature takes refuge from the fury of the elements, the seals are seen by thousands sporting along the shore, and delighted with the universal disorder! This, however, may arise from the sea being at that time too turbulent for them to reside in; and they may then particularly come upon land when unable to resist the shock of their more usual element.

As seals are gregarious, so they are also animals of passage, and perhaps the only quadrupeds that migrate from one part of the world to another. The generality of quadrupeds are contented with their native plains and forests, and seldom stray, except when necessity or fear impels them. But seals change their habitation; and are seen in vast multitudes directing their course from one continent to another*. On the northern coasts of Greenland they are seen to retire in July, and to return again in September. This time it is supposed they go in pursuit of food. But they make a second departure in March to cast their young, and return in the beginning of June, young and all, in a great body together, observing in their route a certain fixed time and track, like birds of passage. When they go upon this expedition, they are seen in great droves, for many days together, making towards the north, taking that part of the sea most free from ice, and going still forward into those seas where man cannot follow. In what manner they return, or by what passage, is utterly unknown; it is only observed, that when they leave the coasts to go upon this expedition, they are all extremely fat, but on their return, they come home excessively lean.

The females in our climate bring forth in winter, and rear their young upon some sand-bank, rock, or desolate island, at some distance from the continent. When they suckle their young they sit up on their hinder-legs, while these, which are at first white, with woolly hair, cling to the teats, of which there are four in number, near the navel†. In this manner the young continue in the place

* Krantz, vol. i. p. 129.

† Coeunt in littore resupinata femina. LIN. SYST.

where they are brought forth, for twelve or fifteen days; after which the dam brings them down to the water, and accuſtoms them to ſwim and get their food by their own induſtry. As each litter never exceeds above three or four, ſo the animal's cares are not much divided, and the education of her little ones is ſoon completed. In fact, the young are particularly docile; they underſtand the mother's voice among the numerous bleatings of the reſt of the old ones; they mutually aſſiſt each other in danger, and are perfectly obedient to her call. Thus early accuſtomed to ſubjection, they continue to live in ſociety, hunt and herd together, and have a variety of tones by which they encourage to purſue or warn each other of danger. Some compare their voices to the bleating of a flock of ſheep, interrupted now and then by the barking of angry dogs, and ſometimes the ſhriller notes of a cat*. All along the ſhore, each has its own peculiar rock, of which it takes poſſeſſion, and where it ſleeps when fatigued with fiſhing, uninterrupted by any of the reſt. The only ſeaſon when their ſocial ſpirit ſeems to forſake them, is that when they feel the influences of natural deſire. They then fight moſt deſperately; and the male that is victorious keeps all the females to himſelf. Their combats, on theſe occaſions are managed with great obſtinacy, and yet great juſtice: two are never ſeen to fall upon one togéther; but each has its antagoniſt, and all fight an equal battle, till one alone becomes victorious.

We are not certainly informed how long the females continue pregnant; but if we may judge from the time which intervenes between their departure from the Greenland coaſts and their return, they cannot go above ſeven or eight months at the fartheſt. How long this animal lives is alſo unknown: a gentleman, whom I knew in Ireland, kept two of them, which he had taken very young, in his houſe for ten years; and they appeared to have the marks of age at the time I ſaw them, for they were grown grey about the muzzle; and it is very probable they did not live many years longer. In their natural ſtate the old ones are ſeen very fat and torpid, ſeparated from the reſt, and, as it ſhould ſeem, incapable of procreation.

* Linnæi Syſt.

As their chief food is fish, so they are very expert at pursuing and catching it. In those places where the herrings are seen in shoals, the seals frequent and destroy them by thousands. When the herring retires, the seal is then obliged to hunt after fish that are stronger and more capable of evading the pursuit*: however, they are very swift in deep waters, dive with great rapidity, and, while the spectator eyes the spot at which they disappear, they are seen to emerge at above a hundred yards distance. The weaker fishes, therefore, have no other means to escape their tyranny, but by darting into the shallows. The seal has been seen to pursue a mullet, which is a swift swimmer, and to turn it to and fro, in deep water, as a hound does a hare on land. The mullet has been seen trying every art of evasion; and at last swimming into shallow water, in hopes of escaping. There, however, the seal followed; so that the little animal had no other way left to escape, but to throw itself on one side, by which means it darted into shoaler water than it could have swam in with the belly undermost; and thus at last it got free.

As they are thus the tyrants of the element in which they chiefly reside, so they are not very fearful even upon land, except on those shores which are thickly inhabited, and from whence they have been frequently pursued. Along the desert coasts where they are seldom interrupted by man, they seem to be very bold and courageous; if attacked with stones, like dogs, they bite such as are thrown against them; if encountered more closely, they make a desperate resistance, and, while they have any life, attempt to annoy their enemy. Some have been known, even while they were skinning, to turn round and seize their butchers; but they are generally despatched by a stunning blow on the nose. They usually sleep soundly when not frequently disturbed; and that is the time when the hunters surprize them. The Europeans who go into the Greenland seas upon the whale-fishery, surround them with nets, and knock them on the head; but the Greenlanders, who are unprovided with so expensive an apparatus, destroy them in a different manner. One of these little men paddles away in his boat, and when he sees a seal asleep on the side of a rock, darts his lance, and that with such unerring aim, that it never fails to bury its point in the

* British Zoology, vol. i. p. 75.

animal's ſide. The ſeal, feeling itſelf wounded, inſtantly plunges from the top of the rock, lance and all, into the ſea, and dives to the bottom; but the lance has a bladder tied to one end, which keeps buoyant, and reſiſts the animal's deſcent; ſo that every time the ſeal riſes to the top of the water the Greenlander ſtrikes it with his oar, until he at laſt deſpatches it. But, in our climate, the ſeals are much more wary, and ſeldom ſuffer the hunter to come near them. They are often ſeen upon the rocks of the Corniſh coaſt, baſking in the ſun, or upon the inacceſſible cliffs, left dry by the tide. There they continue, extremely watchful, and never ſleep long without moving; ſeldom longer than a minute; for then they raiſe their heads, and if they ſee no danger, they lie down again, raiſing and reclining their heads alternately, at intervals of about a minute each. The only method, therefore, that can be taken, is to ſhoot them: if they chance to eſcape, they haſten towards the deep, flinging ſtones and dirt behind them as they ſcramble along, and at the ſame time expreſſing their pain or their fears, by the moſt diſtreſsful cry; if they happen to be overtaken, they make a vigorous reſiſtance with their feet and teeth, till they are killed.

The ſeal is taken for the ſake of its ſkin, and for the oil its fat yields. The former ſells for about four ſhillings; and, when dreſſed, is very uſeful in covering trunks, making waiſtcoats, ſhot-pouches, and ſeveral other conveniences. The fleſh of this animal formerly found place at the tables of the great. At a feaſt provided by Archbiſhop Neville, for Edward the Fourth, there were twelve ſeals and porpoiſes provided, among other extraordinary rarities.

As a variety of this animal, we may mention the SEA-LION, deſcribed in Anſon's Voyages. This is much larger than any of the former; being from eleven to eighteen feet long. It is ſo fat that, when the ſkin is taken off, the blubber lies a foot thick all round the body. It ſeems to differ from the ordinary ſeal, not only in its ſize, but alſo in its food; for it is often ſeen to graze along the ſhore, and to feed upon the long graſs that grows up along the edges of brooks. Its cry is very various, ſometimes reſembling the neighing of a horſe, and ſometimes the grunting of the hog. It may be regarded as the largeſt of the ſeal family.

The MORSE

THE MORSE.

THE Morſe is an animal of the ſeal-kind; but differing from the reſt, in a very particular formation of the teeth, having two large tuſks growing from the upper jaw, ſhaped like thoſe of an elephant, but directed downwards; whereas, in the elephant, they grow upright, like horns; it alſo wants the cutting teeth, both above and below: as to the reſt, it pretty much reſembles a ſeal, except that it is much larger, being from twelve to ſixteen feet long. The morſes are alſo generally ſeen to frequent the ſame places that ſeals are known to reſide in; they have the ſame habitudes, the ſame advantages, and the ſame imperfections. There are, however, fewer varieties of the morſe than the ſeal; and they are rarely found, except in the frozen regions near the pole. They were formerly more numerous than at preſent; and the ſavage natives of the coaſts of Greenland deſtroyed them in much greater quantities before thoſe ſeas were viſited by European ſhips upon the whale-fiſhery than now. Whether theſe animals have been ſince actually thinned by the fiſhers, or have removed to ſome more diſtant and unfrequented ſhores, is not known; but certain it is, that the Greenlanders, who once had plenty, are now obliged to toil more aſſiduouſly for ſubſiſtence; and as the quantity of their proviſions decreaſe, for they live moſtly upon ſeals, the numbers of that poor people are every day diminiſhing. As to the teeth, they are generally from two to three feet long; and the ivory is much more eſteemed than that of the elephant, being whiter and harder. The fiſhers have been known formerly to kill three or four hundred at once; and along thoſe ſhores where they chiefly frequented, their bones are ſtill ſeen lying in prodigious quantities. In this manner a ſupply of proviſions, which would have ſupported the Greenland nation for ages, has been, in a few years, ſacrificed to thoſe who did not uſe them, but who ſought them for the purpoſes of avarice and luxury!

THE MANATI.

WE come, in the laſt place, to an animal that terminates the boundary between quadrupeds and fiſhes. Inſtead of a creature preying among the deeps, and retiring upon land

for repoſe or refreſhment, we have here an animal that never leaves the water, and is enabled to live only there. It cannot be called a quadruped, as it has but two legs only; nor can it be called a fiſh, as it is covered with hair. In ſhort, it forms the link that unites thoſe two great tribes to each other; and may be indiſcriminately called the laſt of beaſts, or the firſt of fiſhes.

We have ſeen the ſeal approaching nearly to the aquatic tribes, by having its hind legs thrown back on each ſide of the tail, and forming ſomething that reſembled the tail of a fiſh; but upon examining the ſkeleton of that animal, its title to the rank of a quadruped was obſerved plainly to appear, having all the bones of the hinder legs and feet as complete as any other animal whatſoever.

But we are now come to a creature that not only wants the external appearance of hinder legs, but, when examined internally, will be found to want them altogether. The Manati is ſomewhat ſhaped in the head and the body like the ſeal; it has alſo the fore legs or hands pretty much in the ſame manner, ſhort and webbed, but with four claws only: theſe alſo are ſhorter in proportion than in the former animal, and placed nearer the head; ſo that they can ſcarcely aſſiſt its motions upon land. But it is in the hinder parts that it chiefly differs from all others of the ſeal kind; for the tail is perfectly that of a fiſh, being ſpread out broad like a fan, and wanting even the veſtiges of thoſe bones which make the legs and feet in others of its kind. The largeſt of theſe are about twenty-ſix feet in length; the ſkin is blackiſh, very tough and hard; when cut, as black as ebony; and there are a few hairs ſcattered, like briſtles, of about an inch long. The eyes are very ſmall, in proportion to the animal's head; and the ear-holes, for it has no external ears, are ſo narrow as ſcarce to admit a pin's head. The tongue is ſo ſhort, that ſome have pretended it has none at all; and the teeth are compoſed only of two ſolid white bones, running the whole length of both jaws, and formed merely for chewing, and not tearing its vegetable food. The female has breaſts placed forward, like thoſe of a woman; and ſhe brings forth but one at a time: this ſhe holds with her paws to her boſom; there it ſticks, and accompanies her wherever ſhe goes.

This animal can ſcarcely be called amphibious, as it never entirely leaves the water, only advancing the head out of the ſtream to reach the graſs on the river ſides. Its food is entirely upon vegetables; and, therefore, it is never found far in the open ſea, but chiefly in the large rivers of South America; and often above two thouſand miles from the ocean. It is alſo found in the ſeas near Kamſchatka, and feeds upon the weeds that grow near the ſhore. There are likewiſe level greens at the bottom of ſome of the Indian bays, and there the manatees are harmleſsly ſeen grazing among turtles and other cruſtaceous fiſhes, neither giving nor fearing any diſturbance. Theſe animals, when unmoleſted, keep together in large companies, and ſurround their young ones*. They bring forth moſt commonly in autumn; and it is ſuppoſed they go with young eighteen months, for the time of generation is in ſpring.

The manati has no voice nor cry, for the only noiſe it makes, is by fetching its breath. Its internal parts ſomewhat reſemble thoſe of a horſe; its inteſtines being longer, in proportion, than thoſe of any other creature, the horſe only excepted.

The fat of the manati, which lies under the ſkin, when expoſed to the ſun, has a fine ſmell and taſte, and far exceeds the fat of any ſea animal; it has this peculiar property, that the heat of the ſun will not ſpoil it, nor make it grow rancid; its taſte is like the oil of ſweet almonds; and it will ſerve very well, in all caſes, inſtead of butter: any quantity may be taken inwardly with ſafety, for it has no other effect than keeping the body open. The fat of the tail is of a harder conſiſtence; and, when boiled, is more delicate than the former. The lean is like beef, but more red; and may be kept a long while, in the hotteſt days, without tainting. It takes up a long time in boiling; and, when done, eats like beef. The fat of the young one is like pork; the lean is like veal; and, upon the whole, it is very probable that this animal's fleſh ſomewhat reſembles that of turtle; ſince they are fed in the ſame element, and upon the very ſame food. The turtle is a delicacy well known among us: our luxuries are not as yet ſufficiently heightened to introduce the manati; which, if it could be brought over, might ſingly ſuffice for a whole corporation.

* Acta Petropolitana.

BOOK VII.

OF THE MONKEY KIND,—AND OF THE ELEPHANT, RHINOCEROS, &c.

CHAP. I.

ANIMALS OF THE MONKEY KIND.

QUADRUPEDS may be confidered as a numerous group, terminated on every fide by fome that but in part deferve the name. On one quarter we fee a tribe covered with quills, or furnifhed with wings, that lift them among the inhabitants of air; on another, we behold a diverfity clothed with fcales and fhells, to rank with infects; and ftill, on a third, we fee them defcending into the waters, to live among the mute tenants of that element. We now come to a numerous tribe, that, leaving the brute creation, feem to make approaches even to humanity; that bear an awkward refemblance of the human form, and difcover fome faint efforts at intellectual fagacity.

Animals of the monkey clafs are furnifhed with hands inftead of paws; their ears, eyes, eye-lids, lips, and breafts, are like thofe of mankind; their internal conformation alfo bears fome diftant likenefs; and the whole offers a picture that may well mortify the pride of fuch as make their perfons alone the principal object of their admiration.

Thefe approaches, however, are gradual; and fome bear the marks of this our boafted form, more ftrongly than others.

In the Ape kind we fee the whole external machine ftrongly impreffed with the human likenefs, and capable of the fame exertions: thefe walk upright, want a tail, have fleshy poſteriors, have calves to their legs, and feet nearly like ours.

In the Baboon kind we perceive a more diſtant approach to the human form; the quadruped mixing in every part of the animal's figure: theſe generally go upon all fours; but ſome, when upright, are as tall as a man; they have ſhort tails, long ſnouts, and are poſſeſſed of brutal fierceneſs.

The Monkey kind are removed a ſtep further: theſe are much leſs than the former, with tails as long, or longer than their bodies, and flattiſh faces.

Laſtly, the Maki and Opoſſum kind, ſeem to loſe all reſemblance of the human figure, except in having hands; their noſes are lengthened out, like thoſe of quadrupeds, and every part of their bodies totally different from the human; however, as they graſp their food, or other objects, with one hand, which quadrupeds cannot do, this ſingle ſimilitude gives them an air of ſagacity, to which they have ſcarce any other pretenſions.

From this ſlight ſurvey it may be eaſily ſeen that one general deſcription will not ſerve for animals ſo very different from each other: nevertheleſs, it would be fatiguing to the laſt degree, as their varieties are ſo numerous, and their differences ſo ſmall, to go through a particular deſcription of each. In this caſe it will be beſt to give a hiſtory of the foremoſt in each claſs; at the ſame time marking the diſtinctions in every ſpecies. By this we ſhall avoid a tedious repetition of ſimilar characters, and conſider the manners and the oddities of this phantaſtic tribe in general points of view; where we ſhall perceive how nearly they approach to the human figure, and how little they benefit by the approximation. The foremoſt of the Ape kind is

THE OURAN OUTANG,

OR WILD MAN OF THE WOODS.

THIS name ſeems to have been given to various animals, agreeing in one common character of walking upright, but coming from different countries, and of very different proportions and powers. The TROGLODYTE of Bontius, the DRILL of Purchas and the PIGMY of Tyſon have all received this general name; and have been ranked, by ſome naturaliſts, under one general deſcription. If we read the accounts of many remote travellers, under this name we

are prefented with a formidable animal, from fix to eight feet high; if we examine the books of fuch as have defcribed it nearer home, we find it a pigmy not above three. In this diverfity we muft be content to blend their various defcriptions into one general account; obferving, at the fame time, that we have no reafon to doubt any of their relations, although we are puzzled which to follow.

