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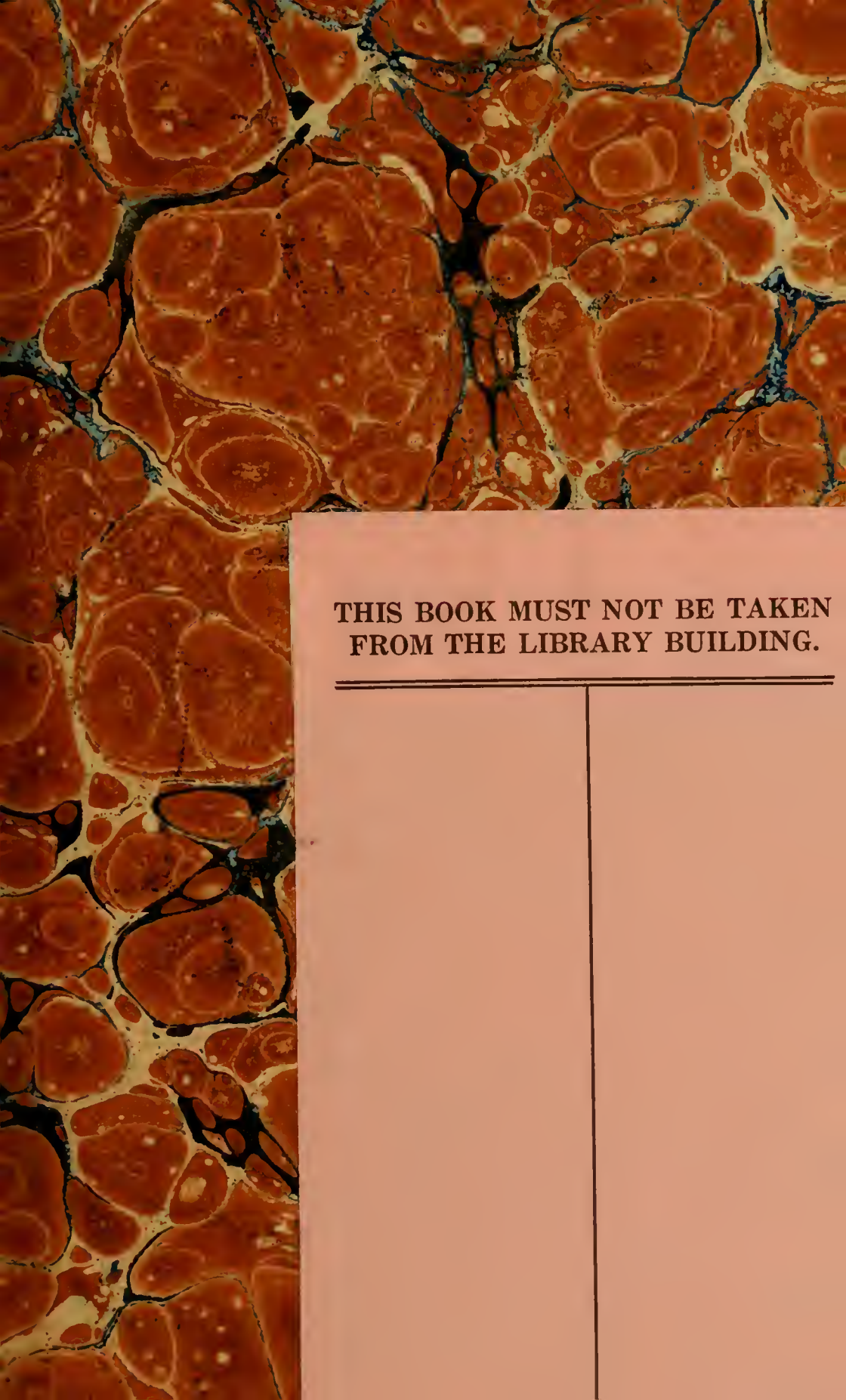
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Manlier Del.

Pajo's Sculp.

Natural History of Quadrupeds.

London, Published as the Act Directs, July 7. 1796, by I. Wilkes.

A. N
UNIVERSAL SYSTEM
OF
NATURAL HISTORY,
INCLUDING THE
NATURAL HISTORY OF MAN;
THE ORANG-OUTANG;
AND
WHOLE TRIBE OF SIMIA;
ALL THE KNOWN
QUADRUPEDS, BIRDS, FISHES,
AND
AMPHIBIOUS ANIMALS;
INSECTS, POLYPEES, ZOOPHYTES, AND ANIMALCULÆ;
TREES, SHRUBS, PLANTS, AND FLOWERS;
FOSSILS, MINERALS, STONES, AND PETREFACTIONS.
FORMING A MAGNIFICENT VIEW OF
THE THREE KINGDOMS OF NATURE,
Divided into DISTINCT PARTS, the Characters SEPARATELY
DESCRIBED, and SYSTEMATICALLY ARRANGED.

VOLUME THE THIRD.

LONDON:
PRINTED FOR THE PROPRIETOR, AND SOLD BY CHAMPANTE
AND WHITROW, JEWRY-STREET, ALDGATE; AND AT THE
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A N U N I V E R S A L

S Y S T E M

O F

N A T U R A L H I S T O R Y .

O F Q U A D R U P E D S .

THE name *quadruped* supposes that the animal has four feet. If it wants two feet, like the manati; if it has arms and hands, like the ape; or if it has wings, like the bat; it is not a quadruped. Hence this general term, when applied to these animals, is abused. To obtain precision in words, the ideas they present must be strictly true. If we had a term for two hands similar to that which denotes two feet, we might then say that man was the only biped and bimanus, because he alone has two hands and two feet; that the manati is a bimanus; that the bat is only a biped; and that the ape is a quadrimanus, or four-handed animal. If we apply these denominations to all the particular beings to which they belong, we shall find, that, from the race of animals who go under the common name of quadrupeds, all the apes, baboons, monkeys, sapajous, sagoins, and makis, must be retrenched, because they are quadrimanus, or four-handed; and that to these, the loris or tailless maucauco, the Virginia murine, and Mexican opossum, the Egyptian and woolly jerboa's, &c. should be added, because they are four-handed like the apes and monkeys. Thus the number of quadrupeds will be

one-fifth diminished. We should likewise retrench the several species of bipeds, namely, the bats, whose fore-feet are rather wings than feet, and likewise three or four jerboa's, because they can walk on their hind-feet only, the fore-feet being too short. If we subtract also the manati, which has no hind-feet, the arctic and Indian walrus, and the seals, to whom the hind-feet are useless; and, if we still retrench those animals which use their fore-feet like hands, as the bears, the marmots, the coati's, the agouti's, the squirrels, the rats, and many others, the denomination of quadruped will appear to be applied improperly to more than one-half of the animal race. The whole and cloven hoofed are indeed the only real quadrupeds. When we descend to the digitated class, we find four-handed or ambiguous quadrupeds, who use their fore-feet as hands, and ought to be separated or distinguished from the others. Of whole-hoofed animals, there are the horse, the ass, the zebra, &c. If to these we add the elephant, the rhinoceros, the hippopotamus, and the camel, whose feet, though terminated by nails, are solid, and serve the animals for walking only, we shall find that to these the name of quadruped is perfectly applicable. The number of cloven-hoofed animals greatly exceeds that of the whole-hoofed. The oxen, the sheep, the goats, the antelopes, the bubalus, the iama, the pacos, the giraffe, the elk, the rein-deer, the stag, the fallow-deer, the roebuck, &c. are all cloven-footed, and constitute real quadrupeds. In the digitated animals, the lion, the tiger, panther, leopard, lynx, cat, wolf, dog, fox, hyæna, badger, polecat, weasels, ferret, porcupines, hedgehogs, armadillos, ant-eaters, and hogs, which last constitute the shade between the digitated and cloven-footed tribes, form a number of species, to which the term of quadruped applies with perfect precision; because, though their fore-feet be divided into four or five toes, they are never used as hands. But all the other digitated spe-

cies, who use their fore-feet in carrying food to their mouths, are not, in strict propriety of language, quadrupeds. These species make an intermediate class between quadrupeds and four-handed animals, being neither the one nor the other. Hence, to more than a fourth of our animals, the name of quadruped does not seem to apply; and to more than a half of them, the application of it is incomplete.

The four-handed race fill the interval between man and the animals; and the two-handed species constitute a mean term in the distance between man and the cetaceous tribes. The bipeds with wings form the shade between quadrupeds and birds; and the digitated species, who use their fore-feet as hands, fill the whole space between the quadrupeds and the four-handed kinds. But this subject need be pursued no farther, since it can only furnish a fresh proof, that many of our definitions or general terms want precision, when applied to the objects or beings which they represent.

EQUUS, of the Order BELLUÆ.

THIS genus of quadrupeds comprehends the Horse, the Dshicketaei or wild Mule, the As, the Zebra, the Quagga, and the Huemel; the characters of which are these: they have six erect and parallel fore-teeth in the upper-jaw, and six somewhat prominent ones in the under jaw; the dog-teeth are solitary, and at a considerable distance from the rest; and the feet consist of an undivided hoof.

THE HORSE.

The intrepidity and sagacity of the horse, have been regarded with admiration by all ranks of men, and in all ages of the world. Even in a domestic state he is bold and fiery; and, equally undaunted as his master, faces danger and death with ardour and magnanimity.

He

He delights in the noise and tumults of arms, and seems to feel the glory of victory: he exults in the chase; his eyes sparkle with emulation in the course. But, though bold and intrepid, he is docile and tractable: he knows how to govern and check the natural vivacity and fire of his temper. He not only yields to the hand, but seems to consult the inclination of his rider. Constantly obedient to the impressions he receives, his motions are entirely regulated by the will of his master. He in some measure resigns his very existence to the pleasure of man. He delivers up his whole powers, he reserves nothing; he will rather die than disobey.

These are features in the character of a horse, whose natural qualities have been matured by art, and turned with care to the service of man. His education commences with the loss of liberty, and is completed by restraint. The slavery of the horse is so ancient and so universal, that he is rarely seen in a natural state. When employed in labour, he is always covered with the harness; and, even during the time destined for repose, he is never entirely delivered from bonds. If sometimes permitted to roam in the pasture, he always bears the marks of servitude, and often the external impressions of labour and pain. His mouth is deformed by the perpetual friction of the bit; his sides are galled with wounds, or furrowed with cicatrices; and his hoofs are pierced with nails. The natural gestures of his body are constrained by the habitual pressure of fetters, from which it would be in vain to deliver him; for he would not be more at liberty. Those horses, the servitude of which is most mild, which are kept solely for the purposes of luxury and magnificence, and whose golden chains only gratify the vanity of their masters, are more dishonoured by the elegance of their trappings, and by the plaits of their hair, than by the iron shoes on their feet.

Art is always excelled by Nature; and, in animated beings, liberty of movement constitutes the perfection of their existence. Examine those horses which have multiplied so prodigiously in Spanish America, and live in perfect freedom. Their motions are neither constrained nor measured. Proud of their independence, they fly from the presence man, and disdain all his care. They search for, and procure, the food that is most salutary and agreeable. They wander and frisk about in immense meadows, and collect the fresh productions of a perpetual spring. Without any fixed habitation, or other shelter than a serene sky, they breathe a purer air than in those musty vaults in which we confine them, when subjected to our dominion. Hence wild horses are stronger, lighter, and more nervous, than most of those which are in a domestic state. The former possess force and dignity, which are the gifts of nature; the latter have only address and gracefulness, which are all that art can bestow.

These wild horses are by no means ferocious in their temper; they are only wild and fiery. Though of strength superior to most animals, they never make an attack. But, when assaulted, they either disdain the enemy, bound out of his way, or strike him dead with their heels. They associate in troops from no other motive than the pleasure of being together; for they have no fear; but acquire a mutual attachment to each other. As grass and vegetables constitute their food, of which they have enough to satisfy their appetite, and as they are not carnivorous, they neither make war with other animals, nor among themselves. They dispute not about their common nourishment, and never have occasion to snatch prey from each other, the general source of quarrels and combats among the rapacious tribes. Hence they live in perpetual peace; because their appetites are simple and moderate, and they have no objects to excite envy.

All these features are apparent in young horses bred together in troops. Their manners are gentle, and their tempers social; their force and ardour are generally rendered conspicuous by marks of emulation. They anxiously press to be foremost in the course, to brave danger in traversing a river, or in leaping a ditch or precipice; and it has been remarked, that those which are most adventurous and expert in these natural exercises, are the most generous, mild, and tractable, when reduced to a domestic state.

Wild horses are mentioned by several ancient authors. Herodotus takes notice of white savage horses on the banks of the Hypanis in Scythia; and, in the northern part of Thrace, beyond the Danube, he remarks, that there were wild horses, covered all over with hair five inches long. Aristotle says, they were to be found in Syria; Pliny, in the northern regions; and Strabo, in Spain and the Alps. Among the moderns, Cardan says the same thing of Scotland, and the Orkney isles; Olaus, of Muscovy; Dapper, of the island of Cyprus, where, he says, there were beautiful wild horses, of great strength and swiftness; and Struys, of the island of May, one of the Cape de Verds, where he saw wild horses of a small stature. Leo of Africa likewise relates, that there were wild horses in the deserts of Africa and Arabia; and he assures us, that he saw, in the solitudes of Numidia, a colt with crisped hair and a crisped mane. Marmol confirms this fact, by informing us, that small wild horses, some of them of an ash-colour, and others white, with short curled hair and manes, are to be found in the Lybian and Arabian deserts: he adds, that they out-run the dogs and domestic horses. We likewise learn, from the *Lettres Edifiantes*, that there are small wild horses in China.

But, as Europe is now almost equally peopled, wild horses are no where to be found in this quarter of the globe. Those in America are the offspring of domestic

mestic horses, transported originally from Europe by the Spaniards. In these uninhabited, or rather depopulated, regions, horses have multiplied prodigiously. That this species of animal was unknown in the New World, appears from the terror and astonishment expressed by the Mexicans and Peruvians at the sight of horses and their riders. The Spaniards carried great numbers of horses to these regions, both with a view to their service, and to the propagation of the breed. Many accordingly were left on the islands, as well as on the continent, where they have multiplied like other wild animals. M. de Salle, in the year 1685, saw, near the bay of St. Louis in North America, these horses grazing in the meadows; and they were so wild that he could not approach them. The author of the history of the Buccaneers remarks, "That troops of horses, to the number of five hundred, are sometimes seen in the island of St. Domingo, who all run together; that, when they perceive a man, they all stop; and that one of them approaches to a certain distance, blows through his nostrils, takes flight, and is instantly followed by the whole troop." He adds, that he is uncertain whether these horses have degenerated by becoming wild; but that he found none of them so handsome as those of Spain, though they sprung from the same race. "They have," he continues, "very gross heads and limbs, and long necks and ears. The inhabitants tame them with ease, and then train them to labour. In taking them, gins of ropes are laid in the places where they frequent. When caught by the neck, they soon strangle themselves, unless some person arrives to disentangle them. They are tied to trees by the body and limbs, where they are left for two days without victuals or drink. This trial is generally sufficient for rendering them more tractable, and they soon become as gentle as if they had never been wild; and, even if they should by accident regain their liberty, they never resume their savage state, but know their

masters, and allow themselves to be approached, and retaken with ease." M. Garfault mentions another method of taming wild horses: "When the colts," he observes, "are not very early tamed, it sometimes happens, that the approach of man strikes them with terror; that they defend themselves with their heels and teeth, in such a manner, that it is almost impossible to dress or shoe them: if not broke by gentleness and patience, they are prevented from sleeping till they fall down with weakness. During this operation, a man continues, day and night, at their heads, giving them, from time to time, handfuls of hay. When treated in this manner, it is astonishing how soon their tempers are softened. Some horses, however, require to be kept awake for eight days."

These facts prove horses to be naturally of gentle dispositions, and much disposed to associate with man. They never forsake the abodes of men, to regain their liberty in the forests. They discover, on the contrary, great anxiety to return to the stable, where they find only coarse food, which is always the same, and often measured to them more by the rules of œconomy, than by the strength of their appetite. But the sweets of habit supply all they have lost by slavery. After being oppressed with fatigue, the place of repose is full of delight. They smell it at a distance, can distinguish it in the midst of great cities, and seem uniformly to prefer bondage to liberty. They form a second nature out of those habits to which they have been forced to submit; for horses, after being abandoned in the forests, have been known to neigh continually in order to be heard, to run to the voice of man, and even to grow meagre, and die in a short time, though surrounded with a profusion of nourishment. Thus, it is obvious, the manners of a horse originate entirely from his education, which is accomplished by a care and industry bestowed by man upon no other animal; but he

is amply rewarded by the perpetual services of this noble and laborious creature.

The foals are separated from their mothers at the age of five, six, or at most seven, months; for experience shows, that when allowed to suck ten or eleven months, though generally fatter and larger, they are not of equal value as those which have been more early weaned. After six or seven months, the foals are removed from their mothers, and are fed twice a-day with bran and a little hay, the quantity of which is augmented in proportion as they advance in age. They are confined to the stables as long as they discover any anxiety to return to their mothers. But when this inquietude is gone, they are allowed to go out, and are conducted to the pasture: they must not, however, be permitted to graze when their stomach is empty. An hour before being put to grass, they should have a little bran, be made to drink, and should never be exposed to great colds or to rain. In this manner they pass the first winter. In the month of May following, they may be allowed to pasture freely every day, and to remain out continually till the end of October.

After young colts are weaned, they should not be put into too warm a stable, otherwise they will be rendered too delicate and too sensible to the impressions of the air. They should be often supplied with fresh litter, and kept clean by frequent friction; but they ought neither to be tied nor handled till they are near three years of age. The manger and rack should not be too high; for the necessity of stretching their neck and raising their head, may induce a habit of keeping them in that position, which would spoil their neck. When twelve or eighteen months old, their tails should be cut; the hair will shoot afterwards, and become stronger and thicker. At the age of two years, the male colts should be put with the horses, and the females with the mares. Without this precaution, the young males would fatigue and enervate themselves.

At the age of three years we should begin to dress the colts, and to render them tractable. At first, a light easy saddle should be placed on them, and allowed to remain two or three hours each day. They should likewise be accustomed to receive a snaffle into their mouths, and to allow their feet to be lifted and struck, in imitation of shoeing. If destined for the coach or draught, they ought to be harnessed as well as snaffled. A bridle is unnecessary at first: by means of a halter or cavesson on their nose, they may be made to trot up and down on a smooth piece of ground, with only a saddle and harness on their bodies: and, when they turn easily, and approach without fear the man who holds the halter, they may then be mounted and dismounted at pleasure.

The bit and the spur have been contrived to command the obedience of horses; the bit for the direction, and the spur for the quickness of their movements. Nature seems to have destined the mouth solely for receiving the impressions of taste and of appetite. But the mouth of the horse is endowed with such amazing sensibility, that, to this organ, in place of the eye and ear, man applies for conveying the indications of his will to this animal. The slightest motion or pressure of the bit gives him notice and determines his course. This organ of sensation has no fault but that of perfection; its too great sensibility requires the most dexterous management; for the smallest abuse spoils the mouth, by rendering it insensible to the impressions of the bit. The senses of seeing and hearing cannot be blunted in this manner: but it is probable, that all attempts to govern horses by these organs have been found inconvenient. Besides, the signs transmitted by the touch have a stronger effect upon animals in general, than those conveyed by the eye or ear. The situation of a horse's eyes, with regard to his rider or conductor, is extremely unfavourable: and, though they be often animated and conducted by the ear, it appears that the

use of this organ is abandoned to the coarser species of horses; for, in the menage, they are seldom addressed by the ear. In a word, when horses are well educated, the smallest pressure of the thighs, the slightest movement of the bit, are sufficient to direct them. Even the spur is almost useless, being seldom employed but to force them to exert violent motions: and when, from the ignorance of the horseman, he gives the spur, and at the same time retracts the bridle, the horse, finding himself incited on one side and restrained on the other, is obliged to rear, or make a perpendicular bound.

By means of the bridle, the horse is taught to keep his head in the most beautiful and advantageous situation, and the smallest sign or slightest movement of the rider is sufficient to make the animal assume its different paces. The trot is perhaps the most natural motion of a horse; but the pace, and even the gallop, are most easy to the rider; and these are the two motions which are most in request. When a horse lifts his fore-leg in order to walk, this movement must be made with steadiness and facility, and the knee must likewise be bended. The lifted leg must appear, for a moment, to be supported, and, when let down, it must be firm, and equally supported on the ground, before the head receive any impression from this movement; for, when the leg falls down suddenly, and the head sinks at the same time, this motion is generally made to give a speedy relief to the other leg, which is not strong enough alone to support the whole weight of the body. This is a very great defect in a horse. It is also worthy of a remark, that, when he rests on his heels, it is a sign of weakness; and, when he supports himself on his toes, it is an unnatural and fatiguing attitude, which the horse cannot long continue. The only sure mark of strength and soundness in a horse, is when he rests firmly on his foot, without favouring any particular part of it.

Walking,

Walking, though the slowest of all motions, ought to be brisk, light, and neither too long nor too short. Lightness depends much on the freedom of the shoulders, and is distinguished by the manner in which the horse, in walking, carries his head. If he carries his head high and steady, he is generally vigorous and light. When the movement of the shoulders is not sufficiently free, the limbs are not lifted high enough, and the horse is apt to stumble upon the road. In walking, a horse should raise his shoulders, and lower his haunches. He should also elevate and support his leg; but, if he supports it too long, and allows it to fall down slowly, he loses every advantage of lightness; his walk becomes hard, and he is good for nothing but state and parade.

But lightness is not the only good quality in the movements of the horse: they should likewise be equal and uniform both before and behind: for, if the crupper vibrates when the shoulders are supported, his motion will be jolting and incommodious to the rider. The same thing happens, when the horse lengthens so much the step of the hind-leg, that the foot lights beyond the print of the fore-foot. Horses with short bodies are subject to this fault. Those whose legs cross each other, or hew, have an unsteady motion; and, in general, long-bodied horses are most commodious to the rider, because he is placed at a greater distance from the two centres of motion, the shoulders and haunches, and is of course less jolted.

The general mode of walking among quadrupeds is to lift up, at one time, a fore-leg and a hind-leg of opposite sides. As their bodies rest on four points which form an oblong square, the most commodious manner of moving is to change two at a time in the diagonal; so that the centre of gravity of the animal's body may always remain nearly in the direction of the two points of support which are not in motion. In the three natural movements of the horse, namely, the walk, the
trot,

trot, and the gallop, this mode is always observed, though with some variations. In walking there are four beats or times of moving; if the right fore-leg moves first, the left hind-leg instantly follows; then the left fore-leg moves, and is instantly followed by the right hind-leg. Thus the right fore-foot rests first on the ground, then the left hind-foot, next the left fore-foot, and, lastly, the right hind-foot, which makes a motion consisting of four beats and three intervals, of which the first and third are shorter than the middle one. In the trot there are only two beats: if the right fore-leg parts from the ground, it is accompanied, at the same time, by the left hind-leg; then the left fore-leg moves at the same time with the right hind-leg; so that, in this motion, there are but two beats and one interval; the right fore-leg and the left hind-leg rest on the ground at the same time, and the same thing happens with regard to the left fore-leg and the right hind-leg. In the gallop, there are commonly three beats: the left hind-leg moves first and rests first on the ground; then the right hind-leg is raised along with the left fore-leg, and both rest on the ground at the same time; and, lastly, the right fore-leg is raised instantly after the left fore-leg and the right hind-leg, and falls last upon the ground. Thus, in the gallop, there are three beats and two intervals: in the first interval, when the motion is quick, the four legs, for an instant, are in the air at the same time, and the four shoes appear at once. When the horse has supple limbs and haunches, and moves with agility, the gallop is most perfect, and the feet fall at four times, first, the left hind-leg, then the right hind-leg, next the left fore-leg, and, lastly, the right fore-leg.

Horses generally gallop on the right foot, in the same manner as they set out in walking or trotting, with the right fore-leg. In galloping, they first cut the road with the right fore-leg, which is farther advanced than the left; and the right hind-leg, which immediately

mediately follows the right fore-leg, is likewise farther advanced than the left hind-leg. Hence the left leg, which bears the whole weight, and pushes the others forward, has the greatest fatigue; so that it would be proper to learn horses to gallop alternately upon the left and right legs; because it would enable them to continue this violent motion much longer. This is practised at the menage, but perhaps for no other reason, but because, in galloping round a circle, the centre of which is sometimes on the right, and sometimes on the left, the rider is frequently obliged to change his hand.

In walking, the horse raises his feet very little above the surface; in trotting, he elevates them a little more, and, in galloping, still higher. The walk ought to be smart, light, and sure; the trot should be firm, quick, and equally supported, and the fore-legs pushed with rapidity by the hind ones. The trotting horse should carry his head pretty high, and keep his body straight; for, if the haunches rise and fall alternately at every movement, and if the crupper rocks, the animal is too weak for this motion. To throw the fore-legs out is another fault: they ought always to be within the line of those behind; for the safest horses go wider behind than before; because horses of this kind are not so apt to cut their legs, are more agile in their movements, and can support greater fatigue in the field, or in long journeys, &c.

The spring of the hocks contributes as much to the motions of galloping as that of the loins. While the latter make an effort to elevate and push forward the anterior parts, the spring of the hocks breaks the stroke and softens the shock. Hence the more uniform and strong the spring of the hocks, the gallop is softer and more rapid.

Though walking, trotting, and galloping, be the natural and ordinary movements of horses, yet some of them have another natural motion, known by the name

name of ambling, or pacing, which is very different from the other three; and, though less quick than the hard trot or gallop, it appears, at first sight, to be extremely fatiguing to the animal. The foot of the horse, in this movement, grazes the surface still nearer than in walking, and each step is much longer. But, what is singular, to make a pace, the two legs of the same side part from the ground at the same time, the fore and hind leg, for example, of the right side, and then the two legs of the left side; so that each side of the body alternately want support, which greatly fatigues the animal, who is obliged to support a balance forced by the rapidity of a movement which is hardly elevated above the ground; for nothing but the rapidity of the motion, and the smallness of the elevation, could possibly prevent the creature from falling on his side. In the motion of pacing, as in that of trotting, there are only two beats. This movement, which is very laborious to the horse, and in which he ought not to be indulged except on smooth ground, is very easy to the rider; it has not the hardness of the trot, because the hind-leg moves along with the fore-one, and creates no resistance to the motion. We are told by connoisseurs, that horses which naturally amble never trot, and that they are much weaker than those which have no such movement. Colts, indeed, often assume this mode of moving, when forced to go quick, and when they have not strength enough to trot or to gallop; and even good horses, after being fatigued, or when they begin to decay, are apt, when pushed, to amble spontaneously. The amble may therefore be regarded as a motion occasioned by weakness or defect. But there are two other movements assumed spontaneously by weak or decayed horses, which are still more defective than that of the amble, and are known by the name of broken ambles. The one is a motion between walking and ambling, and the other between trotting and galloping. Both proceed from

great fatigue, or weakness in the loins, and are conspicuous in many of our hackney and post horses.

Of all quadrupeds, the horse possesses, along with grandeur of stature, the greatest elegance and proportion of parts. By comparing him with animals immediately above or below him, we find that the ass is ill made; that the head of a lion is too large; that the limbs of the ox are too slender and too short, in proportion to the size of his body; that the camel is deformed; and that the grosser animals, as the rhinoceros and elephant, may be considered as rude and shapeless masses. The great difference between the head of man and that of the quadrupeds, consists in the length of their jaws, which is the most ignoble of all characters. But, though the jaws of the horse be very long, he has not, like the ass, an air of imbecility, nor, like the ox, of stupidity. The regularity and proportion of the parts of his head give him a light and sprightly aspect, which is well supported by the beauty of his chest. He elevates his head, as if anxious to exalt himself above the condition of quadrupeds. In this noble attitude, he regards man face to face. His eyes are open and lively, his ears handsome and of a proper height, being neither too long, like those of the ass, nor too short, like those of the bull. His mane adorns his neck, and gives him the appearance of strength and of courage. His long bushy tail covers and terminates with advantage the extremity of his body. His tail, very different from the short tails of the deer, elephant, &c. and from the naked tails of the ass, camel, rhinoceros, &c. is formed of long thick hairs which seem to arise from his crupper, because the trunk from which they proceed is very short. He cannot, like the lion, elevate his tail, but, though pendulous, it becomes him better: and, as he can move it from side to side, it serves him to drive off the flies which incommode him; for, though his skin be very firm, and well garnished with close hair, it is extremely sensible.

The

The attitude of the head and neck contributes more than all the other parts of his body, to give him a graceful aspect. The superior part of the neck, from which the mane issues, should first rise in a strait line from the withers, and then, as it approaches the head, form a curve nearly similar to that of a swan's neck. The inferior part of the neck should have no curvature, but rise in a strait line from the poitrel, or breast, to the under jaw, with a small inclination forward. If it rose in a perpendicular direction, its symmetry and gracefulness would be diminished. The superior part of the neck should be thin, with little flesh near the mane, which ought to be garnished with long delicate hair. A fine neck should be long and elevated, but proportioned to the general size of the animal. When too long, the horse commonly throws back his head; and, when too short and fleshy, the head is heavy to the hand. The most advantageous position of the head is, when the front is perpendicular to the horizon.

The head of a horse should be thin and meagre, and not too long. The ears should be small, erect, but not too stiff, narrow, and placed on the upper part of the head, at a proper distance from each other. The front should be narrow and a little convex, the eye-pits, or hollows between the eyes and ears, well filled, and the eye-lids thin; the eyes should be pretty large and prominent, clear, lively, and full of fire; the pupil should be rather large; the under jaw a little thick, but not fleshy; the nose somewhat arched, the nostrils open and deep, and divided by a thin septum or partition. The mouth should be delicate and moderately split, lips thin, withers sharp and elevated, the shoulders flat, and not confined; the back equal, a little arched lengthwise, and raised on each side of the backbone, which ought to have the appearance of being sunk; the flanks should be short and full, the crupper round and plump, the haunches well furnished with

muscular flesh, the dock or fleshy part of the tail firm and thick, the thighs large and fleshy, the hock round before, broad on the sides, and tendinous behind; the shank thin before, and broad on the sides; the tendon (or tendo Achillis) prominent, strong, and well detached from the leg-bone, and the fetlock somewhat prominent, and garnished with a small tuft of long hair behind; the pasterns should be of a middling length, and pretty large; the coronet a little elevated; the hoof black, solid, and shining; the instep high, the quarters round, the heels broad, and a little prominent, the frog thin and small, and the sole thick and concave.

Few horses possess all these perfections. The eyes are subject to many faults, which it is often difficult to distinguish. In a sound eye, two or three foot-coloured spots appear through the cornea above the pupil; for, unless the cornea be clean and transparent, these spots cannot be seen. When the pupil is small, long, and narrow, or surrounded with a white circle, or when it is of a greenish-blue colour, the eye is unquestionably bad.

Without entering into a long detail, the following general remarks will enable the reader to form a judgment of the principal perfections and imperfections of a horse. The motion of the ears affords a tolerable criterion: when a horse walks, the point of his ears should incline forwards; when fatigued, his ears hang down; and, when angry, or of a malignant disposition, he points alternately one of his ears forwards, and another backwards. Every horse turns his ears to that side from which he hears any noise; and, when struck on the back or crupper, he turns his ears backward. Horses with hollow eyes, or with one eye smaller than the other, have generally a bad sight. Those whose mouths are dry have not such good constitutions as those that have moist mouths, and foam with the bit. The shoulders of a saddle-horse should be flat, supple, and not too fleshy. A draught-horse, on the contrary,

ought to have thick, round, fleshy, shoulders. If, however, the shoulders of a saddle-horse be too meagre, and the bones advance too much through the skin, it is an indication that his shoulders are not free, and that, of course, he will be unable to undergo much fatigue. Another defect of a saddle-horse is to have the poutrel, or breast, too prominent, and the fore-legs inclined or placed too far backward; because, in this case, he is subject to lean heavy upon the hand in galloping, and even to stumble and fall. The length of the legs should be proportioned to the stature of the horse. When the fore-legs are too long, he is not steady on his feet; and, when too short, he bears heavy on the hand. It has been remarked, that mares are more liable than horses to be low before, and that stone-horses have thicker necks than mares or geldings.

It is of great importance to know the age of a horse. The eye-pits of old horses are commonly hollow: but this mark is equivocal; for young horses begot by old stallions have likewise hollow eye-pits. The teeth afford the best criterion of the age of horses. The horse has, in all, forty teeth, viz. twenty-four grinders, four canine or tusks, and twelve fore-teeth. Mares have either no dog-teeth, or very short ones. The canine and fore teeth only afford indications of the age. Five days after birth, the fore-teeth begin to shoot. These first teeth are round, short, and not very solid; and they fall out at different times to be replaced by others. At two years and a half, the four middle fore-teeth fall out, two above and two below. The next year, other four are shed, one on each side of the first, which are now replaced. At four years and a half, other four fall out, always on each side of those which were formerly shed and replaced. These last four foal-teeth are succeeded by other four, which grow not near so quickly as the first eight. It is from these four, called corner-teeth, that the age of a horse is distinguished; and they are easily known, being always the third, both above and below,
reckoning

reckoning from the middle to the extremity of the jaw. They are hollow, and have a black mark in their cavities. At four and a half or five years, these teeth hardly rise above their gums, and their cavities are very perceptible. At six years and a half, the cavities begin to fill up, and the mark gradually diminishes till the animal is seven and a half or eight years, when the cavities are perfectly filled, and the mark totally effaced. After this period the age is attempted to be discovered by the tushes or canine teeth. These four teeth lie immediately adjacent to the other four above described. Neither the tushes nor grinders shed. At the age of three years and a half, the two tushes of the under jaw generally begin to shoot; the two of the upper jaw appear at the age of four, and, till six years be completed, they are very sharp. At ten years, the tushes of the upper jaw seem to be blunted, worn out, and long, because the gum retracts with age; and, the more this appearance takes place, the older is the horse. From ten to thirteen or fourteen years, there are hardly any marks by which the age may be discovered. Some hairs of the eye-brows, indeed, begin to grow white; but this mark is equally equivocal as that derived from the depth of the eye-pits; for it has been remarked, that horses begot by old stallions and old mares, have white hairs in the eye-brows at the age of nine or ten. The teeth of some horses are so hard, that they wear not by eating, and never lose the black mark. But these horses are easily known, because the cavities of their teeth are perfectly filled up, and their tushes are very long. The age of a horse may likewise be known, though with less precision, by the bars or ridges of the palate, which are effaced in proportion as he advances in years.

As it is oftentimes great advantage to know the technical terms employed by dealers and farriers, to express the external parts of a horse, it will be proper to enumerate them here, and to elucidate the whole
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by references to a copper-plate engraving of the figure of a horse.