The Ouran Outang, which, of all other animals, moft nearly approaches to the human race, is feen of different fizes, from three to feven feet high. In general, however, its ftature is lefs than that of a man; but its ftrength and agility much greater. Travellers who have feen various kinds of thefe animals in their native folitudes, give us furprifing relations of their force, their fwiftnefs, their addrefs, and their ferocity. Naturalifts who have obferved their form and manners at home, have been as much ftruck with their patient, pliant, imitative difpofitions; with their appearance and conformation, fo nearly human. Of the fmalleft fort of thefe animals we have had feveral, at different times, brought into this country, all nearly alike; but that obferved by Dr. Tyfon, is the beft known, having been defcribed with the greateft exactnefs.

The animal which was defcribed by that learned phyfician, was brought from Angola in Africa, where it had been taken in the internal parts of the country, in company with a female of the fame kind, that died by the way. The body was covered with hair, which was of a coal black colour, more refembling human hair than that of brutes. It bore a ftill ftronger fimilitude in its different lengths; for in thofe places where it is longeft on the human fpecies, it was alfo longeft in this; as on the head, the upper lip, the chin, and the pubes. The face was like that of a man, the forehead larger, and the head round. The upper and lower jaw were not fo prominent as in monkeys; but flat, like thofe of a man. The ears were like thofe of a man in moft refpects; and the teeth had more refemblance to the human, than thofe of any other creature. The bending of the arms and legs were juft the fame as in a man; and, in fhort, the animal, at firft view, prefented a figure entirely human.

In order to difcover its differences, it was neceffary to make a clofer furvey; and then the imperfections of its form

began to appear. The firſt obvious difference was in the flatneſs of the noſe; the next in the lowneſs of the forehead, and the wanting the prominence of the chin. The ears were proportionably too large; the eyes too cloſe to each other; and the interval between the noſe and mouth too great. The body and limbs differed, in the thighs being too ſhort and the arms too long; in the thumb being too little, and the palm of the hand too narrow. The feet alſo were rather more like hands than feet; and the animal, if we may judge from the figure, bent too much upon its haunches.

When this creature was examined anatomically, a ſurpriſing ſimilitude was ſeen to prevail in its internal conformation. It differed from man in the number of its ribs, having thirteen; whereas, in man, there are but twelve. The vertebræ of the neck alſo were ſhorter, the bones of the pelvis narrower, the orbits of the eyes were deeper, the kidneys were rounder, the urinary and gall bladders were longer and ſmaller, and the ureters of a different figure. Such were the principal diſtinctions between the internal parts of this animal and thoſe of man; in almoſt every thing elſe they were entirely and exactly the ſame, and diſcovered an aſtoniſhing congruity. Indeed, many parts were ſo much alike in conformation, that it might have excited wonder how they were productive of ſuch few advantages. The tongue, and all the organs of the voice, were the ſame, and yet the animal was dumb; the brain was formed in the ſame manner with that of man, and yet the creature wanted reaſon: an evident proof (as Mr. Buffon finely obſerves) that no diſpoſition of matter will give mind; and that the body, how nicely ſoever formed, is formed in vain, when there is not infuſed a ſoul to direct its operations.

Having thus taken a comparative view of this creature with man, what follows may be neceſſary to complete the general deſcription. This animal was very hairy all behind, from the head downwards; and the hair ſo thick, that it covered the ſkin almoſt from being ſeen: but in all parts before, the hair was much thinner, the ſkin every where appeared; and in ſome places it was almoſt bare. When it went on all fours, as it was ſometimes ſeen to do, it appeared

all hairy; when it went erect, it appeared before less hairy, and more like a man. Its hair, which in this particular animal was black, much more resembled that of men than the fur of brutes; for, in the latter, besides their long hair, there is usually a finer and shorter intermixed; but in the ouran outang it was all of a kind; only about the pubes the hair was greyish, seemed longer, and somewhat different; as also on the upper lip and chin, where it was greyish, like the hair of a beard. The face, hands, and soles of the feet, were without hair; and so was most part of the forehead: but down the sides of the face the hair was thick, it being there about an inch and a half long, which exceeded that on any other part of the body. In the palms of its hands were remarkable those lines which are usually taken notice of in palmistry; and, at the tips of the fingers, those spiral lines observed in man. The palms of the hands were as long as the soles of the feet; and the toes upon these were as long as the fingers; the middle toe was the longest of all, and the whole foot differed from the human. The hinder feet being thus formed as hands, the animal often used them as such; and, on the contrary, now and then made use of its hands instead of feet. The breasts appeared small and shrivelled, but exactly like those of a man: the naval also appeared very fair, and in exact disposition, being neither harder nor more prominent than what is usually seen in children. Such is the description of this extraordinary creature; to which little has been added by succeeding observers, except that the colour of the hair is often found to vary: in that described by Edwards it was of a reddish brown.

From a picture so like that of the human species, we are naturally led to expect a corresponding mind; and it is certain, that such of these animals as have been shewn in Europe, have discovered a degree of imitation beyond what any quadruped can arrive at.

That of Tyson was a gentle, fond, harmless creature. In its passage to England, those that it knew on ship-board, it would embrace with the greatest tenderness, opening their bosoms, and clasping its hands about them. Monkeys of a lower species it held in utter aversion; it would always avoid the place where they were kept in the same vessel; and seemed to consider itself as a creature of higher extraction

After it was taken, and a little uſed to wear clothes, it grew very fond of them; a part it would put on without any help, and the reſt it would carry in its hands to ſome of the company, for their aſſiſtance. It would lie in a bed, place its head on the pillow, and pull the clothes upwards, as a man would do.

That which was ſeen by Edwards, and deſcribed by Buffon, ſhewed even a ſuperior degree of ſagacity. It walked, like all of its kind, upon two legs, even though it carried burthens. Its air was melancholy, and its deportment grave. Unlike the baboon or monkey, whoſe motions are violent and appetites capricious, who are fond of miſchief and obedient only from fear, this animal was ſlow in its motions, and a look was ſufficient to keep it in awe. I have ſeen it, ſays Mr. Buffon, give its hand to ſhow the company to the door: I have ſeen it ſit at table, unfold its napkin, wipe its lips, make uſe of the ſpoon and the fork to carry the victuals to its mouth, pour out its drink into a glaſs, touch glaſſes when invited, take a cup and ſaucer and lay them on the table, put in ſugar, pour out its tea, leave it to cool before drinking, and all this without any other inſtigation than the ſigns or the command of its maſter, and often of its own accord. It was gentle and inoffenſive; it even approached ſtrangers with reſpect, and came rather to receive careſſes than to offer injuries. It was particularly fond of ſugared comfits, which every body was ready to give it; and, as it had a deflucion upon the breaſt, ſo much ſugar contributed to increaſe the diſorder and ſhorten its life. It continued at Paris but one ſummer, and died in London. It ate indiſcriminately of all things, but it preferred dry and ripe fruits to all other aliments. It would drink wine, but in ſmall quantities, and gladly left it for milk, tea, or any other ſweet liquor.

Such theſe animals appeared when brought into Europe. However, many of their extraordinary habits were probably the reſult of education, and we are not told how long the inſtructions they received for this purpoſe were continued. But we learn from another account that they takebut a very ſhort time to come to a great degree of imitative perfection. M. L. Broſſe bought two young ones, that were but a year old from a Negroe; and theſe at that early age

diſcovered an aſtoniſhing power of imitation*. They even then ſat at the table like men, ate of every thing without diſtinction, made uſe of their knife, ſpoon, and fork, both to eat their meat and help themſelves. They drank wine and other liquors. When carried on ſhip-board they had ſigns for the cabin boys expreſſive of their wants; and whenever theſe neglected attending upon them as they deſired, they inſtantly flew into a paſſion, ſeized them by the arm, bit them, and kept them down. The male was ſeaſick, and required attendance like a human creature; he was even twice bled in the arm; and every time afterwards when he found himſelf out of order, he ſhewed his arm, as deſirous of being relieved by bleeding.

Pyrard relates, that in the province of Sierra Leona, in Africa, there a kind of apes, called Baris, which are ſtrong and muſcular, and which, if properly inſtructed when young ſerve as very uſeful domeſtics. They uſually walk upright; they pound at a mortar; they go to the river to fetch water, this they carry back in a little pitcher, on their heads; but if care be not taken to receive the pitcher at their return, they let it fall to the ground, and then, ſeeing it broken, they begin to lament and cry for their loſs. Le Compte's account is much to the ſame purpoſe of an ape, which he ſaw in the Strait of Molucca. "It walked upon its two hind feet, which it bent a little, like a dog that had been taught to dance. It made uſe of its hands and arms as we do. Its viſage was not much more diſagreeable than that of a Hottentot; but the body was all over covered with a woolly hair of different colours. As to the reſt, it cried like a child; all its outward actions were ſo like the human, and the paſſions ſo lively and ſignificant, that dumb men could ſcarce better expreſs their conceptions and deſires. It had alſo that expreſſion of paſſion or joy which we often ſee in children, ſtamping with its feet, and ſtriking them againſt the ground, to ſhew its ſpite, or when refuſed any thing it paſſionately longed for. Although theſe animals," continues he, "are very big, for that I ſaw was four feet high, their nimbleneſs is incredible. It is a pleaſure beyond expreſſion to ſee them run up the tackling of a ſhip, where they ſometimes play as if they had a knack of vaulting peculiar to themſelves, or as if they had been paid, like our rope-

* As quoted by Buffon, vol. xxviii. p. 77.

dancers, to divert the company. Sometimes ſuſpended by one arm, they poiſe themſelves, and then turn all of a ſudden round about a rope, with as much quickneſs as a wheel, or a ſling put into motion. Sometimes, holding the rope ſucceſſively with their long fingers, and, letting their whole body fall into the air, they run full ſpeed from one end to the other, and come back again with the ſame ſwiftneſs. There is no poſture but they imitate, nor motion but they perform. Bending themſelves like a bow, rolling like a bowl, hanging by the hands, feet, and teeth, according to the different fancies with which their capricious imagination ſupplies them. But what is ſtill more amazing than all is, their agility to fling themſelves from one rope to another, though at thirty, forty, and fifty feet diſtance."

Such are the habitudes and the powers of the ſmaller claſs of theſe extraordinary creatures; but we are preſented with a very different picture in thoſe of a larger ſtature and more muſcular form. The little animals we have been deſcribing, which are ſeldom found above four feet high, ſeem to partake of the nature of dwarfs among the human ſpecies, being gentle, aſſiduous, and playful, rather fitted to amuſe than terrify. But the gigantic races of the ouran outang, ſeen and deſcribed by travellers, are truly formidable; and in the gloomy foreſts, where they are only found, ſeem to hold undiſputed dominion. Many of theſe are as tall or taller than a man; active, ſtrong, and intrepid, cunning, laſcivious, and cruel. This redoubtable rival of mankind is found in many parts of Africa, in the Eaſt-Indies, in Madagaſcar, and in Borneo*. In the laſt of theſe places, the people of quality courſe him as we do the ſtag; and this ſort of hunting is one of the favourite amuſements of the king himſelf. This creature is extremely ſwift of foot, endowed with extraordinary ſtrength, and runs with prodigious celerity. His ſkin is all hairy, his eyes ſunk in his head, his countenance ſtern, his face tanned, and all his lineaments, though exactly human, harſh and blackened by the ſun. In Africa this creature is even ſtill more formidable. Battel calls him the *pongo*, and aſſures us that in all his proportions he reſembles a man, except that he is much larger, even to a gigantic ſtate. His face reſembles that of a man, the eyes deep ſunk

* Le Compte's Hiſtory of China.

in the head, the hair on each ſide extremely long, the viſage naked and without hair, as alſo the ears and the hands. The body is lightly covered, and ſcarcely differing from that of a man, except that there are no calves to the legs. Still, however, the animal is ſeen to walk upon his hinder legs, and in an erect poſture. He ſleeps under trees, and builds himſelf a hut, which ſerves to protect him againſt the ſun and the rains of the tropical climates, of which he is a native. He lives only upon fruits, and is no way carnivorous. He cannot ſpeak, although furniſhed with greater inſtinct than any other animal of the brute creation. When the Negroes make a fire in the woods, this animal comes near and warms himſelf by the blaze. However, he has not ſkill enough to keep the flame alive by feeding it with fuel. They go together in companies; and if they happen to meet one of the human ſpecies, remote from ſuccour, they ſhew him no mercy. They even attack the elephant, which they beat with their clubs, and oblige to leave that part of the foreſt which they claim as their own. It is impoſſible to take any of theſe dreadful creatures alive, for they are ſo ſtrong that ten men would not be a match for but one of them. None of this kind, therefore, are taken except when very young, and theſe but rarely, when the female happens to leave them behind; for in general they keep clung to the breaſt, and adhere both with legs and arms. From the ſame traveller we learn, that when one of theſe animals dies, the reſt cover the body with a quantity of leaves and branches. They ſometimes alſo ſhew mercy to the human kind. A Negro boy, that was taken by one of theſe, and carried into the woods, continued there a whole year, without receiving any injury *. From another traveller we learn, that theſe animals often attempt to ſurprize the female Negroes as they go into the woods, and frequently keep them againſt their wills for the pleaſure of their company, feeding them very plentifully all the time. He aſſures us that he knew a woman of Loango that had lived among theſe animals for three years. They grow from ſix to ſeven feet high, and are of unequalled ſtrength. They build ſheds, and make uſe of clubs for their defence Their faces are broad, their noſes flat, their ears without a tip, their ſkins are more bright than that of a Mul-

* Le Broſſe, as quoted by Buffon, vol. xxviii. p. 70.

The OURAN OUTANG

latoe, and they are covered on many parts of the body with long and tawny coloured hair. Their belly is large, their heels flat, and yet rising behind. They sometimes walk upright, and sometimes upon all fours, when they are fantastically disposed.

From this description of the ouran outang, we perceive at what a distance the first animal of the brute creation is placed from the very lowest of the human species. Even in countries peopled with savages, this creature is considered as a beast; and in those very places where we might suppose the smallest difference between them and mankind, the inhabitants hold it in the greatest contempt and detestation. In Borneo, where this animal has been said to come to its greatest perfection, the natives hunt it in the same manner as they pursue the elephant or the lion, while its resemblance to the human form procures it neither pity nor protection. The gradations of Nature in the other parts of Nature are minute and insensible; in the passage from quadrupeds to fishes we can scarce tell where the quadruped ends and the fish begins; in the descent from beasts to insects we can hardly distinguish the steps of the progression; but in the ascent from brutes to man, the line is strongly drawn, well marked, and unpassable. It is in vain that the ouran outang resembles man in form, or imitates many of his actions; he still continues a wretched, helpless creature, pent up in the most gloomy part of the forest, and, with regard to the provision for his own happiness, inferior even to the elephant or the beaver in sagacity. To us, indeed, this animal seems much wiser than it really is. As we have long been used to measure the sagacity of all actions by their similitude to our own, and not their fitness to the animals way of living, we are pleased with the imitations of the ape, even though we know they are far from contributing to the convenience of its situation. An ape, or a quadruped, when under the tramels of human education, may be an admirable object for human curiosity, but is very little advanced by all its learning in the road to its own felicity. On the contrary, I have never seen any of these long-instructed animals that did not, by their melancholy air, appear sensible of the wretchedness of their situation. Its marks of seeming sagacity were

merely relative to us and not to the animal; and all its boaſted wiſdom was merely of our own making.

There is, in fact, another circumſtance relative to this animal which ought not to be concealed. I have many reaſons to believe that the moſt perfect of the kind are prone, like the reſt of the quadruped creation, and only owe their erect attitude to human education. Almoſt all the travellers who ſpeak of them mention their going ſometimes upon all fours, and ſometimes erect. As their chief reſidence is among trees, they are without doubt uſually ſeen erect while they are climbing; but it is more than probable that their efforts to eſcape upon the ground are by running upon the hands and feet together. Schouten, who mentions their education, tells us that they are taken in traps, and taught in the beginning to walk upon their hind legs; which certainly implies that in a ſtate of Nature they run upon all fours. Add to this, that, when we examine the palms of their hands and the ſoals of their feet, we find both equally callous and beaten; a certain proof that both have been equally uſed. In thoſe hot countries, where the apes are known to reſide, the ſoals of the Negroes' feet, who go barefoot, are covered with a ſkin above an inch thick; while their hands are as ſoft as thoſe of an European. Did the apes walk in the ſame manner, the ſame exerciſe would have furniſhed them with ſimilar advantages, which is not the caſe. Beſides all this, I have been aſſured by a very credible traveller, that theſe animals naturally run in the woods upon all fours; and when they are taken, their hands are tied behind them, to teach them to walk upright. This attitude they learn after ſome time; and, thus inſtructed, they are ſent into Europe to aſtoniſh the ſpeculative with their near approaches to humanity, while it is never conſidered how much is natural, and how much has been acquired in the ſavage ſchools of Benin and Angola.

The animal next to theſe, and to be placed in the ſame claſs, is the APE, properly ſo called, or the PITHEKOS of the ancients. This is much leſs than the former, being not above a foot and a half high, but walks erect, is without a tail, and is eaſily tamed.

Of this kind alſo is the GIBBON, ſo called by Buffon, or the LONG-ARMED APE, which is a very extraordinary and re-

The LONG ARMED APE

The MAGOT

markable creature. It is of different ſizes, being from four feet to two feet high. It walks erect, is without a tail, has a face reſembling that of a man, with a circle of buſhy hair all round the viſage; its eyes are large and ſunk in its head; its face tanned, and its ears exactly proportioned. But that in which it chiefly differs from all others of the monkey tribe, is the extraordinary length of its arms, which, when the animal ſtands erect, are long enough to reach the ground; ſo that it can walk upon all fours and yet keep its erect poſture at the ſame time. This animal, next to the ouran outang and the ape, moſt nearly reſembles mankind, not only in form, but in gentle manners and tractable diſpoſition. Is is a native of the Eaſt Indies, and particularly found along the coaſt of Coromandel.

The laſt of the ape kind is the CYNOCEPHALUS, or the MAGOT of Buffon. This animal wants a tail, like the former, although there is a ſmall protuberance at that part, which yet is rather formed by the ſkin than the bone. It differs alſo in having a large, callous, red rump. The face is prominent and approaches more to that of quadrupeds than of man. The body is covered with a browniſh hair, and yellow on the belly. It is about three feet and a half, or four feet high, and is a native of moſt parts of Africa and the Eaſt. As it recedes from man in its form, ſo alſo it appears different in its diſpoſitions, being ſullen, vicious, and untractable *.

THE BABOON.

DESCENDING from the more perfect of the monkey kinds, we come to the baboon and its varieties, a large, fierce, and formidable race, that mixing the figure of the man and the quadruped in their conformation, ſeem to poſſeſs only the defects of both; the petulance of the one, and the ferocity of the other. Theſe animals have a ſhort tail; a prominent face; with canine teeth, larger than thoſe of men, and calloſities on the rump†. In man the phyſiognomy may deceive, and the figure of the body does not always lead to the

* Omnes femellæ hujuſce et precedentium, ut et fere ſequentium ſpecierum menſtruali patiuntur fluxu ſicut in feminis.

† Buffon, vol. xxxviii. p. 183.

qualities of the mind; but in animals we may always judge of their diſpoſitions by their looks, and form a juſt conjecture of their internal habits from their external form. If we compare the nature of the ape and the baboon by this eaſy rule, we ſhall at once be led to pronounce that they greatly differ in their diſpoſitions, and that the latter are infinitely more fierce, ſavage, and malicious, than the former. The ouran outang, that ſo nearly reſembles man in its figure, approaches alſo neareſt in the gentleneſs of its manners and the pliancy of its temper. The cynocephalus, that of all other apes is moſt unlike man in form, and approaches nearer the dog in face, reſembles alſo the brute in nature, being wild, reſtleſs, and impelled by a fretful impetuoſity. But the baboon, who is ſtill more remote, and reſembles man only in having hands, who, from having a tail, a prominent face, and ſharp claws, approaches more nearly to the ſavage tribe, is every way fierce, malicious, ignorant, and untractable.

The BABOON properly ſo called, is from three to four feet high, very ſtrong built, with a thick body and limbs, and canine teeth much longer than thoſe of men. It has large calloſities behind, which are quite naked and red. Its tail is crooked and thick, and about ſeven or eight inches long. Its ſnout, for it can hardly be called a face, is long and thick, and on each ſide of its cheeks it has a pouch, into which, when ſatiated with eating, it puts the remainder of its proviſions. It is covered with long, thick hair, of a reddiſh brown colour, and pretty uniform over the whole body. It walks more commonly upon all fours than upright, and its hands as well as its feet are armed with long ſharp claws, inſtead of the broad round nails of the ape kind.

An animal thus made for ſtrength, and furniſhed with dangerous weapons, is found, in fact, to be one of the moſt formidable of the ſavage race in thoſe countries where it is bred. It appears, in its native woods, to be impelled by two oppoſite paſſions; a hatred for the males of the human ſpecies, and a deſire for women. Were we aſſured of theſe ſtrange oppoſitions in its diſpoſition from one teſtimony alone, the account might appear doubtful; but, as it comes from a variety of the moſt credible witneſſes, we cannot refuſe our aſſent. From them, therefore,

we learn, that thefe animals will often affail women in a body, and force them into the woods, where they keep them againft their will, and kill them when refractory. From the Chevalier Forbin we learn, that in Siam whole troops of thefe will often fally forth from their forefts, and attack a village, when they know the men are engaged in their rice harveft. They are on fuch occafions actuated as well by defire as by hunger; and not only plunder the houfes of whatever provifions they can find, but endeavour to force the women. Thefe, however, as the Chevalier humourouffly relates, not at all liking either the manners or the figure of the paltry gallants, boldly ftand on their defence, and with clubs, or whatever other arms they can provide, inftead of anfwering their careffes, oblige their ugly fuitors to retreat; not, however, before they have damaged or plundered every thing eatable they can lay their hands on.

At the Cape of Good Hope they are lefs formidable, but, to the beft of their power, equally mifchievous. They are there under a fort of natural difcipline, and go about whatever they undertake with furprifing fkill and regularity. When they fet about robbing an orchard or a vineyard, for they are extremely fond of grapes, apples, and ripe fruit, they do not go fingly to work, but in large companies, and with preconcerted deliberation. On thefe occafions, a part of them enter the inclofure, while one is fet to watch. The reft ftand without the fence, and form a line reaching all the way from their fellows within, to their rendezvous without, which is generally in fome craggy mountain.—Every thing being thus difpofed, the plunderers within the orchard throw the fruit to thofe that are without as faft as they can gather it; or, if the wall or hedge be high, to thofe that fit on the top; and thefe hand the plunder to thofe next them on the other fide. Thus the fruit is pitched from one to another all along the line, till it is fafely depofited at their head-quarters. They catch it as readily as the moft fkilful tennis player can a ball; and while the bufinefs is going forward, which they conduct with great expedition, a moft profound filence is obferved among them. Their centinel, during this whole time, continues upon the watch, extremely anxious and attentive; but, if he perceives any one coming, he inftantly fets up a loud cry, and at this fig-

nal the whole company ſcamper off. Nor yet are they at any time willing to leave the place empty handed; for if they be be pludering a bed of melons, for inſtance, they go off with one in their mouths, one in their hands, and one under their arm. If the purſuit is hot, they drop firſt that from under their arm, and then that from their hand; and, if it be continued, they at laſt let fall that which they had hitherto kept in their mouths.

The natives of the Cape often take the young of theſe animals, and, feeding them with ſheep and goat's milk, accuſtom them to guard their houſes; which duty they perform with great punctuality. Thoſe, however, that have been brought into Europe, are headſtrong, rude, and untractable. Dogs and cats, when they have done any thing wrong, will run off; but theſe ſeem careleſs and inſenſible of the miſchief they do; and I have ſeen one of them break a whole table of china, as it ſhould ſeem by deſign, without appearing in the leaſt conſcious of having done amiſs. It was not, however, in any reſpect ſo formidable as that deſcribed by Mr. Buffon, of which he gives the following deſcription:—"It was not," ſays he, "extremely ugly, and yet it excited horror. It continually appeared in a ſtate of ſavage ferocity, gnaſhing its teeth, flying at the ſpectators, and furiouſly reſtleſs. It was obliged to be confined in an iron cage, the bars of which it ſo forcibly attempted to break, that the ſpectators were ſtruck with apprehenſion. It was a ſturdy bold animal, whoſe ſhort limbs and powerful exertions ſhewed vaſt ſtrength and agility. The long hair with which it was covered ſeemed to add to its apparent abilities; which, however, were in reality ſo great, that it could eaſily overcome a ſingle man, unleſs armed. As to the reſt, it for ever appeared excited by that paſſion which renders the mildeſt animals at intervals furious. Its laſciviouſneſs was conſtant, and its ſatisfactions particular. Some others alſo of the monkey kind ſhewed the ſame degree of impudence, and particularly in the preſence of women; but, as they were leſs in ſize, their petulance was leſs obvious, and their inſolence more eaſily corrected."

But however violent the deſires of theſe animals may be, they are not found to breed in our climate. The female brings forth uſually but one at a time, which ſhe carries in

The WANDEROW

her arms, and in a peculiar manner clinging to her breaſt. As to the reſt, theſe animals are not at all carniverous; they principally feed upon fruits, roots, and corn, and generally keep together in companies. The internal parts are more unlike thoſe of man than of quadrupeds, particularly the liver, which is like that of a dog divided, into ſix lobes. The lungs are more divided, the guts in general are ſhorter, and the kidneys rounder and flatter.

The largeſt of the baboon kind is the MANDRIL; an ugly diſguſting animal, with a tail ſhorter than the former, tho' of a much larger ſtature, being from four to five feet high. The muzzle is ſtill longer than that of the preceding, it is of a bluiſh colour, and ſtrongly marked with wrinkles, which give it a frightful appearance. But what renders it truly loathſome is, that from the noſe there is always ſeen iſſuing a ſnot, which the animal takes care at intervals to lick off with its tongue and ſwallow. It is a native of the Gold Coaſt; it is ſaid to walk more frequently erect than upon all fours; and, when diſpleaſed, to weep like a child. There was one of them ſhewn in England ſome years ago. It ſeemed tame but ſtupid, and had a method of opening its mouth and blowing at ſuch as came too near.

The WANDEROW is a baboon rather leſs than the former, with the body leſs compact and muſcular, and the hinder parts ſeemingly more feeble. The tail is from ſeven to eight inches long; the muzzle is prominent, as in the reſt of this kind; but what particularly diſtinguiſhes it, is a large long white head of hair, together with a monſtrous white beard, coarſe, rough, and deſcending; the colour of the reſt of the body being brown or black. As to the reſt, in its ſavage ſtate, it is equally fierce with the others; but, with a proper education, it ſeems more tractable than moſt of its kind, and is chiefly ſeen in the woods of Ceylon and Malabar.

The MAIMON of Buffon, which Edwards calls the PIGTAIL, is the laſt of the baboons, and in ſize rather approaches the monkey, being no larger than a cat. Its chief diſtinction, beſides its prominent muzzle, like a baboon, is in the tail, which is about five or ſix inches long, and curled up like that of a hog; from which circumſtance, peculiar to this animal, our Engliſh naturaliſt gave it the name. It is a native of Sumatra, and does not well endure the rigours of our climate.

Edwards, however, kept one of them a year in London; and another of them happening at the ſame time to be expoſed in a ſhew of beaſts, he brought the two exiles together, to ſee if they would claim or acknowledge their kindred. The moment they came into each other's preſence, they teſtified their mutual ſatisfaction, and ſeemed quite tranſported at the interview.

THE MONKEY.

THE varieties in the larger tribes of the monkey kind are but few; in the ape we have ſeen but four, and in the baboon about as many. But when we come to the ſmaller claſs, the differences among them ſeem too tedious for enumeration. Theſe, as was obſerved in the beginning, are all ſmall in ſtature, and with long tails, by which they are diſtinguiſhed from the preceding, that entirely want the tail, or are large and have but a ſhort one. The varieties in the form and colour of dogs, or ſquirrels, is nothing to what are found among monkeys of the ſmaller kind. Boſman mentions above fifty ſorts on the Gold Coaſt alone, and Smith confirms the account. Condamine aſſerts that it would take up a volume to deſcribe the differences of theſe to be found along the river Amazons; and we are ſure that every one of theſe is very different from thoſe on the African coaſt. Naturaliſts, however, have undertaken to make a catalogue of their numbers; and they either tranſmit their deſcriptions from one to another, or only enumerate thoſe few that have found their way to Europe, and have fallen within the narrow circle of their own obſervation. But, though it may be proper enough to deſcribe ſuch as fall under notice, it is certainly wrong to offer a ſcanty catalogue as complete, and to induce the reader to ſuppoſe he ſees a picture of the whole groupe of theſe animals when he is only preſented with a ſmall part of the number. Such, therefore, as are fond of the reputation of adding new deſcriptions to the ſtock of natural hiſtory, have here a wide, though ſurely a barren, field to enlarge in; and they will find it no difficult matter, by obſerving the various animals of this kind that are from time to time brought from their native coaſts to this country, to indulge in deſcription, and to ring the changes upon all the technical terms with which this moſt pleaſing

ſcience is obſcured and rendered diſguſting. For my own part, I will ſpare the reader and myſelf the trouble of entering into an elaborate deſcription of each; content with obſerving once more, that their numbers are very great, and their differences very trifling. There is ſcarce a country in the tropical climates that does not ſwarm with them, and ſcarce a foreſt that is not inhabited by a race of monkeys diſtinct from all others. Every different wood along the coaſts of Africa may be conſidered as a ſeparate colony of monkeys, differing from thoſe of the next diſtrict in colour, in ſize, and malicious miſchief. It is indeed remarkable that the monkeys of two cantons are never found to mix with each other, but rigorouſly to obſerve a ſeparation; each foreſt produces only its own; and theſe guard their limits from the intruſion of all ſtrangers of a different race from themſelves. In this they ſomewhat reſemble the human inhabitants of the ſavage nations, among whom they are found, where the petty kingdoms are numerous, and their manners oppoſite. There, in the extent of a few miles, the traveller is preſented with men ſpeaking different languages, profeſſing different religions, governed by different laws, and only reſembling each other in their mutual animoſity.

In general, monkeys of all kinds, being leſs than the baboon, are endued with leſs powers of doing miſchief. Indeed, the ferocity of their nature ſeems to diminiſh with their ſize; and when taken wild in the woods, they are ſooner tamed, and more eaſily taught to imitate man than the former. More gentle than the baboon, and leſs grave and ſullen than the ape, they ſoon begin to exert all their ſportive mimicries, and are eaſily reſtrained by correction. But it muſt be confeſſed that they will do nothing they are deſired without beating; for, if their fears be entirely removed, they are the moſt inſolent and headſtrong animals in Nature.

In their native woods they are not leſs the peſts of man than of other animals. The monkeys, ſays a traveller *, are in poſſeſſion of every foreſt where they reſide, and may be conſidered as the maſters of the place. Neither the tiger, nor the lion itſelf, will venture to diſpute the dominion, ſince theſe, from the tops of trees, continally carry on an offen-

* Deſcription Hiſtorique de Macacar, p. 51.

ſive war, and by their agility eſcape eſcape all poſſibility of purſuit. Nor have the birds leſs to fear from their continual depredations; for, as theſe harmleſs inhabitants of the wood uſually build upon trees, the monkeys are for ever on the watch to find out and rob their neſts; and ſuch is their petulant delight in miſchief, that they will fling their eggs againſt the ground when they want appetites or inclination to devour them.

There is but one animal in all the foreſt that ventures to oppoſe the monkey, and that is the ſerpent. The larger ſnakes are often ſeen winding up the trees where the monkeys reſide; and, when they happen to ſurpriſe them ſleeping, ſwallow them whole before the little animals have time to make a defence. In this manner, the two moſt miſchievous kinds in all Nature keep the whole foreſt between them; both equally formidable to each other, and for ever employed in mutual hoſtilities. The monkeys in general inhabit the tops of the trees, and the ſerpents cling to the branches nearer the bottom; and in this manner they are for ever ſeen near each other, like enemies in the ſame field of battle. Some travellers, indeed, have ſuppoſed that their vicinity rather argued their mutual friendſhip, and that they united in this manner to form an offenſive league againſt all the reſt of Animated Nature *. "I have ſeen theſe monkeys," ſays Lebat, "playing their gambols upon thoſe very branches on which the ſnakes were repoſing, and jumping over them without receiving any injury, although the ſerpents of that country were naturally vindictive, and always ready to bite whatever diſturbed them." Theſe gambols, however were probably nothing more than the inſults of an enemy that was conſcious of its own ſafety; and the monkeys might have provoked the ſnake in the ſame manner as we often ſee ſparrows twitter at a cat. However this be, the foreſt is generally divided between them; and theſe woods, which Nature ſeems to have embelliſhed with her richeſt magnificence, rather inſpire terror than delight, and chiefly ſerve as retreats for miſchief and malignity.