A The two bones corresponding to the temples of a man, and called by the same name. B The eye-pits, or two cavities between the eye and the ear, above the eye-brows. C The vives. The parotid glands, situated between the ear and the locking of the under jaw. D The face or chanfrin. The fore part of the head from the eyes to the nostrils. E The rim of the nostrils. The cartilage which forms the circular aperture of the nostrils, and terminates them above and below. F Tip of the nose. The partition which divides the nostrils, terminating at the upper lip. G to H The bones of the lower jaw. H The chin. I The beard. Gatherers; the two fore-teeth. Middle-teeth; those adjoining to the gatherers. Corner-teeth; the last on each side. Tushes; the two canine teeth on each side, and in each jaw. Bars; the spaces between the cutting teeth and grinders, filled with ridges, which run across the palate. K The neck, which is bounded above by the mane, and below by the throat, extending from the shoulders to the head. L The tuft or toupet. That part of the mane which lies between the two ears, and hangs down on the front. M The withers. The place where the two shoulders approach each other between the neck and back. N The shoulders, extending from the withers M, to the top of the fore-hand, or fore-leg O. P The chest or breast. Q The back, reaching from the withers M, to the reins S. R The navel. The part between the back and reins; a very absurd term, as the navel is in the lower part of the belly. S The reins. This term is often used, though improperly, to express the whole spine of the horse. T The sides, which are formed and limited by the ribs. V The coffer. The hollow formed by the contour of the ribs. The name belly is given to the part extending from V to the flank. X The flanks. The extremity of the belly,

at the termination of the ribs, below the kidneys, and reaching to the haunch-bones. Y The haunch, formed, as in man, by the haunch-bone. Z The crupper, which is round, and reaches from the kidneys to the tail. The tail is distinguished by two parts, the hair and the rump. *a* The buttocks, are situated below the crupper and the origin of the tail, and extend to the place where the hind-leg joins the body. *b* The shoulder-blade. *c* The humerus. Both of these are included by horsemen under the name of shoulder. *d* The elbow. *e* The arm. *f* The knee, or joints situated below the arm, a term improperly applied to a horse, as it corresponds to the wrist in man. *g* The shank or canon; the second part of the fore-leg. It begins at the articulation of the knee, terminates at the fetlock joint *i*, and answers to the metacarpus in man. *h* The tendon, commonly called the back-sinew. *i* The fetlock joint. *k* The tuft of hair which surrounds a kind of soft horn situated behind the shank. *l* The pasterns. The part of the leg which extends from the fetlock joint to the hoof. *m* The coronet. The place where the hoof joins the leg, and is decorated with long hair falling down all around the hoof. *n* The hoof represents the nail in man; the fore-part of it *n* is called the toe; and the sides *o* the quarters. The hind-part of the hoof is a little raised, and divided into two parts, both included under the name heel: they extend to the middle of the under part of the foot, and uniting again under the sole, or bottom of the foot, form the frog. *p* The stifle, is properly the articulation of the knee, and contains the knee-pan. *q* The thigh. It extends from the stifle and extremity of the buttocks to the ham *r*, and answers to the leg in man. Accordingly, the horse's thigh has a fleshy part *s*, resembling the calf of a human leg. *t* The hock or ham, is the joint at the extremity of the thigh, and bends forwards. This articulation corresponds with the tarsus in man. The hinder-part of the



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The Horse?
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J. Goussier del.

the joint called the hock, is properly the heel. What is commonly called the great sinew, which arises from the point of the hock, and terminates in the foot, is a tendon, answering to the tendo Achillis inserted into the human heel. *u* The shank. *x* The pastern joint. *y* The pasterns. *z* The foot, as in the fore-leg. This explanation of the particular terms, will render the general ones more easy and simple. A horse is divided into three principal parts, the fore-hand, the body or carcase, and the hind-hand. The fore-hand includes the head, neck, withers, breast, and fore-legs. The body is composed of the back, kidneys, ribs, belly, and flanks. The hind-hand comprehends the rump, haunches, tail, buttocks, stifle, thighs, hocks, and the other parts of the hind-legs. By another mode of division, the horse is distinguished into four parts, the head, the body, and the fore and hind trains. The body is composed of the back, the kidneys, the belly, the ribs, and the flanks. The fore-train consists of the neck, the shoulders, the breast, and the fore-legs; and the hind-train, of the rump, the tail, the haunches, and the hind-legs.

At the age of three years the horse is in a condition to propagate; and the mares, like most other females, are still sooner ripe for this operation. But the foals produced from such early embraces are weakly, or ill-formed. The horse should never be admitted to the mare till he is four or four and a half; and even this period is too early, except for coarse or draught horses. When fine horses are wanted, the male should not be admitted to the mare before he is six years old; and Spanish stallions not till they be full seven. The mares may be one year younger: they generally come in season from the end of March to the end of June. But their chief ardour for the horse lasts not above fifteen days or three weeks; and, during this critical period, the mare should be admitted to the stallion: he ought to be found, vigorous, well-made, and of a good-breed.

To procure fine saddle-horses, foreign stallions, as Arabians, Turks, Barbs, and Andalusians, are preferable to all others. Next to these, well-bred British stallions are the best; because they originally sprung from those above mentioned, and are very little degenerated. Italian stallions, especially those of Naples, are extremely good. With mares of a proper size, they produce excellent horses for the saddle; and, with strong large mares, they produce good coach-horses. Neither ought the colour of stallions to be overlooked, as a fine black, grey, bay, sorrel, &c. All party-coloured, or ill-defined colours, ought to be banished from the stud, as well as every horse which has white extremities. Besides these external qualities, a stallion should be endowed with courage, tractability, and spirit; he should have agility, a sensible mouth, and sure limbs; his shoulders should be perfectly free, and his haunches supple; he should have a spring and elasticity in his whole body, especially in his hind-legs; and he ought to be trained and dressed in the riding-school. These precautions in the choice of a stallion are the more necessary, because it has been found by experience, that he communicates to his offspring almost all his good or bad qualities, whether natural or acquired. A horse naturally cross, skittish, restive, &c. produces foals of the same dispositions: and, as the defects of conformation and the vices of the humours are more certainly perpetuated than the qualities of the temper, one should reject from the stud every horse that is deformed or diseased, extremely vicious, glandered, broken-winded, frantic, &c.

In every climate the mare contributes less to the beauty of the offspring than the stallion; for many experiments and observations have been adduced to prove, that not only in horses, but in man, and every other animal, the male has more influence on the external form of the young than the female, and that, in every species, the male is the principal type of the
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race. In the common order of nature, it is not the males, but the females, which constitute the unity of the species; but this prevents not the male from being the true type of each species; and what is advanced concerning unity, extends only to the greater facility of representing the species possessed by the female, though she submits to the embraces of different males. From hence it appears, that, though the female seems to have more influence upon the specific character of the breed, she never improves it, the male alone enjoying the faculty of supporting the purity of the race, and of rendering it more perfect. It is however of great importance that mares for breed should be sound, tall, large, roomy in the trunk of the body, and good nurses. For elegant horses, Spanish and Italian mares are best; but, for draught-horses, those of England and Normandy are preferable. However, when the stallions are good, fine horses may be produced from mares of any country, provided they be well made and of a good breed; for, if the mares have sprung from a bad stallion, their offspring are generally defective.

And again, when the mare has been begot by a bad horse, it often happens, that though served by a good stallion, and handsome herself, her offspring, though beautiful and well made at first, gradually decline as they grow up; whilst other mares, sprung from a good race, produce foals, which, though they have an unpromising aspect when young, improve as they advance in years.

When the stallion is chosen, and the mares are assembled, another stone-horse should be allowed to tease them, for no other purpose but to discover those which are in season. Those that are not in proper condition repel his attacks. But, instead of allowing him to proceed with the mares which are in season, he is led off, and the true stallion is substituted in his place. This trial is chiefly useful for discovering the condition of such mares as have never produced; for

those which have produced are commonly in season nine days after their delivery, and may be safely covered on the tenth day. Nine days after, their condition may be tried by the above proof, and, if still in season, they should be covered a second time, and so on every ninth day, till their ardour abates, which happens a few days after conception. But, to conduct this matter properly, requires considerable attention and expence. The stud should be established on good ground, and its dimensions proportioned to the quantity of mares and stallions employed. This ground should be divided into several apartments, and well fenced with ditches and hedges. The impregnated mares, and those which are suckling their young, should have the richest pasture. Another enclosure, where the grass is less rich, should contain the uncovered mare, those that have not conceived, and the female foals; for a rich pasture makes them grow too fat, and weakens the generative faculty. Lastly, the young male foals and geldings should be confined to the driest and most rugged part of the ground, that, by ascending and descending the eminences, they may acquire a freedom in their limbs and shoulders. This last inclosure should be well fenced from that which contains the mares, to prevent the young horses from enervating themselves by premature efforts. If the field be sufficiently extensive, each of these inclosures should be divided into two, and grazed alternately by horses and oxen. This mode of grazing improves the pasture; for the ox repairs what is injured by the horse. Each park should likewise be furnished with a pond, which is better than a running water, and also with trees to shelter the animals from too much heat; but, to prevent accidents, all old stumps should be rooted out, and deep holes filled up. These pastures will afford sufficient nourishment to the stud during the summer; but, in winter, the mares and foals should be put into stables, and fed with hay, except in very fine weather, when they may
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be set out to pasture during the day. The stallions should always be kept in the stables, fed with a greater proportion of straw than of hay, and moderately exercised till the time of covering, which generally lasts from the beginning of April till the end of June. During this period, they should be fed plentifully, but with no other article than their ordinary food.

When the stallion is conducted to the mare, to augment his ardour, he should be well dressed. The mare should have the shoes taken off her hind-feet; for some of them are apt to kick at the approach of the stallion. One man holds the mare by the head, and two others lead the stallion by long reins. When in a proper situation, he should be assisted by the hand. The stallion sometimes quits the mare without consummating. If the trunk of his tail near the crupper vibrates before he descends, we may be certain that he has consummated; for this motion always accompanies emission. After consummation, the act should not be reiterated; but he ought to be carried back immediately to the stable, there to remain two days: for, though a horse might be able to cover every day during the season; yet, if only admitted once in two days, he is both more vigorous and more successful. During the first seven days, therefore, let him have four different mares, and, on the ninth, let him again cover the first mare, and so on as long as they continue in season. When one of the mares ceases to be ardent, another should be substituted in her place; and, as many are impregnated at the first, second, or third, time, a stallion, managed in this manner, may cover fifteen or eighteen mares, and produce ten or twelve foals, during the three months that these amours continue. Stallions throw out a vast profusion of seminal fluid; mares likewise emit, during the time they are in season; and, as soon as they are pregnant, these emissions cease. This fluid was called hippomanes by the Greeks; and of it they are said to have made love-potions,

potions, which rendered horses, in particular, frantic with desire. The hippomanes is totally different from the fluid found in the membranes that cover the foal, which was first discovered and described by M. Daubenton. The appearance of the hippomanes is the most certain mark of ardour in mares. This passion may likewise be discovered by the swelling of the under part of the vulva, and by the frequent neighing of the mares, who, at this period, have a strong desire of being approached by the horse. After a mare has been covered, she may be led to the pasture without any other precaution. The first foal is always more puny than the subsequent ones: to compensate this defect, a mare should be served, for the first time, with a large stallion. The differences in the figures of the horse and mare should be attended to, in order to correct the faults of the one by the perfection of the other; and no disproportioned conjunctions ought to be admitted, as of a small horse and a large mare, or of a large horse and a small mare; for the produce of such conjunctions will either be small or ill proportioned. In order to improve nature, we must advance by gradual steps: a plump but handsome horse, for example, may be admitted to a mare that is too gross, a small mare to a horse that is a little taller, a mare with a bad fore-hand to a horse with a fine head, neck, &c.

It has been remarked, that studs kept in dry light soils produce active, nimble, and vigorous, horses, with nervous limbs and strong hoofs; while those kept in moist ground, and in too rich pasturage, have generally large heavy heads, gross bodies, thick legs, bad hoofs, and broad feet. It is easy to perceive that these differences proceed from the varieties in climate and food. But the necessity of crossing the breed, to prevent the degeneration of horses, is more difficult to understand, and of more importance to be known.

There is in nature a general prototype of every species, upon which each individual is modelled, but which
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seems, in its actual production, to be depraved or improved by circumstances ; so that, with regard to certain qualities, there appears to be an unaccountable variation in the succession of individuals, and, at the same time, an admirable uniformity in the entire species. The first animal, the first horse, for example, has been the external and internal model, upon which all the horses that have existed, or shall exist, have been formed. But this model, of which we know only copies, has had, in communicating and multiplying its form, the power of adulterating or of improving itself. The original impression is preserved in each individual. But, among millions of individuals, not one exactly resembles another, nor, of course, the model from which they sprung. This difference, which shews that Nature is not absolute, but knows how to vary her works by infinite shades, is equally conspicuous in the human species, in all animals, and in all vegetables. What is singular, this model of the beautiful and the excellent, seems to be dispersed over every region of the earth, a portion of which resides in all climates, and always degenerates, unless united with another portion brought from a distance. In order, therefore, to obtain good grain, beautiful flowers, &c. the seeds must be changed, and never sown in the same soil that produced them. In the same manner, to have fine horses, dogs, &c. the males and females of different countries must have reciprocal intercourse. Without this precaution, all grain, flowers, and animals, degenerate, or rather receive an impression from the climate so strong as to deform and adulterate the species. This impression remains, but is disfigured by every feature that is not essential. By mixing races, on the contrary, or by crossing the breed of different climates, beauty of form, and every other useful quality, are brought to perfection : nature recovers her spring, and exhibits her best productions.

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I mean not to enter into a detail of the causes of these effects ; but shall confine myself to such conjectures as most readily present themselves. We know by experience, that animals or vegetables, transported from distant climates, often degenerate, and sometimes come to perfection, in a few generations. This effect, it is obvious, is produced by difference of climate and of food. The operation of these two causes must, in process of time, render such animals exempt from, or susceptible of, certain affections, or certain diseases. Their temperament must suffer a gradual change. Of course, their form, which partly depends on food and the qualities of the humours, must also, in the course of generations, suffer an alteration. This change, it is true, is hardly perceptible in the first generation ; because the male and female, which we supposed to be the origin of this race, being fully grown, had received their form and structure before they were transported. The new climate and new food may change their temperament ; but cannot have influence upon the solid and organic parts sufficient to alter their form. The first generation of these animals, therefore, will not suffer any change in their figure ; nor, at the instant of birth, will the stock be vitiated or depraved. But the young and tender stranger will feel a much stronger impression from the climate than its father or mother experienced. The operation of food will likewise be so great as to influence the organic parts during the time of the animal's growth : a change will, of course, be introduced into its form ; the seeds of imperfection will be sown, and appear in a sensible manner, in the second generation, which will not only labour under its own proper defects, or those proceeding from its growth and nourishment, but inherit all the vices of the second stock. Lastly, the imperfections and deformities transmitted to the third generation, being combined with the influence of the climate and food during the growth of the animal, will become so great as to obliterate entirely

tirely the characters of the original stock. Hence, in a few generations, animals transported into a climate different from their own, lose all their distinctive qualities, and acquire those peculiar to the country they are obliged to inhabit. In France, English, Spanish, and Barbary, horses, when the breed is not crossed, become French horses, sometimes in the second generation, and always in the third. Instead of preserving the breed distinct, therefore, it is necessary to cross it every generation, by admitting Spanish, English, and Barbary, horses, to mares of the country. It is singular, that this renewing of the race, which is only partial, produces better effects than if it were complete. This may easily be conceived, if we attend to the compensation of defects which necessarily happens, when males and females of different countries are allowed to intermix. Every climate, by its influence, joined to that of the food, gives a certain conformation of parts, which errs either by excess or defect. When a warm climate produces redundancies in particular parts, a cold climate gives rise to deficiencies in the same parts. Hence, when animals of opposite climates intermix, an exact compensation is effected. As the most perfect work of Nature is that in which there are fewest defects, and as the most perfect forms are those which have the fewest deformities, the production of two animals, whose faults exactly compensate each other, will be the most perfect of this kind. Now, this compensation being always completest, when animals of remote, or rather of opposite, climates, are joined, the compound resulting from the mixture is more or less perfect, in proportion as the excess or defects in the constitution of the father are opposed to those peculiar to the mother.

Though the common season of mares is from the beginning of April to the end of June; yet the ardour of some not frequently appears at a more early period. An ardour so premature should be repressed; because

the foal would be brought forth in cold weather, and, consequently, suffer both from the intemperance of the season and from bad milk. If this ardour appears not till after the month of June, it should likewise be repressed; because the foal would be produced in summer, and would not acquire strength enough to resist the rigours of winter.

When the impregnated mares begin to grow heavy, they should be separated from those which are not in that condition, to prevent them from receiving any injury. Their period of gestation is generally eleven months and some days. They bring forth in a standing posture, while most other quadrupeds lie down. When the delivery is difficult, they require the assistance of man; and, when the foal is dead, it is extracted with cords. As in most animals, the colt first presents its head. In escaping from the uterus it breaks the membranes, and the waters flow abundantly. The waters are accompanied with several solid masses, formed by the sediment of the liquor of the allantoides. Those masses, called hippomanes by the ancients, are not, as they supposed, pieces of flesh attached to the head of the foal. They are, on the contrary, separated from the foal by the amnios. Immediately after birth, the mare licks the foal: but she never touches the hippomanes, though the ancients assert that she instantly devours it.

It is usual to cover a mare nine days after she has foaled, that no time may be lost, and that every possible profit may be derived from the stud. It is certain, however, that, her strength being divided, she is unable to nourish both a foal and a foetus so successfully as if she had but one at a time. To procure excellent horses, therefore, the mares should be covered but once in two years, which would make them live longer, and hold more surely: for, in ordinary studs, it is well if a half or two-thirds bring forth in a year. Mares, though impregnated, will sometimes suffer to be covered; and
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yet there are no instances of superfoetation. In general, they are capable of producing to the age of fourteen or fifteen years, and the most vigorous produce not after eighteen. Stallions, when properly managed, retain their prolific powers to the age of twenty years, and sometimes longer: and, as in man, those which begin too early are soonest extinguished; for the large horses, which come sooner to maturity than fine ones, and are employed as stallions at the age of four years, are commonly useless at fifteen. The life of horses, as in every other species of animals, is proportioned to the time of their growth. The horse, whose growth is accomplished in four years, can live six or seven times as much, i. e. twenty-five or thirty. The exceptions to this rule are so few, that no conclusions can be drawn from them: and, as large horses come sooner to maturity than the delicate ones, their lives are likewise shorter, and they are generally superannuated in fifteen years.

In horses, and most other quadrupeds, the growth of the posterior parts seems at first to be greater than that of the anterior. But, in man, the growth of the inferior parts is at first less than that of the superior: for the thighs and legs of infants are, in proportion to their bodies, much less than those of adults. The hind-legs of the foal, on the contrary, are so long, that they can reach his head, which is by no means the case after he acquires his full growth. But this difference proceeds not so much from the inequality in the total growth of the anterior and posterior parts, as from the unequal lengths of the fore and hind feet, which uniformly hold through all nature, and is most remarkable in quadrupeds. Man's feet are larger, and likewise sooner formed, than his hands. The greatest part of the horse's hind-leg is only a foot, being composed of bones corresponding to the tarsus, metatarsus, &c. It is not, therefore, surprising, that his foot should sooner be expanded than the fore-leg, the inferior part of which represents the hand, being composed of

the bones of the carpus, metacarpus, &c. This difference is easily perceived immediately after a foal is brought forth. The fore-legs, when compared with the hind-ones, are proportionably much shorter than they are to be afterwards. Besides, the thickness which the body acquires, though independent of the proportional growth in length, increases the distance between the hind-feet and the head, and, consequently, prevents the animal, when full grown, from reaching the head.

The Arabian horses are the most beautiful. They are larger, more fleshy, and handsomer, than the Barbs. Barbary horses are more common. They have a long fine neck, not overcharged with hair, and well divided from the withers. The head is small and beautiful. The ears are handsome and properly placed, the shoulders are light and flat. The withers are thin and well raised. The back is strait and short. The flank and sides are round, and the belly not too large. The haunch-bones are properly concealed; the crupper is somewhat long, and the tail placed rather high. The thigh is well formed, and rarely flat. The limbs are fine, handsome, and not hairy. The tendon is prominent; and the foot well made; but the pastern is often long. They are of all colours, but generally greyish. In their movements, they are apt to be careless, and require to be checked. They are swift, nervous, light, and make fine hunters. These horses appear to be the most proper for improving the breed. Their stature, however, is not so large as could be wished. It is however confirmed by repeated experience, that in England they produce foals which grow much larger than themselves. Of the Barbary horses, those of the kingdom of Morocco are said to be the best, and next to these are the Barbs from the mountains. The horses of Mauritania are of an inferior quality, as well as those of Turkey, Persia, and Armenia. All the horses of warm climates have smoother and shorter hair than those of other countries. The Turkish horses are not so well proportioned as the Barbs. Their necks are generally slender,

slender, their bodies long, and their legs too thin. They are however excellent travellers, and have a long wind. It will not be thought surprising, that the bones of animals are harder in warm than cold climates. It is for this reason that, though they have thinner shank bones than the horses of this country, their limbs are stronger.

The Spanish horses, which hold the second rank after the Barbs, have a long, thick, hairy, neck. The head is rather gross and fleshy. The ears are long, but well situated. The eyes are full of fire, and their air is bold and noble. The shoulders are thick, and the chest broad. The reins are often a little low, the sides round, and the belly frequently too big. The crupper is generally round and large, though in some it is rather long. The limbs are fine, and not hairy; the tendons of the legs are prominent; the pastern is sometimes too long, like that of the Barb; the foot is rather long, like that of the mule; and the heel is often too high. The Spanish horses of the best race are thick, plump, and of a low stature: their movements are likewise quick and supple; and they are remarkable for spirit and boldness. Their colour is commonly black, or a dark chestnut, though they are to be found of all colours. Their noses and limbs are seldom white: these marks are disliked by the Spaniards, who never breed from those which have such characters. Their favourite mark is a star in the forehead; and they esteem a horse without a single spot as much as we despise him. Both of these prejudices, though opposite to each other, are perhaps equally ill-founded; for we find excellent horses with all kinds of marks, or with no marks whatever. These little differences in the coats of horses seem to have no dependence on their dispositions or internal constitution, but take their rise from external circumstances; for a slight wound on the skin produces a white spot. Besides; Spanish horses, of whatever kind, are all marked in the thigh with the signature of the stud from which they were taken: they

they are generally of a small stature, though some of them are from fourteen to fifteen hands high. Those of Upper Andalusia, are said to be the best, though their heads be often too long: but their other rare and excellent qualities make this fault insignificant. They are obedient, courageous, graceful, spirited, and more docile than the Barbs. For these talents they are preferred to all horses of the world, for the purposes of war, of pomp, or of the menage.

The finest horses in this country, resemble those of Arabia and Barbary, from which they originally sprung: their heads are handsome, and their ears in general well situated. By the ears alone, an English horse may be distinguished from a Barb, being longer; but the great difference lies in their stature; for the English horses are much larger and plumper: they are generally strong, vigorous, hardy, capable of enduring much fatigue, and excellent either for hunting or the course.

The English race-horses of this breed are extremely fleet, and are managed with great dexterity by their riders. In the annals of Newmarket may be found instances of some of them that have literally outstripped the wind. Childers was an amazing instance of rapidity; his speed having been more than once exerted equal to 82 1-half feet in a second of time, which is near a mile in a minute. Eclipse was also, among many others, a surprising instance of the happy combination of superior strength, courage, and fleetness, united in the same animal.

The present cavalry of England supports its ancient glory. It was eminent in the earliest times: our scythed chariots, and the activity and good discipline of our horses, even struck terror into Cæsar's legions: and the Britons, as soon as they became civilized enough to coin, took care to represent on their money the animal for which they were so celebrated. It is now impossible to trace out this species; for those which exist among the indigenæ of Great Britain, such as the
little

little horses of Wales and Cornwall, the hobbies of Ireland, and the shelties of Scotland, though admirably well adapted to the uses of those countries, could never have been equal to the work of war: but probably we had even then a larger and stronger breed in the more fertile and luxuriant parts of the island.

The English were ever attentive to an exact culture of these animals: and in very early times set a high value on their breed. The esteem that our horses were held in by foreigners so long ago as the reign of Athelstan, may be collected from a law of that monarch, prohibiting their exportation, except they were designed as presents. These must have been the native kind, or the prohibition would have been needless; for our commerce was at that time too limited to receive improvement from any but the German kind, to which country their own breed could be of no value. But, when our intercourse with the other parts of Europe was enlarged, we soon laid hold of the advantages this gave of improving our breed. Roger de Belesme earl of Shrewsbury, is the first that is on record: he introduced the Spanish stallions into his estate in Pow-island, from which that part of Wales was for many ages celebrated for a swift and generous race of horses. Giraldus Cambrensis, who lived in the reign of Henry II. takes notice of it; and Michael Drayton, cotemporary with Shakespear, sings their excellence in the sixth part of his *Polyolbion*. This kind was probably destined to mount our gallant nobility, or courteous knights, for feat of chivalry, in the generous contests of the tilt and tournament. From these sprung, to speak the language of the times, the flower of coursers, whose elegant form added charms to the rider, and whose activity and managed dexterity gained him the palm in that field of gallantry and romantic honour.

The Italian horses were formerly much handsomer than they are now; because, for some time past, the breed has been neglected. However, the Neapolitan horses

horses are excellent for carriages. But, in general, they have large heads and thick necks; they are also untractable, and, of course, not easily managed. These defects are compensated by the stateliness of their form, by their high spirit, and by the gracefulness of their motions.

The Danish horses, both on account of size and beauty, are preferred to all others for carriages. Some of them are perfect models; but their number is small: for most of them are not very regularly formed, having thick necks, gross shoulders, backs too long and too low, and cruppers too narrow in proportion to the thickness of their fore-parts. But they are all graceful in their movements; and, in general, they are excellent for war and pomp: they are of all colours; but the tiger-spotted horses are peculiar to Denmark.

Germany produces very fine horses: but, though generally bred from Barbary, Turkish, Spanish, and Italian, horses, most of them are heavy and short-winded; and therefore ill qualified for hunting or coursing. The horses of Hungary and Transylvania, on the contrary, are light and nimble. To prevent their neighing in time of war, and also, it is said, to improve their wind, the Hungarians slit the nostrils of their horses. It is remarked of the Hungarian, Croatian, and Polish, horses, that they are noted for retaining what is called the mark in their teeth till they be very old.

Having described those horses with which we are best acquainted, we shall now give the relation of travellers concerning foreign horses, of which we have little knowledge. There are good horses in all the islands of the Archipelago. Among the ancients, the horses of Crete were in high estimation for agility and swiftness. However, horses are now little used in that island, on account of the ruggedness of the country, which is every where mountainous and full of inequalities. The best horses in these islands, and even in
Barbary,

Barbary, are of the Arabian race. The native horses of the kingdom of Morocco are much smaller than those of Arabia, but very nimble and vigorous. Mr. Shaw alleges, that the breed of Egypt and of Tingitania is superior to those of the neighbouring countries; and yet, more than a century ago, excellent horses were found throughout all Barbary: these Barbary horses, he says, never stumble; and they stand still when the rider dismounts, or drops the bridle. They walk very fast, and gallop with great rapidity; but they are never allowed to trot or amble, these movements being considered by the natives as rude and vulgar. He adds, that the Egyptian horses are superior to all others both in stature and beauty. But these Egyptian, as well as most of the horses of Barbary, sprung originally from the Arabians, which are unquestionably the handsomest horses in the world.

According to Marmol, the Arabian horses are descended from the wild horses in the deserts of Arabia, of which studs were formed very anciently, and which multiplied so greatly, as to spread over all Asia and Africa: they are so swift as to out-run the ostrich. The Arabs of the desert and the people of Lybia rear numbers of these horses for the chase: they never use them either in war, or for travelling: they pasture them as long as the grass remains, and, when it fails, they feed them with dates and camel's milk, which makes them nervous, light, and meagre. They catch the wild horses in snares, and, when young, they eat their flesh, which they esteem as very delicate food. These wild horses are small, and commonly of an ash-colour, though some of them are white; and the hair of the mane and tail is short and crisped. Curious relations, concerning the Arabian horses, are given by other travellers, of which we shall only mention some of the principal facts.

There is not an Arabian, however poor, who has not his horses. The Arabs generally ride on mares,

having learned from experience, that mares endure fatigue, hunger, and thirst, better than horses. These mares are so gentle, that, though numbers of them are often left together for whole days, they never strike or do each other the smallest injury. The Turks, on the contrary, are not fond of mares; but they purchase from the Arabs those horses which they intend not to use as stallions. The Arabs preserve with great care, and for an amazing length of time, the races of their horses: they know all their alliances and genealogies; and they distinguish their races into three different classes: the first, which are of a pure and ancient race on both sides, they call nobles; the second are likewise of an ancient race, but have been degraded by vulgar alliances; and the third consist of their common horses. The latter sell at a low price: but those of the first class, and even of the second, among which some individuals are not inferior to the nobles, are excessively dear. Mares of the noble class are never permitted to be covered but by horses of the same quality. The Arabs, by long experience, know all the races of their horses, as well as those of their neighbours. They know their names, surnames, colours, peculiar marks, &c. When a family have no noble stallions, they borrow one of a neighbour to cover their mares, which is performed in presence of witnesses, who give an attestation of it, signed and sealed, before the secretary of the emir, or some other public person. This attestation contains the name of the horse and mare, and a complete history of their pedigrees. When the mare has foaled, witnesses are again called, and another attestation is made, including a description of the foal, and the day of its birth. These attestations enhance the value of their horses, and they are always delivered to the purchasers. The smallest mares of the first class are worth five hundred crowns; and many of them sell at one thousand crowns; and even higher prices are sometimes given. We shall here present the reader
with

with an original attestation of the pedigree of an Arabian horse, some of which, M. D'Arvieux says, have been preserved for above five hundred years in the public records. "Taken before Abdorraman kadi of Acca. The occasion of this present writing or instrument is, that, at Acca, in the house of Badi, legal-established judge, appeared in court Thomas Usgate the English consul, and with him Sheikh Morad Ebn al Hajj Abdollah, sheikh of the county of Safad; and the said consul desired, from the aforesaid sheikh, proof of the race of the grey horse which he bought of him, and he affirmed to be Monaki Shaduhi; (these are the names the two breeds of Arab horses which are reckoned pure and true, and those which are of both these breeds by father and mother, are the most noble and free from bastardy:) but he was not satisfied with this, but desired the testimony of the Arabs who bred the horse, and knew how he came to Shiekh Morad; whereupon there appeared certain Arabs of repute, whose names are undermentioned, who testified and declared, that the grey horse which the consul formerly bought of Sheikh Morad, is monaki shaduhi, of the pure race of horses, purer than milk; and that the beginning of the affair was, that Sheikh Saleh sheikh of Alfabal, bought him of the Arabs, of the tribe of al Mohammadat, and Sheikh Saleh sold him to Sheikh Morad Ebn al Hajj Abdollah sheikh of Safad, and Sheikh Morad sold him to the consul aforesaid; when these appeared to us, and the contents were known, the said gentleman desired a certificate thereof, and testimony of the witnesses, whereupon he wrote him this certificate, for him to keep as a proof thereof. Dated Friday 28 of the latter Rabi in the year 1135." Witnesses,

Sheikh Jumat al Falibau of the Arabs
of al Mohammadat.

Ali Ebn Taleb al Kaabi.

Ibrahim his brother.

Mohammed al Edrah sheikh Alfarifat.

Khamis al Kaahi.

As the Arabs live in tents, these tents serve them likewise for stables. The mare and her foal, the husband and his wife and children, sleep together promiscuously. The infants often lie on the body, or on the neck of the mare or foal, without receiving any injury from these animals, which seem afraid to move, lest they should hurt the children. These mares are so accustomed to society, that they submit to every kind of familiarity. The Arabs never beat their mares; but treat them gently, and talk and reason with them. They are so careful as to allow them always to walk, and never spur them, unless the occasion be very urgent. Hence, whenever the creatures perceive the rider's heel make an approach on their sides, they instantly set off with incredible swiftness, and leap hedges and ditches as nimbly as stags. If their rider chances to fall, they are so well trained, that they stop short, even in the most rapid gallop. All the Arabian horses are of a middle stature, very easy in their carriage, and rather meagre than fat. They are dressed every morning and evening with so much care, that not a spot of dirt is left on their skin; and their legs, mane, and tail, are washed. Their tails are allowed to grow long; and the comb is seldom used, to prevent the hair from being broken. During the day, they are not permitted to eat; but are watered twice or thrice. At sunset, a bag, containing about half a bushel of barley, is passed over their heads, and fastened to the neck. This bag is not removed till next morning, when the barley is entirely consumed. In the month of March, when the grass is good, they are turned out to pasture: this is also the season in which the mares are covered; and, on these occasions, water is employed in the same manner as in other countries. After the spring is past, the horses are taken from the pasture; and, during the rest of the year, they are allowed neither grass nor hay, and rarely straw, barley being their only food. At the age of a year or ten months, the Arabians cut the manes
of

of their foals, with a view to make them grow long and bushy. When two years, or two years and a half, old, they are mounted, having never, before that period, been either saddled or bridled. Every day, from morning to night, all the Arabian horses stand saddled at the tent-doors.

This race of horses is spread over all Barbary; and the great men among the Moors, and even among the negroes along the rivers Gambia and Senegal, have Arabian horses of great beauty. Instead of barley or oats, they are fed with maize, reduced to a powder, which is mixed with milk, when they require to be fattened. In this warm climate they are allowed little water. On the other hand, the Arabian horses are dispersed over Egypt, Turkey, and perhaps Persia, where very considerable studs were formerly kept. Marc Paul mentions one of these studs which contained ten thousand white mares; and he says, that in the province of Balascia, there is a vast number of large nimble horses, with hoofs so hard as to require no shoes.

In Persia, the horses are exposed night and day to the open air. But, to protect them from the injuries of the weather, from damp vapours, and from rain, they are covered, especially in winter, with cloths; and sometimes an additional covering is added, which is made of hair, and very thick. A spot of dry level ground is prepared for them, which is greater or smaller according to their number, and kept extremely clean. Here they are all tied to a long rope, which is well stretched, and firmly fixed at each end to two iron rods stuck in the earth. Their halters, however, are sufficiently free to allow them to move with ease. To prevent them from hurting each other, their hind-legs are tied with a rope, which has iron buckles at each extremity; these are brought about to the fore-part of the horses, and fastened to the ground by pegs; but loose enough to allow them to lie down or to rise at their pleasure. When put into the stables, they are

managed in the same manner. Xenophon informs us, that this practice was observed in his days; and it is alleged, that, by this means, the animals were rendered more gentle and tractable, and less peevish, among themselves; qualities extremely useful in war, when vicious horses, tied up in squadrons, often injure one another. For litter, the Persians use only sand or dry dust, upon which their horses lie down and sleep as well as if it were straw. In other countries, as the Mogul empire, &c. the horses are littered with their own dung, well dried and reduced to a powder. The eastern horses are never allowed to eat from the ground, or even from a rack; but are served with barley and cut straw in pocks tied to their heads; for in these climates no hay is made, nor do the natives cultivate oats. In spring, the horses are fed with grass or green barley, and great care is taken to give them as much only as is barely necessary; for too much nourishment makes their legs swell, and soon renders them useless. These horses, though ridden without bridle or stirrups, are easily managed. They carry their heads very high, by means of a simple snaffle, and run with great rapidity and sureness upon the worst roads. The whip and spur are very seldom employed. The latter, when used, consists only of a single point fixed to the heel of the boot. Their common whips are made of small strips of parchment knotted and twisted. A few lashes with this whip are sufficient for every purpose of the rider.

Horses are so numerous in Persia, that, though excellent, they sell cheap. Some of them are very tall and heavy; but all of them are more remarkable for strength than for gracefulness and beauty. For easy travelling, the Persians use pacing horses, which are taught this motion by tying the fore-foot to the hind-foot on the same side: when young, their nostrils are slit, from a notion that it makes them breathe more freely. These horses travel so well, that they perform

form with ease a journey of eight leagues without stopping.

But Arabia, Barbary, and Persia, are not the only climates which produce good and handsome horses. Even in the coldest countries, if not too moist, these animals succeed better than in very warm climates. In Iceland, where the cold is excessive, and where often no other food can be had than dried fishes, the horses, though small, are extremely vigorous; some of them indeed are so diminutive as to be fit for carrying children only. Besides, they are so plentiful in this island, that the shepherds tend their flocks on horseback. Their number is not expensive; for their food costs almost nothing. Such as the owners can apply to no immediate use, they mark, and turn out to the mountains. There they soon become wild; and, when wanted, are hunted in troops, and caught with long ropes. When the mares foal in the mountains, the proprietors put their peculiar marks on the young, and leave them there for three years. Those horses which are brought up in the mountains, are generally more handsome, bold, and fleet, than those reared in stables.

The Norwegian horses are likewise small, but well proportioned. Most of them are yellow, with a black line running the whole length of the back. Some of them are of a chestnut, and others of an iron-grey colour. These horses are very sure footed, travel with great caution through the rough paths of the mountains, and slide down steep declivities, by bringing their hind-feet under their bellies. They defend themselves against the assaults of the bear. When a stallion, in company with mares or foals, perceives this voracious animal, he makes them stay behind, approaches, and boldly attacks the enemy, whom he beats with his fore-feet, and generally kills. But, if the horses attempt to defend themselves by striking with their hind-feet, they are infallibly gone; for the bear leaps upon
their

their backs, where he sticks with such force that he suffocates them in a short time.

The horses of Nordland never exceed four feet and a half in height. The nearer we approach to the pole, we find that horses become smaller and weaker. Those of West Nordland are of a singular form. They have large heads and eyes, short necks, large poytreils, narrow withers, long thick shoulders, short loins; the upper part of their legs is long, and the under short and naked; their hoofs are small and hard; their tails and manes are large and bushy; and their feet are small, but sure, and never defended with shoes. These horses are good, seldom restive or stubborn, and climb with patience the highest mountains. The pasture in Nordland is so excellent, that, when horses are brought from thence to Stockholm, they seldom remain above a year without losing their flesh and their vigour. On the contrary, when horses are carried from more northern countries to Nordland, though sickly for the first year, they recover their strength.