The enmity of theſe animals to mankind, is partly ridiculous, and partly formidable. They ſeem, ſays Le Comte, and others, to have a peculiar inſtinct in diſcovering their

* Lebat, Relat. de l' Afriq. Occident, p. 317.

foes; and are perfectly ſkilled, when attacked, in mutually defending and aſſiſting each other. When a traveller enters among theſe woods, they conſider him as an invader upon their dominions, and join all to repel the intruſion. At firſt they ſurvey him with a kind of inſolent curioſity. They jump from branch to branch, purſue him as he goes along, and make a loud chattering, to call the reſt of their companions together. They then begin their hoſtilities by grining, threatening, and flinging down the withered branches at him, which they break from the trees: they even take their excrements in their hands, and throw them at his head. Thus they attend him wherever he goes; jumping from tree to tree with ſuch amazing ſwiftneſs, that the eye can ſcarce attend their motions. Although they take the moſt deſperate leaps, yet they are ſeldom ſeen to come to the ground, for they eaſily faſten upon the branches that break their fall, and ſtick, either, by their hands, feet, or tail, wherever they touch. If one of them happens to be wounded, the reſt aſſemble round, and clap their fingers into the wound, as if they were deſirous of ſounding its depth. If the blood flows in any quantity, ſome of them keep it ſhut up, while others get leaves, which they chew, and thruſt into the opening: however extraordinary this may appear it is aſſerted to be often ſeen, and to be ſtrictly true. In this manner they wage a petulant, unequal war; and are often killed in numbers before they think proper to make a retreat. This they effect with the ſame precipitation with which they at firſt came together. In this retreat the young are ſeen clinging to the back of the female, with which ſhe jumps away, ſeemingly unembarraſſed by the burthen.

The curioſity of the Europeans has, in ſome meaſure, induced the natives of the places where theſe animals reſide, to catch or take them alive by every art they are able. The uſual way in ſuch caſe, is to ſhoot the female as ſhe carries her young, and then both, of courſe tumble to the ground. But even this is not eaſily performed; for if the animal be not killed outright, it will not fall; but clinging to ſome branch, continues, even when dead, its former graſp, and remains on the tree where it was ſhot, until it drops off by putrefaction: In this manner it is totally loſt to the purſuer; for to attempt climbing the tree, to bring either it or the

young one down, would probably be fatal, from the number of ſerpents that are hid among the branches. For this reaſon the ſportſman always takes care to aim at the head; which, if he hits, the monkey falls directly to the ground; and the young one comes down at the ſame time, clinging to its dead parent.

The Europeans along the coaſts of Guinea, often go into the woods to ſhoot monkeys; and nothing pleaſes the Negroes more than to ſee thoſe animals drop, againſt which they have the greateſt animoſity. They conſider them, and not without reaſon, as the moſt miſchievous and tormenting creatures in the world; and are happy to ſee their numbers deſtroyed, upon a double account; as well becauſe they dread their devaſtations, as becauſe they love their fleſh. The monkey, which is always ſkinned before it is eaten, when ſerved up a Negro feaſt, looks ſo like a child, than an European is ſhocked at the very ſight. The natives, however, who are not ſo nice, devour it as one of the higheſt delicacies; and aſſiduouſly attend our ſportſmen, to profit by the ſpoil. But what they are chiefly aſtoniſhed at, is to ſee our travellers carefully taking the young ones alive, while they leave them the old ones, that are certainly the moſt fit to be eaten. They cannot comprehend what advantage can ariſe to us from educating or keeping a little animal, that, by experience, they know to be equally fraught with tricks and miſchief: ſome of them have even been led to ſuppoſe, that, with a kind of perverſe affection, we love only creatures of the moſt miſchievous kinds; and having ſeen us often buy young and tame monkeys, they have taken equal care to bring rats to our factors, offering them for ſale, and greatly diſappointed at finding no purchaſe for ſo hopeful a commodity*.

The Negroes conſider theſe animals as their greateſt plague; and, indeed, they do incredible damage, when they come in companies to lay waſte a field of Indian corn or rice, or a plantation of ſugar canes. They carry off as much as are they able; and they deſtroy ten times more than they bear away. Their manner of plundering it pretty much like that of the baboons, already mentioned, in a garden. One of them ſtands centinel upon a tree, while

* Lebat, Relat. de l'Afriq. Occident, p. 317.

the reſt are plundering, carefully and cautiouſly turning on every ſide, but particularly to that on which there is the greateſt danger: in the mean time, the reſt of the ſpoilers purſue their work with great ſilence and aſſiduity; they are not contented with the firſt blade of corn, or the firſt cane that they happen to lay their hands on: they firſt pull up ſuch as appear moſt alluring to the eye: they turn it round, examine, compare it with others, and if they find it to their mind, ſtick it under one of their ſhoulders. When in this manner they have got their load, they begin to think of retreating: but if it ſhould happen that the owners of the field appear to interrupt their depredations, their faithful centinal inſtantly gives notice, by crying out, *Houp, houp, houp;* which the reſt perfectly underſtand, and all at once throwing down the corn they hold in their left hands, ſcamper off upon three legs, carrying the remainder in the right. If they are ſtill hotly purſued, they then are content to throw down their whole burthen, and to take refuge among their woods, on the top of which they remain in perfect ſecurity.

Were we to give faith to what ſome travellers aſſure us, of the government, policies, and ſubordination of theſe animals, we might perhaps be taxed with credulity; but we have no reaſon to doubt that they are under a kind of diſcipline, which they exerciſe among each other. They are generally ſeen to keep together in companies, to march in exact order, and to obey the voice of ſome particular chieftain, remarkable for his ſize and gravity. One ſpecies of theſe, which Mr. Buffon calls the OUARINE, and which are remarkable for the loudneſs and the diſtinctneſs of their voice, are ſtill more ſo for the uſe to which they convert it. "I have frequently been a witneſs," ſays Margrave, "of their aſſemblies and deliberations. Every day, both morning and evening the ouarines aſſemble in the woods to receive inſtructions. When all come together, one among the number takes the higheſt place on a tree, and makes a ſignal with his hand to the reſt to ſit round, in order to hearken. As ſoon as he ſees them placed, he begins his diſcourſe, with ſo loud a voice, and yet in a manner ſo precipitate, that to hear him at a diſtance, one would think the whole company were crying out at the ſame time: however, during that time, one only is ſpeaking; and all the reſt obſerve the moſt profound

ſilence. When this has done, he makes a ſign with the hand for the reſt to reply; and at that inſtant they raiſe their voices together, until by another ſignal of the hand they are enjoined ſilence. This they as readily obey; till, at laſt, the whole aſſembly breaks up, after hearing a repetition of the ſame preachment."

The chief food of the monkey-tribe is fruits, the buds of trees, or ſucculent roots and plants. They all, like man, ſeem fond of ſweets; and particularly the pleaſant juice of the palm-tree, and the ſugar-cane. With theſe the fertile regions in which they are bred, ſeldom fail to ſupply them; but when it happens that theſe fail, or that more nouriſhing food becomes more agreeable, they eat inſects and worms; and, ſometimes, if near the coaſts, deſcend to the ſea-ſhore, where they eat oyſters, crabs, and ſhell fiſh. The manner of managing an oyſter, is extraordinary enough; but it is too well atteſted, to fail of our aſſent. As the oyſters in the tropical climates are generally larger than with us, the monkeys, when they go to the ſea-ſide, pick up a ſtone, and clap it between the opening ſhells; this prevents them from cloſing; and the monkey then eats the fiſh at his eaſe. They often alſo draw crabs from the water, by putting their tail to the hole where that animal takes refuge, and the crab faſtening upon it, they withdraw it with a jerk, and thus pull their prey upon ſhore. This habit of laying traps for other animals, makes them very cautious of being entrapped themſelves; and I am aſſured, by many perſons of credit, that no ſnare, how nicely baited ſoever, will take the monkey of the Weſt-India iſlands; for having been accuſtomed to the cunning of man, it oppoſes its natural diſtruſt to human artifice.

The monkey generally brings forth one at a time, and ſometimes two. They are rarely found to breed when brought over into Europe; but of thoſe that do, they exhibit a very ſtriking picture of parental affection. The male and female are never tired of fondling their young one. They inſtruct it with no little aſſiduity; and often ſeverely correct it, if ſtubborn, or diſinclined to profit by their example: they hand it from one to the other; and when the male has done ſhewing his regard, the female takes her turn. When wild in the woods, the female, if ſhe happens to have two, carries

one on her back, and the other in her arms: that on her back clings very closely, clasping its hands round her neck, and its feet about her middle; when she wants to suckle it, she then alters her position; and that which has been fed gives place to the other, which she takes in her arms. It often happens that she is unable to leap from one tree to another, when thus loaden, and upon such occasions, their dexterity is very surprising. The whole f y form a kind of chain, locking tail in tail, or hand in hand, and one of them holding the branch above, the rest swing down, balancing to and fro, like a pendulum, until the undermost is enabled to catch hold of the lower branches of some neighbouring tree. When the hold is fixed below, the monkey lets go that which was above, and thus comes undermost in turn; but, creeping up along the chain, attains the next branches, like the rest; and thus they all take possession of the tree, without ever coming to the ground.

When in a state of domestic tameness, those animals are very amusing, and often fill up a vacant hour, when other entertainment is wanting. There are few that are not acquainted with their various mimicries, and their capricious feats of activity. But it is generally in company with other animals of a more simple disposition that their tricks and superior instincts are shewn; they seem to take a delight in tormenting them; and I have seen one of them amusing itself for hours together, in imposing upon the gravity of a cat. Erasmus tells us of a large monkey, kept by Sir Thomas More, that, one day diverting itself in his garden, where some tame rabbits where kept, played several of his usual pranks among them, while the rabbits scarce well knew what to make of their new acquaintance: in the mean time, a weasel, that came for very different purposes than those of entertainment, was seen peering about the place in which the rabbits were fed, and endeavouring to make its way, by removing a board that closed their hutch. While the monkey saw no danger, it continued a calm spectator of the enemy's efforts; but just when, by long labour, the weasel had effected its purpose, and had removed the board, the monkey stept in, and, with the utmost dexterity, fastened it again in its place; and the disappointed weasel, was too much fatigued to renew its operations. To this I will only

add what Father Carli, in his hiſtory of Angola, aſſures us to be true. In that horrid country, where he went to convert the ſavage natives to Chriſtianity, and met with nothing but diſtreſs and diſappointment; while his health was totally impaired by the raging heats of the climate, his patience exhauſted by the obſtinacy of the ſtupid natives, and his little proviſions daily plundered, without redreſs, in ſuch an exigency he found more faithful ſervices from the monkeys than the men; theſe he had taught to attend him, to guard him while ſleeping againſt thieves and rats, to comb his head, to fetch his water; and, he aſſerts, that they were even more tractable than the human inhabitants of the place. It is indeed remarkable, that in thoſe countries where the men are moſt barbarous and ſtupid, the brutes are moſt active and ſagacious. It is in the torrid tracts, inhabited by Barbarians, that ſuch various animals are found with inſtincts ſo nearly approaching reaſon. The ſavages both of Africa and America, accordingly ſuppoſe monkeys to be men; idle, ſlothful, rational beings; capable of ſpeech and converſation; but obſtinately dumb, for fear of being compelled to labour.

As of all ſavages, thoſe of Africa are the moſt brutal, ſo, of all countries, the monkeys of Africa are the moſt expert and entertaining. The monkeys of America are, in general, neither ſo ſagacious nor ſo tractable, nor is their form ſo nearly approaching that of man. The monkeys of the new continent, may be very eaſily diſtinguiſhed from thoſe of the old, by three marks. Thoſe of the antient continent are univerſally found to have a naked callous ſubſtance behind, upon which they ſit; which thoſe of America are entirely without; thoſe alſo of the ancient continent have the noſtrils differently formed, more reſembling thoſe of men, the holes opening downward; whereas the American monkeys have them opening on each ſide; thoſe of the ancient world, have pouches on each ſide the jaw into which they put their proviſions, which thoſe of America are without: Laſtly, none of the monkeys of the ancient continent hang by the tail, which many of the American ſorts are known to do. By theſe marks the monkeys of either continent, may be readily diſtinguiſhed from each other, and prized accordingly. The African monkey, as I am aſſured, requires a longer education, and more correction, than that of America; bu

it is at laſt found capable of more various powers of imitation; and ſhews a greater degree of cunning and activity.

Mr. Buffon, who has examined this race of imitative beings, with greater accuracy than any other naturaliſt before him, makes but nine ſpecies of monkeys belonging to the ancient continent; and eleven belonging to the new. To all theſe he gives the names which they go by, in their reſpective countries; which, undoubtedly, is the method leaſt liable to error, and the moſt proper for imitation.

Of the monkeys of the ancient continent, the firſt he deſcribes is the MOCAGUO; ſomewhat reſembling a baboon in ſize, ſtrength of body, and an hideous wrinkled viſage: it differs, however, in having a very long tail, which is covered with tufted hair. It is a native of Congo.

The ſecond is the PATAS, which is about the ſame ſize with the former; but differs, in having a longer body, and a face leſs hideous; it is particularly remarkable for the colour of its hair, which is of a red, ſo brilliant, that the animal looks as if it were actually painted. It is uſually brought from Senegal; and by ſome, called the *red African monkey*.

The third of the ancient continent is the MALBROUK; of which he ſuppoſes the monkey which he calls the BONET CHINOIS to be a variety. The one is remarkable for a long tail, and long beard; the other, for a cap of hair, that covers the crown of the head, from whence it takes the name. Both are natives of the Eaſt Indies; and the Bramins, who extend their charity to all the brute creation, have hoſpitals for ſuch of them as happen to be ſick, or otherwiſe diſabled.

The fourth of this kind, is the MANGABEY; this may be diſtinguiſhed from all others, by its eye-lids, which are naked, and of a ſtriking whiteneſs. It is a native of Madagaſcar.

The fifth is the MONA, or the CEPHUS of the ancients: it is diſtinguiſhed by its colour, which is variegated with black and red; and its tail is of an aſh-colour, with two white ſpot on each ſide at its inſertion. It is a native of the northern parts of Africa.

The ſixth is the CALLITRIX, or GREEN MONKEY of St. Iago; diſtinguiſhed by its beautiful green colour on the back, its white breaſt and belly, and its black face.

The ſeventh is the MOUSTOC, or WHITE NOSE; diſtinguiſhed by the whiteneſs of its lips, from whence it has received its name, the reſt of the face being of a deep blue.—It is a native of the Gold Coaſt, and a very beautiful little animal.

The eight is the TALAPOIN; and may be diſtinguiſhed as well by its beautiful variety of green, white, and yellow hair, as by that under the eyes, being of a greater length than the reſt. It is ſuppoſed to be a native of Africa and the Eaſt.

The ninth and laſt of the monkeys of the ancient continent, is the DOUC, ſo called in Cochinchina, of which country it is a native. The douc ſeems to unite the characters of all the former together: with a long tail, like the monkey; of a ſize as large as the baboon; and with a flat face like the ape: it even reſembles the American monkeys, in having no callous on its poſteriors. Thus it ſeems to form the ſhade by which the monkeys of one continent are linked with thoſe of the other.

Next come the monkeys of the new continent; which, as hath been ſaid, differ from thoſe of the old, in the make of their noſtrils, in their having no calloſity on their poſteriors, and in their having no pouches on each ſide of the jaw. They differ alſo from each other, a part of them making no uſe of their tails to hang by; while others of them have the tail very ſtrong and muſcular, and ſerving by way of a fifth hand to hold by. Thoſe with muſcular holding tails, are called SAPAJOUS; thoſe with feeble, uſeleſs tails, are called SAGOINS. Of the ſapajous there are five ſorts: of the ſagoins there are ſix.

The firſt of the ſapajous is the WARINE, or the BRAZILIAN GUARIBA. This monkey is as large as a fox, with black, long hair, and remarkable for the loudneſs of its voice. It is the largeſt of the monkey kind to be found in America.

The ſecond is the COAITI; which may be diſtinguiſhed from the reſt by having no thumb, and, conſequently, but four fingers on the two fore-paws. The tail, however, ſupplies the defects of the hand; and with this the animal ſlings itſelf from one tree to another, with ſurpriſing rapidity.

The third is the SAJOU; diſtinguiſhed from the reſt of the ſapajous, by its yellowiſh, fleſh-coloured face.

The fourth is the SAI. It is ſomewhat larger than the ſajou, and has a broader muzzle. It is called alſo the BEWAILER; from its peculiar manner of lamenting when either threatened or beaten.

The fifth and laſt of the ſapajou kind, or monkeys that hold by the tail, is the SAIMIRI, or AURORA; which is the ſmalleſt and moſt beautiful of all. It is of a fine orange colour, with two circles of fleſh round the eyes. It is a very tender, delicate animal, and held in high price.

Of the ſagoins with feeble tails, there are ſix kinds. The firſt and the largeſt, is the SAKI, or CAGUI; ſo remarkable for the length of the hair on its tail, that it has been often termed the FOX-TAILED MONKEY. It is of different ſizes; ſome being twice as large as others.

The ſecond of this kind is the TAMAIM; which is uſually black, with the feet yellow. Some, however, are found all over brown, ſpotted with yellow.

The third is the WISTISTI; remarkable for the large tufts of hair upon its face, and its annulated tail.

The fourth is the MARIKINA; with a mane round the neck, and a bunch of hair at the end of the tail, like a lion.

The fifth is called the PINCH; with the face of a beautiful black, and white hair that deſcends on each ſide of the face, like that of man.

The laſt, leaſt, and moſt beautiful of all, is the MICO, an animal too curiouſly adorned, not to demand a particular deſcription; which is thus given of it, by Mr. Condamine:—"That," ſays he, "which the Governor of Para made me a preſent of, was the only one of its kind that was ſeen in the country. The hair on its body was of a beautiful ſilver colour, brighter than that of the moſt venerable human hair: while the tail was of a deep brown, inclining to blackneſs. It had another ſingularity, more remarkable than the former; its ears, its cheeks, and lips were tinctured with ſo bright a vermilion, that one could ſcarce be led to ſuppoſe that it was natural. I kept it a year; and it was ſtill alive when I made this deſcription of it, almoſt within ſight of the coaſts of France: all I could then do, was to preſerve it in ſpirits

of wine, which might ſerve to keep it in ſuch a ſtate as to ſhew that I did not in the leaſt exaggerate in my deſcription."

OF THE MAKI.

THE laſt of the monkey kind are the makies; which have no other pretenſions to be placed in this claſs, except that of having hands like the former, and making uſe of them to climb trees, or to pluck their food. Animals of the hare kind, indeed, are often ſeen to feed themſelves with their fore-paws, but they can hold nothing in one of them ſingly, and are obliged to take up whatever they eat in both at once: but it is otherwiſe with the maki; as well as the monkey kinds, they ſeize their food with one hand, pretty much like a man, and graſp it with great eaſe and firmneſs. The maki, therefore, from this conformation in its hands both before and behind, approaches nearly to the monkey kind; but, in other reſpects, ſuch as the make of the ſnout, the form of the ears, and the parts that diſtinguiſh the ſexes it entirely differs from them. There are many different kinds of theſe animals; all varying from each other in colour or ſize, but agreeing in the human-like figure of their hands and feet, and in their long noſe, which ſomewhat reſembles that of a dog. As moſt of theſe are bred in the depths of the foreſt, we know little more concerning them than their figure. Their way of living, their power of purſuit and eſcape can only be ſuppoſed, from the analogy of their conformation, ſomewhat to reſemble thoſe of the monkey.

The firſt of this kind is the MOCOCO; a beautiful animal about the ſize of a common cat, but the body and limbs ſlenderer, and of a longer make. It has a very long tail, at leaſt double the length of its body; it is covered with fur, and marked alternately with broad rings of black and white. But what it is chiefly remarkable for, beſides the form of its hands and feet, is the largeneſs of its eyes, which are ſurrounded with a broad, black ſpace; and the length of the hinder legs, which by far exceed thoſe before. When it ſleeps, it brings its noſe to its belly, and its tail over its head. When it plays, it uſes a ſort of galloping, with its tail raiſed over its back, which keeps continually in motion. The head is covered with dark aſh-coloured hair; the back

The MOCOCO

The LORI

and ſides, with a red aſh-colour, and not ſo dark as on the head; and the whole gloſſy, ſoft, and delicate, ſmooth to the touch, and ſtanding almoſt upright like the pile of velvet.—It is a native of Madagaſcar; appears to be a harmleſs, gentle animal; and though it reſembles the monkey in many reſpects, yet it has neither its malice nor its miſchief: nevertheleſs, like the monkey, it ſeems to be always in motion; and moves like all four-handed animals, in an oblique direction.

A ſecond of this kind, which is alſo a native of Madagaſcar, is the MONGOOZ; which is leſs than the former; with a ſoft, gloſſy robe, but a little curled. The noſe alſo is thicker than that of the mococo; the eyes are black, with orange-coloured circles round the pupil; and the tail is of one uniform colour. As to the reſt, it is found of various colours; ſome being black, others brown; and its actions ſomewhat reſemble thoſe of a monkey.

The VARI is much larger than either of the former; its hair is much longer, and it has a kind of ruff round the neck, conſiſting of very long hair, by which it may be eaſily diſtinguiſhed from the reſt. It differs alſo in its diſpoſition, which is fierce and ſavage; as alſo in the loudneſs of its voice, which ſomewhat reſembles the roaring of the lion.—This alſo is a native of Madagaſcar.

To this tribe we may refer a little four-handed animal, of the iſland of Ceylon, which Mr. Buffon's calls the LORI; very remarkable for the ſingularity of its figure. This is, of all other animals, the longeſt, in proportion to its ſize; having nine vertebræ in the loins; whereas other quadrupeds have only ſeven*. The body appears ſtill the longer, by having no tail. In other reſpects, it reſembles thoſe of the maki kind; as well in its hands and feet, as in its ſnout, and in the gloſſy qualities of its hair. It is about the ſize of a ſquirrel; and appears to be a tame, harmleſs, little animal.

OF THE OPPOSSUM AND ITS KINDS.

TO theſe four-handed animals of the ancient continent, we may add the four-handed animals of the new, that uſe their hands like the former, as well as their tails, and that

* Buffon, vol. xxvi. p. 274.

fill up the chafm between the monkey tribe and the lower orders of the foreft. As the maki kind in fome meafure feem to unite the fox and the monkey in their figure and fize, fo thefe feem to unite the monkey and the rat. They are all lefs than the former; they have long tails, almoft bare of hair; and their fur, as well as their fhape, feems to place them near the rat kind. Some have accordingly ranked them in that clafs; but their being four-handed, is a fufficient reafon for placing them in the rear of the monkeys.

The firft and the moft remarkable of this tribe is the OPPOSSUM, an animal found both in North and South America, of the fize of a fmall cat. The head refembles that of a fox; it has fifty teeth in all; but two great ones in the midft like thofe of a rat. The eyes are little, round, clear, lively, and placed upright; the ears are long, broad, and tranfparent, like thofe of the rat kind; its tail alfo increafes the fimilitude, being round, long, a little hairy in the beginning, but quite naked towards the end. The fore-legs are fhort, being about three inches long; while thofe behind are about four. The feet are like hands, each having five toes or fingers with white, crooked nails, and rather longer behind than before. But it is particular in this animal, that the thumb on the hinder-legs wants a nail; whereas the fingers are furnifhed with clawed nails as ufual.

But that which diftinguifhes this animal from all others, and what has excited the wonder of mankind for more than two centuries, is the extraordinary conformation of its belly, as it is found to have a falfe womb, into which the young, when brought forth in the ufual manner, creep, and continue for fome days longer, to lodge and fuckle fecurely. This bag, if we may fo call it, being one of the moft extraordinary things in natural hiftory, requires a more minute defcription. Under the belly of the female is a kind of flit or opening, of about three inches long; this opening is compofed of a fkin, which makes a bag internally, which is covered on the infide with hair, and in this bag are the teats of the female; and into it the young, when brought forth, retire, either to fuckle or to efcape from danger. This bag has a power of opening and fhutting, at the will of the animal; and this is performed by means of feveral mufcles, and two bones, that are fitted for this purpofe, and that are peculiar to this ani-

The OPOSSUM

mal only. These two bones are placed before the *os pubis*, to which they are joined at the base; they are about two inches long, and grow smaller and smaller to their extremities. These support the muscles that serve to open the bag, and give them a fixture. To these muscles there are antagonists, that serve in the same manner, to shut the bag; and this they perform so exactly, that in the living animal the opening can scarce be discerned, except when the sides are forcibly drawn asunder. The inside of this bag is furnished with glands, that exude a musky substance, which communicates to the flesh of the animal, and renders it unfit to be eaten. It is not to be supposed that this is the place where the young are conceived, as some have been led to imagine; for the oppossum has another womb, like that of the generality of animals, in which generation is performed in the ordinary manner. The bag we have been describing, may rather be considered as a supplemental womb. In the real womb, the little animal is partly brought to perfection; in the ordinary one, it receives a kind of additional incubation; and acquires, at last, strength enough to follow the dam wherever she goes. We have many reasons to suppose that the young of this animal are all brought forth prematurely, or before they have acquired that degree of perfection, which is common in other quadrupeds. The little ones, when first produced, are in a manner but half completed, and some travellers assert, that they are at that time, not much larger than flies. We are assured also, that immediately on quitting the real womb, they creep into the false one; where they continue fixed to the teat, until they have strength sufficient to venture once more into the open air, and share the fatigues of the parent. Ulloa assures us, that he has found five of these little creatures hidden in the belly of the dam three days after she was dead, still alive, and all clinging to the teat with great avidity. It is probable, therefore, that upon their first entering the false womb, they seldom stir out from thence; but when more advanced, they venture forth several times in the day, and, at last, seldom make use of their retreat, except in cases of necessity or danger. Travellers are not agreed in their accounts of the time which these animals take to continue in the false womb; some assure us, they remain there for several weeks; and others, more precisely

mention a month. During this period of ſtrange geſtation, there is no difficulty in opening the bag in which they are concealed; they may be reckoned, examined, and handled, without much inconvenience; for they keep fixed to the teat, and cling there as firm as if they made a part of the body of the animal that bears them. When they are grown ſtronger, they drop from the teat into the bag in which they are contained; and, at laſt, find their way out, in ſearch of more copious ſubſiſtence. Still, however, the falſe belly ſerves them for a retreat, either when they want to ſleep or to ſuckle, or when they are purſued by an enemy. The dam, on ſuch occaſions, opens her bag to receive them, which they enter,

———Pars formidine turpi
Scandunt rurſus equum et nota conduntur in alvo.

The oppoſſum, when on the ground, is a ſlow, helpleſs animal; the formation of its hands are alone ſufficient to ſhew its incapacity of running with any degree of ſwiftneſs; but, to counterbalance this inconvenience, it climbs trees with great eaſe and expedition*. It chiefly ſubſiſts upon birds; and hides among the leaves of the trees, to ſeize them by ſurprize. It often alſo hangs by the tail, which is long and muſcular; and, in this ſituation, for hours together, with the head downwards, it keeps watching for its prey. If any leſſer animal, which it is able to overcome, paſſes underneath, it drops upon it with deadly aim, and quickly devours it. By means of its tail, the oppoſſum alſo ſlings from one tree to another, hunts inſects, eſcapes its purſuers, and provides for its ſafety. It ſeems to be a creature that lives upon vegetables, as well as animal ſubſtances, roots, ſugar-canes, the bark, and even the leaves of trees. It is eaſily tamed, but it is a diſagreeable domeſtic, as well from its ſtupidity and figure, as its ſcent, which, however fragrant in ſmall quantities, fails not to be ungrateful when copiouſly ſupplied.

An animal greatly reſembling the former†, is the MARMOSE, which is found in the ſame continent. It ſeems only to differ in ſize, being leſs; and, inſtead of a bag to receive its young, has only two longitudinal folds near the thighs, within which, the young, which are prematurely brought

* Buffon vol. xxi. p. 174.

† Buffon, vol. xxi. p. 212.

The CAYOPOLIN

The TARSIER.

forth, as in the laſt inſtance, continue to ſuckle. The young of theſe, when firſt produced, are not above the ſize of a bean; but continue ſticking to the teat, until they have arrived at greater maturity.

The CAYOPOLIN is ſomewhat larger than the former; and a good deal reſembling it in habits and figure, except that its ſnout is more pointed, its tail is longer in proportion, and its colour is different, being of an aſh, ſomewhat inclining to yellow; however, I ſhould ſuppoſe it to be only a variety of the former.

To this number we may add the PHALANGER, ſo called by Mr. Buffon; a good deal reſembling the former, but diſtinguiſhed by the faſhion of its hinder hands: the thumb and fore-finger being joined together, except at the extremities. This animal is about the ſize of a rat; and has, accordingly, by ſome, been called the RAT OF SURINAM.

The laſt animal of this claſs is called, by Mr. Buffon, the TARSIER. This extraordinary little animal reſembles the former, in having four hands, and a long tail; but it differs very much in the extreme length of its hinder legs, which are longer than the reſt of its whole body. The bones of that part of the foot called the *tarſus*, are likewiſe ſo very long, that from thence the animal has received its name: the tail is naked in the middle, and hairy only at both extremities: its hair is woolly, ſoft, and of a deep aſh colour. As to the reſt, it is unknown from what country this animal was brought; but the naturaliſt, from whom we have this deſcription, ſuppoſes it to be a native of America.

From this general deſcription of four-handed animals, we perceive what few advantages the brute creation derive from thoſe organs, that, in man, are employed to ſo many great and uſeful purpoſes. The being able to pluck their food from the trees, the capacity of clinging among the branches, or at moſt of converting one of thoſe branches into a weapon of defence, are the higheſt ſtretches of their ſagacity, and the only uſe their hands have hitherto been employed in: and yet, ſome ſuperficial men have aſſerted, that the hands alone are ſufficient to vindicate the dominion of mankind over other animals; and that much of his boaſted reaſon, is nothing more than the reſult of his happier conformation: however, were this ſo, an ape or a monkey would in ſome

inſtances be more rational than we; their fingers are ſmaller, and, in ſome of them, more finely formed than ours. To what a variety of purpoſes might they not be employed, if their powers were properly exerted! Thoſe works which we, from the largeneſs of our fingers, are obliged to go clumſily about, one of theſe could very eaſily perform with the utmoſt exactneſs; and if the fineneſs of the hand aſſiſted reaſon, an ape would be one of the moſt reaſonable beings in the creation. But theſe admirably formed machines, are almoſt uſeleſs both to mankind and themſelves: and contribute little more to the happineſs of animal life, than the paws of the loweſt quadruped. They are ſupplied, indeed, with the organs; but they want the mind, to put them into action: it is that reaſoning principle alone, with which man has been endowed, that can adapt ſeemingly oppoſite cauſes, to concur in the ſame general deſign, and even where the organs are deficient, that can ſupply their place, by the intervention of aſſiſting inſtruments. Where reaſon prevails, we find that it ſcarcely matters what the organs are that give it the direction; the being furniſhed with that principle, ſtill goes forward, ſteadily, and uniformly ſucceſsful; breaks through every obſtacle, and becomes maſter of every enterprize. I have ſeen a man, without hands or legs, convert, by practice, his very ſtumps to the moſt convenient purpoſes; and with theſe clumſy inſtruments, perform the moſt aſtoniſhing feats of dexterity. We may, therefore, conclude, that it is the mind alone that gives a maſter to the creation; and that, if a bear or a horſe were endowed with the ſame intellects that have been given to man, the hardneſs of an hoof, or the awkwardneſs of a paw, would be no obſtacle to their advancement in the arts of dominion, or of ſocial felicity.

CHAP. II.

OF THE ELEPHANT.

HAVING gone through the deſcription of thoſe quadrupeds that, by reſembing each other in ſome ſtriking particular, admit of being grouped together and conſidered under one point of view, we now come to thoſe inſulated ſorts that bear no ſimilitude with the reſt, and that to be diſtinctly deſcribed muſt be ſeparately conſidered

The foremoſt of theſe, and in every reſpect the nobleſt quadruped in Nature, is the elephant, not leſs remarkable for its ſize than its docility and underſtanding. All hiſtorians concur in giving it the character of the moſt ſagacious animal next to man; and yet, were we to take our idea of its capacity from its outward appearance, we ſhould be led to conceive very meanly of his abilities. The elephant, at firſt view, preſents the ſpectator with an enormous maſs of fleſh that ſeems ſcarcely animated. Its huge body, covered with a callous hide, without hair; its large miſ-ſhapen legs, that ſeem ſcarcely formed for motion; its little eyes, large ears, and long trunk; all give it an air of extreme ſtupidity. But our prejudices will ſoon ſubſide when we come to examine its hiſtory; they will even ſerve to increaſe our ſurpriſe when we conſider the various advantages it derives from ſo clumſy a conformation.

The elephant is ſeen from ſeven to no leſs than fifteen feet high. Whatever care we take to imagine a large animal before hand, yet the firſt ſight of this huge creature never fails to ſtrike us with aſtoniſhment, and in ſome meaſure to exceed our idea. Having been uſed to ſmaller animals, we have ſcarce any conception of its magnitude; for a moving column of fleſh, fourteen feet high, is an object ſo utterly different from thoſe we are conſtantly preſented with, that to be conceived it muſt be actually ſeen. Such I own, were the ſuggeſtions that naturally aroſe to me when I firſt ſaw this animal, and yet for the ſight of which I had taken care to prepare my imagination. I found my ideas fall as ſhort of its real ſize, as they did of its real figure; neither

the pictures I had ſeen, nor the deſcriptions I had read, giving me adequate conceptions of either.