Excess of heat or of cold seems to be equally hostile to the stature of horses. The Japanese horses are generally small, though some of them are of a tolerable size. The latter probably come from the mountains of that country. The same remark applies to the horses of China. We are assured, however, that those of Tonquin are nervous, of a good size, gentle, and easily trained to any kind of exercise.

It is well known, that horses bred in dry warm climates degenerate, and even cannot live, in moist countries, however warm. But they succeed very well in all the mountainous countries of our continent, from Arabia to Denmark and Tartary, and, in America, from New Spain to the land of Magellan. It is, therefore, neither heat nor cold, but moisture alone, that is noxious to these animals.

There were no horses in America when it was discovered. But, in less than two centuries after a small
number

number of them had been transported thither from Europe, they multiplied so prodigiously, especially in Chili, that they sold at very low prices. Frezier remarks, that this great increase was still more surprising, because the Indians eat horses, and kill many of them by fatigue and bad management. The horses carried by the Europeans to the most eastern parts of our continent, as the Philippine islands, have likewise multiplied exceedingly.

In the Ukraine, and among the Cossacks along the river Don, the horses live wild in the fields and forests. In that large and thinly-peopled country comprehended between the Don and Nieper, the horses go in troops of three, four, or five, hundred, and have no shelter even when the ground is covered with snow, which they remove with their fore-feet in quest of food. These troops are guarded by two or three men on horseback; and it is only in severe winters that they are lodged for a few days in the villages, which, in this country are very distant from each other. These troops of horses give rise to some remarks, which seem to prove that men are not the only animals that live in society, and obey, by compact, the commands of one of their own number. Each of these troops have a chief whom the individuals implicitly obey; he directs their course, and makes them proceed or stop at pleasure. This chief likewise gives orders for the necessary arrangements and motions, when the troop is attacked by robbers or by wolves. He is extremely vigilant and alert: he frequently runs round the troop; and, when he finds any horses out of their rank, or lagging behind, he gives them a push with his shoulder, and obliges them to take their proper stations. These animals, without being mounted or conducted by men, march nearly in as good order as our trained cavalry. Though at perfect liberty, they pasture in files and brigades, and form different companies, without ever mixing or separating. The chief occupies this im-

portant and fatiguing office for four or five years. When he becomes weaker and less active, another horse, ambitious of command, and who feels his own strength, springs out from the troop, attacks the old chief, who, if not vanquished, keeps his command; but, if beat, enters with shame into the common herd; and the conqueror takes the lead, is recognised as sovereign, and obeyed by the whole troop.

In Finland, when the snows are dissolved in the month of May, the horses depart from their masters, and go into certain districts of the forests, as if they had previously fixed a rendezvous. There they form different troops, which never separate or intermix. Each troop takes a different district of the forest for pasturing. To this territory they confine themselves, and never encroach on the lands belonging to other troops. When the grass is exhausted, they decamp, and take possession of a fresh pasturage in the same order as before. The police of their society is so well regulated, and their marches so uniform, that their owners always know where to find their horses, when they have occasion for them; and those which are carried off, after having performed their task, return of their own accord to their companions in the woods. In the month of September, when the weather turns bad, they quit the forest, march home in troops, and each takes possession of his own stable.

These horses are small, but good and spirited, without being vicious. Though generally very docile, some of them resist, when their owners offer to take them, or to yoke them in carriages. When they return from the forests, they are fat and in fine order. But the perpetual labour they undergo during the winter, and the small quantity of food they receive, soon make them lose their flesh. They roll on the snow as other horses do on the grass. They pass the night indifferently, either in the court-yard or in the stable, even during the most violent frosts.

These

These horses, which live in troops, and are often removed from the dominion of man, form the link or shade between domestic and wild horses. Of the latter there are some in the island of St. Helena, which, after being transported thither from Europe, became so savage and ferocious, that, rather than suffer themselves to be taken, they would leap over the highest precipices into the sea. In the environs of Nippes, some of them are not larger than asses; but they are rounder, and well proportioned. They are vivacious, indefatigable, and possess a strength and dexterity beyond what could be expected. In Saint Domingo, the horses are of a middle stature, and much esteemed. Numbers of them are taken with snares and ropes; but most of these continue to be extremely restive and skittish. There are also horses in Virginia, which, though sprung from the domestic kind, have become so ferocious in the woods, that it is difficult to approach them, and, when taken, they belong to the person who apprehends them. They are commonly so stubborn that it is not easy to tame them. In Tartary, and particularly in the country between Urgenz and the Caspian sea, birds of prey are employed in hunting wild horses. These birds are trained to seize the horse by the neck and head, who fatigues himself by running, but is unable to disengage himself from his tormentor. The wild horses in the country of the Mongous and Kakas Tartars, differ not from those which are tame. They are found in great numbers upon the western coast; and some appear in the country of the Kakas which borders on the Harni. These wild horses are so swift, that they often escape the arrows of the most dexterous hunters. They march in numerous troops; and, when they chance to meet with tamed horses, they surround them and oblige them to join their company. In Congo, considerable numbers of wild horses are still to be found. They are sometimes seen also in the environs of the Cape of Good

Hope; but they are seldom taken, because the inhabitants prefer the horses transported from Persia.

If we consult the ancients as to the qualities of horses in different countries, we shall find, that the Greek horses, and especially those of Thessaly and Epirus, were in high estimation, and were excellent for the purposes of war; that those of Achaia were the largest then known; that the handsomest came from Egypt, where they were very numerous; that, in Ethiopia, on account of the great heat of the climate, the horses did not thrive; that Arabia and Africa furnished the handsomest, lightest, and best, horses, either for travelling or for the course; that those of Italy, and particularly of Apulia, were likewise very good; that Sicily, Cappadocia, Syria, Armenia, Media, and Persia, produced excellent horses, which were remarkable for lightness and fleetness; that those of Sardinia and Corsica were small, but bold and vivacious; that the horses of Spain resembled those of Parthia, and excelled in war; that, in Transylvania and Walachia, there were swift horses, with light heads, long manes, which hang down to the ground, and bushy tails; that the Danish horses were handsome, and fine leapers; that those of Scandinavia were small, but well-formed, and very agile; that the horses of Flanders were remarkable for strength; that the Gauls furnished the Romans with good horses for the purposes of riding and carrying burthens; that the German horses were ill-formed, and so vicious, that no use was made of them; that the horses of Switzerland were numerous, and useful in war; that those of Hungary were also very good; and, lastly, that the Indian horses were small and very feeble.

From all these facts, it is apparent, that the Arabian horses have always been, and still are, the best horses of the world, both for beauty and goodness; that from them, either directly or by the mediation of the Barbs, are derived the finest horses in Europe, in Africa, and in

in Asia; that Arabia, is, perhaps, not only the original climate of horses, but the best suited to their constitution; since, instead of crossing the breed by foreign horses, the natives anxiously preserve the purity of their own race; that, at least, if Arabia be not best climate for horses, the Arabs have produced the same effect, by the scrupulous and perpetual attention they have paid towards ennobling the race, and never permitting individuals to mix which were not the most handsome, and of the finest quality; and that, by the same attention, continued for ages, they have improved the species far beyond what nature would have performed in the most favourable climate. It may still farther be concluded, that climates rather warm than cold, and above all, dry countries, are best adapted to the nature of horses; that, in general, the small are better than the large horses; that care is equally necessary to them as food; that, by familiarity and caresses, we procure more advantage from them, than by force and chastisement; that the horses of warm countries have their bones, hoofs, and muscles, more firm and compact than those of cold climates; that, though heat is more conformable to the nature of these animals than cold, yet excessive heat is exceedingly hurtful to them; that excessive cold is not less injurious; and, in fine, that their constitution and dispositions depend almost entirely upon climate, food, care, and education.

The practice of gelding horses, so generally diffused over Europe, is unknown in Persia, Arabia, and many other parts of the east. This operation greatly diminishes their strength, courage, sprightliness, &c. but it endows them with gentleness, tranquillity, and docility. In performing it, the animal is thrown on his back, by means of ropes fixed to his legs; the scrotum is opened with a sharp knife; and the testes, with their vessels, and the ligaments which support them, are removed. The wound is then closed up; and the patient is bathed twice a-day with cold water. His food, during

this period, consists of bran drenched in water, with a view to cool him. The operation should be performed in spring or autumn, much heat or much cold being equally dangerous. With regard to the age at which it should be executed, the practice differs in different places. In some countries horses are gelded at the age of a year or eighteen months, or as soon as the testes are very apparent without the body. But the most general and most rational custom is to delay the operation till the age of two or three years; because when protracted thus long, the animal retains more of the qualities peculiar to the male sex. Pliny says, that, if a horse be gelded before he loses his milk-teeth, they never shed. But I know, from repeated observation, that this remark is false. The ancients, it is probable, were led into this error, by an analogy drawn from the stag, roebuck, &c. for the horns of these animals never fall after castration. Geldings lose the power of impregnating; but there are many examples of their being still able to copulate.

Mares and geldings neigh less frequently than perfect horses. Their voices are also neither so full nor so deep. In horses of every kind, five different species of neighing, expressive of different passions, may be distinguished. In the neigh proceeding from joy, the voice is long protracted, and begins and terminates with sharp sounds: the horse, at the same time, flings, but without any inclination to strike. In the neigh of desire, whether from love or friendship, the horse does not fling, the voice is long continued, and finishes with graver sounds. The neigh of anger, during which the animal flings and strikes with fury, is very short and sharp. The neigh of fear, during which he also flings, is not longer than that of anger; the voice is grave and hoarse, and seems as if it proceeded entirely from the nostrils. This neigh resembles the roaring of a lion. The noise expressive of pain is not so much a neigh, as a groan or snorting uttered with a grave voice, and following

following the alternate motions of respiration. It has likewise been remarked, that horses which neigh most frequently from motives of joy or desire, are the best and most generous. The voice of unmutilated horses is stronger than that of geldings or mares. The female voice, even from the moment of birth, is weaker than that of the male. At two years, or two and a half, which is the age of puberty, the voice both of males and females, as in man and other animals, becomes stronger and more grave.

When the horse is fired with love, he shews his teeth, and has the appearance of laughing. He likewise shews them when angry and inclined to bite. He sometimes thrusts out his tongue to lick, but less frequently than the ox, though the latter is less sensible of careesses. The horse remembers injuries much longer than the ox, and is also more easily dispirited. His natural disposition, which is bold and impetuous, makes him exert his whole force at once; and, when he perceives that still more is requisite, he grows indignant, and obstinately refuses to act. But the ox, who is naturally slow and slothful, seldom employs his whole strength, and is not so easily disheartened.

The horse sleeps much less than man. When in good health, he never lies above two or three hours at a time. He then rises to eat. After being much fatigued, and after filling his belly, he lies down a second time. But, upon the whole, he sleeps not above three or four hours in the twenty-four. There are also some horses which never lie down, but sleep standing; and even those which are accustomed to lie down, sometimes sleep on their feet. It has been remarked, that geldings sleep oftener and longer than perfect horses.

All quadrupeds drink not in the same manner, though all are under an equal necessity of exploring with the head that liquor which they have no other method of apprehending, except the ape, and some other animals that have hands, and can drink like man;
when

when a proper vessel is presented to them; for they carry it to their mouth, pour out the liquor, and swallow it by the simple movement of deglutition. This is the ordinary way in which man drinks, because most commodious. But he can vary his method of drinking, by contracting the lips, and sucking the fluid, or rather by sinking both mouth and nose into it, and then performing the motions necessary to swallowing. He can even seize a fluid by the simple motion of his lips; or, lastly, he can stretch out and expand his tongue, make a kind of little cup of it, and in this manner, though with some difficulty, satisfy his thirst. Most quadrupeds might also drink in different ways: but, like man, they follow that which is most convenient. The dog, whose mouth opens wide, and whose tongue is long and slender, drinks by lapping, or licking, with his tongue, which he forms into a kind of cup or scoop, fills at each time, and thus carries a sufficient quantity of fluid into his mouth. This method he prefers to that of dipping his nose into the water. The horse, on the contrary, whose mouth is too small, and whose tongue is too thick and too short for forming a scoop, and who, besides, drinks with more avidity than he eats, briskly sinks his mouth and nose deep into the water, which he swallows plentifully by the simple motion of deglutition. After running, when the respiration is short and laborious, horses should be allowed to drink at leisure, and to breathe as often as they incline. Neither should they be permitted to drink water that is too cold; for, independent of the colics frequently occasioned by very cold water, it often cools their nose to such a degree, as to bring on rheums, and perhaps lay the foundation of the disease called glanders, the most obstinate of all maladies to which this noble animal is subject.

The horse is still found wild about the lake Aral; near Kuzneck, in lat. 54; on the river Tom, in the south part of Siberia, and in the great Mongolian deserts,

serts, and among the Kalkas, N. W. of China. The Mongolians call them Takijah. They are less than the domestic kind, and of a mouse-colour, with very thick hair, especially in winter: they have greater heads than the tame; their foreheads are remarkably arched: they go in great herds, and are excessively vigilant. They are however often surprized by the Kalmucks, who ride in amongst them mounted on very swift horses, and kill them with broad lances: they eat the flesh, and use the skins to lie on. The wild horses are also taken by means of hawks, which fix on the head, and distress them so as to give the pursuers time to overtake them. In the interior parts of Ceylon is a small variety of the horse, not exceeding thirty inches in height: which is sometimes brought to Europe as a rarity.

Distinction must be made between the wild horses of Asia above mentioned, and those in the deserts on each side of the Don, particularly towards the Palus Mæotis and the town of Backmut. These were the offspring of the Russian horses employed in the siege of Asoph in 1697, when, for want of forage, they were turned loose, and which have relapsed into a state of nature, and grew as wild, shy, and timid, as the original savage breed. The Cossacks chase them, but always in the winter, by driving them into the vallies filled with snow, into which they plunge and are caught; their excessive swiftness excludes any other method of capture. They hunt them chiefly for the sake of the skins: if they catch a young one, they couple it for some months with a tame horse, and so gradually domesticate it. These are much esteemed, for they will draw twice as much as the former. The horses of the wandering Tartars, carried away by the herds of the wild kind, mix and breed together. Their offspring are very distinguishable by their colours, which are composed of variety of shades of chestnut.

No horses are to be met with in any place within the Arctic circle, except there should be a few in the extreme part of Norway. Kamtschatka is entirely destitute of horses, and of every domestic animal except dogs: which, with the rein-deer, are the substitute of horses used by the natives. America, before the arrival of the Europeans, was in like circumstances, or rather worse; for instead of the dog it had only a wolfish cur; nor do either the Greenlanders or Eskimaux make any other use of the rein-deer, than to supply themselves with its flesh for food, and its skin for raiment. The synonyms of this noble animal, or appellations given it by different authors, are as follow: *Equus*, *Gesner quad.* 404. *Raii syn. quad.* 62. *Pferdt. Klein quad.* 4. *Equus cauda undique fetosa.* *E. caballus.* *Lin. syst.* 100. *Hæst. Faun. suec.* No. 47. *Equus auriculis brevibus erectis, juba longa.* *Briffon, quad.* 69. *Le Cheval. de Buffon* iv. 174. tab. i. *Br. Zool.* i. *Wild horse. Leo Afr.* 339, *Hakluyt's coll. voy.* i. 329. *Bell's trav.* i. 225. *Zimmerman.* 138. 140.

THE DSHIKKETAEI, OR, WILD MULE.

THE dshikketaei, or wild mule, is of the size and appearance of the common mule; with a large head, flat forehead growing narrow toward the nose, eyes of a middle size, the irides of an obscure ash-colour; thirty-eight teeth in all, being two in number fewer than in a common horse; ears much longer than those of a horse, quite erect, lined with a thick whitish curling coat; neck slender, compressed; mane upright, short, soft, of a greyish colour; in place of the foretop, a short tuft of downy hair about an inch and three-quarters long. The body is rather long, and the back very little elevated; the breast protuberant and sharp. The limbs are long and elegant; the thighs thin, as in a mule's. Within the fore-legs there is an oval callus; in the hind-legs none. The hoofs are oblong, smooth,
and

and black; the tail is like that of a cow, slender, and, for half of its length, naked, the rest covered with long ash-coloured hairs. Its winter-coat grey at the tips, of a brownish ash-colour beneath; about two inches long, in softness like the hair of a camel, and undulated on the back. Its summer-coat is much shorter, of a most elegant smoothness, and in all parts marked most beautifully with small vortexes. The end of the nose is white; from thence to the foretop inclining to tawny. The buttocks are white; as are the inside of the limbs and belly. From the mane a blackish testaceous line extends along the top of the back to the tail, broadest on the loins, and growing narrower towards the tail. The colour of the upper part of the body is a light yellowish-grey, growing paler towards the sides. The length, from the tip of the nose to the base of the tail, is six feet seven inches; length of the trunk of the tail one foot four; of the hairs beyond the end, eight inches. The height of the animal is three feet nine. This species inhabits the deserts between the rivers Onun and Argun in the most southern parts of Siberia, and extends over the vast plains and deserts of western Tartary, and the celebrated sandy desert of Gobi, which reaches even to India. In Siberia they are seen only in small numbers, as if detached from the numerous herds to the south of the Russian dominions. In Tartary they are particularly conversant about Tarricnoor, a salt lake at times dried up. They shun wooded tracts and lofty snowy mountains: they live in separate herds, each consisting of a chief, a number of mares and colts, in all to the number of about twenty; but seldom so many, for commonly each male has but five and sometimes fewer females: they copulate towards the middle or end of August; and bring for the most part but one at a time, which by the third year attains its full growth, form, and colour. The young males are then driven away from their paternal herds, and keep at a distance till they can find mates of their

own age which have quitted their dams. These animals always carry their heads horizontally; but, when they take to flight, hold them upright, and erect their tail: their neighing is deeper and louder than that of a horse: they fight by biting and kicking, as usual with the horse: they are fierce and untameable; and even those which have been taken young, are so intractable as not to be broken by any art which the wandering Tartars could use. Yet were it possible to bring them into fit places, and to provide all the conveniencies known in Europe, the task might be effected: but it is doubted whether the subdued animal would retain the swiftness it is so celebrated for in its state of nature. It exceeds that of the antelope; it is even proverbial; and the inhabitants of Thebet, from the fame of its rapid speed, mount on it Chammo their god of fire. The Mongalians despair of ever taking them by the chace; but lurk behind some tomb, or in some ditch, and shoot them when they come to drink or eat the salt of the desert. They are excessively fearful animals, and provident against danger. A male takes on him the care of the herd, and is always on the watch. If they see a hunter, who by creeping along the ground has got near them, the centinel takes a great circuit, and goes round and round him, as discovering somewhat to be apprehended. As soon as the animal is satisfied, it rejoins the herd, which sets off with great precipitation. Sometimes its curiosity costs it its life; for it approaches so near as to give the hunter an opportunity of shooting it. But it is observed, that in rainy or in stormy weather, these animals seem very dull, and less sensible of the approach of mankind. The Mongalians and Tungusi, according to Du Halden, kill them for the sake of the flesh, which they prefer to that of horses, and even to that of the wild-boar, esteeming it equally nourishing and wholesome. The skin is also used for the making of boots. Their senses of hearing and smelling are most exquisite: so that they are approach-

ed with the utmost difficulty. The Mongolians call them *dshikketaei*, which signifies, the eared; the Chinese, *yo to tse*, or mule. In ancient times the species extended far to the south. It was the *hemionos* or half ass of Aristotle, found in his days in Syria, and which he celebrates for its amazing swiftness and its fecundity, a breeding mule being thought a prodigy; and Pliny, from the report of Theophrastus, speaks of this species being found in Cappadocia, but adds they were a particular kind.

The domestic mules of the present times are the offspring of the horse and the ass, or ass and mare. They are very much commended for their being stronger, surer footed, going easier, being more cheaply maintained, and lasting longer, than horses. They are commonly of a black-brown, or quite black, with that shining list along the back and across the shoulders which distinguishes asses. In former times they were much more common in this country than at present; being often brought over in the days of popery by the Italian prelates. They continued longest in the service of millers; and are yet in use among them in some places, on account of the great loads they carry on their back. As they are capable of being trained for riding, bearing burdens, and for draught, there is no doubt that they might be usefully employed in many different services. But they are commonly found to be vicious, stubborn, and obstinate to a proverb; which, whether it occasions or is produced by the ill usage they meet with, is a point not easily settled. Whatever may be the case of asses, it is allowed that mules are larger, fairer, and more serviceable, in mild than in warm climates. In the present British American colonies, both on the continent and in the islands, but especially in the latter, they are much used and esteemed; so that they are frequently sent to them from hence, suffer less in the passage, and die much seldom than horses, and commonly yield, when they arrive,

arrive, no inconsiderable profit. The synonyms of this animal are, *Mulus*, *Gesner. quad. 702. syn. quad. 64.* *Maul esel. Klein quad. 6.* *Le Mulet. De Buffon, iv. 401. xiv. 336. Brisson quad. 71.* *Equus mulus, Lin. syst. Faun. suec. No. 35. Br. Zool. i. 13.* *Equus hemionus, Mongolis dshikketaei dictus, describente P. S. Pallas, Nov. com. Petrop. xix. 394. tab. vii. Zimmerman 666.*

T H E A S S.

THE koulan, or wild-afs, varies from the tame in several respects, and requires a more particular description. The forehead is very much arched: the ears are erect, even when the animal is out of order; sharp-pointed, and lined with whitish curling hairs; the irides are of a livid brown; the lips thick; and the end of the nose sloping steeply down to the upper lip; the nostrils are large and oval. It is much higher on its limbs than the tame afs, and its legs are much finer, but it again resembles it in the narrowness of its chest and body: it carries its head much higher; and its skull is of a surprising thinness. The mane is dusky, about three or four inches long, composed of soft woolly hair, and extends quite to the shoulders: the hairs at the end of the tail are coarse, and about a span long. The colour of the hair in general is a silvery white; the upper part of the face, the sides of the neck and body, are of a flaxen-colour; the hind-part of the thighs are the same; the fore-part divided from the flank by a white line, which extends round the rump to the tail: the belly and legs are also white: along the very top of the back, from the mane quite to the tail, runs a stripe of bushy waved hairs of a coffee-colour, broadest above the hind-part, growing narrower again towards the tail; another of the same colour crosses it at the shoulders (of the males only), forming a mark, such as distinguishes the tame asses: the dorsal band and the mane

mane are bounded on each side by a beautiful line of white, well described by Oppian, who gives an admirable account of the whole. Its winter-coat is very fine, soft, and silky, much undulated, and likest to the hair of the camel; greasy to the touch: and the flaxen-colour, during that season, more exquisitely bright. Its summer-coat is very smooth, silky, and even, with exception of certain shaded rays that mark the sides of the neck pointing downwards.

These animals inhabit the dry and mountainous parts of the deserts of Great Tartary, but not higher than lat. 48. They are migratory, and arrive in vast troops to feed, during the summer, in the tracts east and north of lake Aral. About autumn they collect in herds of hundreds, and even thousands, and direct their course towards the north of India, to enjoy a warm retreat during winter. But Persia is their most usual place of retirement: where they are found in the mountains of Casbin, some even at all times of the year. If we can depend on Barboga, they penetrate even into the southern parts of India, to the mountains of Malabar and Golconda. According to Leo Africanus, wild asses of an ash-colour are found in the deserts of northern Africa. The Arabs take them in snares for the sake of their flesh. If fresh killed, it is hot and unfavoury: if kept two days after it is boiled, it becomes excellent meat. These people, the Tartars, and Romans, agreed in their preference of this to any other food: the latter indeed chose them young, at a period of life in which it was called *lalisio*; (vide Martial xiii. 97.) The epicures of Rome preferred those of Africa to all others. The grown *onagri* were introduced among the spectacles of the theatre; and their combats were preferred even to those of the elephants.

The manners of the wild ass are very much the same with those of the wild horse and the *dhikketæi*. They assemble in troops under the conduct of a leader; and are very shy. They will, however, stop in the midst of
their

their course, and even suffer the approach of man at that instant, but will then dart away with the rapidity of an arrow dismissed from the bow. This Herodotus speaks to, in his account of those of Mesopotamia; and Leo Africanus, in that of the African.

They are extremely wild. Holy writ is full of allusions to their savage nature. "He scorneth the multitude of the city, neither regardeth he the crying of the driver;" (Job. xxxix. 7.) Yet they are not untameable. The Persians catch and break them for the draught: they make pits, half-filled with plants to lessen the fall, and take them alive. They break, and hold them in great esteem, and sell them at a high price. The famous breed of asses in the east is produced from the koulán reclaimed from the savage state, which highly improves the breed. The Romans reckoned the breed of asses produced from the onager and tame ass to excel all others. The Tartars, who kill them only for the sake of the flesh and skins, lie in ambush and shoot them. They have been at all times celebrated for their amazing swiftness; for which reason the Hebrews call them pere; as they styled them arod from their braying. Their food is the saltiest plants of the deserts, such as the kalis, atriplex, chenopodium, &c. and also the bitter milky tribe of herbs: they also prefer salt-water to fresh. This is exactly conformable to the history given of this animal in the book of Job; for the words "barren land," expressive of its dwelling, ought, according to the learned Bochart, to be rendered "salt places." The hunters lie in wait for them near the ponds of brackish water, to which they resort to drink: but they are not of a thirsty nature, and seldom have recourse to water. These animals were anciently found in the Holy Land, Syria, the land of Uz or Arabia Deserta, Mesopotamia, Phrygia, and Lycaonia. But at present they are entirely confined to the countries above-mentioned. Chagrin, a word derived from the Tartar soghré, is made of the skin

skin of these animals, which grows about the rump, and also those of horses, which is equally good. There are great manufactures of it at Astracan and in all Persia. It is a mistake to suppose it to be naturally granulated, for its roughness is entirely the effect of art. The Persians use the bile of the wild ass as a remedy against the dimness of sight: and the same people, and the Nogayan Tartars, have been known to endeavour the most infamous bestialities with it in order to free themselves from the disorders of the kidneys.

The tame or domestic ass, is an humble, patient, and tranquil, animal. He submits with firmness to strokes and chastisement: he is temperate both as to the quantity and quality of his food; he contents himself with the rigid and disagreeable herbage which the horse and other animals leave to him and disdain to eat: he is more delicate with regard to his drink, never using water unless it be perfectly pure. As his master does not take the trouble of combing him, he often rolls himself on the turf among thistles, ferns, &c. Without regarding what he is carrying, he lies down to roll as often as he can, seeming to reproach his master for neglect and want of attention. When very young, the ass is a gay, sprightly, nimble, and gentle, animal. But he soon loses these qualities, probably by the bad usage he meets with; and becomes lazy, untractable, and stubborn. When under the influence of love, he becomes perfectly furious. The affection of the female for her young is strong: Pliny assures us, that, when an experiment was made to discover the strength of maternal affection in a she-ass, she ran through the flames in order to come at her colt. Although the ass be generally ill used, he discovers a great attachment to his master; he smells him at a distance, searches the places and roads he used to frequent, and easily distinguishes him from the rest of mankind. The ass has a very fine eye, an excellent scent, and a good ear. When overloaded, he hangs his head, and sinks

his ears: when too much teased or tormented, he opens his mouth and retracts his lips in a disagreeable manner, which gives him an air of ridicule and derision. If you cover his eyes, he will not move another step; if you lay him on his side, and place his head so that one eye rests on the ground, and cover the other with a cloth, he will remain in this situation without making any attempt to get up. He walks, trots, and gallops, in the same manner as the horse; but all his motions are slower. Whatever be the pace he is going at, if you push him, he instantly stops.

The cry of the horse is known by the name of neighing; that of the ass, by braying, which is a long disagreeable noise, consisting of alternate discords from sharp to grave and from grave to sharp; he seldom cries but when pressed with hunger or love: the voice of the female is clearer and more piercing than that of the male. The ass is less subject to vermin than other animals covered with hair; he is never troubled with lice, probably owing to the hardness and dryness of his skin; and it is probably for the same reason that he is less sensible to the whip and spur than the horse. The teeth of the ass fall out and grow at the same age and in the same manner as those of the horse; and he has nearly the same marks in his mouth.

Asses are capable of propagating when two years old. The females are in season during the months of May and June. The milk appears in the dugs ten months after impregnation; she brings forth in the twelfth month, and always one at a time. Seven days after the birth, the season of the female returns, and she is again in a condition to receive the male. The colt should be taken from her at the end of five or six months, that the growth and nourishment of the foetus may not be obstructed. The stallion or jack-ass should be the largest and strongest that can be found; he should be at least three years old, and never ought to exceed ten. The ass, like the horse, takes three or
four

four years in growing, and lives till he be twenty-five or thirty : he sleeps less than the horse, and never lies down to sleep but when excessively fatigued. He is more robust, and less subject to diseases, than the horse.

Travellers inform us, that there are two sorts of asses in Persia ; one of which is used for burdens, they being slow and heavy : the other is kept like horses for the saddle ; for they have smooth hair, carry their head well, and are much quicker in their motion ; but, when they ride them, they sit nearer their buttocks than when on a horse : they are dressed like horses, and are taught to amble like them ; but they generally cleave their nostrils to give them more room for breathing. Dr. Russel likewise tells us they have two sorts in Syria ; one of which is like ours ; and the other very large, with remarkable long ears ; but they are both put to the same use, which is, to carry burdens.

In America there were originally no asses at all, nor yet horses : but they were carried thither long ago, at first by the Spaniards, and afterwards by other nations, where they multiplied greatly ; inasmuch, that, in some places, there are whole droves of them that run wild, and are very hard to be caught. Asses in general carry the heaviest burdens in proportion to their bulk ; and, as their keeping costs little or nothing, it is a great wonder that they are not put to more uses than they generally are among us. The flesh of the common ass never is eaten in these parts of the world ; though some pretend their colts are tender, and not disagreeable.

In countries where the land is light, the ass is often yoked in the plough ; and his dung, in strong moist land, is an excellent manure. Asses skin, being very hard and elastic, is employed for making sieves, drums, shoes, and pocket-book parchment for memorandums, which is laid over with a kind of plaister. The bones of the ass being also remarkably hard and compact, the ancients preferred them for making their best sounding

flutes. The fynonyms of this beaft are the following :
Afinus. *Gefner quad.* 5. *Raii fyn. quad.* 63. *Efel. Klein quad.* 6. *L'ane. De Buffon*, iv. 377. *Equus auriculis longis flaccidis, juba brevi*. *Briffon quad.* 70. *Equus afinus*. *Eq. caudæ extremitate fetofa, cruce nigra fupra*. *Lyn. fyst.* 100. *Afna, Faun. fuc.* No. 35. ed. 1746. *Afs, Br. Zool.* I. ii. *Smellie's de Buffon*, III. 398. tab. xii. *Onager, Varro de re ruft.* lib. ii. c. 6. p. 81. *Plinii Hift. Nat.* lib. viii. c. 44. *Oppian Cyneg.* ii. *Lin.* 184. *Pallas in act. acad. Petrop.* ii. 258. *Zimmerman.* 666.

T H E Z E B R A .

WHETHER we confider fymmetry of fhape, or beauty of colours, the zebra is perhaps the moft elegant of all quadrupeds. In this animal, the figure and gracefulness of the horfe are united with the fleetnefs of the ftag. His robe is adorned with black and white belts, alternately difpofed, with fuch regularity and exact proportion, that nature feems here to have employed the rule and compafs. Thefe alternate bands of black and white are the more fingular, becaufe they are ftraight, parallel, and as nicely feparated as thofe of a ftriped ftuff. Befides, they extend not only over the body, but the head, thighs, legs, and even the ears and tail ; fo that, at a diftance, the whole body of the animal has the appearance of being artificially adorned, in the moft elegant manner, with ribbands. The fhadcs are always lively and brilliant ; and the hair is fhort, clofe, and fine, the luftre of which augments the beauty of the colours. The zebra, in general, is fmallcr than the horfe, and larger than the afs. Though he has often been compared to thefe two animals, under the names of the wild-horfe and ftriped-afs, he is not a copy of either, but fould rather be regarded as their model, if in nature every fpecies were not equally original, and had not an equal right to creation.

Neither



THE ZEBRA

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Neither can the onager, nor the fine mules of Siberia, be regarded as the origin of the zebra species, though they resemble it in figure and swiftness. None of them exhibit that regular variety of colours, by which the zebra is so eminently distinguished. This beautiful species is singular, and very remote from all other kinds. It likewise belongs to a different climate from that of the onager, being only found in the eastern and southern regions of Africa, from Æthiopia to the Cape of Good Hope, and from thence as far as Congo. He exists not in Europe, Asia, America; nor in any of the northern parts of Africa. Those mentioned by some voyagers to have been found in Brasil, had been transported thither from Africa. Others, which have been seen in Persia, and in Turkey, had been brought to those countries from Æthiopia. In fine, almost all we have seen in Europe came from the Cape of Good Hope. This point of Africa is their native climate, where they are very numerous, and where the Dutch have exerted every effort to tame and render them domestic; but they have not hitherto been able fully to accomplish this purpose. But the wild horse and the onager are perhaps equally untractable; and, it is extremely probable, that, if the zebra were early accustomed to obedience, and to a domestic state, he would become equally gentle with the ass and horse, and might supply the place of both.

As the British dominion has been lately extended over the Cape of Good Hope, where these beautiful animals are found in the greatest abundance, it is probable, that, in a short time, we shall receive further information of every thing relative to their nature. There is no doubt, but, if they were imported into England, they might not only be made to generate and multiply among themselves, but likewise with horses and asses, whereby a new race of mules, and perhaps of great value, might be brought into use. This is confirmed by the following fact. A stallion-

ass

afs was brought to a female zebra kept a few years ago in London; but the zebra at first refused any commerce with him. The afs was then curiously painted, to resemble the male zebra; whereupon she admitted his embraces, and produced a very fine mule. The representation given in the annexed plate, is drawn from a very beautiful zebra belonging to the stadholder, which he imported from the Cape a little before the late revolution in Holland. It is about the size of an Hungarian horse, and very much resembles that animal, in the sprightly attitude of its head and neck; the mane is short and stiff, variegated with the same colours as the body. Its hair is short, smooth, and shining, like the coat of a blood-horse; and upon the whole more elegant than any other we have yet seen. The colour of this creature is a white ground striped with black transverse bands, about two fingers broad, which terminate in dark-brown or yellow. From the mane to the tail runs a black line along the spine of the back, whence the black stripes, that encircle the body, branch forth, which without joining disappear under the belly, and leave a white space of an hand's breadth. The legs are marked down to the hoofs with narrower rings, alternately black and white, the same as the tail and ears. The upper part of the neck is encircled after the same manner, but near the body the rays verge towards the breast. From the top of the head proceed ten or twelve straight black stripes over the forehead, which grow narrower and reach down to the nose, where the black colour is changed to a brown, and afterwards at the extremity to a yellow. The synonyms are: Zebra, *Nieremberg*. 168. Zecora, *Ludolph*. *Æthiop.* I. lib. i. c. 10. II. 150. Zebra, *Raii syn. quad.* 64. *Klein quad.* 5. Le Zebre, ou L'ane rayé. *Briffon quad.* 73. *De Buffon*, xii. 1. tab. i. ii. *Equus Zebra*, *Eq. fasciis fuscis versicolor.* *Lyn. syst.* 101. *Edw.* 222. Wild-afs, *Kolben Cape Good Hope.* ii. 112. *Mus. Lev.*

THE QUAGGA.

THIS animal is striped like the former, on the head, neck, and mane. From the withers to the middle of the flanks the stripes grow gradually shorter, leaving part of the back, loins, and sides, quite plain: the ground colour of the whole upper-part and sides is bay: the belly, legs, and thighs, white and free from spots or stripes: the ears are shorter than those of the zebra: the feet of each are small, and the hoofs hard.

This animal and the zebra have been long confounded together, and considered as male and female; but in each species the sexes agree in colours and marks, unless that those in the male are more vivid. Sir Joseph Banks first separated these species by the remarks he communicated on a quagga he saw at the Cape in 1771. They keep in vast herds like the zebra, but usually in different tracts of country, and never mix together: they are of a thicker and stronger make, and from the few trials which have been made, prove of a more docile nature. A quagga caught young has been known to lose its savage disposition, and run to receive the caresses of mankind; and there have been instances of its being broke so far as to draw in a team with the common horses. It is said by Sparman, to be fearless of the hyæna, and even to attack and pursue that fierce animal; so that it proved an excellent guard to the horses with which it was turned out to graze at night. Nature seems to have designed them for the beasts of draft or of burden for this country: and they certainly might be broke for the carriage or the saddle. They are used to the food which harsh dry pastures of Africa produce; are in no terror of wild beasts, nor are subject to the epidemic distemper which destroys so many horses of the European offspring; and it may generally be observed, that both the

oxen and horses introduced into this country lose the strength and powers of those in Europe. The synonyms of this species are: *Le Voy. de M. Hop.* 40. *Opeagha*, *Masson's Travels*, in the *Phil. Trans.* lxvi. 297. or *Quagga*, of the *Hottentots*. *Female Zebra; Edw.* 223.