It would therefore, be impoſſible to give an idea of this animal's figure by a deſcription; which, even aſſiſted by the art of the engraver, will but confuſedly repreſent the original. In general it may be obſerved, that the forehead is very high and riſing, the ears very large and dependant, the eyes extremely ſmall, the proboſcis, or trunk, long, the body round and full, the back riſing in an arch, and the whole animal ſhort in proportion to its height. The feet are round at the bottom; on each foot there are five flat horny riſings, which ſeem to be the extremities of the toes, but do not appear outwardly. The hide is without hair, full of ſcratches and ſcars, which it receives in its paſſage through thick woods and thorny places. At the end of the tail there is a tuft of hair, a foot and a half long. The female is leſs than the male, and the udder is between the fore-legs. But a more accurate, as well as a more entertaining deſcription of the parts, will naturally occur in the hiſtory of their uſes.

Of all quadrupeds, the elephant is the ſtrongeſt, as well as the largeſt; and yet, in a ſtate of Nature, it is neither fierce nor formidable*. Mild, peaceful, and brave, it never abuſes its power or its ſtrength, and only uſes its force for its own protection, or that of its community. In its native deſerts, the elephant is ſeldom ſeen alone, but appears to be a ſocial friendly creature. The oldeſt of the company conducts the band; that which is next in ſeniority brings up the rear. The young, the weak, and the ſickly, fall into the centre: while the females carry their young, and keep them from falling by means of their trunks. They maintain this order only in dangerous marches, or when they deſire to feed in cultivated grounds; they move with leſs precaution in the foreſt and ſolitudes; but without ever ſeparating, or removing ſo far aſunder as to be incapable of lending each other any requiſite aſſiſtance. Nothing can be more formidable than a drove of elephants as they appear at a diſtance in an African landſcape; wherever they march, the foreſts ſeem to fall before them; in their paſſage, they bear down

* I have extracted the greateſt part of this deſcription from Mr. Buffon, Where I add, I mark with commas, "thus."

The ELEPHANT

the branches upon which they feed; and, if they enter into an inclofure, they deftroy all the labours of the hufbandman in a very fhort time. Their invafions are the more difagreeable as there is no means of repelling them; fince it would require a fmall army to attack the whole drove when united. It now and then happens that one or two is found lingering behind the reft, and it is againft thefe that the art and force of the hunters are united; but an attempt to moleft the whole body would certainly be fatal. They go forward directly againft him who offers the infult, ftrike him with their tufks, feize him with their trunks, fling him into the air, and then trample him to pieces under their feet. But they are thus dreadful only when offended, and do no manner of perfonal injury when fuffered to feed without interruption. It is even faid that they are mindful of injuries received; and, when once molefted by man, feek all occafions for the future to be revenged; they fmell him with their long trunks at a diftance; follow him with all their fpeed upon the fcent; and, though flow to appearance, they are foon able to come up with and deftroy him.

In their natural ftate, they delight to live along the fides of rivers, to keep in the deepeft vales, to refrefh themfelves in the moft fhady forefts and watery places. They cannot live far from the water; and they always difturb it before they drink. They often fill their trunk with it, either to cool that organ, or to divert themfelves by fpurting it out like a fountain. They are equally diftreffed by the extremes of heat and cold; and, to avoid the former, they frequently take fhelter in the moft obfcure receffes of the foreft, or often plunge into the water, and even fwim from the continent into iflands fome leagues diftant from the fhore.

Their chief food is of the vegetable kind, for they loath all kind of animal diet. When one among their number hapens to light upon a fpot of good pafture, he calls the reft, and invites them to fhare in the entertainment; but it muft be a very copious pafture indeed that can fupply the neceffities of the whole band. As with their broad and heavy feet they fink deep wherever they go, they deftroy much more than they devour; fo that they are frequently obliged to change their quarters, and to migrate from one country to another. The Indians and Negroes, who are often incom-

moded by ſuch viſitants, do all they can to keep them away, making loud noiſes, and large fires round their cultivated grounds; but theſe precautions do not always ſucceed; the elephants often break through their fences, deſtroy their whole harveſt, and overturn their little habitations. When they have ſatisfied themſelves, and trod down or devoured whatever lay in their way, they then retreat into the woods in the ſame orderly manner in which they made their irruption.

Such are the habits of this animal conſidered in a ſocial light; and, if we regard it as an individual, we ſhall find its powers ſtill more extraordinary. With a very awkward appearance, it poſſeſſes all the ſenſes in great perfection, and is capable of applying them to more uſeful purpoſes than any other quadruped. The elephant, as we obſerved, has very ſmall eyes, when compared to the enormous bulk of its body. But though their minuteneſs may at firſt ſight appear deformed, yet, when we come to examine them, they are ſeen to exhibit a variety of expreſſion, and to diſcover the various ſenſations with which it is moved. It turns them with attention and friendſhip to its maſter; it ſeems to reflect and deliberate; and as its paſſions ſlowly ſucceed each other, their various workings are diſtinctly ſeen.

The elephant is not leſs remarkable for the excellence of its hearing. Its ears are extremely large, and greater in proportion than even thoſe of an aſs. They are uſually dependent; but it can readily raiſe and move them. They ſerve alſo to wipe its eyes, and to protect them againſt the duſt and flies that might otherwiſe incommode them. It appears delighted with muſic, and very readily learns to beat time, to move in meaſure, and even to join its voice to the ſound of the drum and the trumpet.

This animal's ſenſe of ſmelling is not only exquiſite, but it is in a great meaſure pleaſed with the ſame odours that delight mankind. The elephant gathers flowers with great pleaſure and attention; it picks them up one by one, unites them into a noſegay, and ſeems charmed with the perfume. The orange flower ſeems to be particularly grateful both to its ſenſe of taſte and ſmelling; it ſtrips the tree of all its verdure, and eats every part of it, even to the branches themſelves. It ſeeks in the meadows the moſt odoriferous plants

to feed upon; and in the woods it prefers the cocoa, the banana, the palm, and the ſago tree, to all others. As the ſhoots of theſe are tender and filled with pith; it eats not only the leaves and the fruits, but even the branches, the trunk, and the whole plant to the very roots.

But it is in the ſenſe of touching that this animal excels all others of the brute creation, and perhaps even man himſelf. The organ of this ſenſe lies wholly in the trunk, which is an inſtrument peculiar to this animal, and that ſerves it for all the purpoſes of a hand. The trunk is, properly ſpeaking, only the ſnout lengthened out to a great extent, hollow like a pipe, and ending in two openings, or noſtrils, like thoſe of a hog. An elephant of fourteen feet high has the trunk about eight feet long, and five feet and a half in circumference at the mouth, where it is thickeſt. It is hollow all along, but with a partition running from one end of it to the other; ſo that though outwardly it appears like a ſingle pipe, it is inwardly divided into two. This fleſhy tube is compoſed of nerves and muſcles, covered with a proper ſkin of a blackiſh colour, like that of the reſt of the body. It is capable of being moved in every direction, of being lengthened and ſhortened, of being bent or ſtraigthened, ſo pliant as to embrace any body it is applied to, and yet ſo ſtrong that nothing can be torn from the gripe. To aid the force of this graſp, there are ſeveral little eminences, like a caterpillar's feet, on the underſide of this inſtrument, which without doubt contribute to the ſenſibility of the touch as well as to the firmneſs of the hold. Through this trunk the animal breathes, drinks, and ſmells, as through a tube; and at the very point of it, juſt above the noſtrils, there is an extenſion of the ſkin, about five inches long, in the form of a finger, and which in fact anſwers all the purpoſes of one; for, with the reſt of the extremity of the trunk, it is capable of aſſuming different forms at will, and conſequently of being adapted to the minuteſt objects. By means of this, the elephant can take a pin from the ground, untie the knots of a rope, unlock a door, and even write with a pen. "I have myſelf ſeen," ſays Ælian, "an elephant writing Latin characters on a board, in a very orderly manner, his keeper only ſhewing him the figure of each letter. While thus employed, the eyes might be obſerved ſtudiouſly caſt down

upon the writing, and exhibiting an appearance of great ſkill and erudition." It ſometimes happens that the object is too large for the trunk to graſp; in ſuch a caſe the elephant makes uſe of another expedient, as admirable as any of the former. It applies the extremity of the trunk to the ſurface of the object, and, ſucking up its breath, lifts and ſuſtains ſuch a weight as the air in that caſe is capable of keeping ſuſpended. In this manner this inſtrument is uſeful in moſt of the purpoſes of life; it is an organ of ſmelling, of touching, and of ſuction; it not only provides for the animal's neceſſities and comforts, but it alſo ſerves for its ornament and defence.

But, though the elephant be thus admirably ſupplied by its trunk, yet, with reſpect to the reſt of its conformation, it is unwieldy and helpleſs. The neck is ſo ſhort that it can ſcarce turn the head, and muſt wheel round in order to diſcover an enemy from behind. The hunters that attack it upon that quarter, generally thus eſcape the effects of its indignation; and find time to renew their aſſaults while the elephant is turning to face them. The legs are, indeed, not ſo inflexible as the neck, yet they are very ſtiff and bend not without difficulty. Thoſe before ſeem to be longer than the hinder; but upon being meaſured, are found to be ſomething ſhorter. The joints, by which they bend, are nearly in the middle, like the knee of a man; and the great bulk which they are to ſupport makes their flexure ungainly. While the elephant is young, it bends the legs to lie down or to riſe; but when it grows old, or ſickly, this is not performed without human aſſiſtance; and it becomes, conſequently, ſo inconvenient, that the animal chuſes to ſleep ſtanding. The feet, upon which theſe maſſy columns are ſupported, form a baſe ſcarce broader than the legs they ſuſtain. They are divided into five toes, which are covered beneath the ſkin, and none of which appear to the eye; a kind of protuberance like claws are only obſerved, which vary in number from three to five. The apparent claws vary; the internal toes are conſtantly the ſame. The ſoal of the foot is furniſhed with a ſkin as thick and hard as horn, and which completely covers the whole under part of the foot.

To the reſt of the elephant's incumbrances may be added its enormous tuſks, which are unſerviceable for chewing, and are only weapons of defence. Theſe, as the animal grows old, become ſo heavy, that it is ſometimes obliged to make holes in the walls of its ſtall to reſt them in, and eaſe itſelf in the fatigue of their ſupport. It is well known to what an amazing ſize theſe tuſks grow; they are two in number, proceeding from the upper jaw, and are ſometimes found above ſix feet long. Some have ſuppoſed them to be rather the horns than the teeth of this animal; but, beſides their greater ſimilitude to bone than to horn, they have been indiſputably found to grow from the upper jaw, and not from the frontal bones, as ſome have thought proper to aſſert*. Some alſo have aſſerted, that theſe tuſks are ſhed in the ſame manner as the ſtag ſheds its horns; but it is very probable, from their ſolid conſiſtence, and from their accidental defects, which often appears to be the effect of a ſlow decay, that they are as fixed as the teeth of other animals are generally found to be. Certain it is that the elephant never ſheds them in a domeſtic ſtate, but keeps them till they become inconvenient and cumberſome to the laſt degree. An account of uſes to which theſe teeth are applied, and the manner of chuſing the beſt ivory, belongs rather to a hiſtory of the arts than of Nature.

This animal is equally ſingular in other parts of its conformation; the lips and the tongue in other creatures ſerve to ſuck up and direct their drink or their food; but in the elephant they are totally inconvenient for ſuch purpoſes; and it not only gathers its food with its trunk, but ſupplies itſelf with water by the ſame means. When it eats hay, as I have ſeen it frequently, it takes up a ſmall wiſp of it with the trunk, turns and ſhapes it with that inſtrument for ſome time, and then directs it into the mouth, where it is chewed by the great grinding teeth, that are large in proportion to the bulk of the animal. This pacquet, when chewed, is ſwallowed, and never ruminated again as in cows or ſheep, the ſtomach and inteſtines of this creature more reſembling thoſe of a horſe. Its manner of drinking is equally extraordinary. For this purpoſe, the elephant dips the end of its trunk into the water, and ſucks up juſt as much as fills that

* See Mr. Daubenton's deſcription of the ſkeleton of this animal.

great fleſhy tube completely. It then lifts up its head with the trunk full, and turning the point into its mouth, as if it intended to ſwallow trunk and all, it drives the point below the opening of the wind-pipe. The trunk being in this poſition and ſtill full of water, the elephant then blows ſtrongly into it at the other end, which forces the water it contains into the throat, down which it is heard to pour with a loud gurgling noiſe, which continues till the whole is blown down. From this manner of drinking, ſome have been led into an opinion that the young elephant ſucks with its trunk and not with its mouth; this, however, is a fact which no traveller has hitherto had an opportunity of ſeeing, and it muſt be referred to ſome future accident to determine.

The hide of the elephant is as remarkable as any other part. It is not covered over with hair as in the generality of quadrupeds, but is nearly bare. Here and there indeed, a few briſtles are ſeen growing in the ſcars and wrinkles of the body, and very thinly ſcattered over the reſt of the ſkin; but in general the head is dry, rough, and wrinkled, and reſembling more the bark of an old tree than the ſkin of an animal. This grows thicker every year; and by a conſtant addition of ſubſtance, it at length contracts that diſorder well known by the name of the elephantiaſis, or Arabian leproſy; a diſeaſe to which man, as well as the elephant, is often ſubject. In order to prevent this, the Indians rub the elephant with oil, and frequently bathe it to preſerve its pliancy. To the inconveniences of this diſorder is added another, ariſing from the great ſenſibility of thoſe parts that are not callous. Upon theſe the flies ſettle in great abundance, and torment this animal unceaſingly; to remedy which, the elephant tries all its arts; uſes not only its tail and trunk in the natural manner to keep them off, but even takes the branch of a tree, or a bundle of hay, to ſtrike them off with. When this fails, it often gathers up the duſt with its trunk, and thus covers all the ſenſible places. In this manner it has been ſeen to duſt itſelf ſeveral times a day, and particularly upon leaving the bath.

Water is as neceſſary to this animal as food itſelf. When in a ſtate of Nature, the elephant rarely quits the banks of the river, and often ſtands in water up to the belly. In a ſtate of ſervitude, the Indians take equal care to provide a proper ſupply; they waſh it with great addreſs; they give

it all the conveniences for lending assistance to itself; they smooth the skin with a pumice-stone, and then rub it over with oils, essences, and odours.

It is not to be wondered at that an animal furnished with so many various advantages, both of strength, sagacity, and obedience, should be taken into the service of man. We accordingly find that the elephant, from time immemorial, has been employed either for the purposes of labour, of war, or of ostentation; to increase the grandeur of eastern princes, or to extend their dominions. We have hitherto been describing this animal in its natural state; we now come to consider it in a different view, as taken from the forest and reduced to human obedience. We are now to behold this brave, harmless creature as learning a lesson from mankind, and instructed by him in all the arts of war, massacre, and devastation We are now to behold this half-reasoning animal led into the field of battle, and wondering at those tumults and that madness which he is compelled to increase. The elephant is a native of Africa and Asia, being found neither in Europe nor America. In Africa he still retains his natural liberty The savage inhabitants of that part of the world, instead of attempting to subdue this powerful creature to their necessities, are happy in being able to protect themselves from his fury. Formerly, indeed, during the splendour of the Carthaginian empire, elephants were used in their wars; but this was only a transitory gleam of human power in that part of the globe; the natives of Africa have long since degenerated, and the elephant is only known among them from his devestations. However, there are no elephants in the northern parts of Africa at present, there being none found on this side of Mount Atlas. It is beyond the river Senegal that they are to be met with in great numbers, and so down to the Cape of Good Hope, as well as in the heart of the country. In this extensive region they appear to be more numerous than in any other part of the world. They are there less fearful of man; less retired into the heart of the forests, they seem to be sensible of his impotence and ignorance; and often come down to ravage his little labours. They treat him with the same haughty disdain which they shew to other animals, and consider him as a mischievous little being, that fears to oppose them openly,

But although theſe animals are moſt plentiful in Africa, it is only in Aſia that the greateſt elephants are found, and rendered ſubſervient to human command. In Africa, the largeſt do not exceed ten feet high; in Aſia they are found from ten to fifteen. Their price increaſes in proportion to their ſize; and when they exceed a certain bulk, like jewels, their value then riſes as the fancy is pleaſed to eſtimate.

The largeſt are entirely kept for the ſervice of princes; and are maintained with the utmoſt magnificence, and at the greateſt expence. The uſual colour of the elephant is a duſky black, but ſome are ſaid to be white; and the price of one of theſe is ineſtimable. Such a one is peculiarly appropriated for the monarch's own riding; he is kept in a palace, attended by the nobles, and almoſt adored by the people*. Some have ſaid that theſe white elephants are larger than the reſt†; others aſſert that they are leſs; and ſtill others entirely doubt their exiſtence.

As the art of war is but very little improved in Aſia, there are few princes of the Eaſt who do not procure and maintain as many elephants as they are able, and place great confidence on their aſſiſtance in an engagement. For this purpoſe they are obliged to take them wild in their native foreſts, and tame them; for the elephant never breeds in a ſtate of ſervitude. It is one of the moſt ſtriking peculiarities in this extraordinary creature, that his generative powers totally fail when he comes under the dominion of man; as if he ſeemed unwilling to propagate a race of ſlaves, to increaſe the pride of his conqueror. There is, perhaps, no other quadruped that will not breed in its own native climate, if indulged with a moderate ſhare of freedom; and we know that many of them will copulate in every climate. The elephant alone has never been ſeen to breed; and though he has been reduced under the obedience of man for ages, the duration of pregnancy in the female ſtill remains a ſecret‡. Ariſtotle, indeed, aſſerts, that ſhe goes two years with young; that ſhe continues to ſuckle her young for three years, and that ſhe brings forth but one at a time: but

* P. Vincent Marie. † P. Tachard.

‡ Multis perſuaſum eſt elephantem non brutorum ſed hominum more coire. Quod retro mingit non dubitatur. Sed ipſe vidi marem hujuſce ſpeciei, in noſtri regis ſtabulis ſuper fæmellam itidem incluſam quadrupedum more ſilientem, pene paululum incurvato ſed ſufficienter recto.

he does not inform us of the manner in which it was poſſible for him to have his information. From authorities equally doubtful, we learn, that the little one is about as large as a wild boar, the inſtant it is brought forth; that its tuſks do not yet appear; but that all the reſt of its teeth are apparent; that at the age of ſix months, it is as large as an ox, and its tuſks pretty well grown; and that it continues, in this manner, for near thirty years, advancing to maturity. All this is doubtful; but it is certain, that, in order to recruit the numbers which are conſumed in war, the princes of the Eaſt are every year obliged to ſend into the foreſts, and to uſe various methods to procure a freſh ſupply. Of all theſe numerous bands, there is not one that has not been originally wild; nor one that has not been forced into a ſtate of ſubjection. Men themſelves are often content to propagate a race of ſlaves, that paſs down in this wretched ſtate thro' ſucceſſive generations; but the elephant, under ſubjection, is unalterably barren; perhaps from ſome phyſical cauſes, which are as yet unknown.

The Indian princes having vainly endeavoured to multiply the breed of elephants, like that of other animals, have been, at laſt content to ſeparate the males from the females, to prevent thoſe acceſſes of deſire, which debilitated without multiplying the ſpecies. In order to take them wild in the woods, a ſpot of ground is fixed upon, which is ſurrounded with a ſtrong palliſade. This is made of the thickeſt and the ſtrongeſt trees; and ſtrengthened by croſs bars, which give firmneſs to the whole. The poſts are fixed at ſuch diſtances from each other, that a man can eaſily paſs between them; there being only one great paſſage left open, thro' which an elephant can eaſily come; and which is ſo contrived as to ſhut behind, as ſoon as the beaſt is entered. To draw him into this incloſure, it is neceſſary firſt to find him out in the woods; and a female elephant is conducted along into the heart of the foreſt, where it is obliged by its keeper to cry out for the male. The male very readily anſwers the cry, and haſtens to join her; which the keeper perceiving, obliges her to retreat, ſtill repeating the ſame cry, until ſhe leads the animal into the incloſure already deſcribed, which ſhuts the moment he is entered. Still, however, the female proceeds calling and inviting, while the male proceeds for-

ward in the inclofure, which grows narrower all the way, and until the poor animal finds himfelf completely fhut up, without the power of either advancing or retreating; the female, in the mean time, being let out by a private way, which fhe has been previoufly accuftomed to. The wild elephant, upon feeing himfelf entrapped in this manner, inftantly attempts to ufe violence; and, upon feeing the hunters, all his former defires only turn to fury. In the mean time, the hunters, having fixed him with cords, attempt to foften his indignation, by throwing buckets of water upon him in great quantities, rubbing the body with leaves, and pouring oil down his ears. Soon after, two tame elephants are brought, a male and a female, that carefs the indignant animal with their trunks; while they ftill continue pouring water to refrefh it. At laft a tame elephant is brought forward, of that number which is employed in inftructing the new-comers, and an officer riding upon it, in order to fhew the late captive that it has nothing to fear. The hunters then open the inclofure; and while this creature leads the captive along, two more are joined on either fide of it, and thefe compel it to fubmit. It is then tied by cords to a maffy pillar, provided for that purpofe, and fuffered to remain in that pofition for about a day and a night, until its indignation be wholly fubfided. The next day it begins to be fomewhat fubmiffive; and in a fortnight, is completely tamed like the reft. The females are taken when accompanying the males; they often come into thefe inclofures, and they fhortly after ferve as decoys to the reft. But this method of taking the elephant differs, according to the abilities of the hunter; the Negroes of Africa, who hunt this animal merely for its flefh, are content to take it in pit-falls; and often to purfue it in the defiles of a mountain, where it cannot eafily turn, and fo wound it from behind till it falls.

The elephent, when once tamed, becomes the moft gentle and obedient of all animals. It foon conceives an attachment for the perfon that attends it, carefles him, obeys him, and feems to anticipate his defires. In a fhort time it begins to comprehend feveral of the figns made to it, and even the different founds of the voice; it perfectly diftinguifhes the tone of command from that of anger or approbation, and it

acts accordingly. It is ſeldom deceived in its maſter's voice; it receives his orders with attention, and executes them with prudence, eagerly, yet without precipitation. All its motions are regulated; and its actions ſeem to partake of its magnitude; being grave, majeſtic, and ſecure. It is quickly taught to kneel down, to receive its rider; it careſſes thoſe it knows with its trunk; with this ſalutes ſuch as it is ordered to diſtinguiſh, and with this, as with a hand, helps to take up a part of its load. It ſuffers itſelf to be arrayed in harneſs, and ſeems to take a pleaſure in the finery of its trappings. It draws either chariots, cannon, or ſhipping, with ſurpriſing ſtrength and perſeverance; and this with a ſeeming ſatisfaction, provided that it be not beaten without a cauſe, and that its maſter appears pleaſed with its exertions.

The elephant's conductor is uſually mounted upon its neck, and makes uſe of a rod of iron to guide it, which is ſometimes pointed, and at others bent into a hook. With this the animal is ſpurred forward, when dull or diſobedient; but, in general, a word is ſufficient to put the gentle creature into motion, eſpecially when it is acquainted with its conductor. This acquaintance is often perfectly neceſſary; for the elephant frequently takes ſuch an affection to its keeper, that it will obey no other: and it has been known to die for grief, when, in ſome ſudden fit of madneſs, it has killed its conductor. We are told, that one of theſe, that was uſed by the French forces in India for the drawing their cannon, was promiſed, by the conductor, a reward, for having performed ſome painful ſervice; but being diſappointed of its expectations, it ſlew him in a fury. The conductor's wife, who was a ſpectator of this ſhocking ſcene, could not reſtrain her madneſs and deſpair; but running with her two children in her arms, threw them at the elephant's feet, crying out, that ſince it had killed her huſband, it might kill her and her children alſo. The elephant ſeeing the children at his feet, inſtantly ſtopped, and moderating its fury, took up the eldeſt with its trunk, and placing him upon its neck, adopted him for its conductor, and obeyed him ever after with great punctuality.

But it is not for drawing burthens alone, that the elephants are ſerviceable in war; they are often brought into the ranks,

and compelled to fight in the moſt dangerous parts of the field of battle. There was a time, indeed, in India, when they were much more uſed in war that at preſent. A century ort wo ago, a great part of the dependence of the general, was upon the number and the expertneſs of his elephants; but of late, ſince war has been contented to adopt fatal inſtead of formidable arts, the elephant is little uſed, except for drawing cannon, or tranſporting proviſions. The princes of the country are pleaſed to keep a few for ornament, or for the purpoſes of removing their ſeraglios: but they are ſeldom led into a field of battle, where they are unable to withſtand the diſcharge of fire-arms, and have been often found to turn upon their employers. Still, however, they are uſed in war, in the more remote parts of the eaſt; in Siam, in Cochin China, in Tonquin, and Pegu. In all theſe places, they not only ſerve to ſwell the pomp of ſtate, being adorned with all the barbarian ſplendour that thoſe countries can beſtow, but they are actually led into the field of battle, armed before with coats of mail, and loaded on the back each with a ſquare tower, containing from five combatants to ſeven. Upon its neck ſits the conductor, who goads the animal into the thickeſt ranks, and encourages it to increaſe the devaſtation: wherever it goes, nothing can withſtand its fury; it levels the ranks with its immenſe bulk, flings ſuch as oppoſe it into the air, or cruſhes them to death under its feet. In the mean time, thoſe who are placed upon its back, combat as from an eminence, and fling down their weapons with double force, their weight being added to their velocity. Nothing, therefore, can be more dreadful, or more irreſiſtible, than ſuch a moving machine, to men unacquainted with the modern arts of war; the elephant, thus armed and conducted, raging in the midſt of a field of battle, inſpires more terror than even thoſe machines that deſtroy at a diſtance, and are often moſt fatal, when moſt unſeen. But this method of combating, is rather formidable than effectual: poliſhed nations have ever been victorious over thoſe ſemi-barbarous troops that have called in the elephant to their aſſiſtance, or attempt to gain a victory by merely aſtoniſhing their oppoſers. The Romans quickly learned the art of opening their ranks, to admit the elephant, and thus ſeparating it from aſſiſtance, quickly compelled its

conductors to calm the animal's fury, and to submit. It sometimes also happened that the elephant became impatient of control; and, instead of obeying its conductor, turned upon those forces it was employed to assist. In either case, there was a great deal of preparation to very little effect, for a single elephant is known to consume as much as forty men in a day.

At present, therefore, they are chiefly employed in carrying or drawing burthens, throughout the whole Peninsula of India; and no animal can be more fitted by Nature for this employment. The strength of an elephant is equal to its bulk, for it can, with great ease, draw a load that six horses could not remove: it can readily carry upon its back three or four thousand weight; upon its tusks alone it can support near a thousand: its force may also be estimated from the velocity of its motion, compared to the mass of its body. It can go, in its ordinary pace, as fast as a horse at an easy trot; and, when pushed, it can move as swiftly as a horse at full gallop. It can travel with ease fifty or sixty miles a day; and when hard pressed, almost double that distance. It may be heard trotting on at a great distance; it is easy also to follow it by the track, which is deeply impressed on the ground, and from fifteen to eighteen inches in diameter.

In India they are also put to other very disagreeable offices; for in some courts of the more barbarous princes, they are used as executioners; and this horrid task they perform with great dexterity: with their trunks they are seen to break every limb of the criminal at the word of command; they sometimes trample him to death, and sometimes impale him on their enormous tusks, as directed. In this the elephant is rather the servant of a cruel master, than a voluntary tyrant, since no other animal of the forest is so naturally benevolent and gentle; equally mindful of benefits as sensible of neglect, he contracts a friendship for his keeper, and obeys him even beyond his capacity.

In India, where they were at one time employed in launching ships, a particular elephant was directed to force a very large vessel into the water: the work proved superior to its strength, but not to its endeavours; which, however, the keeper affected to despise. "Take away," says he, "that lazy beast, and bring another better fitted for service."

The poor animal inſtantly upon this redoubled its efforts, fractured its ſcull, and died upon the ſpot.

In Deli, an elephant, paſſing along the ſtreets, put his trunk into a tailor's ſhop, where ſeveral people were at work. One of the perſons of the ſhop, deſirous of ſome amuſement, pricked the animal's trunk with his needle, and ſeemed highly delighted with this ſlight puniſhment. The elephant, however, paſſed on without any immediate ſigns of reſentment; but coming to a puddle filled with dirty water, he filled his trunk, returned to the ſhop, and ſpurted the contents over all the finery upon which the tailors were then employed.

An elephant in Adſmeer, which often paſſed through the bazer or market, as he went by a certain herb-woman, always received from her a mouthful of greens. Being one day ſeized with a periodical fit of madneſs, he broke his fetters, and running through the market, put the crowd to flight, and, among others, this woman, who in her haſte forgot a little child at her ſtall. The elephant recollecting the ſpot where his benefactreſs was accuſtomed to ſit, took up the infant gently in his trunk, and conveyed it to a place of ſafety.

At the Cape of Good Hope it is cuſtomary to hunt thoſe animals for the ſake of their teeth. Three horſemen, well mounted, and armed with launces attack the elephant alternately, each relieving the other, as they ſee their companion preſſed, till the beaſt is ſubdued. Three Dutchmen, brothers, who had made large fortunes by this buſineſs, determined to retire to Europe, and enjoy the fruits of their labours; but they reſolved, one day before they went, to have a laſt chaſe, by way of amuſement: they met with their game, and began their attack in the uſual manner; but, unfortunately, one of their horſes falling, happened to fling his rider, the enraged elephant inſtantly ſeized the unhappy huntſman with his trunk, flung him up to a vaſt height in the air, and received him upon one of his tuſks as he fell; and then turning towards the other two brothers, as if it were with an aſpect of revenge and inſult, held out to them the impaled wretch, writhing in the agonies of death.

The teeth of the elephant are what produces the great enmity between him and mankind; but whether they are ſhed, like

the horns of the deer, or whether the animal be killed to obtain them, is not yet perfectly known. All we have as yet certain is, that the natives of Africa, from whence almost all our ivory comes, assure us, that they find the greatest part of it in their forests; nor would, say they, the teeth of an elephant recompense them for their trouble and danger in killing it: notwithstanding, the elephants which are tamed by man, are never known to shed their tusks; and from the hardness of their substance, they seem no way analogous to deer's horns.

The teeth of the elephant are very often found in a fossil state. Some years ago, two great grinding-teeth, and part of the tusk of an elephant, were discovered, at the depth of forty-two yards, in a lead-mine in Flintshire*.

The tusks of the Mammouth, so often found fossil in Siberia, and which are converted to the purposes of ivory, are generally supposed to belong to the elephant: however, the animal must have been much larger in that country than it is found at present, as those tusks are often known to weigh four hundred pounds; while those that come from Africa seldom exceed two hundred and fifty. These enormous tusks are found lodged in the sandy banks of the Siberian rivers; and the natives pretend that they belong to an animal which is four times as large as the elephant.

There have lately been discovered several enormous skeletons, five or six feet beneath the surface, on the banks of the Ohio, not remote from the river Miume in America, seven hundred miles from the sea-coast. Some of the tusks are near seven feet long; one foot nine inches in circumference at the base, and one foot near the point; the cavity at the root or base, nineteen inches deep. Besides their size, there are yet other differences: the tusks of the true elephant have sometimes a very slight lateral bend; these have a larger twist, or spiral curve, towards the smaller end: but the great and specific difference consists in the shape of the grinding-teeth; which, in these newly found, are fashioned like the teeth of a carnivorous animal; not flat and ribbed transversely on their surface, like those of the modern elephant, but furnished with a double row of high and conic processes, as if intended to masticate, not to grind their food. A third dif-

* Pennant's Synopsis, p. 90.

ference is in the thigh-bone, which is of a great disproportionable thickness to that of the elephant; and has also some other anatomical variations. These fossil bones have been also found in Peru and the Brazils; and, when cut and polished by the workers in ivory, appear, in every respect similar. It is the opinion of Dr. Hunter that they must have belonged to a larger animal than the elephant; and differing from it, in being carnivorous. But as yet this formidable creature has evaded our search; and if, indeed, such an animal exists, it is happy for man that it keeps at a distance; since what ravage might not be expected from a creature, endued with more than the strength of the elephant, and all the rapacity of the tiger!

CHAP. III.

OF THE RHINOCEROS.

NEXT to the elephant, the Rhinoceros is the most powerful of animals. It is usually found twelve feet long, from the tip of the nose to the insertion of the tail; from six to seven feet high; and the circumference of its body is nearly equal to its length. It is, therefore, equal to the elephant in bulk: and if it appears much smaller to the eye, the reason is, that its legs are much shorter. Words can convey but a very confused idea of this animal's shape; and yet there are few so remarkably formed: its head is furnished with an horn, growing from the snout, sometimes three feet and a half long; and but for this, that part would have the appearance of the head of a hog; the upper lip, however, is much longer in proportion, ends in a point, is very pliable, serves to collect its food, and deliver it into the mouth: the ears are large, erect, and pointed; the eyes are small and piercing; the skin is naked, rough, knotty, and, lying upon the body in folds, after a very peculiar fashion: there are two folds, very remarkable; one above the shoulders, and another over the rump: the skin, which is of a dirty brown colour, is so thick as to turn the edge of

The RHINOCEROS

a ſcymitar, and to reſiſt a muſket-ball: the belly hangs low; the legs are ſhort, ſtrong and thick, and the hoofs divided into three parts, each pointing forward.