THE HUEMEL.

THE huemel is distinguished by bisculated hoofs; and is of the same size, coat, and colour, of the afs: the ears are erect, short, strait, pointed like that of a horse; the head being equally elegant, and the neck and rump finely formed. This animal inhabits the highest and most inaccessible part of the Andes, and is therefore very difficult to be taken. Yet it must at times descend, as Commodore Byron saw one at Port Desire. It neighed like a horse, and frequently stopped and looked at our people; then ran off at full speed, and stopped and neighed again. Its voice had nothing of the braying of an afs; neither does it resemble that animal in its internal parts: it is full of mettle, and of great swiftness. By its cloven hoofs it forms the link, as M. Molina observes, between this genus and the ruminant animals. The synonyms are: *Le Gnemel ou Huemel*, *Molina Chili.* 303. *Equus bisculus Gmelin. Lin.* 209.

BOS, of the Order PECORA.

THE generic characters of this genus of quadrupeds are: the horns are hollow within, and bend out laterally; there are eight cutting teeth in the lower jaw, and none in the upper, their place being supplied by a hard membrane; there are no dog-teeth in either jaw; the skin along the lower side of the neck is pendulous. The specific marks of the common bull and cow are, rounded horns, with a large space between their

their basis. The following species are comprehended in this genus :

THE TAURUS, or common BULL and COW.

THE northern countries of Europe are found to produce the best cattle of this kind. In general, they bear cold better than heat; for which reason they are not so plenty in the southern countries. There are but few in Asia, to the south of America, or in Africa beyond Egypt and Barbary. America produced none till they were carried there by the Europeans. But the largest are to be met with in Denmark, Podolia, the Ukraine, and among the Calmuck Tartars; likewise those of Ireland, England, Holland, and Hungary, are much larger than those of Persia, Turkey, Greece, Italy, and Spain; but those of Barbary are least of all. In mountainous countries, as Wales, the highlands of Scotland, &c. the black cattle are small, but hardy; and when fatted make excellent beef. In Lapland they are mostly white, and many of them want horns. The British breed of cattle has in general been so much altered and improved by foreign mixture, that it is difficult to point out the original kind of these islands. Those which are supposed to have been originally British, are far inferior in size to those on the northern parts of the European continent; the cattle in Scotland are in general small, and hornless; the Welsh runts are larger, as are the black cattle of Cornwall. The large species that is now cultivated in most parts of England, are either of foreign extraction, or our own improved by a cross with the foreign kind. The Lincolnshire kind derive their size from the Holstein breed; and the large hornless cattle that are bred in some parts of England, come originally from Poland.

About two hundred and fifty years ago, there was found in Scotland a wild race of cattle, called *bifontes jubati*, which were of a pure white colour, and had, if

we may believe Boethius, manes like lions. These are now extinct in a wild state; but their offspring, still sufficiently savage, are preserved in the parks of Drumlanrig and Chillingham. They retain their white colour, but have lost their manes. The principal external appearances which distinguish this breed of cattle from all others, are the following:---Their colour is invariably white; muzzles black; the whole of the inside of the ear, and about one-third of the outside, from the tip downwards, red: the colour of the ears, in the undegenerated beasts, is black; horns white, with black tips, very fine, and bent upwards: some of the bulls have a thin upright mane, about an inch and an half or two inches long. At the first appearance of any person, they set off in full gallop; and, at the distance of two or three hundred yards, make a wheel round, and come boldly up again, tossing their heads in a menacing manner: on a sudden they make a full stop at the distance of forty or fifty yards, looking wildly at the object of their surprize; but, upon the least motion being made, they all again turn round and fly off with equal speed, but not to the same distance; forming a shorter circle, and again returning with a bolder and more threatening aspect than before, they approach much nearer, probably within thirty yards; when they make another stand, and again fly off: this they do several times, shortening their distance, and advancing nearer, till they come within ten yards, when most people think it prudent to leave them, not chusing to provoke them farther; for there is little doubt but in two or three turns they would make an attack. The mode of killing them was perhaps the only modern remains of the grandeur of ancient hunting:---On notice being given, that a wild bull would be killed on a certain day, the inhabitants of the neighbourhood came mounted, and armed with guns, &c. sometimes to the amount of an hundred horse, and four or five hundred foot, who stood upon walls, or got into trees, while the
horsemen

harsen men rode off the bull from the rest of the herd, until he stood at bay; when the marksmen dismounted and shot. At some of these huntings twenty or thirty shots have been fired before he was subdued. On such occasions the bleeding victim grew desperately furious, from the smarting of his wounds, and the shouts of savage joy that were echoing from every side: but, from the number of accidents that happened, this dangerous mode has been little practised of late years, the park-keeper alone generally shooting them with a rifled gun, at one shot. When the cows calve, they hide their calves for a week or ten days in some sequestered situation, and go and suckle them two or three times a-day. If any person come near the calves, they clap their heads close to the ground, and lie like a hare in form, to hide themselves. This is a proof of their native wildness; and is corroborated by the following circumstance that happened to the writer of the narrative, who found a hidden calf, two days old, very lean, and very weak:---On stroking its head, it got up, pawed two or three times like an old bull, bellowed very loud, stepped back a few steps, and bolted at his legs with all its force; it then began to paw again, bellowed, stepped back, and bolted as before; but knowing its intention, and stepping aside, it missed him, fell, and was so very weak that it could not rise, though it made several efforts: but it had done enough: the whole herd were alarmed, and coming to its rescue, obliged him to retire; for the dams will allow no person to touch their calves, without attacking them with impetuous ferocity. When any one happens to be wounded, or is grown weak and feeble through age or sickness, the rest of the herd set upon it, and gore it to death. The weight of the oxen of this species is generally from forty to fifty stone the four quarters; the cows about thirty. The beef is finely marbled, and of excellent flavour. Those at Burton-Constable, in the county of York, were all destroyed by a distemper a

few years since. They varied slightly from those at Chillingham, having black ears and muzzles, and the tips of their tails of the same colour; they were also much larger, many of them weighing sixty stone, probably owing to the richness of the pasturage in Holderness, but generally attributed to the difference of kind between those with black and with red ears, the former of which they studiously endeavoured to preserve. --- The breed which was at Drumlanrig, in Scotland, had also black ears.

Frequent mention is made of our savage cattle by historians. One relates, that Robert Bruce was (in chasing these animals) preserved from the rage of a wild bull by the intrepidity of one of his courtiers, from which he and his lineage acquired the name of Turn-bull. Fitz Stephen names these animals *urisyvestres* among those that harboured in the great forest that in his time lay adjacent to London. Another enumerates, among the provisions at the great feast of Nevil archbishop of York, six wild bulls. The loss of the savage nature of these animals by domestication, might occasion some change in the external appearance, as is frequent with wild animals deprived of liberty; and to that we may ascribe their loss of mane. The *urus* of the Hercynian forest described by Cæsar was of this kind: the same which is called by the modern Germans, *aurochs*, i. e. *bos sylvestris*.

The ox is the only horned animal in these islands that will apply its strength to the service of mankind. It is now generally allowed, that, in the draught, oxen are in many cases more profitable than horses; their food, harness, and shoes, being cheaper; and, should they be lamed or grow old, an old working beast will be as good meat, and fatten as well, as a young one. There is scarce any part of this animal without its use. The blood, fat, marrow, hide, hair, horns, hoofs, milk, cream, butter, cheese, whey, urine, liver, gall, spleen, bones, and dung, have each their particular use in manufactures,

nufactures, commerce, and medicine. The skin has been of great use in all ages. The ancient Britons, before they knew a better method, built their boats with osiers, and covered them with the hides of bulls, which served them for short coasting voyages.

*Primum cana salix madefacto vimine parvam
Texitur in puppim, caesoque induta juvenco,
Vectoris patiens, tumidum super emicat amnem:
Sic Venetus stagnante Pado, fusoque Britannus
Navigat oceano.*

LUCAN. lib. iv. 131.

The bending willow into barks they twine;
Then line the work with spoils of slaughter'd kine.
Such are the floats Venetian fishers know,
When in dull marshes stands the settling Po;
On such to neighb'ring Gaul, allur'd by gain,
The bolder Britons cross the swelling main. ROWE.

Vessels of this kind are still in use on the Irish lakes; and on the Dee and Severn: in Ireland they are called curath; in English, coracles; from the British cwrgwl, a word signifying a boat of that structure. At present the hide, when tanned and curried, serves for boots, shoes, and numberless other conveniencies of life.--- Vellum is made of the thinnest calve-skins, and the skins of abortions. Of the horns are made combs, boxes, handles for knives, and drinking vessels; and, when softened by water, obeying the manufacturer's hands, they form pellucid laminæ for the sides of lanterns. These last conveniencies were invented by the great King Alred, who first used them to preserve his candle time-measurers from the wind: or (as other writers will have it) the tapers that were set up before the reliques in the miserable tattered churches of that time. The very smallest fragments, and even the dust and filings of horn, are found very serviceable in manuring cold lands. The matter lying within, on which the horn is formed, is called the slough; and, when dry,

is used in making walls or fences, in which, covered from wet, it will last a long time. It is also most admirable in mending roads, where the soil is soft and spewy; for, dissolving, it becomes a glutinous substance, that binds amazingly with gravel. As a manure, they allow between two and three quarter-sacks to an acre. Horn saw-dust with mould is an excellent compost for flowers. It is also of use in hardening, and giving what is called a proper temper, to metals. In medicine, horns were employed as alexipharmics or antidotes against poison, the plague, or the small-pox; they have been dignified with the title of English bazoar, and are said to have been found to answer the end of the oriental kind.

The teguments, cartilages, and gristles, for the indifferent,---and, for the finer, all the cuttings, parings, and scrapes, of hides,---are boiled in water, till the gelatinous parts of them are thoroughly dissolved; and the mass, properly dried, becomes glue. The bones are used by mechanics where ivory is too expensive; by which the common people are served with many neat conveniences at an easy rate. From the tibia and carpus bones is procured an oil much used by coach-makers and others in dressing and cleansing harness, and all trappings belonging to a coach; and the bones calcined afford a fit matter for tests for the use of the refiner in the smelting trade. The blood is used as an excellent manure for fruit-trees, and is the basis of that fine colour the Prussian blue. The sinews are prepared so as to become a kind of thread or small cord, used in sewing saddles, in making racquets, and other things of a like nature. The hair hath also its value, and is employed in many different ways. The long hair of the tail is frequently mixed with horse hair spun into ropes, and sometimes wove. The short hair serves to stuff saddles, seats of several kinds, mattresses, and chairs. The refuse is a good manure, and operates more speedily than the horns. The fat, tallow, and
suet,

fuet, furnish us with light; and are also used to precipitate the salt that is drawn from briny springs. The gall, liver, spleen, and urine, had also their place in the materia medica, though they have now resigned it to more efficacious and agreeable medicines. The uses of butter, cheese, cream, and milk, in domestic œconomy, and the excellence of the latter in furnishing a palatable nutriment for most people whose organs of digestion are weakened, are too obvious to be insisted on.

It is a great doubt whether any wild oxen of our species are found on the continent of Africa. We must beware of the misnomers of common travellers, especially the antient. Thus we shall find the wild ox of Leo to be the antelope; and the buffaloes of Pigafetta, said to be found in Congo and Angola, may probably prove the species called *bonafus*. With more confidence we may say, from the authority of Flacourt, that wild oxen are found in Madagascar, like the European, but higher on their legs. Borneo, according to Beckman, and the mountains of Java, yield oxen in a state of nature; but the torrid zone forbids the scrutiny into species, which would give satisfaction to an inquisitive naturalist. The varieties of domestic cattle sprung from the wild stock are very numerous; such as the great Indian ox, of a reddish colour, with short horns bending close to the neck; with a vast lump on the shoulders, very fat, and esteemed the most delicious part. This lump is accidental, and disappears in a few descents, in the breed produced between them and the common kind. This variety is also common in Madagascar, and of an enormous size. A very small kind, with a lump on the shoulders, and horns almost upright, bending a little forward, is the *bos indicus* of Linnæus, and the zebu of M. de Buffon. In Surat is a minute kind, not bigger than a great dog; which has a fierce look, and is used to draw children in small carts. The larger species are the common beasts of draft in many parts of India, and draw the hackeries

or chariots; and are kept in very high condition. Others are used as pads, are saddled, and go at the rate of twenty miles a-day. There are cattle in Abyssinia, and the isle of Madagascar, with lumps on their backs, and horns attached only to the skin, quite pendulous. In Adel or Adea, and Madagascar, they are of a snowy whiteness, as large as camels, and with pendulous ears, and hunch-backs. They are called boury. There are also white cattle, with black ears, in the isle of Tinian. The lant or dant, described by Leo Africanus, is another beast, perhaps, to be referred to this genus. He says it resembles an ox; but hath smaller legs and comelier horns; that the hair is white; and so swift, as to be one of the rivals in speed with the Barbary horse: the ostrich is the other. If the horse can overtake either, it is esteemed at a thousand ducats, or a hundred camels. The hoofs are of a jetty blackness: of the hide targets are made, impenetrable by a bullet; and valued at a great price.

Of the European cattle, the most famous are those of Holstein and Jutland, which feeding on the rich low warm lowlands, between the two seas, grow to a great size. A good cow yields from twelve to twenty-four quarts of milk in a day. Besides home consumption, about thirty-two thousand are annually sent towards Copenhagen, Hamburgh, and Germany. About the Viitula is bred the same kind. Podolia and the Russian Ukrain, particularly about the rivers Bog, Dnieper, and Dniester, produce a fine breed; tall, large-horned, of a greyish-white colour, with dusky heads and feet, and a dusky line along the back. The calves of those designed for sale suck a year, and are never worked, which brings them to a larger size than their parents. They are called in Germany blue oxen, eighty or ninety thousand are driven to Konigsberg, Berlin, and Breslaw: the best are sold at one hundred rix-dollars apiece, or twenty pounds sterling; which brings annually a return to their native country of six million



THE AMERICAN BISON.

Barlow sculp.

1/20 1845.

million three hundred thousand rix-dollars. Hungary breeds the same kind, and sends annually to Vienna and other parts of Germany about one hundred and twenty thousand, which brings back eight million of rix-dollars.

The antient Gauls used horns to drink out of; *in amplissimis epulis pro proculis utuntur*, says Cæsar: if, according to Pliny, each horn held an *urna*, or four gallons, it was a goodly draught. Gesner, in his *Icon. Anim.* 34, says, he saw a horn, he supposes of an *urus*, hung against a pillar in the cathedral of Strasburgh, which was six feet long. These were probably the horns of oxen, or castrated beasts, which often grow to enormous sizes; the horns of wild cattle being very short.

THE BISON.

THE Bison has short black rounded horns, with a great interval between their bases. On the shoulders is a vast hunch, consisting of a fleshy substance, much elevated. The fore-parts of the body are thick and strong; the hind-part slender and weak. The hunch and head are covered with a very long undulated fleece, divided into locks, of a dull rust-colour: this is at times so long, as to make the fore-part of the animal of a shapeless appearance, and to obscure its sense of seeing. During winter, the whole body is clothed in the same manner. In summer the hind-part of the body is naked, wrinkled, and dusky. The tail is about a foot long; at the end is a tuft of black hairs, the rest naked. It inhabits Mexico and the interior parts of North America. It is found in great herds in the Savannas; and is fond of marshy places, where it lodges amidst the high reeds. In Louisiana they are seen feeding in herds innumerable, promiscuously with multitudes of stags and deer, during morning and evening; retiring in the sultry heats into the shade of tall reeds, which border the rivers of America. They are exceedingly

ceedingly shy; and very fearful of man, unless they are wounded, when they pursue their enemy, and become very dangerous.

The chase of these animals is a favourite diversion of the Indians; and is effected in two ways. First, by shooting: when the marksman must take great care to go against the wind: for their smell is so exquisite, that the moment they get scent of him they instantly retire with the utmost precipitation. He aims at their shoulders, that they may drop at once, and not be irritated by an ineffectual wound. Provided the wind does not favour the beasts, they may be approached very near, being blinded by the hair which covers their eyes.--- The other method is performed by a great number of men, who divide and form a vast square: each band sets fire to the dry grass of the savannah where the herds are feeding: these animals having a great dread of fire, which they see approach on all sides, they retire from it to the centre of the square; when the bands close and kill them (pressed together in heaps) without the least hazard. It is pretended, that on every expedition of this nature they kill fifteen hundred or two thousand beeves. The hunting-grounds are prescribed with great form, lest the different bands should meet and interfere in the diversion. Penalties are enacted on such who infringe the regulations, as well as on those who quit their posts and suffer the beasts to escape from the hollow squares: the punishments are, the stripping the delinquents, the taking away their arms, which is the greatest disgrace a savage can undergo, or lastly the demolition of their cabins.

The uses of these animals are various. Powder-flasks are made of their horns. The skins are very valuable; in old times the Indians made of them the best targets. When dressed, they form an excellent buff; the Indians dress them with the hair on, and clothe themselves with them; the Europeans of Louisiana use them for blankets, and find them light, warm, and soft

The.

The bulls become excessively fat, and yield great quantities of tallow, a hundred and fifty pounds weight having been got from one beast, which forms a considerable matter of commerce. These over-fed animals usually become the prey of wolves; for, by reason of their great unwieldiness, they cannot keep up with the herd. The Indians, by a very bad policy, prefer the flesh of the cows; which in time will destroy the species: they complain of the rankness of that of the bulls; but Du Pratz thinks the last much more tender, and that the rankness might be prevented by cutting off the testicles as soon as the beast is killed. The hair or wool is spun into cloth, gloves, stockings, and garters, which are very strong, and look as well as those made of the best sheep's wool; Governor Pownal assures us, that the most luxurious fabric might be made of it. The fleece of one of these animals has been found to weigh eight pounds. Their sagacity in defending themselves against the attacks of wolves is admirable. When they scent the approach of a drove of those ravenous creatures, the herd flings itself into the form of a circle: the weakest keep in the middle; the strongest are ranged on the outside, presenting to the enemy an impenetrable front of horns: should they be taken by surprise, and have recourse to flight, numbers of the fattest or weakest are sure to perish. Attempts have been made to tame and domesticate the wild, by catching the calves and bringing them up with the common kind, in hopes of improving the breed; but it has not yet been found to answer: notwithstanding they had the appearance for a time of having lost their savage nature, yet they always grew impatient of restraint, and by reason of their great strength would break down the strongest inclosure, and entice the tame cattle into the corn-fields. They have been known to engender together, and to breed.

THE GRUNTING OX.

THIS species hath a short head, a broad nose, with thick and hanging lips. Ears large, beset with coarse bristly hairs, pointed downwards, but not pendulous. Horns short, slender, rounded, upright, and bending, and very sharp-pointed. They are placed remote at their bases, between which the hair forms a long curling tuft. The hair in the middle of the forehead is radiated, and the space between the shoulders is much elevated. Along the neck is a sort of mane, which in some extends along the top of the back to the tail. The whole body, especially the lower parts, the throat, and neck, are covered with hairs, so long as to conceal at least half the legs, and make them appear very short. All the other parts of the body are covered with long hairs like those of a he-goat. The hoofs are large: the false hoofs project much; are convex without, and concave within. Its most obvious specific mark is the tail, which spreads out broad and long, with flowing hairs like that of a beautiful mare, of a most elegant silky texture, and of a glossy silvery-colour. There is one preserved in the British Museum, not less than six feet long. The colour of the head and body is usually black; but that of the mane is of the same colour with the tail.

Doctor Pallas compares the size of those which he saw to that of a small domestic cow. But the growth of these was probably checked by being brought very young from their native country into Siberia. Mr. Bogle speaks of them as larger than the common Thibet breed. Marco Polo says, that the wild kind, which he saw in his travels, were nearly as large as elephants. He may exaggerate; but the tail in the British Museum is a proof of their great size, for it is six feet long, yet probably did not touch the ground. These animals, in the time of Rubruquis and Marco Polo, were

were very frequent in the country of Tangut, the present seat of the Mongol Tartars. They were found both wild and domesticated. They are in these days more rare, but are met with in abundance in both states, in the kingdom of Thibet. Even when subjugated, they retain their fierce nature, and are particularly irritated at the sight of red or any gay colours. Their rising anger is perceived by the shaking of their bodies, raising and moving their tails, and the menacing looks of their eyes: their attacks are so sudden and so rapid, that it is very difficult to avoid them. The wild breed, which is called bucha, is very tremendous: if, in the chace, they are not slain on the spot, they grow so furious from the wound, they will pursue the assailant; and, if they overtake him, they never desist tossing him on their horns into the air, as long as life remains: they will copulate with domestic cows. In the time of Marco Polo, this half-breed was used for the plough, and for bearing of burdens, being more tractable than the others: but even the genuine breed were so far tamed as to draw the waggons of the Nomades or wandering Tartars. To prevent mischief, the owners always cut off the sharp points of the horns. The tamed kinds vary in colour to red and black, and some have horns almost as white as ivory.

There are two varieties of the domesticated kinds, one called in the Mongol language ghainoûk, the other farlyk. The first of the original Thibet race, the other a degenerated kind. Many are also destitute of horns, but have on the front, in their place, such a thickness of bone, that it is with the utmost difficulty that the persons employed to kill them can knock them down with repeated blows of the ax. Their voice is very singular, being like the grunting of a hog. A bezoar is said to be sometimes found in their stomachs, in high esteem among the oriental nations: but the most valuable part of them is the tail, which forms one of the four great articles of commerce in Thibet. They are
fold

sold at a high price, and are mounted on silver handles, and used as chowras or brushes to chase away the flies. In India no man of fashion ever goes out, or sits in form at home, without two chowrawbadars or brushers attending him, each furnished with an instrument of this kind. The tails are also fastened by way of ornament to the ears of elephants, and the Chinese dye the hair red, and form it into tufts, to adorn their summer bonnets. Frequent mention is made of these animals in the sacred books of the Mongols: the cow being with them an object of worship, as it is with most of the orientalists. Of the antients, Ælian is the only one who takes notice of this singular species. Amidst his immense farrago of fables, he gives a very good account of it, under the name of “the Poephagus, an Indian animal larger than a horse, with a most thick tail, and black, composed of hairs finer than the human. Highly valued by the Indian ladies for ornamenting their heads; each hair he says was two cubits long. It was the most fearful of animals and very swift. When it was chased by men or dogs, and found itself nearly overtaken, it would face its pursuers, and hide its hind parts in some bush, and wait for them: imagining that if it could conceal its tail, which was the object they were in search of, that it would escape unhurt. The hunters shot at it with poisoned arrows, and, when they had slain the animal, they took only the tail and hide, making no use of the flesh.”

THE BUFFALO.

THE buffalo hath large horns, straight for a great length from their base, then bending upwards; not round, but compressed, and one side sharp: the skin is almost naked, and black. Those about the Cape of Good Hope of a dusky red. The head is proportionably less than the common ox; the ears are larger; the nose broad and square, eyes white, and no dewlaps:

the limbs are long, body square, tail shorter and more slender than that of our common cattle. It grows to a very great size, if we may form a judgment from the horns. In the British Museum is a pair six feet six inches and a half long, it weighs twenty-one pounds, and the hollow will contain five quarts. Lobo mentions some in Abyssinia, which would hold ten. Dillon saw some in India ten feet long: they are sometimes wrinkled, but often smooth. These animals are found wild in Malabar, Borneo, and Ceylon: they are excessively fierce and dangerous if attacked; they are afraid of fire, and are greatly provoked at the sight of red: they are very fond of wallowing in the mud; love the sides of rivers; and swim very well. They are domesticated in Africa, India, and Italy, and are used for their milk and their flesh, which is far inferior to the common beef: much cheese is also produced from the milk. The horns are greatly esteemed in manufactories; and of their skin is made an impenetrable buff. They form a distinct race from the common cattle: they will not copulate together, neither will the female buffaloes suffer a common calf to suck them; nor will the domestic cow permit the same from the young buffalo. A buffalo goes twelve months with young; our cows only nine. The buffaloes of Abyssinia grow twice the size of our largest oxen, and are called taur-elephantes, not only on that account, but because their skins are naked and black like that of the elephant: they are very common in Italy, originally introduced into Lombardy from India by King Agilulf, who reigned from 591 to 616: they are said to have grown wild in Apuglia, and to be very common, in hot weather, on the sea-shore between Manfredonia and Barletta: the tamed kind are used in Italy for the dairy and the draught. In India and Africa for both; and in some parts of India also for the saddle.

Aristotle describes these animals very well under the title of wild oxen, among the Arachotæ, in the northern part of India, bordering on Persia. He gives them great strength, black colour, and their horns bending upwards more than those of the common kind. Pliny probably means a large breed of this kind, as high as a camel, with horns extending four feet between tip and tip. There was a small sort exhibited in London some years ago, under the name of bonafus; of the size of a runt: hair on the body bristly, and very thin, so that the skin appeared: the rump and thighs quite bare; the first marked on each side with two dusky stripes, pointing downward, the last with two transverse stripes: the horns are compressed sideways, taper, and sharp at the point. There is another variety, namely, the anoa, which is a very small species, of the size of a middling sheep: they are wild, in small herds, in the mountains of Celebes, which are full of caverns: they are taken with great difficulty; and even in confinement are so fierce, that Mr. Soten lost in one night fourteen stags, which were kept in the same paddock, whose bellies they ripped up. The gauvera is another species found in Ceylon, and described by Knox, who says, its back stands up in a sharp ridge, and whose legs are white half way from the hoofs. The hunch-backed oxen already described are probably the animals intended by Mr. Knox.

T H E M U S K B U L L and C O W.

THESE are natives of Hudson's-bay: they are about the size of a Scotch bullock; have a thick body, and short legs: the horns are large, and very remarkable: they are united at their origin in the skull; but, immediately after, they fall down on each side of the crown of the head, then taper away small, the points turning up. The hair is black, and grows to a great length; underneath which is a fine wool superior to
Vigonia

Vigonia wool. The male only has the curious scalp; the female is covered with hair. These animals frequent the country about a hundred miles inwards to the north-west of Churchill-river, in Hudson's-bay, where they are very numerous. They live in herds of thirty, forty, and upwards to the number of eighty or a hundred. The bulls are very few in proportion to the cows: for, according to Mr. Graham's information, it is rare to see more than two or three full-grown bulls with the largest herd; and, from the number of males which at times are found dead, the Indians are of opinion that they kill each other in contending for the females at the rutting season. They are then so jealous of their mistresses, that they run at either man or beast who offers to approach them, and have been seen to run and bellow even at ravens and other large birds which chanced to fly or light near them. They go to rut in August. The females bring forth their young about the latter end of May or beginning of June, and are never known to have more than one at a time. They delight much in the most mountainous parts of the barren grounds, and are seldom found at any great distance through the woods: though a beast of considerable magnitude and apparently unwieldy form, yet it climbs the rocks with great ease and agility; and is nearly as sure-footed as a goat, and like that animal will feed on any thing: for though they seem fondest of grass, yet in winter they eat moss and any other herbage they can find; also the tops of the willows and the brush of the pine-tree. The flesh of this animal no way resembles that of the western buffalo; but is more like that of the moose or elk, the fat being of a clear white slightly tinged with a light azure. The calves and young heifers are exceeding good eating; but the flesh of the bulls both smell and taste so strong of musk, as to render it very disagreeable. It seems to have been from want of better information, that Mr. Drage asserts the heart to be the

most impregnated: had he said the kidneys, he would have been much nearer the truth. The urine must contain this scent in a very great degree: for the penis is always lubricated with a brown gummy substance, so highly scented with musk, that after having been kept for several years it does not seem to have lost any of its quality. The dung of this animal (though so large) is all in little round knobs; and so exactly like that of the varying hare both in size and colour, that it would be very easy to mistake the one for the other, were it not for the quantity. The Indians kill great numbers of them. From two thousand to four thousand weight of the flesh frozen is brought to Prince of Wales's fort annually, and is served out as provisions to the Europeans.

THE CAPE BUFFALO.

THESE inhabit the interior parts of Africa north of the Cape of Good Hope, but do not extend to the north of the Tropic. They are said to be greatly superior in size to the largest English ox: hang their heads down, and have a most ferocious and malevolent appearance. They are in fact excessively fierce and dangerous to travellers: will lie quietly in wait in the woods, and rush suddenly on passengers, and trample them, their horses, and oxen of draught, under their feet: so that they are to be shunned as the most cruel beasts of this country. They will even return to the attack, and delight to lick the slaughtered bodies. They are prodigiously swift, and so strong, that a young one of three years of age, being placed with six tame oxen in a waggon, could not by their united force be moved from the spot. They are also found in the interior parts of Guinea; but are so fierce and dangerous, that the negroes who are in chase of other animals are fearful of shooting at them. The lion, which can break the back of the strongest domestic oxen at one blow,

cannot

cannot kill this species, except by leaping on its back, and suffocating it by fixing its talons about its nose and mouth. The lion often perishes in the attempt; but leaves the marks of its fury about the mouth and nose of the beast. They live in great herds, especially in Krake-Kamma, and other deserts of the Cape; and retire during the day into the thick forests: they are reckoned good meat by the Dutch of the Cape: they are called aurochs, but differ totally from the European. The warmth of the climate has prevented the vast length and abundance of hair which distinguishes the former, and the luxuriance of herbage in this country has given it the vast superiority of size.

Of this animal we have the following account by Dr. Sparman, who was the first who gave a distinct delineation and description of it. Describing the death of one that was shot, he informs us, that “immediately after the report of the gun the buffalo fell upon its knees: that he afterwards, however, raised himself up, and ran seven or eight hundred paces into a thicket; and, directly upon this, with a most dreadful bellowing, gave us to understand, that it was all over with him. All this together formed a spectacle, which most sportsmen would have been highly delighted to have been present at: this creature, as well as most of the largest kind of game, was shot by a Hottentot. Even some of the best huntsmen among the farmers are obliged, for the most part, to make use of Hottentots by way of bush-hunters; as in their skin-cloaks they do not excite the attention of the wild beasts so much as the Europeans do in their dress: they are likewise ready, at any time when there is occasion for it, to go barefoot, and crawl softly upon their bellies, till they come within a proper distance of the animal. Moreover, when the buffalo at length is irritated, the Hottentots can much easier escape from the danger which threatens them than a Christian. I myself, on another occasion, saw two Hottentots run with amaz-

ing swiftness when a buffalo was in pursuit of them. It was not without the greatest discontent on the part of my Hottentots that I made a draught and took the dimensions of this buffalo; thus preventing them, in the mean while, from falling aboard of the flesh. Neither did they afterwards delay one moment to cut a few slices off and broil them: they likewise laid two bones on the fire to broil for the sake of the marrow. After this they began to take out the entrails, which, according to the testimony of my Hottentots, perfectly resembled those of an ox: the buffalo's, however, are much larger, and take up more room, and indeed gave us no little trouble in clearing them away; for the diameter of this creature's body was full three feet.

“ Upon the whole, the size of the buffalo was as follows: the length eight feet, the height five and a half, and the fore-legs two feet and a half long; the larger hoofs were five inches over; from the tip of the muzzle to the horns was twenty-two inches. This animal in shape very much resembled the common ox: but the buffalo has much stouter limbs, in proportion to its height and length: their fetlocks hang likewise nearer to the ground. The horns are singular, both in their form and position: the bases of them are thirteen inches broad, and are only an inch distance from each other; by which means there is formed between them a narrow channel or furrow, in a great measure bare of hair. Measuring them from this furrow, the horns rise up in a spherical form, with an elevation of three inches at most. In this way they extend over a great part of the head, viz. from the nape of the neck to the distance of three and a half inches from the eyes; so that the part from which they grow out, does not occupy a space of less than eighteen or twenty inches in circumference. From hence bending down on each side of the neck, and becoming more cylindrical by degrees, they each of them form a curve, the convex part of which is turned towards the ground and the point up in the
air;

air; which, however, at the same time is generally inclined backwards: the distance between the points of the horns is frequently above five feet; the colour of them is black; and the surface, to within about a third part of them, measured from the base, is very rough and craggy, with cavities sometimes an inch deep. Neither these cavities, nor the elevations which are formed between them, appear to be at all accidental, as there is a tolerable similarity between these excrescences, though they are very different in different buffaloes. The ears are a foot in length, somewhat pendant, and in a great measure covered and defended by the lower edges of the horns: the edges of the ears are notched and shrivelled up in divers ways, which probably proceeds from the wounds these creatures often receive in their battles with each other, and from the rents they get in the briars and almost impenetrable thickets through which they pass, together with other casualties of that nature: though several Hottentots have been induced from thence to imagine, that the buffaloes belonged to certain supernatural beings, who marked these animals in this manner for their own cattle. By way of naming these beings to me, they made use of the word *duyvel*, which means devil.

“ The hairs of the buffalo are of a dark brown colour, about an inch long; harsh; and, on such males as are advanced in years, very thin, especially on the middle of the sides of the belly: hence they appear at some distance as if they were girt with a belt; and, what contributes not a little to this appearance is, that the buffaloes in general are very fond of rolling in the mire. The hairs on the knees are in most buffaloes somewhat longer than those on the rest of the body, and lie as it were in whirls: the eyes are somewhat sunk within their prominent orbits: this, together with the near situation of them to the bases of the horns, which hang somewhat over its pendant dangling ears, and its usual method of holding its head inclined to

one side, gives the buffalo a fierce and treacherous aspect. The disposition likewise of the animal seems to correspond with its countenance. He may in some sort be called treacherous, as he is wont to hide himself among the trees, and stand there skulking till somebody happens to come very near him, when he rushes out at once into the road, and attacks them. This animal likewise deserves the appellation of fierce and cruel; as it has been remarked, that, not content with throwing down and killing the person whom he attacks, he stands over him afterwards, in order to trample upon him with his hoofs and heels, at the same time crushing him with his knees, and with his horns and teeth tearing to pieces and mangling the whole body, and stripping off the skin by licking it with his tongue. This, however, he does not all at once, but at intervals, going away between whiles to some distance off. Notwithstanding all this, the buffalo will bear to be hunted; though sometimes he will turn and hunt his pursuer, whose only dependence in that case is upon the swiftness of his steed. The surest way to escape from him is to ride up some hill, as the great bulk of the buffalo's body, like that of the elephant, is a weight sufficient to prevent him from being able to vie with the slender and fine limbed horse in swiftness; though, on the other hand, the buffalo, in going down hill, gets on much faster than the horse; a fact to which I have more than once been an eye-witness.

“ The flesh of the buffalo is coarse and not very fat, but full of juice, and of a high and not disagreeable flavour. The hide is thick and tough, and is in great request with the farmers for thongs and harnesses. Of it we made the only halters that can be depended upon for securing our horses and oxen; so that these beasts cannot get loose by snapping them asunder, which they are otherwise apt to do when the lions and wolves make their appearance in the neighbourhood. Every such

such halter should be a finger and a half in breadth and about three yards long, and are sold a good way up in the country for a quarter of a rixdollar a-piece.

“ The hide of the buffalo we had now shot, after it had been dressed in some sort by my Hottentots, by being stretched out and salted a little, and afterwards half dried, served to make a pair of new four-plaited traces for my waggon. We observed, that the ball had hit the lower part of the neck, and entered the lungs; where, though it did not seem to have struck against any bone, and though it was alloyed with the usual quantity of tin, it was yet found to be pretty much flattened. In other buffaloes that we shot since, I have sometimes found the balls, though alloyed with tin, shivered into several pieces against the bones in the internal parts, or at least very much flattened. It is not, therefore, worth while to set about shooting the buffalo with balls made of lead only, for they will seldom be able to penetrate into those parts where they are likely to prove mortal. Besides being possessed of the degree of hardness requisite, a ball should be of a tolerable size, in order to kill so large an animal as the buffalo. The least that ought to be used for this purpose should weigh two ounces and a quarter.

“ My Hottentots shewed so much diligence and zeal both in cutting up and eating this beast, that the encouragement and stimulation which is otherwise frequently necessary to set their sluggish and heavy souls in motion, would on this occasion have been quite superfluous. They drove the waggon then up to the place where the beast lay, and loaded it with the best and fattest part of the flesh. The raw hide, which was of considerable weight and extent, was tied under the waggon till it should be wanted, and the two remaining legs or marrow-bones were fastened to each side of the body of the waggon. Notwithstanding this, our Boshies-men had each of them loaded themselves with a quantity of slips of flesh made up into bundles.

Thus

Thus covered up to the eyes and ears in meat, we made a singular appearance, which might have given any traveller who had happened to pass that way the idea of a walking flesh-market. As we proceeded on our journey, a swarm of other carnivorous animals in a considerable number, viz. eagles, falcons, and common hawks, were seen soon afterwards to occupy our places about the buffalo's remains; though we saw none of them either in the trees or flying about in the air till we had got to the distance of a few gun-shots from the spot."

Another hunt of this formidable animal he afterwards describes as follows: "There was now again a great scarcity of meat in the waggon; for which reason my Hottentots began to grumble, and reminded me that we ought not to waste so much of our time in looking after insects and plants, but give a better look out after the game. At the same time they pointed to a neighbouring dale over-run with wood, at the upper edge of which, at the distance of a mile and a quarter from the spot where we then were, they had seen several buffaloes. Accordingly we went thither; but, though our fatigue was lessened by our Hottentots carrying our guns for us up a hill, yet we were quite out of breath and overcome by the heat of the sun before we got up to it. Yet, what even now appears to me a matter of wonder is, that as soon as we had got a glimpse of the game, all this languor left us in an instant. In fact, we each of us strove to fire before the other, so that we seemed entirely to have lost sight of all prudence and caution. When we advanced to within twenty or thirty paces of the beast, and consequently were perhaps likewise in some degree actuated by our fears, we discharged our pieces pretty nearly at the same time; while the buffalo, which was rather upon lower ground than we were, behind a thin scambling bush, seemed to turn his head round in order to make towards us. In the mean while, however, the moment we had discharged

charged our guns, we had the pleasure to see him fall, and directly afterwards run down into the thickest part of the wood. This induced us to hope that our shot had proved mortal; for which reason we had the imprudence to follow him down into the close thickets, where luckily for us we could get no farther. We had, however, as we found afterwards, only hit the hindmost part of the chine, where the balls, which lay at the distance of three inches from each other, had been shivered to pieces against the bones. In the mean while our temerity, which chiefly proceeded from hurry and ignorance, was considered by the Hottentots as a proof of spirit and intrepidity hardly to be equalled; on which account, from that instant they ever after appeared to entertain an infinitely higher opinion of our courage than they had ever done before. Several of our Hottentots now came to us, and threw stones down into the dale, though without success, in order to find out by the bellowings of the beast whether he had retired: afterwards, however, he seemed to have plucked up his courage; for he came up at last out of the dale on his own accord to the skirts of the wood, and placed himself so as to have a full view of us on the spot where we were resting ourselves somewhat higher up: his intention was, in all probability, and in the opinion of our old sportsmen, to revenge himself on us, if we had not happened to see him in time, and fired at him directly. What, perhaps, in some measure put a stop to his boldness was, that we stood on higher ground than he did; for several veteran sportsmen have assured me of it as a fact, that they know from experience, that the buffaloes do not willingly venture to ascend any hill or eminence in order to attack any one. The third shot, which afterwards was observed to have entered at the belly, was fatal. This occasioned the buffalo to take himself down again into the vale, dying the ground and bushes all the way he went with his blood. Though still hot

upon the chase, yet we advanced with the greatest caution, accompanied by two of our Hottentots, through the thin and more pervious part of the wood, where the buffalo had taken refuge. He was advancing again in order to attack some of us, when Mr. Immelman, from the place where he was posted, shot him in the lungs. Notwithstanding this, he had still strength enough left to make a circuit of a hundred and fifty paces, before we heard him fall: during his fall, and before he died, he bellowed in a most stupendous manner; and this death-song of his inspired every one of us with joy, on account of the victory we had gained: and so thoroughly steeled is frequently the human heart against the sufferings of the brute creation, that we hastened forwards, in order to enjoy the pleasure of seeing the buffalo struggle with the pangs of death. I happened to be the foremost amongst them; but think it impossible for anguish, accompanied by a savage fierceness, to be painted in stronger colours than they were in the countenance of this buffalo. I was within ten steps of him when he perceived me, and bellowing raised himself suddenly again on his legs. I had reason to believe since, that I was at the time very much frightened; for, before I could well take my aim, I fired off my gun, and the shot missed the whole of his huge body, and only hit him in the hind legs, as we afterwards discovered by the size of the balls. Immediately upon this I flew away like lightning, in order to look out for some tree to climb up into. Notwithstanding the tedious prolixity it might occasion me to be guilty of, I thought the best and readiest method of giving my reader an idea of the nature of this animal, and of the method of hunting it, as well as of other contingent circumstances, would be to adduce an instance or two of what occurred during the chase. My Hottentots cut up the buffalo with their usual alacrity and ardour; but, as they had a great way to carry the flesh to the waggon, they took it thither in a
rather

rather unusual way. This was as follows: they cut out large slips of flesh, whole and entire, with holes in the middle, wide enough for them to put their heads and arms through, and loaded themselves with it in this manner before, behind, and on every side of them; the meat all the while dangling about their bodies in a manner ludicrous enough, though not much adapted to create an appetite in the spectator. In this way their hands being entirely disengaged, excepting that each man carried a stick, they clambered up the brow of the hill that overhung the vale, and thus walked on towards the waggon, whither one might trace them all the way by the blood."

THE DWARF BUFFALO.

THIS species hath horns receding in the middle, almost meeting at the points, and standing erect; in body they are larger than a roebuck, and less than a stag; compact and well made in their limbs; the hair shining, and of a tawny brown; legs short, neck thick, shoulders a little elevated; and the tail terminated with long hairs, twice as coarse as those of a horse. This species is described by Belon, who met with it at Cairo; but he says, that it was brought from Asamie, the present Azafi, a province of Morocco, seated on the ocean.

OVIS, the SHEEP, of the Order PECORA.

THE sheep is a genus of the mammalia class, the characters of which are these: the horns are concave, turned backwards, and full of wrinkles; there are eight fore-teeth in the under-jaw, and no dog-teeth. The wool of these animals is only a congeries of very long and slender hairs, oddly twisted and contorted, and variously interwoven with one another. This, as far as is yet known, is a clothing peculiar to the sheep kind, no other animal having been seen to possess it. It is not, however, the clothing of all the species of

sheep, some that are found in distant nations having short hair like that of the goat. The English wool is excellent for almost every purpose. The Spanish is extremely fine; and the œconomy of their shepherds admirable; as is also their vast attention to the business, and their annual migrations with their flocks. The finest fleeces in the world are those of Caramania, reserved entirely for the Moulhaes and priests; those of Cachemire are excellent; and the lamb-skins of Bucharia are exquisite.

The sheep in its nature is harmless and timid, resists by butting with its horns, and threatens by stamping with its foot; it drinks little; generally brings forth one at a time, sometimes two, but rarely three; it goes about five months with young; is subject to the rot, to worms in its liver, the vertigo, &c. Sheep have their teeth, when they feed in certain pastures, incrufted and gilt with pyritical matter; which has been observed in the sheep of Ægypt, Anti-Lebanon, and Scotland. The various species of sheep are thus enumerated by Mr. Pennant, viz.

The *cretan*, or *ovis strepsiceros*, has large horns, quite erect, and twisted like a screw. They are common in Hungary; and are called by the Austrians, *zackl*; and is almost the only kind in which their butchers deal. Great flocks are found on Mount Ida in Crete. M. Buffon has given descriptions of this sort under the name of *vallachian* sheep.

The *ovis anglica*, or *hornless sheep*, are very common in many parts of England; the largest are in Lincolnshire, and the least horned sheep are in Wales.

The *ovis polycerata*, or *many-horned sheep*, are common in Iceland, and other parts of the North; they have usually three horns, sometimes four, and even five. Horned sheep are also very common in Siberia, among the Tartarian flocks, about the river Jenesei. The ram of this breed hath generally two upright and two lateral horns, the body covered with wool, the fore-
part



1. The four horned Ram. 2. Horns of the Scotland Sheep.
3. Horns of the Cretan Sheep.

part of the neck with yellowish hairs, about 14 inches in length. They are very mischievous and pugnacious. M. Buffon has given the description of one of the same kind, but with only two horns, under the name of *le morvant de la chine*.

There was a most elegant species, brought from Guinea, in the possession of Richard Wilding, Esq. of Llanrhaidr, in Denbighshire. It was small of stature, but most beautifully limbed. The hair of a silvery whiteness, and quite silky; on the fore and hind part of the neck it was of a great length, especially in front; half of the nose was of a jetty blackness; on each knee and on each ham was a black spot; the footlock and feet black. In the month of November it began to assume a soft woolly coat, like that of the English sheep: so sensibly was it influenced by climate. This animal was at first extremely gentle, and attended its master in all his walks, and leaped over every stile in its way. It afterwards, on being introduced to some females, grew so vicious as to become dangerous, so that it was sent to a mountain inclosure, where it died.

The *aries guineensis*, or *African sheep*, are meagre, very long legged and tall, short horns, and pendent ears, covered with hair instead of wool; short hair; with wattles on the neck. Perhaps the Adimain of Leo Africanus, which he says furnishes the Lybians with milk and cheese, is of this species, which is of the size of an ass, and the shape of a ram, with pendent ears. Della Valle tells us, that at Goa he has seen a wether bridled and saddled, which carried a boy twelve years old. The Portuguese call them *cabritto*, and breed them; but they are very bad eating.

The *ovis arabica*, or *broad-tailed sheep*, are common in Syria, Barbary, and Æthiopia. Some of their tails end in a point, but often square or round. They are so long as to trail on the ground, and the shepherds are obliged to put boards with small wheels under the tails to keep them from galling. These tails are esteemed

esteemed a great delicacy, are of a substance between fat and marrow, and are eaten with the lean of the mutton. Some of these tails weigh fifty pounds each. The short *thick-tailed* sheep are common among the Tartars. The *broad-tailed* are found in the kingdom of Thibet; and their fleeces, in fineness, beauty, and length, are equal even to those of Caramania. The Cachemirians engross this article, and have factors in all parts of Thibet for buying up the wool, which is sent into Cachemir, and worked into shauls, superior in elegance to those woven even from the fleeces of their own country. This manufacture is a considerable source of wealth. Bernier relates, that in his days, shauls made expressly for the great omrahs, of the Thibetian wool, cost a hundred and fifty rupees: whereas those made of the wool of their own country never cost more than fifty. These articles of luxury have, till of late, been supposed to have been made with the hair of a goat, till we were undeceived by Mr. Bogle, a gentleman sent by Mr. Hastings on a commission to the Tayshoo Lama of Thibet. His account of that distant country is instructive and entertaining. We have sufficient in the Philosophical Transactions to make us regret that we have not the whole of that memorable mission. Both the broad-tailed and long-tailed sheep were known to the antients. Aristotle takes notice of the first, Pliny of the second. One says the tails were a cubit broad; the other a cubit in length.

The *fat-rumped* sheep without tails, have arched noses, wattles, pendulous ears, and with curled horns, like the common sheep. The wool is coarse, long, and in flocks; the legs slender, and the head black. The ears are of the same colour, with a bed of white in the middle. The wool is generally white, sometimes black or reddish, and often spotted. The buttocks appear like two hemispheres, quite naked and smooth, with the *os coccygis* between scarcely sensible to the touch.

These

These are composed only of fuet; whence Dr. Pallas properly styles this variety *ovis steatopyges*. These sheep grow very large, even to two hundred pounds weight, of which the posteriors weigh forty. Their bleating is short and deep, more like that of a calf than sheep. They abound in all the deserts of Tartary, from the Volga to the Irtis, and the Altaic chain; but are more or less fat according to the nature of the pasture, but most so where the vernal plants are found; and, in the summer, where there are herbs replete with juice and salts, and where salt springs and lakes impregnate the vegetation of the country. These monstrous varieties are supposed to originate from disease, arising from an excess of fat in the hind parts, which involved, and at length destroyed, the tail. By breeding between animals similarly affected, the breed was probably continued in those parts where food and climate have concurred to support the same appearances. Those with fat tails, are rather in the way to exhibit such a singular variety, or a mixed breed between the common and tail-less kind. All abound so greatly in Tartary, that one hundred and fifty thousand have been sold annually at the Orenburg fairs, and a much greater number at Troinkaja, in the Irkutz government, bought from the Kirgisian Tartars, and dispersed through Russia. They are very prolific; usually bring two at a time, and often three.

The *argali*, *capra ammon* of Linnæus, or *Siberian* sheep, hath horns placed on the summit of the head, close at their bases, rising at first upright, then bending down and twisting outward, like those of the common ram; angular, and wrinkled transversely. In the females they are less and more upright, bending backwards: the head like a ram, ears less than in that animal, neck slender, body large, limbs slender but strong, tail very little more than three inches long; hoofs small, and like those of a common sheep. The hair in summer is very short and smooth, like that of a
stag;

stag; the head grey, the neck and body brownish, mixed with ash-colour; at the back of the neck, and behind each shoulder, is a dusky spot, with the space about the tail yellowish. In the winter, the end of the nose is white, the face cinereous, the back ferruginous, mixed with grey, growing yellowish towards the rump; the rump, tail, and belly, white; the coat in this season rough, waved, and a little curling; an inch and a half long; about the neck two inches, and beneath the throat still longer. The usual size of the male is that of a smaller hind; the female somewhat less; the form strong and nervous.

The next animal related to this species, is the *Μουσμον* of Strabo, and *musmon* of Pliny; perhaps also the *ophion* of the latter, and the wild ram of Opian, which with its horns often laid prostrate even the wild boar. These were natives of Spain, Sardinia, and Corsica, and are still existing in those countries. The remains of a male animal of this kind, imported from Corsica by the illustrious defender of the liberties of his country, General Paoli, is now preserved in the Leverian Museum. It was at the age of four years at the time of its decease. Its horns are twenty-two inches long; the space between tip and tip near eleven; the girth near the base the same. This poor animal had the ill fortune to fall, in our land of freedom, into heavy slavery, and hard usage, in the latter part of his life, which stunted his growth, and prevented the luxuriance of its horns; which ought, at its age, to have had the volutes of a large-horned ram, to have been fifteen inches round at the base. On the front of the neck is a large spot of white. The shoulders were covered with black hairs; bright and glossy in a state of vigour. On each side of the back, near the loins, is a large bed of white. The male, in its native country, is called *musfro*, the female *musfra*. They inhabit the highest parts of the Corsican alps, unless forced down by the snows into rather lower regions. They
are

are so wild, and so fearful of mankind, that the old ones are never taken alive: but are shot by the chafseurs, who lie in wait for them. The females bring forth in the beginning of May, and the young are often caught after their dam is shot. They instantly grow tame, familiar, and attach themselves to their master. They will copulate with the common sheep: there is now an instance in England of a breed between the ram of this species, and a common ewe. They are likewise very fond of the company of goats. In a wild state, they feed on the most acrid plants: and when tame will eat tobacco, and drink wine. Their flesh is savoury, but always lean. The horns are used for powder-flasks, slung in a belt, by the Corsican peasants; and some are large enough to hold four or five pounds. The Sardinians make use of the skins dressed, and wear them under their skirts, under the notion of preserving them against bad air: they also wear a surtout without sleeves made of the same materials, which falls below the knees, and wraps close about their bodies. The skin is very thick, and might have been proof against arrows, when those missile weapons were in use. At present these surtouts are worn to defend them against the briars and thorns, in passing through thickets. In all probability they are the very same kind of garment as the *mastruca sardorum*, which the commentators on Cicero suppose to have been made of the skins of the musk: and the *Mastrucati Lantrunculi* the people who wore them. This is in a manner confirmed, as they are still in use with the *latre* or *banditti* of the island; who find the benefit of them in their impetuous sallies out of the brakes of the country, on the objects of their rapine. The race is still found in Sardinia and Corsica: whether it exists still in Macedonia, we are ignorant. It is found in these days in great abundance, but confined to the north-east of Asia, beyond the lake Baikal, between the Onon and Argun, and on the east of the Lena to the

height of lat. 60; and from the Lena to Kamtschatka; and perhaps the Kurili islands. It abounds on the desert mountains of Mongolia, Songaria, and Tartary. It inhabits the mountains of Persia, and the north of Indostan. The breed once extended further west, even to the Irtis: but, as population increased, they have retired to their present obscure haunts, shunning those of mankind.

It is probable that these animals are also found in California. The Jesuits who visited that country in 1697, say, that they found a species of sheep as big as a calf of a year or two old, with a head like that of a stag, and enormous horns like those of a ram; and with tail and hair shorter than that of a stag. This is very likely, as the migration from Kamtschatka to America is far from being difficult. They were once inhabitants of the British isles. Boethius mentions a species of sheep in St. Kilda, larger than the biggest he-goat, with tails hanging to the ground, and horns longer, and as thick as those of an ox. "This account," says Mr. Pennant, "like the rest of his history, is a mixture of truth and fable: I should have been silent on this head, had I not better authority: for I find the figure of this animal on a Roman sculpture, taken out of Antoninus's wall near Glasgow. It accompanies a recumbent female figure, with a rota or wheel, expressive of a via or way, cut possibly into Caledonia, where these animals might, in that early age, have been found. Whether they were the objects of worship, as among the ancient Tartars, I will not pretend to say; for among the graves of those distant Asiatics, brazen images and stone figures of their argali, or wild sheep, are frequently found."

Their present habitations, in Siberia, are the summits of the highest mountains, exposed to the sun, and free from woods: they go in small flocks; copulate in autumn, and bring forth in the middle of March, one, and sometimes two, young. At that season the
females

females separate from the males, and educate their lambs; which when first dropped are covered with a soft grey curling fleece, which changes into hair late in the summer. At two months age the horns appear, are broad, and like the face of an ax. In the old rams they grow to a vast size: they are sometimes found of the length of two Russian yards, measured along the spires; weigh fifteen pounds apiece: and are so capacious as to give shelter to the little foxes, who find them accidentally fallen in the wilderness. Father Rubruquis, the traveller of 1253, first takes notice of these animals, under the name of artak. He says he had seen some of the horns so large, that he could scarcely lift a pair with one hand; and the Tartars made great drinking-cups with them.

They feed from spring to autumn in the little valleys among the tops of the mountains, on young shoots and Alpine plants, and grow very fat. Towards winter they descend lower, eat either the dry grass, perennial plants, mosses, or lichens; and are found very lean in the spring: they are then purged by early pulsatillæ, and other sharp anemonoid plants, of which the tame sheep are also excessively fond: they, besides, at all times of the year, frequent the places abundant in salt, as is frequent in every part of Siberia, and excavate the ground, in order to get more readily at it. These answer to the licking-places in America, and are the haunts of deer as well as argali. They are very fearful of mankind; when closely pursued, they do not run in a progressive course, but obliquely from side to side, in which they shew the nature of sheep: they strive as soon as possible to reach the rocky mountains, which they ascend with great agility; and tread the narrowest paths over the most dangerous precipices with the greatest safety. The old rams are very quarrelsome, and have fierce combats among themselves, fighting with their head like the common kind: they often strike their antagonist down the steep precipices; and

their horns and bones are frequently found at the bottom; a mark of the fatal effects of their feuds: they will often entangle their horns accidentally, and, thus locked, fall down and perish. They are important objects of the chase with the northern Asiatics, for their uses are considerable. The flesh and fat are esteemed by the natives among the greatest delicacies. Doctor Pallas thought the lamb excellent; but the flesh, and especially the fat, of the old ones less agreeable, when boiled; but if roasted exceedingly good. The skins, with their winter coat, serve as warm raiments and coverlets; the horns for variety of necessaries.

The chase of these animals is both dangerous and difficult. As soon as they see a man, they ascend to the highest peaks of the rocks; and are shot with the utmost stratagem, by winding round the rocks, and coming on them unaware. At other times they are taken in pit-falls made in the paths which lead to their favourite salt or licking-places. Elks, stags, and roes, and other wild beasts, are taken in these pits: they are often times shot with cross-bows, placed in the way of their haunts, which discharges its arrow whenever the beast treads on a string fastened for that purpose to the trigger. The Mongols and Tungusi use frequently a nobler method of chase, and surround them with horses and dogs. The Kamtschatkans pass the latter part of the summer to December, with all their families, amidst the mountains, in pursuit of these animals. The old rams are of vast strength: ten men can scarcely hold one: the young are very easily made tame. The first trial probably gave origin, among a gentle race of mankind, to the domesticating these most useful of quadrupeds; which the rude Kamtschatkans to this moment consider only as objects of the chase, while every other part of the world enjoy their various benefits, reclaimed from a state of nature. Dr. Pallas calls it the *ovis fera*, and says it is the
parent

parent animal, from whence all the domestic sheep originally sprung.

The ancients did not neglect experiments to improve the breed of sheep. Columella says, that his uncle, Columella, a man of strong sense, and an excellent farmer, procured some wild rams, which had been brought among other cattle to Cales from Africa, by way of tribute, which were of a very singular colour: these he turned to his common sheep. The first produce was lambs with a rough coat, but of the same colour with the rams. These again produced, from the Tarentine ewes, lambs with finer fleeces; and, in the third generation, the fleeces were as fine as those of the ewes, but the colour the same with that of the father and grandfather: this breed was the same which the old Romans called *umbri*; or *spurious*. But there had been once a notion, that the animal itself was no more than an hybridous production.

*Tityrus ex oyibus oritur, hircoque parente:
Mufimonem capra ex vervegno femine gignit.*

The *tragelaphus*, or *bearded sheep*, hath hairs on the lower part of the cheeks and upper jaws extremely long, forming a divided or double beard; the hair on the sides, and body, short; on the top of the neck longer, and a little erect: the whole under-part of the neck and shoulders covered with coarse hair, not less than fourteen inches long. Beneath the hair, in every part, is a short genuine wool, the rudiments of a fleecy cloathing: the colour of the breast, neck, back, and side, is of a pale ferruginous colour, and the tail very short: the horns are close at the base, recurvated, twenty-five inches long, eleven in circumference in the thickest place, diverging, and bending outwards; their points being nineteen inches distant from each other. One of these animals was brought into England from Barbary in 1561, by Doctor Caius. He says, that it inhabited the mountainous and rocky parts of Mauritania;

tania; and seemed in confinement to be very gentle, full of play, and frolicksome, like a goat: the horns were like those of a ram. This appears to be the tragelaphus of Pliny, not only on account of its beard, and the great length of hair on its shoulders; but likewise of the place where that Roman naturalist says it was found, near the river Phasis; for Doctor Pallas says, that an animal with a divided beard, probably the same, has lately been discovered by Professor Guildenstaedt, on the mountains of Caucasus; from whose foot arises the very river, on whose banks were its ancient haunts. This species and the former agree greatly together, the beard excepted, and great length of hair on the breast. In all probability it is one and the same species.

Of all the animals with which Divine Providence has stored the world for the use of man, none is to be found more innocent, more useful, or more valuable, than the sheep. The sheep supplies us with food and cloathing, and finds ample employment for our poor at all times and seasons of the year, whereby a variety of manufactures of woollen cloth is carried on without interruption to domestic comfort and loss to friendly society or injury to health, as is the case with many other occupations. Every lock of wool that grows on its back becomes the means of support to the staplers, dyers, pickers, scourers, scriblers, carders, combers, spinners, spoolers, warpers, queelers, weavers, fullers, tuckers, burlers, shearmen, pressers, clothiers, and packers, who, one after another, tumble and toss, and twist, and bake, and boil, this raw material, till they have each extracted a livelihood out of it; and then comes the merchant, who, in his turn, ships it (in its highest state of improvement) to all quarters of the globe, from whence he brings back every kind of riches to his country, in return for this valuable commodity which the sheep affords.

Besides

Besides this, the useful animal, after being deprived of his coat, produces another against the next year; and when we are hungry, and kill him for food, he gives us his skin to employ the fell-mongers and parchment-makers, who supply us with a durable material for securing our estates, rights, and possessions; and if our enemies take the field against us, supplies us with a powerful instrument for rousing our courage to repel their attacks. When the parchment-maker has taken as much of the skin as he can use, the glue-maker comes after and picks up every morsel that is left, and therewith supplies a material for the carpenter and cabinet-maker, which they cannot do without, and which is essentially necessary before we can have elegant furniture in our houses; tables, chairs, looking-glasses, and a hundred other articles of convenience: and when the winter nights come on, while we are deprived of the cheering light of the sun, the sheep supplies us with an artificial mode of light, whereby we preserve every pleasure of domestic society, and with whose assistance we can continue our work, or write or read, and improve our minds, or enjoy the social mirth of our tables. Another part of the slaughtered animal supplies us with an ingredient necessary for making good common soap, a useful store for producing cleanliness in every family, rich or poor. Neither need the horns be thrown away; for they are converted by the button-makers and turners into a cheap kind of buttons, tips for bows, and many useful ornaments. From the very trotters an oil is extracted useful for many purposes, and they afford good food when baked in an oven. Even the bones are useful also; for by a late invention of Dr. Higgins, they are found, when reduced to ashes, to be an useful and essential ingredient in the composition of the finest artificial stone in ornamental work for chimney-pieces, cornices of rooms, houses, &c. which renders the composition more durable by effectually preventing its cracking.

If it is objected to the meek inoffensive creature, that he is expensive while living, in eating up our grafs, &c. it may be answered that it is quite the contrary; for he can feed where every other animal has been before him and grazed all they could find; and that if he takes a little grafs on our downs or in our fields, he amply repays us for every blade of grafs in the richness of the manure which he leaves behind him. He protects the hand from the cold wintry blast, by providing them with the softest leather gloves. Every gentleman's library is also more or less indebted to him for the binding of his books, for the sheath of his sword, and for cases for his instruments; in short, not to be tedious in mentioning the various uses of leather, there is hardly any furniture or utensil of life but the sheep contributes to render either more useful, convenient, or ornamental. As the sheep is so valuable an animal, every piece of information concerning the proper method of managing it must be of importance. It will not therefore be useless nor unentertaining to give some account of the manner of managing sheep in Spain, a country famous for producing the best wool.

In Spain there are two kinds of sheep: the coarse-woolled sheep, which always remain in their native country, and are housed every night in winter; and the fine-woolled sheep, which are always in the open air, and travel every summer from the cool mountains of the northern parts of Spain, to feed in winter on the southern plains of Andalusia, Mancha, and Estramadura. Of these latter, it appears from accurate computations, that there are about five millions; and that the wool and flesh of a flock of ten thousand sheep produce yearly about twenty-four reals a-head, or about the value of twelve English sixpences, one of which belongs to the owner, three to the king, and the other eight are allowed for the expences of pasture, tythes, shepherds, dogs, salt, shearing, &c. Ten thousand sheep form a flock, which is divided into ten tribes,
under

under the management of one person, who has absolute dominion over fifty shepherds and fifty dogs. In the 16th century the travelling sheep were estimated at seven millions: under Philip III. the number was diminished to two millions and a half. Ustariz, who wrote at the beginning of this century, made it amount to four millions. The general opinion is, that at present it does not exceed five millions. If to this number the eight millions of stationary sheep be added, it will make nearly thirteen millions of animals, all managed contrary to the true interests of Spain, for the advantage of a few individuals. For the proprietors of stationary flocks also have privileges which greatly resemble those of the members of the *Mesta*. According to Arriquebar, Spain contains eight millions of fine-woolled sheep, ten millions of coarse-woolled, and five hundred thousand bulls, oxen, and cows.

M. Bourgoanne, a French gentleman, who resided many years in Spain, and directed his inquiries chiefly to the civil government, trade, and manufactures, of that country, gives the following account of the wandering sheep of Segovia. "It is (says he) in the neighbouring mountains that a part of the wandering sheep feed during the fine season. They leave them in the month of October, pass over those which separate the two Castiles, cross New Castile, and disperse themselves in the plains of *Estramadura* and *Andalusia*. For some years past those of the two Castiles, which are within reach of the *Sierra-Morena*, go thither to pass the winter; which, in that part of Spain, is more mild: the length of their day's journey is in proportion to the pasture they meet with. They travel in flocks from one thousand to twelve hundred in number, under the conduct of two shepherds; one of whom is called the *mayoral*, the other the *zagal*. When arrived at the place of their destination, they are distributed in the pastures previously assigned them. They return in the month of April; and, whether it be habit

or natural instinct that draws them towards the climate, which at this season becomes most proper for them, the inquietude which they manifest might, in case of need, serve as an almanac to their conductors."

Mr. Arthur Young, in that patriotic work which he conducted with great industry and judgment, the *Annals of Agriculture*, gives us a very accurate and interesting account of the Pyrenean or Catalonian sheep.

"On the northern ridge, bearing to the west, are the pastures of the Spanish flocks. This ridge is not, however, the whole; there are two other mountains, quite in a different situation, and the sheep travel from one to another as the pasturage is short or plentiful. I examined the soil of these mountain pastures, and found it in general stony; what in the west of England would be called a stone brash, with some mixture of loam, and in a few places a little peaty. The plants are many of them untouched by the sheep; many ferns, narcissus, violets, &c. but burnet and the narrow-leaved plantain were eaten, as may be supposed, close. I looked for trefoils, but found scarcely any: it was apparent that soil and peculiarity of herbage had little to do in rendering these heights proper for sheep. In the northern parts of Europe, the tops of mountains half the height of these (for we were above snow in July) are bogs, all are so which I have seen in our islands, or at least the proportion of dry land is very trifling to that which is extremely wet: here they are in general very dry. Now a great range of dry land, let the plants be what they may, will in every country suit sheep. The flock is every night brought to one spot, which is situated at the end of the valley on the river I have mentioned, and near the port or passage of Picada: it is a level spot sheltered from all winds. The soil is eight or nine inches deep of old dung, not at all inclosed: from the freedom from wood all around, it seems to be chosen partly for safety against wolves and bears. Near it is a very large stone, or rather rock, fallen

fallen from the mountain. This the shepherds have taken for a shelter, and have built a hut against it; their beds are sheep-skins, and their door so small that they crawl in. I saw no place for fire; but they have it, since they dress here the flesh of their sheep, and in the night sometimes keep off the bears, by whirling fire-brands: four of them belonging to the flock mentioned above lie here. I viewed their flock very carefully, and by means of our guide and interpreter, made some inquiries of the shepherds, which they answered readily, and very civilly. A Spaniard at Venasque, a city in the Pyrenees, gives six hundred livres French (the livre is tenpence halfpenny English) a year for the pasturage of his flock of two thousand sheep. In the winter he sends them into the lower parts of Catalonia, a journey of twelve or thirteen days, and when the snow is melted in the spring, they are conducted back again. They are the whole year kept in motion, and moving from spot to spot, which is owing to the great range they every where have of pasture. They are always in the open air, never housed or under cover, and never taste of any food but what they can find on the hills.

“ Four shepherds, and from four to six large Spanish dogs, have the care of this flock: the latter are in France called of the Pyrenees breed; they are black and white, of the size of a large wolf, a large head and neck, armed with collars stuck with iron spikes. No wolf can stand against them; but bears are more potent adversaries: if a bear can reach a tree, he is safe; he rises on his hind legs, with his back to the tree, and sets the dogs at defiance. In the night the shepherds rely entirely on their dogs; but on hearing them bark are ready with fire-arms, as the dogs rarely bark if a bear is not at hand. I was surprised to find that they are fed only with bread and milk. The head shepherd is paid a hundred and twenty livres a-year wages and bread; the others eighty livres and bread. But they

are allowed to keep goats, of which they have many, which they milk every day. Their food is milk and bread, except the flesh of such sheep or lambs as accidents give them. The head shepherd keeps on the mountain top, or an elevated spot, from whence he can the better see around while the flock traverses the declivities. In doing this the sheep are exposed to great dangers in places that are stony; for by walking among the rocks, and especially the goats, they move the stones, which, rolling down the hills, acquire an accelerated force enough to knock a man down, and sheep are often killed by them; yet we saw how alert they were to avoid such stones, and cautiously on their guard against them. I examined the sheep attentively. They are in general polled, but some have horns; which in the rams turn backwards behind the ears and project half a circle forward; the ewes horns turn also behind the ears, but do not project: the legs white or reddish; speckled faces, some white, some reddish; they would weigh fat, I reckon, on an average, from fifteen to eighteen pounds a quarter. Some tails short, some long. A few black sheep among them: some with a very little tuft of wool on their foreheads. On the whole they resemble those on our South Downs; their legs are as short as those of that breed; a point which merits observation, as they travel so much and so well. Their shape is very good; round ribs and flat strait backs; and would with us be reckoned handsome sheep; all in good order and flesh. In order to be still better acquainted with them, I desired one of the shepherds to catch a ram for me to feel, and examine the wool, which I found very thick and good of the carding sort, as may be supposed. I took a specimen of it, and also of a hoggit, or lamb of last year. In regard to the mellow softness under the skin, which, in Mr. Bakewell's opinion, is a strong indication of a good breed, with a disposition to fatten, he had it in a much superior degree to many of our English breeds, to the

full as much so as the South Downs, which are for that point the best short-woolled sheep in England. The fleece was on his back, and weighed, as I guessed, about eight pounds English; but the average, they say, of the flock is from four to five, as I calculated by reducing the Catalonian pound of twelve ounces to ours of sixteen. This ram had the wool of the back part of his neck tied close, and the upper tuft tied a second knot by way of ornament; nor do they ever shear this part of the fleece for that reason: we saw several in the flock with this species of decoration. They said that this ram would sell in Catalonia for twenty livres. A circumstance which cannot be too much commended, and deserves universal imitation, is the extreme docility they accustom them to. When I desired the shepherd to catch one of his rams, I supposed he would do it with his crook, or probably not be able to do it at all; but he walked into the flock, and singling out a ram and a goat, bid them follow him, which they did immediately; and he talked to them while they were obeying him, holding out his hand as if to give them something. By this method he brought me the ram, which I caught, and held without difficulty."

The best sort of English sheep for fine wool are those bred in Herefordshire, Devonshire, and Worcestershire; but they are small, and black-faced, and bear but a small quantity. Warwick, Leicestershire, Buckingham, and Northamptonshire, breed a large-boned sheep, of the best shape and deepest wool we have. The marshes of Lincolnshire breed a very large kind of sheep, but their wool is not good, unless the breed be mended by bringing in the sheep of other counties among them, which is a scheme of late very profitably followed there. In this county it is no uncommon thing to give fifty guineas for a ram, and a guinea for the admission of a ewe to one of these valuable males, or twenty guineas for the use of it for a certain number of ewes during one season. Suffolk also breeds a very

valuable

valuable kind of sheep. The northern counties in general breed sheep with long but hairy wool: however, the wool which is taken from the neck and shoulders of the Yorkshire sheep is used for mixing with Spanish wool in some of their finest cloths.

Wales bears a small hardy kind of sheep, which has the best tasted flesh, but the worst wool of all. Nevertheless it is of more extensive use than the finest Segovian fleeces; for the benefit of the flannel manufacture is universally known. The sheep of Ireland vary like those of Great Britain: those of the south and east being large and their flesh rank: those of the north and the mountainous parts small and their flesh sweet. The fleeces in the same manner differ in degrees of value. Scotland breeds a small kind, and their fleeces are coarse.

But the new Leicestershire breed is the most fashionable, and of course the most profitable breed, in England. Joseph Altom of Clifton, who raised himself from a plough-boy, was the first who distinguished himself in the midland counties for a superior breed of sheep. How he improved his breed is not known; but it was customary for eminent farmers in his time to go to Clifton in summer to choose and purchase ram-lambs, for which they paid two or three guineas. This man was succeeded by the celebrated Mr. Bakewell, of Dishley; and it may reasonably be supposed that the breed, by means of Altom's stock, had passed the first stage of improvement before Mr. Bakewell's time. Still, however, it must be acknowledged, that the Leicestershire breed of sheep owes its present high state of improvement to the ability and care of Mr. Bakewell.

“ The manner in which Mr. Bakewell raised his sheep to the degree of celebrity in which they deservedly stand, is, notwithstanding the recentness of the improvement, and its being done in the day of thousands now living, a thing in dispute; even among
men

men high in the profession, and living in the very district in which the improvement has been carried on! Some are of opinion that he effected it by a cross with the Wiltshire breed; an improbable idea, as their form altogether contradicts it: others, that the Ryeland breed were used for this purpose; and with some show of probability. If any cross whatever was used, the Ryeland-breed, whether we view the form, the size, the wool, the flesh, or the fattening quality, is the most probable instrument of improvement. It is however probable, that no cross with any alien breed whatever has been used; but that the improvement has been effected by selecting individuals from kindred breeds; from the several breeds or varieties of long-woolled sheep, with which Mr. Bakewell was surrounded on almost every side, and by breeding from the same family, with this selection: solicitously seizing the superior accidental varieties produced; associating these varieties; and still continuing to select, with judgment, the superior individuals.