Such is the general outline of an animal that appears chiefly formidable from the horn growing from its ſnout; and formed rather for war, than with a propenſity to engage. This horn, is ſometimes found from three to three feet and a half long growing from the ſolid bone, and ſo diſpoſed, as to be managed to the greateſt advantage. It is compoſed of the moſt ſolid ſubſtance; and pointed ſo as to inflict the moſt fatal wounds. The elephant, the boar, or the buffalo, are obliged to ſtrike tranſverſely with their weapons; but the rhinoceros employs all his force with every blow: ſo that the tiger will more willingly attack any other animal of the foreſt, than one whoſe ſtrength is ſo juſtly employed. Indeed, there is no force which this terrible animal has to apprehend: defended, on every ſide, by a thick horny hide, which the claws of the lion or the tiger are unable to pierce, and armed before with a weapon that even the elephant does not chooſe to oppoſe. The miſſioners aſſure us, that the elephant is often found dead in the foreſts, pierced with the horn of a rhinoceros; and though it looks like wiſdom to doubt whatever they tell us, yet I cannot help giving credit to what they relate on this occaſion, particularly when confirmed by Pliny. The combat between theſe two, the moſt formidable animals of the foreſt, muſt be very dreadful. Emanuel, king of Portugal, willing to try their ſtrength, actually oppoſed them to each other; and the elephant was defeated.

But though the rhinoceros is thus formidable by nature, yet imagination has not failed to exert itſelf, in adding to its terrors. The ſcent is ſaid to be moſt exquiſite; and it is affirmed that it conſorts with the tiger. It is reported alſo, that when it has overturned a man, or any other animal, it continues to lick the fleſh quite from the bone with its tongue, which is ſaid to be extremely rough. All this, however, is fabulous: the ſcent, if we may judge from the expanſion of the olfactory nerves, is not greater than that of a hog, which we know to be indifferent; it keeps company with the tiger, only becauſe they both frequent watery places in the burning climates where they are bred; and as

to its rough tongue, that is ſo far from the truth, that no animal of near its ſize has ſo ſoft a one. "I have often felt it myſelf," ſays Ladvocat, in his deſcription of this animal; "it is ſmooth, ſoft, and ſmall, like that of a dog; and to the feel it appears as if one paſſed the hand over velvet, I have often ſeen it lick a young man's face who kept; it and both ſeemed pleaſed with the action."

The rhinocerous which was ſhewn at London in 1739, and deſcribed by Doctor Parſons, had been ſent from Bengal. Though it was very young, not being above two years old, yet the charge of his carriage and food from India, coſt near a thouſand pounds. It was fed with rice, ſugar, and hay: it was daily ſupplied with ſeven pounds of rice, mixed with three of ſugar, divided into three portions; it was given great quantities of hay and graſs, which it chiefly preferred; its drink was water, which it took in great quantities. It was of a gentle diſpoſition, and permitted itſelf to be touched and handled by all viſitors, never attempting miſchief, except when abuſed, or when hungry; in ſuch a caſe, there was no method of appeaſing its fury, but by giving it ſomething to eat. When angry, it would jump up againſt the walls of its room, with great violence; and made many efforts to eſcape, but ſeldom attempted to attack its keeper, and was always ſubmiſſive to his threats. It had a peculiar cry, ſomewhat a mixture between the grunting of a hog, and the bellowing of a calf.

The age of theſe animals is not well known; it is ſaid by ſome, that they bring forth at three years old, and if we may reaſon from analogy, it is probable they ſeldom live till above twenty. That which was ſhewn in London, was ſaid by its keeper, to be eighteen years old, and even at that age, he pretended to conſider it as a young one; however, it died ſhortly after, and that probably in the courſe of nature.

The rhinoceros is a native of the deſerts of Aſia and Africa, and is uſually found in thoſe extenſive foreſts, that are frequented by the elephant and the lion. As it ſubſiſts entirely upon vegetable food, it is peaceful and harmleſs among its fellows of the brute creation; but, though it never provokes to combat, it equally diſdains to fly. It is every way fitted for war, but reſts content in the conſciouſneſs of its

ſecurity. It is particularly fond of the prickly branches of trees, and is ſeen to feed upon ſuch thorny ſhrubs as would be dangerous to other animals, either to gather or to ſwallow. The prickly points of theſe, however, may only ſerve to give a poignant reliſh to this animal's palate, and may anſwer the ſame grateful ends in ſeaſoning its banquet, that ſpices do in heightening ours.

In ſome parts of the kingdom of Aſia, where the natives are more deſirous of appearing warlike than ſhewing themſelves brave, theſe animals are tamed, and led into the field to ſtrike terror into the enemy; but they are always an unmanageable and reſtive animal, and probably more dangerous to the employers, than thoſe whom they are brought to oppoſe.

The method of taking them, is chiefly watching them, till they are found either in ſome moiſt or marſhy place, where, like hogs, they are fond of ſleeping and wallowing. They then deſtroy the old one with fire arms; for no weapons, that are thrown by the force of man, are capable of entering this animal's hide. If, when the old one is deſtroyed, there happens to be a cub, they ſeize and tame it: theſe animals are ſometimes taken in pit-falls, covered with green branches, laid in thoſe paths which the Rhinoceros makes going from the foreſt to the river ſide.

There are ſome varieties in this animal, as in moſt others; ſome of them are found in Africa with a double horn, one growing above the other; this weapon, if conſidered in itſelf, is one of the ſtrongeſt, and moſt dangerous, that Nature furniſhes to any part of the animal creation. The horn is entirely ſolid, formed of the hardeſt bony ſubſtance, growing from the upper maxilary bone, by ſo ſtrong an apophyſe, as ſeemingly to make but one part with it. Many are the medicinal virtues that are aſcribed to this horn, when taken in powder; but theſe qualities have been attributed to it, without any real foundation, and make only a ſmall part of the many fables which this extraordinary animal has given riſe to.

CHAP. IV.

THE HIPPOPOTAMOS.

THE hippopotamos is an animal as large, and not leſs formidable than the rhinoceros; its legs are ſhorter, and its head rather more bulky than that of the animal laſt deſcribed. We have had but few opportunities in Europe of examining this formidable creature minutely; its dimenſions, however, have been pretty well aſcertained, by a deſcription given us by Zerenghi, an Italian ſurgeon, who procured one of them to be killed on the banks of the river Nile. By his account it appears, that this terrrible animal, which chiefly reſides in the waters of that river, is above ſeventeen feet long, from the extremity of the ſnout to the inſertion of the tail; above ſixteen feet in circumference round the body, and above ſeven feet high: the head is near four feet long, and above nine feet in circumference. The jaws open about two feet wide, and the cutting-teeth, of which it hath four in each jaw, are above a foot long.

Its feet, in ſome meaſure, reſemble thoſe of the elephant, and are divided into four parts. The tail is ſhort, flat, and pointed; the hide is amazingly thick, and though not capable of turning a muſket ball, is impenetrable to the blow of a ſabre; the body is covered over with a few ſcattered hairs of a whitiſh colour. The whole figure of the animal is ſomething between that of an ox and a hog, and its cry is ſomething between the bellowing of the one, and the grunting of the other.

This animal, however, though ſo terribly furniſhed for war, ſeems no way diſpoſed to make uſe of its prodigious ſtrength againſt an equal enemy; it chiefly reſides at the bottom of the great rivers and lakes of Africa; the Nile, the Niger, and the Zara; there it leads an indolent kind of life, and ſeems ſeldom diſpoſed for action, except when excited by the calls of hunger. Upon ſuch occaſions, three or four of them are often ſeen at the bottom of a river, near ſome cataract, forming a kind of line, and ſeizing upon ſuch fiſh as are forced down by the violence of the ſtream. In that

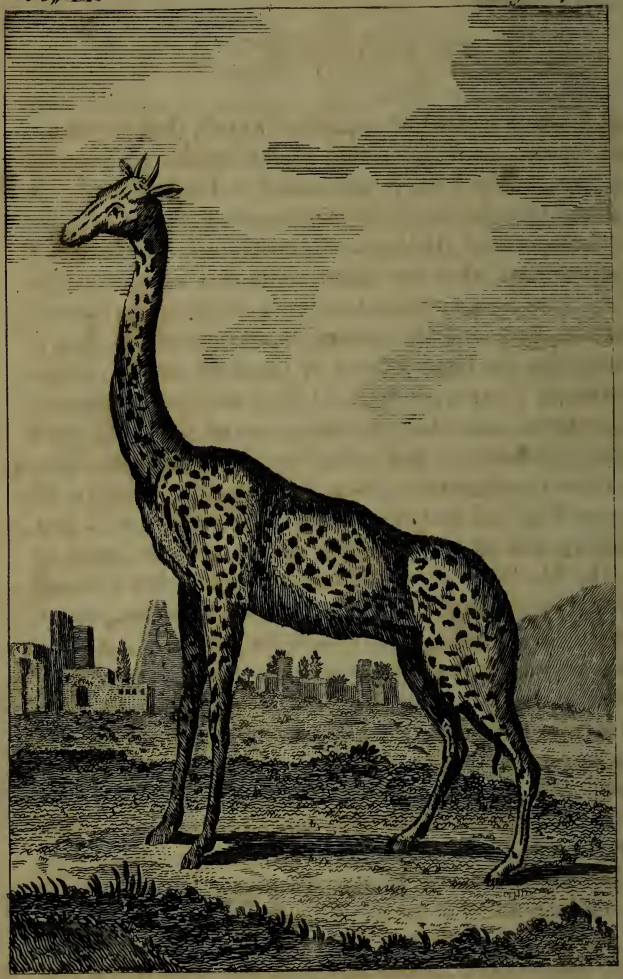
element they purſue their prey with great ſwiftneſs and perſeverance; they ſwim with much force, and remain at the bottom for thirty or forty minutes, without riſing to take breath. They traverſe the bottom of the ſtream, as if walking upon land, and make a terrible devaſtation where they find plenty of prey. But it often happens, that this animal's fiſhy food is not ſupplied in ſufficient abundance, it is then forced to come upon land, where it is an awkward and unwieldy ſtranger; it moves but ſlowly, and, as it ſeldom forſakes the margin of the river, it ſinks at every ſtep it takes; ſometimes, however, it is forced, by famine, up into the higher grounds, where it commits dreadful havoc among the plantations of the helpleſs natives, who ſee their poſſeſſions deſtroyed, without daring to reſiſt their invader. Their chief method is by lighting fires, ſtriking drums, and raiſing a cry to frighten it back to its favourite element; and as it is extremely timorous upon land, they generally ſucceed in their endeavours. But if they happen to wound, or otherways irritate it too cloſely, it then becomes formidable to all that oppoſe it: it overturns whatever it meets, and brings forth all its ſtrength, which it ſeemed not to have diſcovered before that dangerous occaſion. It poſſeſſes the ſame inoffenſive diſpoſition in its favourite element, that it is found to have upon land; it is never found to attack the mariners in their boats as they go up or down the ſtream; but ſhould they inadvertently ſtrike againſt it, or otherwiſe diſturb its repoſe, there is much danger of ſending them at once to the bottom. "I have ſeen," ſays a mariner, as we find it in Dampier, "one of theſe animals open its jaws, and ſeizing any boat, between his teeth, at once bite and ſink it to the bottom. I have ſeen it, upon another occaſion, place itſelf under one of our boats, and, riſing under it, overſet it, with ſix men who were in it; who, however, happily received no other injury." Such is the great ſtrength of this animal; and from hence, probably, the imagination has been willing to match it in combat againſt others more fierce, and equally formidable. The crocodile and ſhark have been ſaid to engage with it, and yield an eaſy victory; but as the ſhark is only found at ſea, and the hippopotamos never ventures beyond the mouth of freſh-water rivers, it is moſt probable that theſe engagements never occurred; it ſometimes happens, indeed, that the princes of Africa amuſe

themſelves with combats, on their freſh-water lakes, between this and other formidable animals; but whether the rhinoceros or the crocodile are of this number, we have not been particularly informed. If this animal be attacked at land, and finding itſelf incapable of vengeance from the ſwiftneſs of its enemy, it immediately returns to the river, where it plunges in head foremoſt, and after a ſhort time riſes to the ſurface, loudly bellowing, either to invite or intimidate the enemy; but though the Negroes will venture to attack the ſhark or the crocodile, in their natural element, and there deſtroy them, they are too well appriſed of the force of the hippopotamos to engage it; this animal, therefore, continues the uncontrouled maſter of the river, and all others fly from its approach, and become an eaſy prey.

As the hippopotamos lives upon fiſh and vegetables, ſo it is probable the fleſh of terreſtrial animals may be equally grateful: the natives of Africa aſſert, that it has often been found to devour children and other creatures that it was able to ſurpriſe upon land; yet it moves but ſlowly, almoſt every creature, endued with a common ſhare of ſwiftneſs, is able to eſcape it; and this animal, therefore, ſeldom ventures from the river ſide, but when preſſed by the neceſſities of hunger, or of bringing forth its young.

The female always comes upon land to bring forth, and it is ſuppoſed that ſhe ſeldom produces above one at a time.—Upon this occaſion, theſe animals are particularly timorous, and dread the approach of a terreſtrial enemy; the inſtant the parent hears the ſlighteſt noiſe, it daſhes into the ſtream, and the young one is ſeen to follow it with equal alacrity.

The young ones are ſaid to be excellent eating; but the Negroes, to whom nothing that has life comes amiſs, find an equal delicacy in the old. Dr. Pococke has ſeen their fleſh ſold in the ſhambles, like beef; and it is ſaid, that their breaſt, in particular, is as delicate eating as veal. As for the reſt, theſe animals are found in great numbers, and as they produce very faſt, their fleſh might ſupply the countries where they are found, could thoſe barbarous regions produce more expert huntſmen. It may be remarked, however, that this creature, which was once in ſuch plenty at the mouth of the Nile, is now wholly unknown in Lower Egypt, and is no where to be found in that river, except above the cataracts.



The CAMELOPARD

CHAP. V.

THE CAMELOPARD.

WERE we to be told of an animal ſo tall, that a man on horſeback could, with eaſe, ride under its belly, without ſtooping, we ſhould hardly give credit to the relation; yet of this extraordinary ſize is the camelopard, an animal that inhabits the deſerts of Africa, and the accounts of which are ſo well aſcertained, that we cannot deny our aſſent to their authority. It is no eaſy matter to form an adequate idea of this creature's ſize, and the oddity of its formation. It exhibits ſomewhat the ſlender ſhape of the deer, or the camel, but deſtitute of their ſymmetry, or their eaſy power of motion. The head ſomewhat reſembles that of the deer, with two round horns, near a foot long, and which, it is probable, it ſheds as deer are found to do; its neck reſembles that of a horſe; its legs and feet thoſe of the deer; but with this extraordinary difference, that the fore-legs are near twice as long as the hinder. As theſe creatures have been found eighteen feet high, and ten from the ground to the top of the ſhoulder, ſo allowing three feet for the depth of the body, ſeven feet remains, which is high enough to admit a man mounted upon a middle-ſized horſe. The hinder part, however, is much lower, ſo that when the animal appears ſtanding, and at reſt, it has ſomewhat the appearance of a dog ſitting, and this formation of its legs, gives it an awkward and a laborious motion; which, though ſwift, muſt yet be tireſome. For this reaſon, the camelopard is an animal very rarely found, and only finds refuge in the moſt internal deſert regions of Africa. The dimenſions of a young one, as they were accurately taken by a perſon who examined its ſkin, that was brought from the Cape of Good Hope, were found to be as follow: the length of the head was one foot eight inches; the height of the fore-leg, from the ground to the top of the ſhoulder, was ten feet; from the ſhoulder to the top of the head was ſeven; the height of the hind-leg was eight feet five inches; and from the top

of the ſhoulder to the inſertion of the tail was juſt ſeven feet long.

No animal either from its diſpoſition, or its formation, ſeems leſs fitted for a ſtate of natural hoſtility; its horns are blunt, and even knobbed at the ends; its teeth are made entirely for vegetable paſture; its ſkin is beautifully ſpeckled with white ſpots, upon a browniſh ground; it is timorous and harmleſs, and, notwithſtanding its great ſize, rather flies from, than reſiſts the ſlighteſt enemy; it partakes very much of the nature of the camel, which it ſo nearly reſembles; it lives entirely upon vegetables, and when grazing, is obliged to ſpread its fore-legs very wide, in order to reach its paſture; its motion is a kind of pace, two legs on each ſide moving at the ſame time, whereas in other animals they move tranſverſely. It often lies down with its belly to the earth, and, like the camel, has a callous ſubſtance upon its breaſt, which, when repoſed, defends it from injury. This animal was known to the ancients, but has been very rarely ſeen in Europe. One of them was ſent from the Eaſt to the Emperor of Germany, in the year 1559; but they have often been ſeen tame at Grand Cairo in Egypt; and, I am told, there are two there at preſent.—When ancient Rome was in its ſplendour, Pompey exhibited at one time, no leſs than ten upon the theatre. It was the barbarous pleaſure of the people, at that time, to ſee the moſt terrible, and the moſt extraordinary animals produced in combat againſt each other. The lion, the lynx, the tiger, the elephant, the hippopotamos, were all let looſe promiſcuouſly, and were ſeen to inflict indiſcriminate deſtruction.

END OF THE SECOND VOLUME.