“ It now remains to give a description of the superior class of individuals of this breed, especially ewes and wethers, in full condition, but not immoderately fat. The rams will require to be distinguished afterwards. The head is long, small, and hornless, with ears somewhat long, and standing backward, and with the nose shooting forward. The neck thin, and clean toward the head; but taking a conical form; standing low, and enlarging every way at the base; the fore-end altogether short. The bosom broad, with the shoulders, ribs, and chine, extraordinary full. The loin broad, and the back level. The haunches comparatively full toward the hips, but light downward; being altogether small in proportion to the fore-parts. The legs, at present, of a moderate length; with the bone extremely fine. The bone throughout remarkably light. The carcase, when fully fat, takes a remarkable form: much wider than it is deep, and almost as broad as it is long.

long. Full on the shoulder, widest on the ribs, narrowing with a regular curve towards the tail; approaching the form of the turtle nearer perhaps than any other animal. The pelt is thin, and the tail small. The wool is shorter than long wools in general, but much longer than the middle wools; the ordinary length of staple five to seven inches, varying much in fineness and weight."

This breed surpasses every other in beauty of form; they are full and weighty in the fore quarters; and are remarkable for smallness of bone. Mr. Marshall, who has been of so much benefit to agriculture and his country by his publications, informs us, in his Rural Economy of the Midland Counties, that he has seen a rib of a sheep of this breed contrasted with one of a Norfolk sheep: the disparity was striking; the latter nearly twice the size; while the meat which covered the former was three times the thickness: consequently the proportion of meat to bone was in the one incomparably greater than in the other. Therefore, in this point of view, the improved breed has a decided preference: for surely while mankind continue to eat flesh and throw away bone, the former must be, to the consumer at least, the more valuable.

The criterions of good and bad flesh while the animal is alive differ in different species, and are not properly settled in the same species. One superior breeder is of opinion, that if the flesh is not loose, it is of course good; holding, that the flesh of sheep is never found in a state of hardness, like that of ill-fleshed cattle: while others make a fourfold distinction of the flesh of sheep; as looseness, mellowness, firmness, hardness: considering the first and the last equally exceptionable, and the second and third equally desirable; a happy mixture of the two being deemed the point of perfection. The flesh of sheep when slaughtered, is well known to be of various qualities. Some is composed of large coarse grains, interspersed with wide empty pores like a sponge:

a sponge: others, of large grains, with wide pores filled with fat; others, of fine close grains, with smaller pores filled with fat: and a fourth, of close grains, without any intermixture of fatness. The flesh of sheep, when dressed, is equally well known to possess a variety of qualities: some mutton is coarse, dry, and insipid; a dry sponge, affording little or no gravy of any colour. Another sort is somewhat firmer, imparting a light-coloured gravy only. A third plump, short, and palatable; affording a mixture of white and red gravy. A fourth likewise plump and well-flavoured, but discharging red gravy, and this in various quantities. It is likewise observable, that some mutton, when dressed, appears covered with a thick, tough, parchment-like integument; others with a membrane comparatively fine and flexible. But these, and some of the other qualities of mutton, may not be wholly owing to breed, but in part to the age and the state of fatness at the time of slaughter. Examined in this light, whether we consider the degree of fatness, or their natural propensity to a state of fatness, even at an early age, the improved breed of Leicestershire sheep appear with many superior advantages.

The degree of fatness to which the individuals of this breed are capable of being raised, will perhaps appear incredible to those who have not had an opportunity of being convinced by their own observation. "I have seen widders (says Mr. Marshall) of only two shear, two to three years old, so loaded with fat as to be scarcely able to make a run; and whose fat lay so much without the bone, it seemed ready to be shaken from the ribs on the smallest agitation. It is common for the sheep of this breed to have such a projection of fat upon the ribs, immediately behind the shoulder, that it may easily be gathered up in the hand, as the flank of a fat bullock. Hence it has gained, in technical language, the name of the fore-flank; a point which a modern breeder never fails to touch in judging of the

quality of this breed of sheep. What is, perhaps, still more extraordinary, it is not rare for the rams, at least of this breed, to be 'cracked on the back;' that is, to be cloven along the top of the chine, in the manner fat sheep generally are upon the rump. This mark is considered as an evidence of the best blood. Extraordinary, however, as are these appearances while the animals are living, the facts are still more striking after they are slaughtered. At Litchfield, in February 1785, I saw a fore-quarter of mutton, fatted by Mr. Princep of Croxall, and which measured upon the ribs four inches of fat. It must be acknowledged, however, that the Leicestershire breed do not produce so much wool as most other long-woolled sheep."

As the practice of letting rams by the season is now become profitable, it may be useful to mention the method of rearing them. "The principal ram-breeders save annually twenty, thirty, or perhaps forty, ram-lambs; castration being seldom applied, in the first instance, to the produce of a valuable ram; for in the choice of these lambs they are led more by blood, or parentage, than by form; on which, at an early age, little dependence can be placed. Their treatment from the time they are weaned, in July or August, until the time of shearing, the first week in June, consists in giving them every indulgence of keep, in order to push them forward for the show; it being the common practice to let such as are fit to be let the first season, while they are yet yearlings. Their first pasture, after weaning, is pretty generally clover, that has been mown early, and has got a second time into head; the heads of clover being considered as a most forcing food of sheep. After this goes off, turnips, cabbages, colewort, with hay, and (report says) with corn. But the use of this the breeders severally deny, though collectively they may be liable to the charge. Be this as it may, something considerable depends on the art of making up, not lambs only, but rams of all ages. Fat, like charity,

charity, covers a multitudes of faults; and besides, is the best evidence of their fattening quality which their owners can produce (i. e. their natural propensity to a state of fatness), while in the fatness of the sharhogs, or yearlings, is seen their degree of inclination to fat at an early age. Fattening quality being the one thing needful in grazing stock, and being found, in some considerable degree at least, to be hereditary, the fattest rams are of course the best; though other attachments, well or ill placed, as to form or fashionable points, will perhaps have equal or greater weight in the minds of some men, even in this enlightened age. Such shearlings as will not make up sufficiently as to form and fatness, are either kept on to another year to give them a fair chance, or are castrated, or butchered while yearlings."

From the first letting, about forty years ago, to the year 1780, the prices kept gradually rising from fifteen shillings to a guinea, and from one to ten. In 1780 Mr. Bakewell let several at ten guineas each; and, what is rather inexplicable, Mr. Parkinson, of Quarndon, let one the same year for twenty-five guineas; a price which then astonished the whole country. From that time to 1786, Mr. Bakewell's stock rose rapidly from ten to a hundred guineas; and that year he let two-thirds of one ram (reserving one-third of the usual number of ewes to himself) to two principal breeders, for a hundred guineas each, the entire services of the ram being rated at three hundred guineas! Mr. Bakewell making that year, by letting 20 rams only, more than a thousand pounds! After that time the prices still kept rising. Four hundred guineas were repeatedly given. Mr. Bakewell, in 1789, made twelve hundred guineas by three rams, (brothers, we believe); two thousand of seven; and of his whole letting, full three thousand guineas! Indeed the progress Mr. Bakewell was making, not only in the breed of sheep; but in that of long horned cattle, and black draft-horses, promised the most extensive advantages to himself

and the public. He exhibited his famous black horse to the king and many of the nobility, in the court-yard at St. James's; but death intervened, and put an end to his extensive views, on the 1st of October, 1795. Besides this extraordinary sum made by Mr. Bakewell, there are six or seven other breeders who make from five hundred to a thousand guineas each. The whole amount of monies produced that year in the Midland Counties, by letting rams of the modern breed for one season only, is estimated, by those who are adequate to the subject, at the almost incredible sum of ten thousand pounds.

Rams previous to this season are reduced from the cumbrous fat state in which they are shewn. The usual time of sending them out is the middle of September. They are conveyed in carriages of two wheels with springs, or hung in slings, twenty or thirty miles a-day, sometimes to the distance of two or three hundred miles. They are not turned loose among the ewes, but kept apart in a small enclosure, where a couple of ewes only are admitted at once. When the season is over, every care is taken to make the rams look as fat and handsome as possible. In the choice of ewes the breeder is led by the same criterions as in the choice of rams. Breed is the first object of consideration. Excellency, in any species or variety of live-stock, cannot be attained with any degree of certainty, let the male be ever so excellent, unless the females employed likewise inherit a large proportion of the genuine blood, be the species or variety what it may. Hence no prudent man ventures to give the higher prices for Mr. Bakewell's, or the Dishley, rams, unless his ewes are deeply tinged with the Dishley blood. Next to breed is flesh, fat, form, and wool.

After the lambs are weaned, the ewes are kept in common feeding-places, without any alteration of pasture, previous to their taking the ram. In winter they are kept on grass, hay, turnips, and cabbages. As the
heads

heads of the modern breed are much finer than most others, the ewes lamb with less difficulty. The female lambs, on being weaned, are put to good keep, but have not such high indulgence shewn them as the males, the prevailing practice being to keep them from the ram the first autumn. At weaning time, or previously to the admission of the ram, the ewes are culled, to make room for the thaves or shearlings, whose superior blood and fashion intitle them to a place in the breeding flock. In the work of culling, the ram-breeder and the mere grazier go by somewhat different guides. The grazier's guide is principally age, seldom giving his ewes the ram after they are four shear. The ram-breeder, on the contrary, goes chiefly by merit; an ewe that has brought him a good ram or two is continued in the flock so long as she will breed. There are instances of ewes having been prolific to the tenth or twelfth year; but in general the ewes of this breed go off at six or seven shear. In the practice of some of the principal ram-breeders, the culling ewes are never suffered to go out of their hands until after they are slaughtered, the breeders not only fattening them, but having them butchered, on their premises. There are others, however, who sell them; and sometimes at extraordinary prices. Three, four, and even so high as ten, guineas each have been given for these outcasts.

In purchasing sheep in general, the farmer should always buy from a worse land than his own, and they should be big-boned, and have a long greasy wool, curling close and well. These sheep always breed the finest wool, and are also the most approved of by the butcher for sale in the market. For the choice of sheep to breed, the ram must be young, and his skin of the same colour with his wool, for the lambs will be of the same colour with his skin. He should have a large long body; a broad forehead, round and well rising; large eyes; and strait and short nostrils. The polled sheep, that is, those which have no horns, are found to
be

be the best breeders. The ewe should have a broad back; a large bending neck; small, but short, clean, and nimble, legs; and a thick deep wool covering her all over. To know whether they be sound or not, the farmer should examine the wool that none of it be wanting, and see that the gums be red, the teeth white and even, and the brisket-skin red, the wool firm, the breath sweet, and the feet not hot. Two years old is the best time for beginning to breed; and their first lambs should not be kept too long, to weaken them by suckling, but be sold as soon as conveniently may be. They will breed advantageously till they are seven years old. The farmers have a method of knowing the age of a sheep, as a horse is known, by the mouth. When a sheep is one shear, as they express it, it has two broad teeth before; when it is two shear, it will have four; when three, six; and when four eight. After this their mouths begin to break. The difference of land makes a very great difference in the sheep. The fat pastures breed straight tall sheep, and the barren hills and downs breed square short ones; woods and mountains breed tall and slender sheep; but the best of all are those bred upon new-ploughed land and dry grounds. On the contrary, all wet and moist lands are bad for sheep, especially such as are subject to be overflowed, and to have sand and dirt left in them. The salt marshes are, however, an exception to this general rule, for their saltness makes amends for their moisture; salt, by reason of its drying quality, being of great advantage to sheep.

As to the time of putting the rams to the ewes, the farmer must consider at what time of the spring his grass will be fit to maintain them and their lambs, and whether he has turnips to do it till the grass comes; for very often both the ewes and lambs are destroyed by the want of food; or if this does not happen, if the lambs are only stunted in their growth by it, it is an accident that they never recover. The ewe goes twenty
weeks

weeks with lamb, and according to this it is easy to calculate the proper time. The best time for them to yearn is in April, unless the owner has very forward grass or turnips, or the sheep are field-sheep. Where you have not inclosures to keep them in, then it may be proper they should yearn in January, that the lambs may be strong by May-day, and be able to follow the dam over the fallows and water-furrows; but then the lambs that come so early must have a great deal of care taken of them, and so indeed should all other lambs at their first falling, else while they are weak the crows and magpies will pick their eyes out.

When the sheep are turned into fields of wheat or rye to feed, it must not be too rank at first, for if it be, it generally throws them into scourings. Ewes that are big should be kept but bare, for it is very dangerous to them to be fat at the time of their bringing forth their young. They may be well fed, indeed, like cows, a fortnight beforehand, to put them in heart. The feeding sheep with turnips is one great advantage to the farmers. When they are made to eat turnips they soon fatten, but there is some difficulty in bringing this about. The old ones always refuse them at first, and will sometimes fast three or four days, till almost famished; but the young lambs fall to at once. The common way, in some places, of turning a flock of sheep at large into a field of turnips, is very disadvantageous, for they will thus destroy as many in a fortnight as would keep them a whole winter. There are three other ways of feeding them on this food, all of which have their several advantages. The first way is to divide the land by hurdles, and allow the sheep to come upon such a portion only at a time as they can eat in one day, and so advance the hurdles farther into the ground daily till all be eaten. This is infinitely better than the former random method; but they never eat them clean even this way, but leave the bottoms and outsides scooped in the ground: the people
pull

pull up these indeed with iron crooks, and lay them before the sheep again, but they are commonly so fouled with the creature's dung and urine, and with the dirt from their feet, that they do not care for them; they eat but little of them, and what they do eat does not nourish them like the fresh roots.

The second way is by inclosing the sheep in hurdles, as in the former: but in this they pull up all the turnips which they suppose the sheep can eat in one day, and daily remove the hurdles over the ground whence they have pulled up the turnips: by this means there is no waste, and less expence, for a person may in two hours pull up all those turnips; the remaining shells of which would have employed three or four labourers a-day to get up with their crooks out of the ground trodden hard by the feet of the sheep; and the worst is, that as in the method of pulling up first, the turnips are eaten up clean; in this way, by the hook, they are wasted, the sheep do not eat any great part of them, and when the ground comes to be tilled afterwards for a crop of corn, the fragments of the turnips are seen in such quantities on the surface, that half the crop at least seems to have been wasted.

The third manner is to pull up the turnips, and remove them in a cart or waggon to some other place, spreading them on a fresh place every day; by this method the sheep will eat them up clean, both root and leaves. The great advantage of this method is, when there is a piece of land not far off which wants dung more than that where the turnips grew, which perhaps is also too wet for the sheep in winter, and then the turnips will, by the too great moisture and dirt of the soil, sometimes spoil the sheep and give them the rot. Yet such ground will often bring forth more and larger turnips than dry land, and when they are carried off, and eaten by the sheep on ploughed land, in dry weather, and on green sward in wet weather, the sheep will succeed much better; and the moist soil where the
turnips

turnips grew, not being trodden by the sheep, will be much fitter for a crop of corn than if they had been fed with turnips on it. The expence of hurdles, and the trouble of moving them, are saved in this case, which will counterbalance at least the expence of pulling the turnips and carrying them to the places where they are to be eaten. They must always be carried off for oxen.

The diseases to which sheep are subject are these, rot, red-water, foot-rot and hoving, scab, dunt, rickets, fly-struck, flux, and bursting. Of each of these we shall give the best description in our power, with the most approved remedies.

The rot, which is a very pernicious disease, has of late engaged the attention of scientific farmers. Some valuable and judicious observations have been made upon it, which ought to be circulated, as they may perhaps, in many cases, furnish an antidote for this malignant distemper. Some have supposed the rot owing to the quick growth of grass or herbs that grow in wet places. Without premising, that all-bounteous Providence has given to every animal its peculiar taste, by which it distinguishes the food proper for its preservation and support, if not vitiated by fortuitous circumstances, it seems very difficult to discover on philosophical principles why the quick growth of grass should render it noxious, or why any herb should at one season produce fatal effects, by the admission of pure water only into its component parts, which at other times is perfectly innocent, although brought to its utmost strength and maturity by the genial influence of the sun. Besides, the constant practice of most farmers in the kingdom, who with the greatest security feed their meadows in the spring, when the grass shoots quick and is full of juices, militates directly against this opinion. Mr. Arthur Young, to whom agriculture is so much indebted, ascribes this disease to moisture. In confirmation of this opinion, which has

been generally adopted, we are informed, in the Bath Society papers, that there was a paddock adjoining to a park which had for several years caused the rot in most of the sheep which was put into it. In 1769 it was drained, and from that time the sheep were free from this malady. But there are facts which render it doubtful that moisture is the sole cause. We are told, the dry limed land in Derbyshire will produce the rot as well as water meadows and stagnant marshes; and that in some wet grounds sheep sustain no injury for many weeks.

On dissecting sheep that die of this disorder, a great number of insects called flukes are found in the liver. That these flukes are the cause of the rot, therefore, is evident; but to explain how they come into the liver is not so easy. It is probable that they are swallowed by the sheep along with their food while in the egg state. The eggs deposited in the tender germ are conveyed with the food into the stomach and intestines of the animals, whence they are received into the lacteal vessels, carried off in the chyle, and pass into the blood; nor do they meet with any obstruction until they arrive at the capillary vessels of the liver. Here, as the blood filtrates through the extreme branches, answering to those of the *vena porta* in the human body, the discerning vessels are too minute to admit the impregnated ova, which, adhering to the membrane, produce those animalculæ that feed upon the liver and destroy the sheep. They much resemble the flat-fish called plaice, are sometimes as large as a silver two-pence, and are found both in the liver and in the pipe (answering to that of the *vena cava*) which conveys the blood from the liver to the heart.

The common and most obvious objection to that opinion is, that this insect is never found but in the liver, or in some parts of the viscera, of sheep that are diseased more or less; and that they must therefore be
bred

bred there. But this objection will lose its force, when we consider that many insects undergo several changes, and exist under forms extremely different from each other. Some of them may therefore appear and be well known under one shape, and not known to be the same under a second or third. The fluke may be the last state of some aquatic animal which we at present very well know under one or other of its previous forms. If this be admitted, it is easy to conceive that sheep may, on wet ground especially, take multitudes of these ova or eggs in with their food; and that, the stomach and viscera of the sheep being a proper nidus for them, they of course hatch, and, appearing in their fluke or last state, feed on the liver of the animal, and occasion this disorder. It is a singular fact, "that no ewe ever has the rot while she has a lamb by her side." The reason of this may be, that the impregnated ovum passes into the milk, and never arrives at the liver. The rot is fatal to sheep, hares, and rabbits, and sometimes to calves; but never infects animals of a larger size.

Miller says that parsley is a good remedy for the rot in sheep. Perhaps a strong decoction of this plant, or the oil extracted from its seeds, might be of service. Salt is also a useful remedy. It seems to be an acknowledged fact that salt marshes never produce the rot. Salt indeed is pernicious to most insects. Common salt and water expel worms from the human body; and sea-weed, if laid in a garden, will drive away insects; but, if the salt is separated by steeping it in the purest spring-water for a few days, it abounds with animalculæ of various species. Lisle, in his book of husbandry, informs us of a farmer who cured his whole flock of the rot by giving each sheep a handful of Spanish salt five or six mornings successively. The hint was probably taken from the Spaniards, who frequently give their sheep salt to keep them healthy. On some farms perhaps the utmost caution cannot always prevent this disorder. In wet and warm seasons the

prudent farmer will remove his sheep from the lands liable to rot. Those who have it not in their power to do this may give each sheep a spoonful of common salt, with the same quantity of flour, in a quarter of a pint of water, once or twice a-week. When the rot is recently taken, the same remedy given four or five mornings successively will in all probability effect a cure. The addition of the flour and water (in the opinion of Mr. Price of Salisbury, to whose excellent paper in the Bath Society's Transactions the public are much indebted) will not only abate the pungency of the salt, but dispose it to mix with the chyle in a more gentle and efficacious manner. A farmer of a considerable lordship in Bohemia, visiting the hot-wells of Carlsbad, related how he preserved his flocks of sheep from the mortal distemper which raged in the wet year 1769, of which so many perished. His preservative was very simple and very cheap: "He fed them every night, when turned under a shed, cover, or stables, with hashed fodder straw; and, by eating it greedily, they all escaped."

A remedy for the rot in sheep, said to be infallible, hath been lately offered to the public under sanction of letters patent, by Mr. Thomas Fleet, an eminent farmer, near Basingstoke, in Hampshire. He calls it a "medicine for preventing the rot in sheep, and checking the farther progress of the said disease in those already infected with it; and also to render them capable of being fatted on the herbage of the same land which produced or occasioned the disease!" The ingredients of which the medicine is compounded, he declares on oath to be, turpentine, bole-armoniac, turmeric, quicksilver, brimstone, salt, opium, alkanet-root, bark, antimony, and camphor, mixed up in distilled water. What progress has been made in the prevention and cure of the rot in sheep by this medicine, we have not yet been able to learn.

"The

“ The red-water is a disorder most prevalent on wet grounds. I have heard (says Mr. Arthur Young) that it has sometimes been cured by tapping, as for a dropsy. This operation is done on one side of the belly towards the flank, just below the wool.

“ The foot-rot and hoving, which is very common on low fenny grounds, is cured by keeping the part clean, and lying at rest in a dry pasture.”

The scab is a cutaneous disease owing to an impurity of the blood, and is most prevalent in wet lands or in rainy seasons. It is cured by tobacco-water, brimstone, and alum, boiled together, and then rubbed over the sheep. If only partial, tar and grease may be sufficient. But the simplest and most efficacious remedy for this disease was communicated to the Society for the Encouragement of Arts, &c. by Sir Joseph Banks. “ Take one pound of quicksilver, half a pound of Venice turpentine, half a pint of oil of turpentine, and four pounds of hogs lard. Let them be rubbed in a mortar till the quicksilver is thoroughly incorporated with the other ingredients; for the proper mode of doing which, it may be proper to take the advice, or even the assistance, of some apothecary or other person used to make such mixtures. The method of using the ointment is this: beginning at the head of the sheep, and proceeding from between the ears along the back to the end of the tail, the wool is to be divided in a furrow till the skin can be touched; and, as the furrow is made, the finger slightly dipped in the ointment is to be drawn along the bottom of it, where it will leave a blue stain on the skin and a joining wool: from this furrow similar ones must be drawn down the shoulders and thighs to the legs, as far as they are woolly; and if the animal is much infected, two more should be drawn along each side parallel to that on the back, and one down each side between the fore and hind legs. Immediately after being dressed, it is usual to turn the sheep among other stock, with-

out any fear of the infection being communicated ; and there is scarcely an instance of a sheep suffering any injury from the application. In a few days the blotches dry up, the itching ceases, and the animal is completely cured: it is generally, however, thought proper not to delay the operation beyond Michaelmas. The *bip-pobojca ovina*, called in Lincolnshire sheep-fagg, an animal well known to all shepherds, which lives among the wool, and is hurtful to the thriving of sheep both by the pain its bite occasions and the blood it sucks, is destroyed by this application, and the wool is not at all injured. Our wool-buyers purchase the fleeces on which the stain of the ointment is visible, rather in preference to others, from an opinion that, the use of it having preserved the animal from being vexed either with the scab or faggs, the wool is less liable to the defects of joints or knots; a fault observed to proceed from every sudden stop in the thriving of the animal, either from want of food or from disease. This mode of curing was brought into Lincolnshire by Mr. Stephenson of Mareham, and is so generally received, that the scab, which used to be the terror of the farmers, and which frequently deterred the more careful of them from taking the advantage of pasturing their sheep in the fertile and extensive commons, is no longer regarded with any apprehension: by far the most of them have their flock anointed in autumn, when they return from the common, whether they shew any symptoms of scab or not; and, having done so, conclude them safe for some time from either giving or receiving infection."

The dunt is a distemper caused by a bladder of water gathering in the head. No cure for this has yet been discovered.

The rickets is an hereditary disease for which no antidote is known. The first symptom is a kind of light-headedness, which makes the affected sheep appear wilder than usual when the shepherd or any person approaches

proaches him. He bounces up suddenly from his lair, and runs to a distance, as though he were pursued by dogs. In the second stage the principal symptom is the sheep rubbing himself against trees, &c. with such fury as to pull off his wool and tear away his flesh. "The distressed animal has now a violent itching in his skin, the effect of an highly inflamed blood; but it does not appear that there is ever any cutaneous eruption or salutary critical discharge. In short, from all circumstances, the fever appears now to be at its height."---The last stage of this disease "seems only to be the progress of dissolution, after an unfavourable crisis. The poor animal, as condemned by nature, appears stupid, walks irregularly, (whence probably the name rickets,) generally lies, and eats little; these symptoms increase in degree till death, which follows a general consumption, as appears upon dissection of the carcase; the juices and even solids having suffered a general dissolution." In order to discover the seat and nature of this disease, sheep that die of it ought to be dissected. This is said to have been done by one gentleman, Mr. Beal; and he found in the brain or membranes adjoining a maggot about a quarter of an inch long, and of a brownish colour. A few experiments might easily determine this fact.

The fly-struck is cured by clipping the wool off as far as infected, and rubbing the parts dry with lime or wood-ashes; carriers oil will heal the wounds, and prevent their being struck any more; or they may be cured with care, without clipping, with oil of turpentine, which will kill all the vermin where it goes; but the former is the surest way.

The flux is another disease to which sheep are subject. The best remedy is said to be, to house the sheep immediately when the distemper appears, to keep them very warm, and feed them on dry hay, giving them frequent glisters of warm milk and water. The cause of that distemper is either their feeding on wet lands,

or on grass that is become mossy by the lands having been fed many years without being ploughed. When the farmer perceives his sheep-walks to become mossy, or to produce bad grass, he should either plough or manure with hot lime, making kilns either very near or in the sheep-walks, because the hotter the lime is put on, the sweeter the grass comes up, and that early in the year.

Bursting, or blast, attacks sheep when driven into fresh grass or young clover. They over-eat themselves, foam at the mouth, swell exceedingly, breathe very quick and short, then jump up, and instantly fall down dead. In this case, the only chance of saving their life is by stabbing them in the maw with an instrument made for that purpose. The instrument is a hollow tube, with a pointed weapon passing through it. A hole is made with the pointed weapon; which is immediately withdrawn, and the hole is kept open by inserting the tube till the wind is discharged.

Sheep are infested with worms in their nose called *æstrus oves*, and produced from the egg of a large two-winged fly. The frontal sinuses above the nose in sheep and other animals are the places where these worms live and attain their full growth. These sinuses are always full of a soft white matter, which furnishes these worms with a proper nourishment, and are sufficiently large for their habitation; and when they have here acquired their destined growth, in which they are fit to undergo their changes for the fly-state, they leave their old habitation, and, falling to the earth, bury themselves there; and, when these are hatched into flies, the female, when she has been impregnated by the male, knows that the nose of a sheep or other animal is the only place for her to deposit her eggs, in order to their coming to maturity. Mr. Vallinieri, to whom the world owes so many discoveries in the insect class, is the first who has given any true account of the origin of these worms. But, though their true history had been till that time unknown,

known, the creatures themselves were very early discovered, and many ages since were esteemed great medicines in epilepsies.

CAPRA, the GOAT, of the Order PECORA.

THE characteristics of this genus of quadrupeds are, horns bending backwards, and almost joining at their bases; eight cutting teeth in the under jaw, but none in the upper; and they have no dog-teeth. The males are distinguished by a beard on the chin. The following are the different species of this animal recorded by naturalists:

THE IBEX, OR WILD GOAT.

THIS animal is superior in size to the largest of the common goats; its form resembles the stag; its body is covered with shaggy hair; and, for the greatest part, of a grey or yellowish rust-colour; a black line runs along the back; its chin is furnished with a great beard, the colour of which is between a dun and a chestnut; its head is of a thick form, and remarkably hard; its horns rise almost out of one base; diverge and bend backwards as they advance towards the extremities; but approach nearer each other, and are hooked at the points. They are smooth and black, with sharp ridges on the upper parts, which are hollow on the exterior sides. The tail is very short and black: the neck and joints are remarkably stout: the belly affords a bezoar. The females are generally destitute of horns; and, when they happen to be furnished with them, they are very small in comparison with those of the males. The horns of the males are commonly three feet in length, and often eight pounds in weight. The ibex displays amazing agility; it often leaps headlong down precipices, and escapes uninjured by falling on its horns. The moment it reaches the

ground. it springs up upon its legs, and bounds nimbly away.

The lower mountains of Caucasus and Taurus, the hills of Laar and Khorazan in Persia, the island of Crete, and the Alps in Europe, are all habitations of this animal. Bell, a traveller of good sense and veracity, relates, that he saw one of these animals in the province of Kurdistan, and describes it as larger than the common goat, and furnished with horns of a prodigious size.

There is a different wild goat, beside that above described, an inhabitant of both Europe and Asia. This is the ibex of Pliny, Pennant, Linnæus, and several other naturalists; and is by the Germans confounded with the last-mentioned species, under the common name of steinboc. It is distinguished by large knotted horns, reclining backwards, nearly of the same size with those of the last species; a small head; large eyes; a thick, short, strong, body; strong legs; very short hoofs; and a short tail. Its body is of a deep brown colour, with a mixture of hoary hairs; its belly is of a tawny white colour; its legs are partly black, partly white; the space under the tail is, in some individuals, tawny, in others white. Its hair is rough; and the male is furnished with a dusky beard. The females are smaller in size than the males; and, like the common she-goat, have smaller horns than the males; --- and those with fewer knobs on the upper surface.

The favourite haunts of this animal are the most precipitous and inaccessible heights of lofty mountains. It is remarkably swift; and displays amazing agility and dexterity in leaping. It is a gregarious animal; and though, by choosing such places for its habitation, it seems averse to all intercourse with mankind; yet, when caught young, it is not incapable of domestication. The female is scarcely ever known to produce above one or two young ones at a birth. When the period of parturition comes on, she retires from the company

company of the males. The ibex is said to be naturally a short-lived animal. Its flesh is esteemed good eating. Its blood was once much valued for its virtues, as a remedy in cases of pleurisy.

The ibex is an object of the chase; but it is dangerous to pursue these goats, and exceedingly difficult to take or kill them. The inaccessible nature of the places to which they generally resort, their dexterity in leaping, and even their cunning in attacking the huntsman, are the principal circumstances that render this chase so difficult. They sometimes tumble the huntsman over those precipices, among which they themselves leap about without any danger. They often fling themselves down the precipices; and, like the former ibex, falling on their horns, escape unhurt. It is said,---but the story favours too much of the wonderful,---that, to escape the hunter, they sometimes hang themselves by the horns from trees projecting over precipices. These animals inhabit the rude summits of the chain of mountains extending from Mount Taurus between eastern Tartary and Siberia. A few are also found in the east of the Jenesei. The province of Hedsjœes in Arabia, and the loftiest mountains in Crete, are also known to afford the same species. In Europe, this ibex appears on the Carpathian and the Pyrenæan mountains; in the country of the Grisons; and amidst the highest points of the Rhoëtian Alps.

These two species, both existing chiefly, if not entirely, in a wild state, and principally distinguished from each other by the appearance of their horns, are considered as the only distinct species which this genus of animals affords. The other breed of goats, scattered over different parts of the world, are viewed only as so many varieties of the same animal. These varieties have been all thought to originate either from the one or the other of the species described, or perhaps from the intermixture of the two together.

THE COMMON DOMESTIC GOAT.

THE common goat, believed by some naturalists to be nearest allied to the ibex with knotted horns, and by others represented as a descendant of the ibex with smooth, black, horns, is distinguished by horns which incline gently backwards as they rise from their bases, increasing the curve towards the upper extremity. This animal is seldom so large as either of the wild goats above described. The finest bucks have pendent ears, thick thighs, black thick soft hair, a long bushy beard, a short fleshy neck, and a light head. The best she-goats have large bodies, thick thighs, long capacious udders, and soft bushy hair; and walk with a light lively step.

The character of the goat is much less amiable than that of the sheep. Viciousness, subtlety, and leachery, are the predominant qualities of this animal. Even in his ordinary motions he betrays the caprice of his character: he walks, runs, leaps, retires, approaches, in the most irregular manner imaginable. Our domestic goat, like the ibex, is amazingly swift and agile. He mounts the most rugged mountains, and fearlessly approaches the steepest precipices: and, though he appears thus rashly to expose himself to certain danger, yet such is his address in running, climbing, leaping, and balancing his body in difficult situations, that he scarcely ever meets with any unfortunate accident. The plants which the goat prefers for food are chiefly such as are despised by the sheep, the cow, the horse, and most other domestic animals; and indeed grow in situations where few other animals can approach them. Hemlock, euphorbium, and several mosses, are absolutely delicacies to the goat. He devours, with great avidity, the bark, leaves, and branches, of most trees. Many proprietors of sheep keep a few goats among their flocks to clear the pasture of those herbs, which, though delicacies to the goat, are noxious to the sheep.

Goat-

Goat-herds pretend that their goats eat up adders very voraciously.

The she-goat goes five months with young, and brings commonly one or two, but sometimes even three or four, at a birth. The kids are usually produced between the end of February and the beginning of May. The male is capable of engendering when a year old; and the female ready to receive his embraces at the age of seven months: but it is better to restrain both sexes from venery till they attain the age of eighteen months or two years. The ardour of the male is remarkable; but in the space of three or four years his vigour is wasted; and at the age of five or six, he feels prematurely all the languid feebleness of old age. The buck has a rank nauseous smell; proceeding not from his flesh, however, but from his skin. Though fond of the summits of bleak and lofty mountains, the goat is but ill qualified to bear extreme cold. In France, goats are sheltered under roofs in winter, as well as black cattle, and fed with branches of trees gathered for the purpose in autumn, and with cabbages, turnips, and other similar plants. But heat, however intense, is scarcely ever injurious to the health of goats; they bask in the rays of the sun, without feeling themselves scorched, or in any other way disagreeably affected.

The domestic goat is well known through Europe, and even in the other regions of the globe. Considerable numbers are kept in the mountainous parts of Wales. The Welch goats are greatly superior in size to any of the breeds cultivated in other mountainous countries, and are commonly of a white colour. In Carnarvonshire, they are generally suffered to run wild on the rocks, in both winter and summer. If we may judge from the expressions of the ancient pastoral poets, goats were in their days tended in Greece and Italy with not less care than sheep. In Norway, goats are numerous, notwithstanding their inability, to suffer
extreme

extreme cold. Nay, in that northern climate, they thrive so prodigiously, that, as Põntoppidan relates, not less than seventy or eighty thousand raw hides are annually exported from Bergen. / Even Iceland is not destitute of goats; but that island is so scantily supplied with trees, shrubs, and the other plants on which these animals delight to brouse, that they are not numerous nor thriving there. Attempts have been made to introduce this animal into Greenland; and as the goat, when it cannot obtain its favourite vegetable food, refuses not to eat dried fish, it is found capable of subsisting even in that barren and dreary region. Our common domestic goat is not, indeed, a native of America; but, with the other chief domestic animals of the Old World, has been conveyed thither by the settlers from Europe. In South America, these animals have multiplied prodigiously; but the climate of Canada has been found too severe. Africa, India, Madagascar, and the Oriental islands, all afford this animal. Our voyagers to the South-Seas found abundance of goats in the island of Juan Fernandez; which,---though in consequence of living in regions where they are almost totally sequestered from human intercourse, they were become in their character and dispositions absolutely wild,---yet were of the same variety with the common domestic goat of Europe. In Batavia, the Dutch colonists have, among their other domestic animals, herds of goats.

A small island between Bonavista and Mayo is related by an English voyager who visited these, the Cape-de-Verd islands, and the coast of Guinea, in the year 1566, to have contained at that time such numbers of goats, that the Portuguese who inhabited it used annually to export to Europe about forty thousand skins. The few inhabitants of the island valued the flesh so little, that they cheerfully supplied our voyager and his company with as many carcases as they could use, without expecting any price.

The

The goat, though less friendly and less serviceable to mankind than the sheep, affords, however, a variety of articles of no small utility to human life. The flesh of this animal is wholesome food. That of a spayed goat, six or seven years old, is remarkably sweet and fat. The haunches, salted and dried, make excellent hams. The dried blood of the he-goat is, with some persons, a specific for the pleurisy and inflammatory disorders. The milk is of the best kind; much more agreeable than that of the sheep, and possessed of some valuable medicinal qualities: the cheese prepared from it is much esteemed in some places: the cream is scarcely ever separated for butter: the milk and the whey are both eagerly drunk, as powerful remedies in cases of consumption. In the summer months, people of consumptive habits, through Scotland and Ireland, resort in considerable numbers to places where goat's milk is obtained.

The horns of the goat are materials of manufacture, as well as those of the cow and the sheep. Even the disagreeable odour of the he-goat is thought to operate on the human frame as a cure for nervous and hysterical distempers, and as a good preventive against many others. Horses, it is imagined, find it very refreshing; and many persons of skill in the management of horses keep a he-goat in their studs or stables, for this very purpose. But the skin is perhaps the most valuable part of the goat. It is prepared for a great many purposes, either with or without the hair. It covers the soldier's knapsack, and is manufactured into bolsters and hangings. When dressed without the hair, the skin of the kid especially, becomes a soft and pliant species of leather, excellent for gloves, and fit to be made into stockings, bed-ticks, sheets, and shirts. It takes a dye better than any other skin; is susceptible of the richest colours; and when it used formerly to be flowered, and ornamented with gold and silver, became an elegant and superb article of furniture. The

I

hair

hair separated from the hide, is a valuable material to the wigmaker: the whitest wigs are made of goats hair: that on the haunches is brighter, longer, and thicker, than that on the other parts of the body. A skin well furnished with hair of a good quality, is frequently sold at no less a price than a guinea. Pliny relates, that in Cilicia, and either in Syria or in the country adjacent to the African Syrtes,---for there are different readings of this passage,---the hair of the goat used anciently to be shorn in the same manner as in other places the fleece of the sheep. The tallow of this animal is also an article of considerable value. It is much purer, and approaches in its nature much nearer to butter, than the tallow of either the ox or the sheep. Where goats are numerous, it is often used by the poorer people in the preparation of food. Candles made of it are far superior in whiteness to those made of other tallow, and burn better.

THE ANGORA GOAT.

THIS species is shorter in the form of its body than our common domestic goat. Its sides are broader and more flat; its legs shorter; and its horns straighter. Its hair is soft and glossy like silk, and of a silver white colour, and hangs down in curling locks, eight or nine inches long. Its horns are wreathed in a spiral form, and extend towards its sides. Its ears are plain and pendulous. These goats are confined within the tract of country around the towns of Angora and Beibazar in Asiatic Turkey. The goats of Cougna, the old Iconium, are probably nearly allied in their character to those of Angora. Tournefort, in mentioning the goats of these two different districts, represents those of Angora as distinguished from those of Cougna only by diversity of colour; the latter being all either black or brown. Baron Alstroemer attempted to introduce this breed into Sweden, for the sake of the hair. It is remarkable





J. Piney sculp

The Syrian Goat!

London: Published by the Art Director, Dec. 1796.

The sheep

markable, that not only the goat, but even the sheep and the hare, of Angora, have longer and softer hair than the same animals in any other part of the globe. The length, the fineness, the curling softness, and the beautiful white colour, of the hair of the Angora goat, render it a very valuable commodity. It is spun into thread; of which the finest camblets are wrought. The Turkish administration, with a wise policy, prohibit this hair from being exported raw; because the spinning of it affords employment and sustenance to a number of their subjects. An animal furnished with such precious hair would surely be a valuable acquisition to Britain, if we might hope that it would thrive in our climate. Perhaps some patriot may one day make the experiment.

Syria affords a peculiar variety of the goat, with large pendulous ears and short black horns; which is the *capra mambrica* of Linnæus. The ears are usually between one and two feet in length, and sometimes so troublesome to the animal, that the owners find it proper to cut off one of them for its convenience. This goat is rather larger in size than our common domestic goat; its hair is usually yellow: this variety abounds through the east, and is found also among the Kirghisian Tartars: the city of Aleppo is plentifully supplied with their milk: they appear, from the relation of Aristotle, to have been known to the ancients.

Africa affords a variety of the goat, distinguished chiefly by their dwarfish size: the horns of the male are short, thick, and triangular, and lie flat upon the skull: the male is covered with rough hair; and two long hairy wattles hang beneath his chin: the female has smaller horns, a smooth coat, and no wattles.

Whidaw, or Juda in Africa, affords a peculiar variety of a small size, with short smooth horns, turning a little forwards at the points. Some natural historians represent this animal as a native of America; others strenuously contend, that neither the goat nor any

other domestic animal was known in America before its discovery by the Spaniards. It would be difficult for us to decide. This goat is not confined to Whidaw; but is common also in Guinea, Angola, and some other parts of Africa.

The Capricorn is another variety; the characteristic marks of which are, short horns turning forwards at the ends, marked on the sides with rings; and those more prominent before than behind. M. Buffon considers these as an intermediate race between the domestic and the wild goat. A breed of tame goats resembling the common kind, but without horns, also inhabit the country of the Cabonas, north of the Cape of Good Hope.

Mr. Marsden, in his history of Sumatra, describes an animal which seems to have been unknown to former writers in natural history; and which I am at a loss whether to rank among the goats or the antelopes. It is about three feet in height and four in length. Its horns are about six inches long, and turned back with an arch. Its hinder parts resemble those of the bear in shape, being rounded into a semicircle from the back. Its tail is small, and terminates in a point. Its legs are clumsy. Along the ridge of the back, the hair rises almost as coarse and strong as the bristles of a boar. A large tuft of greyish hair spreads over the shoulders; the rest of the body is all over black. It has no beard. The natives of Sumatra denominate this animal Cambing Cotan, or the wild goat of the woods; and represent it as remarkably swift. It is certainly wild and ferocious in its dispositions.

THE ANTELOPE.

THE generic characters of the antelope are, hollow horns directed backwards, and either annulated or spiral; eight cutting teeth in the inferior, but none in the upper, jaw; three feathered lines of hair, marking the
inside

inside of the ears longitudinally; limbs of a slender, elegant, form; and commonly small holes, *pori ceriferi*, under the eyes, but not connected with them, through which oozes a wax-like matter. The genus of antelopes seem to occupy an intermediate place between the goat and the deer: they are almost confined to the regions of Asia and Africa; few of them inhabit Europe; and none are found in America. The form of their limbs renders them amazingly swift and agile: they never shed their horns: they are so remarkable for beautiful eyes, that in the East, the most flattering compliment which can be paid to a fine woman, is to say, "She has the eyes of an antelope." They feed rather upon shrubby than upon grassy pastures: their size resembles that of the roebuck; and they associate in large herds. There are a great many species, which we shall correctly enumerate.

THE GNU.

THE form of this animal resembles partly the horse, partly the ox, and partly the stag. It is as large as a middle-sized horse; the length of its body between five and six feet; its height between four and five. Its neck, though neither so long nor so slender as the neck of a horse, is however longer and more slender than that of the ox, and adorned with a stiff erect mane. Its body displays the elegant proportions of the horse; and its tail, though somewhat longer, is like that of the horse, copiously furnished with long hair: but the head of the gnu is thick and large, and horned like the head of an ox. On the forehead, between the nose and the flexures of the horns, the face is covered with an oblong square brush of stiff black hairs, turned upwards: on the inferior jaw too, it has a beard of thick shaggy hair. Its legs are long, and elegantly slender, like the legs of the stag; the space between the fore legs is covered with long bushy hair. Its horns

are rough; they rise on the hinder part of the head; and, bending their direction forward for a short way, almost close to the skin, then turn suddenly upwards, and run back for a considerable length, so as to bear a near resemblance in form to the sickles commonly used in cutting corn. The females are horned as well as the males; nor are the two sexes distinguished from each other by any difference of the horns. The horns of the young gnu are perfectly straight; they acquire their flexure as the animal grows older, and *they* longer and thicker.

The *pori ceriferi* with which it is furnished under the eyes, are what chiefly entitles it to the character of an antelope. The tail and mane are of a light grey colour; the shag on its chin and its breast, and the stiff brush on its forehead, black; and the rest of the body uniformly dark brown.

The gnu is a lively capricious animal. When irritated, even though at a distance from its enemy, it expresses its resentment by plunging, curveting, flinging out its legs behind, and butting with its head against molehills, bars, and other similar objects: these animals feed in large herds; and it is only when a straggler has been accidentally separated from the herd, that any of them is found in a solitary state. The voice of this species has obtained it from the Hottentots the name of gnu; they sometimes utter a sound like the bellowing of an ox, and sometimes a clearer note. The gnu is an inhabitant of the south of Africa. It is found chiefly in the districts of Camdebo and Agter Bruntjes-hoogte. Dr. Sparrman seems even to think that it is confined within those regions. The flesh of the gnu is very juicy, and more agreeable and nourishing than beef.

THE CHAMOIS.

THE chamois is nearly of the same size with the domestic goat. Its neck is slender; its forehead elevated; its horns slender, black, and upright, with the points hooked backwards: its tail is short: its hoofs are much divided: its legs are long and agile; but not remarkably slender: its ears are long, erect, and pointed. Behind each of the horns, it has a large orifice in the skin of the head. The hair is rather short on the upper part of the body; but, upon the sides, the haunches, the neck, and the belly, long, like the hair of the common goat. The body of the chamois is, commonly, in spring, of a dun or ash colour, which changes, in summer, to a yellowish brown, mixed with black; and in winter, assuming a darker shade, becomes deep brown. Its forehead is brown: its cheeks, chin, and throat, with the inner sides of the ears, are white: a black line runs along the back: the belly is yellowish.

The chamois is one of the most sprightly of animals. His sight, smelling, and hearing, are amazingly acute: his voice is hissing: he is eminently swift; and his sprightliness and timidity very often prompt him to exercise his velocity. When a person approaches in the direction in which the wind blows, he distinguishes him by the scent even at the distance of half a league. He expresses his sense of the danger by hissing or whistling with great violence, striking the ground with his feet, leaping, and looking eagerly about to discover the object of his fears; and at last running off with all the speed he can exert. The chamois are social animals, and feed together; sometimes in pairs, and sometimes in little flocks of from three to twenty in number. A chamois, when affrighted, communicates the alarm to his fellows by whistling, with the hissing voice peculiar to the species. The males and females feed in separate parties, except in the rutting season.

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The chamois selects the highest flavoured herbs; and even culls, with the nice appetite of an epicure, the flowers and the tenderest buds of his favourite plants. He eats the carline thistle and the genipay with great eagerness. Though rocks and precipices, and the summits of the loftiest mountains that afford the shrubs and herbage in which he delights, are his favourite haunts; yet in winter he often finds it necessary to descend into the lower forests, and to content himself with pine-leaves, and such green or dry herbs as he can procure by scratching away the snow with his feet.

The female chamois receives the male at the age of eighteen months: the season of love is in October and November; and the period of parturition consequently in March and April. The venereal ardour of the male chamois exceeds even that of the ibex: he bleats eagerly, and runs wildly about from mountain to mountain in quest of a mistress. Generally two, but seldom three, young ones are produced by the female at a birth.

The Alpine hunters carry on constant war against the chamois. The chase is however dangerous; as the animal climbs over rocks, springs from cliff to cliff, runs along the edges of precipices, and even leaps down their faces with the greatest safety and facility. The horns of the chamois are used as heads to canes. His skin, when dressed, forms a strong supple leather, excellent for riding-breeches, gloves, and vests: his flesh is a valuable article of food: his blood is esteemed a specific against pleurisies; and the qualities of purifying the blood and promoting perspiration are ascribed to it.

The Alps of Dauphiny, Switzerland, and Italy; the Pyrenæan mountains, Greece, Crete, and the mountains of Caucasus and Taurus; are all inhabited by the chamois. The numbers of this species are more considerable than those of the ibex species. The chamois does not ascend so near the summits of the lofty mountains which it inhabits as the ibex.

THE BLUE ANTELOPE.

THIS animal, denominated by some the blue goat, and by the Dutch colonists in the south of Africa, Blawe Bock, seems to occupy a sort of middle rank between the goats and the antelopes. It is larger in size than any ordinary buck; its horns are sharp-pointed, taper, arcuated, and reclined backwards: they are twenty inches in length, and marked with twenty prominent rings, but smooth towards the points. The hair of the body is long: the tail is seven inches in length; and the hairs at the end of it seven inches: the colour of the hair, when the animal is alive, is a beautiful glossy blue; when dead, it takes a blueish grey colour: the belly is white; and, under each eye, the face is marked with a large white spot. This animal is a native of Africa, in the neighbourhood of the Cape; but seems to be confined within some districts at a considerable distance from that promontory.

THE EGYPTIAN ANTELOPE.

THIS is the antelope oryx of Linnæus, the oryx of the ancients, the pafan of Buffon, and the gemse bok or chamois of the Dutch colonists at the Cape of Good Hope. The animals of this species are of the same size as our common domestic he-goat; but in figure, colour, and agility, chiefly resemble the stag. The length of a skin which Mr. Pennant examined, was more than six feet six inches: the tail, which is covered with long black hair, is, between the rump and the end of the hairs, two feet six inches long.

The belly, the rump, and the legs, are white; but each leg is marked below the knee with a dusky spot: the rest of the body is grey or reddish; except that a black line runs along the back: the horns are almost perfectly strait; of a blackish colour; each about an inch and a half in diameter at the base, and distinguished

guished on the lower half by twenty or more prominent wavy rings, the upper half smooth, and tapering into a sharp point: the distance between the points of the horns is fourteen inches.

This animal is found in the neighbourhood of the Cape. Sparman supposes it peculiar to the north-western parts of the tract of country inhabited by the Dutch colonists. It is also an inhabitant of Syria, Arabia, Persia, India, Egypt, and Ethiopia. It is supposed to be the zebi of the Holy Scriptures. Pliny relates that the Egyptians had observed this animal to be particularly affected by the appearance of the dog-star. Another circumstance which he relates concerning the oryx, shews that his knowledge of it was very imperfect: he gravely tells us, that its hair, instead of pointing, like that of other animals, towards the tail, lay in the contrary direction. Mr. Paterfon informs us, from his own observation, that the horns of this antelope are remarkably long and sharp; and that, when attacked by dogs, it defends itself sitting on its hinder quarters.

THE LEUCORYX.

THE leucoryx is of the same size with a small ox from Wales or the Highlands of Scotland. Its body is thick and clumsy; its limbs rather more elegantly formed; its nose thick and broad, like a cow's; its ears somewhat slouching; its horns long, slender, slightly incurvated, annulated for a part of their length, black, and terminating with sharp points. Its tail reaches to the first joint, and ends with a tuft. The body of this animal is almost all over of a milk-white colour; only the middle of the face, the sides of the cheeks, and the limbs, are tinged with red. The island of Gow Bahrein, in the gulph of Bassora, is the native region of the leucoryx. Mr. Pennant relates, from a paper which he found in the British museum, that Shah Sultahn

Sultahn Houffein kept some of this species as curiosities, in a park, at the distance of eight leagues from his capital. A fossil horn from Siberia has been suspected by Dr. Pallas to have been produced on the head of a leucoryx. Oppian, as quoted by Pennant, describes an animal under the name of oryx, which seems to be no other but this antelope; though his description is more particular than any that the works of modern naturalists afford of the leucoryx.

THE ALGAZEL.

THIS is the antelope gazella of Linnæus; and some other naturalists have characterised it, by adding to its name, an epithet, signifying that it bears a bezoar. There appears to be a considerable resemblance both in size and other particulars between the algazel and leucoryx: but, the horns of the algazel, though long, slender, and nearly upright, as well as the horns of the leucoryx, differ from those of the latter animal, in being gently arched, not backwards, but towards each other: they are always annulated; but the inequalities produced by the rings on the surface of the horn are less remarkable in some than in others: the breast and the buttocks of this animal are white; the rest of its body is red.

India, Persia, Egypt, and Ethiopia, are the countries which produce the algazel. It is a gregarious animal. Along a plain it moves slowly; but climbs the sides of hills with great vigour and velocity: it is extremely shy and timid; yet, when taken alive, is easily tamed. Autumn is its season of love, and spring of parturition. The oriental bezoar, a concretion once highly valued for its supposed medical qualities, strongly odorous, and highly aromatic, was formerly thought to be obtained only from this animal. The bezoar, however, is at present regarded as a concretion, not peculiar

to any one animal, but formed within many other animals of the East, and even of Europe.

THE ELK-ANTELOPE.

THIS is the Indian antelope of Pennant; the cou-dou of Buffon; and the eland of the Dutch colonists at the Cape of Good Hope. From Sparrman we also learn, that it is denominated by the Caffres, empofos or poffo, and, by the Hottentots, t'gann. In size and shape this animal bears some resemblance to the elk. The forehead of the elk-antelope is flat, and broad above the eyes; but from the eyes to the tip of the nose, becomes gradually narrower, till it terminates in a sharp point: the breast is furnished with a dewlap covered with long hair: on the upper part of the forehead stands a tuft of erect hairs: a thin erect mane runs along the back, from the nape of the neck to the origin of the tail: the ears are long and pointed: though the body is of a thick robust form, the legs are slender and elegant: the height of the animal is commonly between five and six feet: the horns are generally about two feet long, of a dark brown colour, having, each, from the base, for one-third of its length, three sides, and three ridges or ribs separating the sides, with a spiral wreath running over both the ridges and the sides: from the termination of the ridges and the spiral wreath, the rest of the horn is round and smooth; both horns rise almost in an upright direction, only their tops are slightly bent forwards: the hoofs are short, and surrounded, at their junction with the leg, with a circle of black hairs: the tail does not reach to the first joint of the leg, but is terminated with a tuft of long black hairs; the short hair covering it is of an ash-colour. The whole body, indeed, except the tuft at the end of the tail, the skin between the fetlocks and hoofs, and the thin erect mane, is of a blueish ash-colour, tinged with red.

India, Congo, and the southern parts of Africa, are the countries which afford these animals. Before Sparrman, no natural historian had given a description of the elk-antelope from personal observation. That enthusiastic student of nature had various opportunities, in his journey from the Cape into the interior parts of Africa, both of examining the form and appearance, and of observing the manners, of this species. They are gregarious; and are often seen in immense herds in the extensive plains on the confines of Caffraria, north-west from the Cape. The industry of the Dutch colonists, who were accustomed to hunt them eagerly for their flesh, hides, and tallow, has almost exterminated them from the districts lying nearer that promontory. Though the elk-antelope affords always a considerable quantity of tallow, and is generally fat and bulky; yet he is content with such a moderate quantity of food as he can crop from shrubs and bushes, without requiring large quantities of grain or grass. When hunted, these animals always run, if possible, against the wind, and will even face the hunter rather than flee in a different direction: their fatness and heaviness render it difficult for them to run long, if hard pursued; and, it is probable that they turn their faces against the wind, when pursued, from finding that in this direction they become not so soon insufferably hot and breathless, as when their progress is assisted by the force of the wind. Some of the hunters pretend that they have seen the elk-antelope, when fleeing with all speed before a pursuer, exude from his neck a bloody froth. Sometimes a mixture of melted fat and blood is seen to gush, on similar occasions, from the nostrils of the panting animal. At other times, even the younger and fleetest bucks are seen to drop down dead, when their strength is exhausted in flight.

The flesh of the elk-antelope is excellent food: it is of a fine grain, very juicy, and tastes deliciously:

the breast especially, is considered as a great delicacy: the fat of the heart is not only very copious, but so fine and tender as to be no bad substitute for butter: the hide on the neck of the elk-antelope is very thick and tough; and, next after that of the buffalo, makes the best traces for waggons, halters for oxen, field-shoes, &c. Both the Hottentots and the Boshiesmen use the horn of the elk, with wooden stalks fitted to them, for tobacco pipes; from which they gulp up large draughts of smoke with the most eager avidity.

THE HARNESSSED ANTELOPE.

THIS species is scarcely inferior in size to the elk-antelope, though of a different shape. Its legs, like those of the other antelopes, are long and slender; its neck rather long and round; its forehead broad, and somewhat prominent; its ears broad; its horns situated almost on the hinder part of the head, strait, spiral, and flattened so as to have two angular sides; its tail ten inches in length, and covered with long shaggy hair: the length of this animal, from the top of the nose to the root of the tail, is about four feet and an half; the height, from the heels of the hinder feet to the back, two feet eight inches: the hair, over the whole body, is short and smooth: the ears are bare within: the females have no horns.

The ground colour of the body of this animal is a deep tawny. Beneath each eye, the face is marked with a white spot: on each side the body displays six transverse and two longitudinal stripes or bands, so regularly disposed as to have the appearance of harnessing: the thighs are marked with white spots: the cheeks and the under part of the neck are white. This animal is very common in Senegal. It is gregarious. Large herds of harnesssed antelopes are seen spread through the plains and woods of the country of Podor. It inhabits the South of Africa, in Zwellendam and
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the adjoining districts near the Cape; but appears not farther east than Zwellendam, in those regions, till you reach the country of the Tambuki. The flesh of the harnessed antelope is neither tender nor delicate.

THE GUINEA ANTELOPE.

THIS name has been affixed by Mr. Pennant to the animal which Buffon and Linnæus distinguish by the name of grimm, in honour of the gentleman who first described it. It is of a more diminutive size than most of those antelopes which we have hitherto been describing. It is about eighteen inches high; with slender legs; a considerable length of neck; rather a sharp snout; its forehead somewhat prominent; large ears; dusky eyes, and under each a cavity into which a strong-scented oily fluid is constantly secreted, and there becomes concrete; its horns, not three inches long, slightly annulated at the base, and tapering gradually till they terminate each in a sharp point; and between the horns a tuft of black hairs, which serves as one of the most striking characteristics of the animal. The females are destitute of horns. The belly of this elegant animal is white; its tail, which is short, white beneath, and black above; the rest of the body of a yellowish brown colour.

Guinea is considered as the country of this species. It is chiefly from Guinea that the few individuals which have been seen in Europe have been procured. But Dr. Sparrman, in his voyage to the Cape, mentions three different animals; the steenbok, the grysbok, and the klippringer, all bearing some resemblance of character to the grimm, or Guinea antelope: and, if they are not all varieties of this species, some one of them may probably be the very same. But Dr. Sparrman did not find it convenient to examine these animals with such accuracy as could enable him to decide concerning their character, or to describe them with suf-

ficient exactness: they abound, however, in the neighbourhood of the Cape.

THE ROYAL ANTELOPE.

THIS little creature, denominated by Buffon, le chevrotain de Guinea, and by Bosman, king of the harts, must surely have received the latter appellation, as well as that of royal antelope, by way of irony; for it seems merely an antelope in miniature. It is only about nine inches high; its legs are not thicker than a goose quill; the male has small, strait, black, horns, smooth, shining as jet, and only two inches long; but the female is hornless: the ears are broad; the legs are long in proportion to the size of the body, and very slender: the hoofs are divided; the horns are annulated; and the number of rings on a horn denotes the years of the age of the individual to which it belongs. The colour of this little creature is chiefly a reddish brown; but the belly is white: and the tail, which, though short, is covered with pretty long hair, partly yellow, partly red, and partly white.

It is amazingly swift; it springs readily over walls twelve feet high, climbs the loftiest mountains, and is never caught without the greatest difficulty; yet, when taken, and familiarized to mankind, it becomes very tame and mild. It is a native of Senegal, and the other hot regions of Africa; and such is the tenderness of its constitution, that it can scarcely bear transportation, and does not thrive in our cold European climates. It is called by the Hottentots noumetjes; it utters a long, shrill, warbling, cry, amazingly loud for so diminutive an animal. Its flesh is one of the most exquisite delicacies that can appear on the table of the epicure.

THE INDOSTAN ANTELOPE.

THE most remarkable peculiarities of this antelope are horns bending forwards, a mane on the neck, a bunch on the back, and a long bushy tail. It is the biggel of Mandelsloe in his travels, and is described by Dr. Parsons in the Philosophical Transactions, as a quadruped brought from Bengal. It is about five feet high: the hair covering the body is short, soft, and of an ash colour: the tail is two and twenty, and the horns seven, inches in length. It is furnished with a dewlap on the lower part of the breast, like a bull: the legs are of an elegant slender form: the neck resembles that of the camel. This animal is an inhabitant of the most remote parts of the Mogul's dominions in India: it is a ruminating animal. It lies down and rises like the camel. Its voice is of a harsh croaking sound.

THE WHITE-FOOTED ANTELOPE.

THE horns of this animal are short, and inclined forwards; it is furnished with a mane extending along the neck, and half way down the back; its tail is long and bushy; the male is marked immediately above the hoofs with one white spot on each of the fore, and two on each of the hinder, feet: the body is of a dark grey colour; the ears are large, and striped with black; the mane is black, and a tuft of long black hairs hangs down the fore part of the neck: the female of this species is destitute of horns, and has her feet marked immediately above the hoofs, with three black, and two white, bands. This antelope measures, at the top of the shoulders, four feet and one inch in height, and, from the lower end of the neck to the anus, four feet in length.

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This species, like the preceding, are native inhabitants only of the remote parts of India: they exist both in a wild and tame state. In a domestic state, they refuse not oats, but prefer grass and hay, and eat wheaten bread with great fondness. Even in confinement, however, their manners are not uniformly mild: they sometimes run with sudden fury against such as approach them, and often attack each other with amazing cunning and impetuosity. The males, in fighting, are accustomed to drop on their knees at a distance; to approach in that attitude; and, when near, to spring on each other with the utmost violence. In the reign of Aureng Zebe, they were numerous between Delli and Lahor, on the way to Cachemire. That monarch used frequently to pursue them in the chase. An army of hunters surrounded the space in which the animals were feeding, with nets; which were drawn still closer and closer, till they were at length confined within a narrow precinct. The monarch and his courtiers then entered the circle, and, attacking the antelopes with arrows, spears, or muskets, made often so prodigious a slaughter, that the carcases were sent as presents to the great men throughout all parts of the empire. In consequence of our connexions with India, animals of this species have been often imported into England, and have even copulated and produced young here. Two young ones are sometime produced at a birth; and the period of gestation is believed to be nine months.

THE SWIFT ANTELOPE.

THIS animal is chiefly distinguished by having the extremities of its horns bent forwards in the same manner as those of the chamois bend backward. The ground colour of its body is tawny; but the belly, the lower part of the sides, the rump, and the thighs, are of a pure white: the fore part of the neck is also
marked



Painted by G. S. S. & Co.

The White-footed Antelope, or Nyl-ghan.

Published April 1800.

marked with a milk-white spot. The individuals of the species, however, are not all uniformly coloured. The horns are eight inches in length, black and round: the length of the body is commonly about four feet; and its height approaches to three: both sexes have horns. Senegal is the native country of this species: they are timid and gentle, easily tamed, but so amazingly swift, that they seem to need neither defensive weapons nor ferocity of manners to protect them from the tyranny of mankind. The velocity of their flight has been compared by Ælian to the awful impetuosity of a whirlwind.

THE RED ANTELOPE.

THIS animal resembles the roebuck in size. It is about four feet in length, and in height two feet three inches: its horns are five inches and a half long, almost smooth,---only with one or two slight rings at the base, and bent forwards at the point, but not so much as those of the Nanguer: its body is all over of a pale red colour; its ears are longer than its horns. This species is peculiar to Africa. They abound in the country of Senegal, and in the neighbourhood of the Cape. Sparrman considers the steenbock as a variety belonging to this species, distinguished by a white spot over the eyes.

THE STRIPED ANTELOPE.

THIS animal, the koedoe of the Dutch colonists at the Cape of Good Hope, the condoma of M. de Buffon, and, from the form of its horns, the strepsiceros of some other writers, is of a beautiful tall figure, with long slender shanks; and, though of a less clumsy and heavy form, larger than the elk antelope. The male koedoe is distinguished by large spiral horns, with a ridge following the wreath, compressed sideways, consisting of three flexures, and measu-

ring often between four and five feet: the female is destitute of horns. The body of the animal is commonly nine feet long, and four in height: its predominant colour is a rusty brown; the face is marked with two white lines originating one from the corner of each eye: a brownish white stripe extends along the ridge of the back: eight or nine white stripes run down the sides: the posterior part of the belly, with the fore part of the hinder legs, are also white: a short mane adorns the upper part of the neck: a few long hairs hangs between the throat and the breast: the tail is brown above, white beneath, and two feet in length. The mouth of the koedoe is furnished with cartilaginous processes resembling tusks.

This species inhabit the south of Africa: they are well known to the Dutch colonists at the Cape of Good Hope, and have not escaped the notice of the curious travellers from Europe who have visited that region. Shrubs and low bushes afford their favourite food. Though their form seems to promise agility and speed, yet they are said to run slowly, and to become soon fatigued. No other antelope is so easily overtaken by the hounds: but, when the foe approaches, the male turns, and bravely defends himself with his horns: the female, though not furnished with these weapons of defence, is not swifter than the male. The flesh is excellent food, the marrow delicious.

THE COMMON ANTELOPE.

THIS denomination is adopted from Pennant for the *antilope cervicapra* of Linnæus, and the antelope of Buffon; because this species has been most frequently, and for the longest space of time, distinguished by naturalists, at least in Britain, as belonging to the genus of antelopes. The animals of this species are somewhat inferior in size to the fallow-deer. The general colour of their body is a dusky brown, mixed with red:
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The Kudu Antelope?

London Published as the Act directs 17th Nov^r 1796.

the belly and the inside of the thighs are white: the orbits of the eye are likewise white; and a white spot marks each side of the forehead: the horns are about fourteen inches long, marked with distinct rings nearly to the points, and bended, by a double flexure, into a form resembling that of the ancient lyre. The females are without horns.

Barbary and India are the regions which this species is known chiefly to inhabit. The female goes nine months with young, and produces only one at a birth. Bengal, as we learn from travellers, affords a variety of this species, the horns of which resemble those of the common antelope of Barbary; but its face, back, and sides, are of a very deep brown colour; its belly and the inside of its legs are white; its tail is black above and white beneath; and its size superior to that of the last variety. Mr. Pennant distinguishes this animal by the epithet brown, and conjectures that it may be the same with the lidmee of Barbary, mentioned by Dr. Shaw in his travels.

In the cabinet of the Marquis de Marigny, in the museum that was lately Sir Ashton Lever's, and in Mr. Pennant's cabinet of natural curiosities, there are several horns which appear to have belonged to a third variety of this species: they are of a spiral form, but smooth and black: two are joined in a parallel direction, with the points turned different ways; and we learn, that, joined in this manner, these horns are carried by the fakirs and fantons in India, as a sort of weapon, and an ensign of dignity.

This animal loves the smoke of tobacco; and, when caught alive, will approach the pipe of the huntsman, though otherwise more timid than any other animal. This is perhaps the only creature, besides man, that delights in the smell of a poisonous and stinking plant. The Arabians hunt it with a falcon. I had an excellent opportunity, says Hasselquist, of seeing this sport near Nazareth in Galilee. An Arab, mounted on a swift

courser, held the falcon in his hand, as huntsmen commonly do : when he espied the rock-goat on the top of a mountain, he let loose the falcon, which flew in a direct line like an arrow, and attacked the animal ; fixing the talons of one of his feet into the cheek of the creature, and the other into its throat, extending his wings obliquely over the animal ; spreading one towards one of its ears, and the other to the opposite hip. The animal, thus attacked, made a leap twice the height of a man, and freed himself from the falcon ; but being wounded, and losing his strength and speed, he was again attacked by the falcon ; which fixed the talons of both its feet into the throat of the animal, and held it fast till the huntsman, coming up, took it alive, and cut its throat ; the falcon drinking the blood as a reward for his labour. A young falcon which was learning, was likewise put to the throat of the bleeding animal : by this means are young falcons taught to fix their talons in the throat of the animal, as being the properest part ; for should the falcon fix them in the creature's hip, or some other part of the body, the huntsman would not only lose his game, but his falcon also : for the animal, roused by the wound, which could not prove mortal, would run to the deserts and the tops of the mountains, whither its enemy, keeping its hold, would be obliged to follow ; and, being separated from its master, must of course perish.

THE BARBARY ANTELOPE.

THIS species, the gazelle of Buffon, are distinguished by horns about a foot in length, first reclining backwards, then bending in the middle, and reverting forwards, annulated with about thirteen rings, --- of which those nearest the base encircle the whole horns, but those approaching to the point are only half rings, and also furrowed longitudinally. In size and figure these animals nearly resemble the roebuck. The colour

four of the upper part of the body is a reddish brown; the buttocks and the lower parts are white: a strong dusky line divides the brown from the white: each knee is furnished with a tuft of a hair: the tail is black above, and white beneath. This species are gregarious. In Barbary, Egypt, Arabia, and Syria, they are seen in numerous herds. The Barbary antelope is, most probably, the dorcas of Ælian, and the dishon of Moses.

THE KEVEL.

THIS is the flat-horned antelope of Pennant; and the kevel of most other writers. Its horns are, like those of the last species, marked with rings, from fourteen to eighteen in number; but, instead of being round, they are flattened on the sides. It is equal in size only to a small roebuck. In other respects, it bears an exact resemblance to the antelope of Barbary. Both females and males are furnished with horns. These animals are known for inhabitants both of Senegal and of Persia: they herd together, and are easily domesticated: their flesh is juicy, and of a very agreeable relish. The Persian name is dshairan.

THE SPRINGER.

THE horns of this species are seven inches long, of a deep black colour, annulated near the base, but smooth towards the points, for more than one-half of their length: they rise from the base, almost in an upright direction; but, as they advance, bend gently towards the sides; forming, each, with more than the upper half of its length, a beautiful curve: the horns of the two sexes are similar both in size and shape: the ears are six inches and a half in length: the whole length of the animal, from the nose, is but very little more than four feet: the tail is somewhat less than a foot long, and towards the extremity very slender, and covered

covered with a few dark brown hairs, from one to two inches and an half in length: the eyes of this antelope are highly beautiful; but the face is not marked with *pori ceriferi* under them. Brown is the predominant colour of the body of this animal: the face, the belly, and the rump, are white: a white list, which the animal can expand at pleasure, extends from the tail half way up the back: the lighter brown of the neck and sides is separated from the white parts of the body by brown stripes of a much deeper shade: the ears are ash-coloured, and partly covered with very short hairs, partly bare.

These antelopes are inhabitants of Africa. In seasons of extreme drought, they advance from the northern interior parts of that continent towards the Dutch settlements, and proceed strait forwards till they penetrate to the sea. When their progress is stopped by this barrier, they return by the same road: they journey in immense herds. Dr. Sparrman shot one of a herd of about two thousand, that came all to drink at the same well. Mr. Vaillant, on his return from visiting the Gonaquois and the Caffres, to the Cape, travelled a while in the middle of a herd of these animals, migrating in search of water and cool shelter; the number of which he estimates at much more than fifty thousand. He, with his dogs, oxen, carriages, and attendants, travelled in the midst of the herd, without giving them any alarm. He shot among them and killed three, without scattering the rest. So peaceable, so insensible to danger, is the species, or so difficult is it for individuals wedged into so immense, unwieldy, a herd, to save themselves by flight. Hyænas, lions, and other beasts of prey, attend them on their march, and thin their numbers with eager rapacity. The Hottentots call them the lion's flock of sheep.

The form of the springer is remarkably elegant. Its manners are mild and playful: it runs with considerable velocity; and its race is frequently interrupted
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by a bound, to the elevation of perhaps two yards. At that height, the animal seems to suspend itself for a few moments in the air; sometimes expands the white list on its back, and by drooping its head, and gathering its feet together, raises that part into a convex form; and, at other times, depressing its belly, sinks it back into a concavity, till the rump and the neck almost meet. It would appear that the emigrations of the springers are not regularly periodical. They forsake tracts of country which are desolated by drought, or which they have bared of herbage, for others where they may find water and pasture. According to Dr. Sparrman's account, they are quickly dispersed before the pursuer, when assembled in moderate herds. Their flesh is juicy, and of a good taste.

It appears that there are different varieties of this species. Sparrman relates, that the horns are sometimes reclined backwards, sometimes bent forwards. Mr. Pennant's white-faced antelope, which he describes, from a specimen in the Leverian Museum, as a separate species, differs so very little from the springer in size and colours, and resembles it so exactly in shape, that we cannot view it as any other than a variety of this species.

THE CHINESE ANTELOPE.

THIS species, the tzeiran of Buffon, the yellow goat of Du Halde, in his account of China, called by the Mongals dseren, by the Chinese hoang yang, and whang yang, are distinguished by yellow annulated horns, nine inches long, diverging much near the points; but having these turned towards each other. The body is nearly four feet and an half long, and in height two feet and an half: the head is of a thick form, and the nose blunt, and convex above: the ears are small and sharp-pointed: the structure of the wind-pipe forms a remarkable protuberance on the neck;

the pits in the groin are uncommonly large: the tail is short: the females are destitute of horns. From the beginning of May, the period at which the animal changes its coat, the hair continues, through summer, short, close, and tawny: as winter advances, it becomes long, rough, and hoary.

These animals abound in the deserts inhabited by the Mongal Tartars, and through all the wide tract of country between Thibet and China. They are likewise among the animals hunted by the Buratti, and are spread through the country between Tangut and the borders of India: they associate in herds: low rocky hills and dry sunny plains are their favourite haunts: they select the sweeter plants: they avoid woods and water with the most fearful solicitude. In running and leaping they exhibit amazing agility, and are almost indefatigable. When taken young they are easily tamed: the young are produced so late in the season as in the month of June: they are not less watchful of their safety than swift: but, notwithstanding their vigilance and velocity, they escape not the Mongal hunters. They spy out the herd from an eminence, surround them secretly, and easily shoot them attempting to escape. When one of the herd breaks through, all his companions follow in a single line; whatever the obstacles which opposed their passage; however certain the dangers into which they run. The hunters use a sort of whizzing arrows with broad heads, and having a round piece of bone with holes upon the shaft; the noise of which contributes much to stupify and confound the animals.

THE SAIGA.

SAIGA is a denomination much more frequently applied to this species than Scythian antelope, the name adopted by Pennant. Linnæus and Buffon agree in using it. These animals have semi-pellucid horns, of a pale yellow colour, about eleven inches long, and annulated

nulated for the greater part of their length, but smooth at the points. In the figure and size of its body, the saiga bears a great resemblance to our domestic goat: its head is rather large; its nose is very cartilaginous, thick, and arched, and rises nearly to the eyes: the ears are small: the neck slender, but prominent above the throat. In summer the hair on the back and sides is short and close; its colour grey mixed with yellow; but the inferior part of the neck, and the body, white. In winter, the hair becomes long, rough, and hoary: the knees are tufted: the tail is four inches long, and naked below, but clothed above with erect hairs, terminating in a tuft: the females are without horns: the male has sometimes three, and sometimes, but very rarely, one.

These animals inhabit the regions included in the ancient Scythia; from the Danube and Dnieper to the banks of the Irtish; through Poland, Moldavia, and the lesser Russia; on the shores of the Euxine and Caspian seas, on the banks of the lake Aral, and of the river Volga. They feed in herds; they copulate in the end of November; and, during the season of love, the male is bold and faithful in defence of the female: the period of parturition is between the beginning and the middle of May. Never more than one is produced at a birth. Sunny plains, abounding in salt springs and acrid aromatic plants, are their favourite haunts. In summer they feed in the more northern parts of that extensive tract of country through which they are spread. In the rutting season, in the end of autumn, they migrate southward. In their progress into the southern deserts, they join in vast herds. Returning northward in the spring, they divide into small parties. They very seldom feed alone; the males feeding promiscuously with the females and their young: they readily lie down all at same time; but, by a providential instinct, some are always keeping watch; and, when they are tired, they seemingly give notice to such as have taken their rest.

who arise instantly. and as it were relieve the centinels of the preceding hours. They thus often preserve themselves from the attack of wolves, and from the surprize of the huntsmen. They are excessively swift, and will outrun the fleetest horse or grey-hound; yet partly through fear, and partly by the shortness of their breath, they are very soon taken. If they are but bit by a dog, they instantly fall down, nor will they even offer to rise. In running they seem to incline on one side, and their course is so rapid that their feet seem scarcely to touch the ground. In a wild state they seem to have no voice. When brought up tame, the young emit a short sort of bleating, like sheep. The males are most libidinous animals: the Tartars, who have sufficient time to observe them, report that they will copulate twenty times together: and that this ability arises from their feeding on a certain herb, which has most invigorating powers. When taken young, they may easily be made tame; but, if caught when at full age, are so wild and so obstinate as to refuse all food. When they die, their noses are quite flaccid. They are hunted for the sake of their flesh, horns, and skins, which are excellent for gloves, belts, &c. The huntsmen always approach them against the wind, lest they should smell their enemy; they also avoid putting on red or white clothes, or any colours which might attract their notice. They are either shot, or taken by dogs; or by the black eagle, which is trained to this species of falconry: their best season is in September: at other times, the skins are penetrated by worms: the fat resembles that of mutton; in taste, like that of a buck: the head is reckoned the most delicate part.

The Saiga is supposed to be the kolos of Strabo, which he describes as white and swift, and of an intermediate size between a stag and a ram.

THE CORINE.

THIS species have very slender horns, not marked with rings, but with circular rugæ. In size they are smaller than the roebuck: the neck, the body, and the flanks, are tawny; the belly and the inside of the thigh white, and separated from the thighs by a dark line: the ears are large: a white, and beneath it a black line, marks each side of the face: the knees are furnished with tufts of hairs. Senegal is the country of this animal. Its colour, its velocity in running, and agility in leaping, have induced some naturalists to suspect that it might be the female of the kevel or flat-horned antelope. But its horns are remarkably different from those of that species.

THE CERVINE ANTELOPE.

THE animal to which we have adopted from Pennant the name of cervine antelope, is the bubalus of the ancients, and the hartebeest of the Dutch at the Cape of Good Hope. The horns of this antelope rise almost from one base, and, widening as they advance, bend, first forwards, and then, after rising for a considerable length almost in an upright direction, turn their points backward: measured along the exterior curvature, they are from six to nine inches in length: they are annulated nearly to the points; entirely of a deep black colour; and common to both sexes.

The hartebeest is somewhat above four feet in height: a cinnamon colour predominates over its body: the forehead is covered with black and brown hairs intermixed: a broad black streak extends over the hinder parts of the haunch, down the thigh, as far as to the knee: the anterior parts of both the fore and the hinder legs are also marked with black: two narrow stripes of the same colour rise one behind each ear, and run

nearly together along the ridge of the back: the *pariceriferi* under the eyes are exceedingly small: the face exhibits at least the rudiments of a beard and whiskers: the tail reaches nearly to the joint of the leg; it is covered with long bristly hairs, but does not terminate in a tuft: the legs are of the same slender and elegant form as those of the other antelopes: the buttocks are finely rounded: the ears are asinine: the head is large, and the forehead high. The animal has no teeth in the upper, and only eight in the lower, jaw.

This species are natives of Africa. Naturalists have become acquainted with them in Barbary, and in the neighbourhood of the Cape. The ancient Romans, who ransacked almost every forest and range of mountains through the known world, for wild beasts to exhibit in the Circus, were not strangers to this animal. Pliny mentions the bubalus as an inhabitant of Africa, and as somewhat between a calf and a stag in form. The same animal seems to be a native of Arabia. Travellers tell, that its young are easily tamed, and associate readily with other cattle. The Arabian name is *bakar uafch*, or *bekker el wafch*. The inhabitants at the Cape are familiarly acquainted with these antelopes. They have not indeed attempted to domesticate them; but they often pursue and shoot them in the chace. Herds of hartebeests range through all the districts in which the Dutch colonists are settled. Sometimes a solitary individual or a single pair are met with. Even at its full speed, the hartebeest seems to gallop with a heavy pace: yet, its motion is not slower than that of any other of the large antelopes. When pursued, it often turns and gazes on its pursuer. Fighting, it drops on its knees like the gnu, in order to rush on its antagonist with the greater impetuosity. Its flesh is somewhat dry, but of a fine grain, and of an agreeable high flavour. The Dutch colonists make handsome spoons of its horns. The cerumen which oozes from

from its *pori ceriferi*, is esteemed by the Hottentots as a rare and excellent medicine.

THE KOB, OR GAMBIAN ANTELOPE.

THIS species bears a considerable resemblance in shape and colours to what we have considered as a second variety of the last species. Its horns are thirteen inches long, and annulated with eight or nine rings, but smooth at the points. Its size is equal to that of the fallow-deer: its fore legs have the knees protected by a covering of long hairs. It is an inhabitant of Gambia and Senegal in Africa: one of the most timid animals of the kind: when pursued, it hesitates not to throw itself down rocks and precipices.

THE BOSCH-BOCK, OR WOOD-ANTELOPE.

THIS animal is somewhat more than two feet and an half in height; its body apparently more bulky in proportion to its height than the bodies of the other antelopes; its back is strait; its buttocks not rounded; a perpendicular line might be dropped between the origin of the tail and the hoof of the hinder feet: a narrow line of long white hairs, forming a slight mane, extends along the neck, the back, and even the tail: the predominant colour of the body is a dark brown; the shoulders and a part of the fore ribs are of a still darker brown than the rest of the body: the ears are five inches long, and without, of a foot-colour, but on the inside grey: the haunches and the sides are marked each with about nine or twelve white spots: the belly is marked with two large spots; one immediately behind the fore, the other immediately before the hinder, legs: another white spot distinguishes the lower part of the neck: the fore legs are white from the knees to the pasterns: like other antelopes, the bosch-bock has fore-teeth only in the lower jaw: its horns are black, of a triangular yet spiral form, roughened at the
bottom

bottom by an infinite number of wavy rings, conical and sharp at the points,---and have the extremities sometimes light coloured and transparent: they are about ten inches in length, extend upwards almost in a line with the forehead, but recede a little backwards and from each other at the middle, and then turn the points gently forwards: the female has no horns: the skin of an animal of this species measured, from the horns to the rump, four feet; and, from the top of the back to the hoof, thirty-three inches. These animals are known to inhabit the forests of Groot, Vaderbosch, Houtniquas-bosch, and perhaps Sitsikamma near the Cape of Good Hope. They avoid hills and open plains, and confine themselves to woods and groves.

The cry of the bosch-bock resembles the short, low, hoarse, interrupted, growlings of a dog or tiger. It frequently ravages vineyards and kitchen gardens: it discovers great sagacity and address in avoiding the snares, traps, and ambuscades, laid for it. Dr. Sparrman relates, that he watched a whole night in a vineyard which was visited by bosch-bocks; but the animals, though they seemed to have made their usual evening meal on the vines, escaped undiscovered. This creature runs so slowly, that the dogs sometimes overtake him: but he generally sells his life dear. When he perceives it impossible to escape by flight, he turns upon his pursuers, kneels down, that he may butt with greater impetuosity, and generally kills or gores the best and boldest of the dogs. His horns, though his chief instrument of defence, are sometimes entangled among bushes and low branches of trees, and thus prove fatal to him, by stopping his flight, till his enemies surround him. To avoid this, he elevates his nose as he runs, and reclines his horns on his neck. In woodlands, however, experience enables him to make his way with so much more dexterity and speed than dogs, that they generally lose scent of him in a short time.

time. The female, being destitute of horns, runs with more security in woods and forests than the male: she never therefore leaves the woods to make her escape through the plain; and, being of a lighter form than the male, dogs are seldom able to surprize or overtake her. The bosch-bock is monogamous.

CERVUS, the DEER, of the Order PECORA.

THE distinguishing characteristics of this genus of quadrupeds are the following; the horns are solid, brittle, covered with a hairy skin, and growing from the top; they likewise fall off, and are annually renewed: they have eight cutting teeth in the inferior, but none in the upper jaw; and they have no dog-teeth. Did we not confide in the wisdom of the great Author of nature, we might be tempted to censure the form of their horns as awkward and inconvenient. Sometimes they spread into broad palms, which send out sharp snags around their outer edges; sometimes they divide fantastically into various branches, part of which project over the front, while others are reared upwards in the air; and sometimes they are so reclined backwards, that the animal seems almost forced to bear its head in a stiff and erect posture; yet, they communicate an air of grandeur and magnificence; appearing like growing trees planted on the head of a living animal. The *cervus* family are to be found amid the dreary forests, the eternal snows, the bleak mountains, and the barren wilds, of the arctic world. They are more numerous in Europe and America, than in the other divisions of the globe. A warm temperature seems equally unpropitious to the nobler species of the deer, as a cold temperature does to the antelope. There are a great variety of these animals, of which the following are the particulars:

THE ELK.

THIS animal exhibits a stately but awkward form; vast length of legs; a square body of disproportionate bulk; a short tail; shoulders somewhat elevated; a long projecting snout, furrowed in the middle, with wide nostrils; a short neck; a mane almost erect, extending along the neck and shoulders; a small excrescence under the throat, with a tuft of hair hanging from it; long, slouching, asinine, ears; and horns with brow antlers, but with short beams spreading into broad palms, which are on the inner side plain, but, on the exterior side, furnished with sharp snags: the female, wanting horns, appears, still more than the male, though of a smaller size, a mere awkward bulk, without dignity, and without animation: the greatest height of the elk is seventeen hands; his greatest weight one thousand two hundred and twenty-nine pounds. Mr. Pennant informs us that he has seen, in the house of the Hudson's-bay company, a pair of elk's horns, thirty-two inches long, and fifty-six pounds in weight.

A hoary brown is the general colour of the body of this animal; his mane is light brown; his tail is dusky above, white beneath. Europe, Asia, and America, all afford this species: they were not unknown to the ancient Romans. Cæsar mentions the alce as an inhabitant of the Hercynian forest; larger than the roebuck; destitute of horns; without joints in its legs; and incapable of lying down on the ground, or of resting in any other manner than by reclining against a tree. The hunter, he tells us, used to observe the haunts to which the alces resorted; and to cut the trees against which they were accustomed to lean, almost through, leaving them standing, but insufficient to support any weight. When the alce returned to rest, the tree gave way; and he, falling with it to the ground, became an easy prey to his artful enemy.

Some

Some of these particulars are referable only to the female elk; others are absolutely fabulous: but Cæsar's opportunities of information were partial; and the actual appearance and real economy of the animal might easily enough give rise to the fabulous part of his relation. Pliny repeats the information communicated by Cæsar, but renders the history of the animal more perplexed by new fables, and by an unnecessary variety of names.

On the old continent, the elk is at present known for an inhabitant of Lapland, Norway, Sweden, Poland, Russia, Siberia, and Tartary, as far as the north of China. In the new world, this species inhabit the isle of Cape Breton, Nova Scotia, the western side of the bay of Fundy, Canada, and the country round the great lakes, almost as far as south as the river Ohio. They avoid the plains and open country, and confine themselves to the forests: the length of their legs, the shortness of their neck, and the disproportionable largeness of their upper lip, rendering it extremely difficult, or perhaps impossible, for them to graze on the ground, they brouze the boughs of trees, or wade into lakes and rivers in search of water plants. The stinking bean trefoil is with them a favourite herb; they dig through the snow with their hoofs to find it. The ancients tell, that, to avoid entangling his upper lip between his teeth, the elk is obliged to move backward as he feeds. But modern anatomists have discovered, that nature has provided against his suffering this inconvenience, by the largeness and strength of the muscles destined to raise the upper lip. The articulations of his legs are so closely embraced with ligaments, that they cannot be very supple or pliant: the olfactory nerves in the brain of the elk are larger than in other animals; and his powers of smelling are probably peculiarly exquisite.

The motion of these animals is a high shambling trot, amazingly swift: to avoid entangling their horns,

as they run through the woods, they point their noses parallel with the horizon: they raise their fore feet commonly three or four feet high in walking. Mild and inoffensive in their general manners; yet, in the season of autumn, when they feel the influence of the genial passion, they are quite furious: the males then strike with both horns and hoofs, the only means of defence or attack with which nature has furnished them; swim about from isle to isle in search of the females; and appear plainly to feel, in all their extravagance, the transports of that impetuous passion. If a person then approach his haunts, he runs upon him at full speed, and either gores him with his horns, or tramples him dead under his feet: the female goes with young through winter; and, in the month of April, produces commonly two at a birth: the young ones continue to follow their dam for a whole year. The elk is not an unsocial animal. In summer, distinct families feed together; in winter numbers meet among the deep pine forests of the northern regions which they inhabit. The elk is said to be subject to the epilepsy. The Polish name *lofs*, and the German *eland*, both signifying miserable, are said to have been given it, on account of the affliction which it suffers from this disease. But, if we may trust the tale, the animal is provided with a specific against this malady, and has only to scratch its ear with its hoof.

Elks have been sometimes domesticated. In old times, Mr. Pennant relates, that they were yoked in Sweden to the sledge; but having, from their dexterity in moving through difficult roads, been frequently accessory to the escape of murderers and other criminals, the use of them was prohibited under great penalties. Yet a Swedish writer informs us, that till the Barons Alstroemer, the same who imported the Angora goat, proposed premiums, and employed other means, for its domestication, this strong, stately, and swift-footed, animal was in that country always wild;

wild : from which it seems reasonable to infer, that the elk is at present a domestic animal in Sweden. The arts by which the hunters of ancient Germany invaded the safety of the elk, have been already mentioned. In the north of Europe, he is hunted in the same manner as the stag. As he flees before his pursuers, he often falls suddenly down, as if struck dead, though neither shot, nor in any manner wounded : these falls are ascribed to fits of the epilepsy ; but are perhaps rather owing to the stiffness of his joints, the length of his legs, and the difficulties of the tract through which he runs. When closely attacked, he turns upon his enemies, and makes a vigorous defence with his horns and hoofs.---The Indians of North America display great address in hunting the elk. Sometimes, joining in large bodies, they rouse these animals through the woods on each side of some great river, and, surrounding them on all quarters, compel them into the stream, where a part of the hunters are stationed in a series of canoes, forming a crescent between the two sides of the river, to intercept the elks, as they attempt to escape by swimming, and kill them with clubs or lances. At other times, they, with greater art, inclose a triangular space with stakes, hedged with branches of trees, and opening at the bottom into another triangle, formed in the same manner : the opening into the second triangle is hung round with snares, made of slips of raw hides : then ranging the woods in considerable parties, and rousing both elks and other deer, they drive them into the inclosures, where they are either caught in the snares, or shot with the arrows of the hunters. The elk is likewise often shot with the gun. When first roused, the animal, by squatting on his hinder parts, and making water, affords the hunter an opportunity of shooting at him. If the hunter miss his aim, the elk runs off with a rapid trot, clattering loudly with his hoofs. The happiest season for this pursuit is in winter, when the ground is co-

vered with deep snow, but the snow so softened by the impression of the sun as to yield under the weight of the elk; it still bears the hunter who travels on broad rackets or snow shoes; and the object of his pursuit then falls an easy prey.

One of the imaginary beings whose existence ignorance and wild superstition have suggested to the Indians of North America, is an invulnerable moose, of an enormous size, capable of wading with ease through eight feet depth of snow, and with an arm growing on its shoulders, subservient to the same purposes as the human arms. To this monster they attribute sovereign authority over his species, and represent him surrounded with a court, and reigning over faithful and obedient subjects. A moose is with these simple people a beast of good omen. To dream of him, is esteemed a flattering token of long life. The hoof of the elk is regarded among the Indians, the Norwegians, and the other northern nations, to whom it is well known, as a sovereign cure for the epilepsy. The person afflicted must apply it to his heart, hold it in his left hand, and rub his ear with it. It is also reduced to a powder, and drunk in water, as a remedy for the cholic, pleurisy, vertigo, and purple fever. The flesh of this animal is sweet and nourishing: the Indians imagine that it invigorates them more than any other species of animal food: the tongue is peculiarly excellent; the nose perfect marrow, and esteemed the greatest delicacy that Canada affords: the skin of the elk is almost impenetrable to balls: dressed into buff, it is strong, yet soft and light: in preparing it for use, the Indians use a lather of the brains of the animal in hot water: it is the leather of which their snow-shoes are formed, and with it they cover their canoes. The hair on the neck, shoulders, and hams, of a full-grown elk, makes good mattrasses and saddles. The palmated parts of the horns are hollowed by the Indians into capacious ladles.

THE REIN-DEER.

IN size the rein-deer is inferior to the elk: he has shorter and thicker limbs, and larger feet: his hair is also thicker and warmer. A full grown rein-deer is between four and five feet high, and of proportionate length. Both sexes of this species have large, slender, branchy, horns, with palmated antlers bending over the brow, and with the upright branches also palmated at the top: these horns are commonly from three to four feet long, and between two and three feet from tip to tip: the wild is larger than the tame rein-deer: the female, as well as the male, sheds her horns; but never during the period of conception; and, what is singular, even a castrated rein-deer sheds his horns, though seldom before his ninth year: the female has six paps; but only four yield milk. Shaggy hair covers the under part of the neck. The space round the eyes is invariably black. In the earlier part of life, the body above is of a dusky yellow; the face and the tail are always white; as the animal advances in age, the dun part of his body becomes first hoary, and at last white.

This species were not unknown to the civilized nations of antiquity. Cæsar mentions an animal as an inhabitant of the Hercynian forest, which can be no other than the rein-deer. He observed a palmated and branchy antler to project over its forehead; the male and the female were exactly similar in manners, in form, and in the size of their horns. Pliny too speaks of it as inhabiting the deserts of Scythia. He describes its size and figure with tolerable accuracy; attributing to it branchy horns, cloven hoofs, and shaggy hairs. But he adds a fable, which shews the imperfect state of zoology among the ancients. The rein-deer, he says, possessed the power of varying its colour at pleasure; a power still more astonishing than that ascribed to the cameleon! for the rein-deer had to change the colour, not merely of its skin, but also of its hair. But the alteration of colour, which this animal

mal undergoes in the progress of life, must have given rise to the tale. The rein-deer is at present an inhabitant of all the high northern regions of Europe, Asia, and America. Greenland, Spitzbergen, the northern parts of Canada, approaching to Hudson's-bay; Samoisida, Lapland, Norway, Kamtschatka, and Siberia, all afford animals of this species. Among the Laplanders, the Samoides, and the Kamtschatkans, the rein-deer is a domestic animal. Less than four hundred years ago, he was hunted so far south as in the forests of France. But the temperature of the climate in that country was not then so mild as it has since been rendered, by increasing cultivation, and by cutting down the forests.

Few animals are more mild and amiable in their manners, or more beneficial to man, than the rein-deer. His familiarity with mankind has afforded them opportunities of studying his economy. The season of love is in the latter months of autumn. In Lapland, where there are both tame and wild rein-deer, the females are often let loose into the woods, in the rutting season, and copulate with wild males. The progeny of such parents are fitter for the sledge, but more ferocious and unmanageable than others: the wild rein-deer of the woods are always larger, stronger, and blacker, than the domestic kind: in the rutting season, the males emit a disagreeable odour: the females are sometimes barren: the Laplanders castrate a great part of the young males, leaving only one unmutated male for every five or six females; they perform the operation with their teeth: castration renders the animal more mild and manageable: the period of pregnancy is three-and-thirty weeks; twins are frequently produced: the young follow their mothers two or three years; and attain not their full growth till their fourth year: the age of the tame rein-deer never exceeds sixteen years: his favourite food is a peculiar species of moss, which is the chief vegetable production

tion of the dreary plains that he inhabits in winter, and for which he digs, with his hoofs, through the snow: in summer, he eats the leaves and buds of trees, in preference to grass. His horns render it difficult for him to graze on the ground.

Tame rein-deer are kept in herds: it is difficult to keep a herd together: they are naturally disposed to escape from the hands of man; and the gnats, which are peculiarly troublesome to them, greatly increase their natural restlessness. Sometimes the Laplanders, who have been most successful in domesticating this animal, take shelter themselves, with their rein-deer, around their cottages, and kindle fires of moss, that diffuse a thick smoke, which keeps off those insects. The rein-deer themselves, to avoid the persecution of the gnat, and of a gadfly which they find a no less formidable enemy, scale the summits of the loftiest mountains; where they starve, rather than expose themselves to their tormentors, if not compelled by the herdsmen to descend in quest of food. The gadfly deposits its eggs on the rein-deer; and these, settling into the skin of the poor animal, produce worms which riddle it like a sieve: this happens in winter and spring, when the rein-deer are unavoidably confined to the marshy plains; the holes made by the worms close in summer; and it is only in autumn, that the fur becomes of value. Besides what they suffer from these enemies, they are liable to other causes of uneasiness: the teats sometimes crack, and yield blood instead of milk; a giddiness sometimes seizes them, in which they turn round till they drop down dead; ulcers about the hoofs sometimes incapacitate them for walking; and they are, at times, destroyed by a disease called by the natives of Lapland, *suddataka*, by which they become wild and furious, cease to receive nourishment from their food, though still eager to eat; and at last die of leanness and through decay of strength. In a wild state, the rein-deer is hunted by

man; bears make occasional depredations on both tame and wild herds; and the glutton or carcajou often drops from the thick branches of some tree on the unwary rein, fastens with its teeth and claws on the upper part of his neck, and sticks immoveably, till its prey, exhausted with his exertions to escape or shake it off, drops down dead of fatigue and loss of blood. The deer has no other means of saving himself from the arts of this enemy, but plunging into water; on which the care of its own safety makes the glutton leave him. The wolf is another of the rapacious animals that prey on the rein-deer. Wolves distinguish them from a distance, by the smell, or by the clattering noise of their hoofs when they run. Against a single wolf, a rein-deer is able to defend himself; but, when those ravenous animals come in numbers, they are easily successful.

Nature seems to have designed the rein-deer as an ample recompence to the Laplander for her unkindness to him in other respects. His chief, almost his sole, occupation is to manage his rein-deer. The rein is his horse, his cow, his sheep, his goat: the female is carefully milked; and her milk proves a wholesome beverage; it yields rich cheese, and not bad butter. In travelling, the Laplander mounts on the back of his rein, or is drawn by the docile animal in his sledge: the rein, as soon as yoked in the sledge, runs off with amazing velocity, and conducts the traveller safely through the most dangerous and difficult ways. Sometimes, however, when urged beyond his strength, he turns with fury on his driver, who has no means to save himself but overturning the sledge, and hiding under it. Yet he refuses not to run from thirty to sixty English miles without rest. As the Tartars and Arabs live in great familiarity with their horses, talk to them at times, and treat them as companions, so the Laplander pretends to a similar intimacy with his rein. He whispers in his ear what road to take,
and

and with what degree of speed to run; and, as they hold on their way through the deserts, addresses to him his songs of love, his effusions of joy or sorrow.

After the rein-deer have nourished their Lapland masters with their milk, and conducted them as submissive slaves, yet faithful companions, on their journeys, they are at last slain for other purposes. In winter, when fed only on moss, they become very fat: their flesh is either eaten fresh and newly killed, or salted and dried, or dried and preserved without salt. It is the Laplander's principal article of food. The skin, with its fur, is made into garments for both sexes: of it also is made the harness by which the deer are yoked in the sledges. As an article of traffic, the Laplanders likewise dispose of the furs in considerable quantities, to their neighbours. Sails for their skiffs are formed of the hides by the simple Samoiedes: the sinews, dried and divided, afford excellent sewing thread: the bones, the horns, and the hoofs, have also their uses. The Laplanders appear by much the most ingenious people of all the tribes of mankind who inhabit the same regions with the rein-deer. Samoiedes, Kamtschatkans, Esquimaux, and Greenlanders,---none of all these savages have so skilfully availed themselves of the useful qualities of this species as the natives of Lapland. The Samoiedes employ the living rein for no other purpose but the draught: the rude Koreki of Kamtschatka keep sometimes not fewer than twenty thousand in a herd, yet kill them only for the sake of the skins: the Greenlanders and Esquimaux are unacquainted with the rein in any other but a wild state; they pursue him in the chace, eat his flesh raw, and often drink his blood warm from the carcase; they gorge up the fat with peculiar relish: the Greenlanders surround the wild rein-deer in crowds, alarm and confound them by various arts, and, driving them into narrow defiles, there kill them with harpoon darts: the flesh, the fat, and the skins, are all important ar-

ticles to the Indian; he eats the flesh, and sells the skins, and sometimes the fat, to the English; yet he has never thought of domesticating them, but kills them only in the chase.

Rein-deer have been generally considered as incapable of subsisting even in temperate climates, and as thriving on no food but the rein-liverwort, their favourite moss. Cultivation has exterminated or banished them from the forests of France and Germany. Such as have been in late times introduced into Holstein, Prussia, and the neighbourhood of Dantzick, whether kept in confinement, or let loose into the woods, have perished, without reproducing their species. Within these few years, Sir H. G. Liddel, on his return from a tour to Lapland, brought with him to England five rein-deer; which he placed round Eflington-castle, in the north part of Northumberland, containing several large fir plantations, and extensive moors plentifully covered with rein-liverwort; they at first throve well, and produced young; but, by various accidents, both parents and young are now either dead, or in a very declining state.

THE STAG.

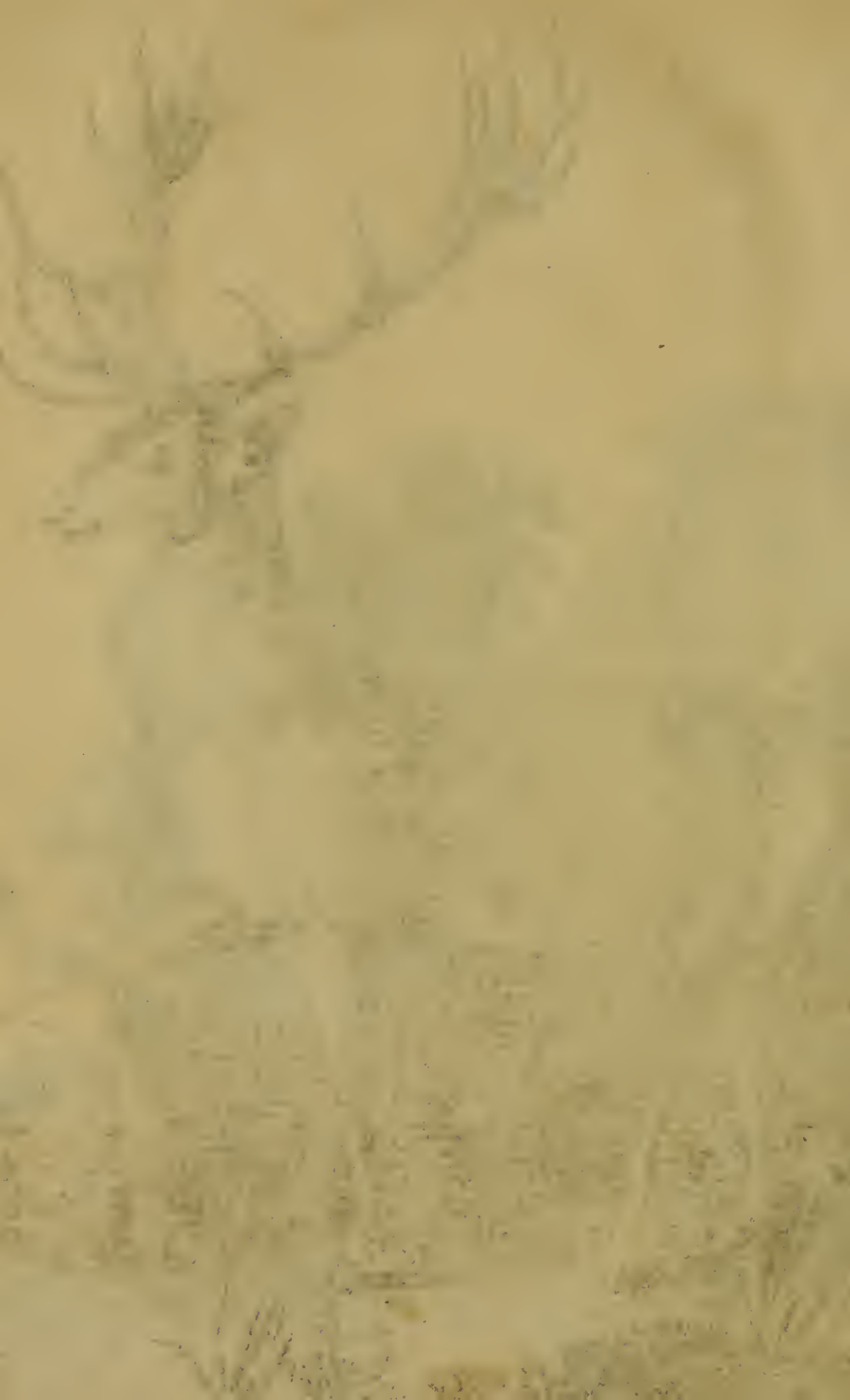
THE stag is an animal of a stately elegant form. When full grown he is commonly between four and five feet high. Often, when he enjoys abundance of food, and lives undisturbed by mankind or the beasts of prey, he attains a much larger size. His legs are slender and elegant; his tail short; his ears large and pointed; his horns lofty and branchy. The hind is of a smaller and more slender form, and destitute of horns. A reddish brown colour, which has gained this species the appellation of red-deer, distinguishes the upper part of the body; the hinder part of the neck, and the space between the shoulders, are marked with a black list; some part of the face is commonly
black;



The Stag.

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J. Lake sculp.



black ; the belly and the lower side of the tail are white. Sometimes we see yellow stags ; and sometimes, but very seldom, a white one. The stag loses and renews his horns annually ; and for a while each new set of horns is adorned with an additional branch. The calf has no horns, but only short, rough, horny, excrescences, covered with a thin, hairy, skin : in his second year, his horns are single and strait, and, at least till his sixth, the number of antlers continues to increase. From this period, they are multiplied so irregularly, that the animal's age comes to be estimated, not so much by the number of antlers, as by the size and thickness of the whole horns. Old stags cast their horns in the end of February, or the beginning of March ; the youngest are the latest in suffering this change ; but, by the end of May, they have all, of whatever age, laid aside their old, and begin to shoot forth new, horns : the horns fall off spontaneously, or are rubbed off by gentle friction against trees. The ancients fancied, that stags were at great pains to hide their horns in places where they might not be found ; the right horn especially, was, in their opinion, known to the animal to be highly valuable for its medicinal virtues, and was therefore so industriously concealed, that it rarely fell into the hands of man. The shedding of the horns is advanced by a mild, and retarded by an inclement, winter. After depositing their horns, stags forsake their usual haunts, walk with their heads low, avoid thick and deep forests, and retreat among brushwood, till the branchy ornaments of their heads are renewed : the sprouting horns are at first extremely tender, and covered with blood-vessels : they grow not like the horns of the bull, the sheep, or the goat, by shooting out new matter at the roots, and moving forward that which is already formed ; but, like trees and other vegetative bodies, increase their length by additions at the points. Stags have not their horns uniformly coloured ; those of the younger stags are

whitish; old stags have sometimes red, sometimes black, and sometimes pale dirty coloured, horn. When their horns are completed for the season, they polish them by rubbing against trees; and, it has been imagined, that the horns were coloured by the bark and sap of the trees against which they were rubbed: but experiments, made on purpose, have proved this opinion to be fanciful. The ancients tell us, that ivy had been observed spreading upon the horns of stags. Buffon seems to think them a sort of vegetable: they scarce ever acquire more than twenty or two-and-twenty antlers. In the old age of the animal, they become dry and stunted. A stag castrated with his horns on his head, never loses them; if castrated when they are newly fallen, they are never renewed.

Delicacy and acuteness of the senses distinguish the stag in an eminent degree: his powers of smelling are exquisite: his eye is sparkling, soft, and glowing with expression: he hears distant and low sounds, and is not incapable of relishing the melody of music: he is fascinated with the shepherd's pipe. One mode of hunting this animal, practised in ancient Greece, was for two persons to go out together, and one to charm the unsuspecting stag with the melody of his voice or his pipe, till the other approached near enough to pierce him with a dart or arrow. When he listens eagerly, he erects his ears. The forest is his favourite haunt; the leaves and sprouts of trees, the food of which he is fondest. In the seasons, when he is not exhausted by the efforts of love, or faint through want of food, or timid and dispirited on account of the tenderness of his budding horns, he runs with amazing vigour and velocity. He is mild and gentle, and views mankind, when unaccompanied by dogs, without fear, and even with a degree of confidence. Reduced to extremity by the attacks of an enemy, resentment and courage are raised in his breast, and he sells his life dear. He then kicks with his fore-feet, and pushes with his horns. A
tiger

tiger has been known to flee before a stag; dogs often suffer from his fierceness: his voice is bold and strong; and, as he advances in age, becomes bolder, stronger, and more tremulous: the cry of the hind is not so loud as that of the stag, and is never excited but by apprehension for herself, or her young: he eats slowly; and ruminates with difficulty, as the length of his neck renders him unable to bring up his food for chewing, without a disagreeable belching. In winter and spring, the stag scarce ever drinks; during these seasons, he unavoidably receives enough of moisture with his food: but, in the heats of summer, he plunges into the stream, and swims broad rivers, wide lakes, and even arms of the sea. Pliny tells us, that stags used in his days to pass commonly enough from Cilicia to Cyprus. Numbers were observed to swim together in one line; each reclining his horns on his companion immediately before him. In their ordinary associations, some one of the old males seems to be invested with the sovereignty of the herd.

The stag feels the passion which prompts to the propagation of the species, in all its extravagance and fury. The rutting period is with him a season of madness: it is about the end of August, or in the beginning of September, when the stag, after his new horns are fully grown, wanders from the thickets in which he had hid himself, while they were sprouting, in search of the hind: his neck is then swollen; his eyes are wild and glaring; he forgets his usual caution, and wanders through the open fields, regardless of man or other animals; he strikes his horns with mad impetuosity against trees and other obstacles; he roars with a loud, rough, and tremulous, voice. When two or more rival stags court the favours of the same hind, obstinate combats ensue: they redouble their roarings, paw the earth with their feet, and, meeting, strike their heads against each other with impetuous fury. One is at length disabled or forced to flee; but the victor has often

often repeatedly to renew the conflict with a fresh opponent, before he be left to the undisturbed enjoyment of his mistress. Sometimes, while the other stags are contending for the hind, a young one hastily enjoys the prize for which they contend, and runs off. Even, after conquering his rivals, and obtaining secure possession of his mistress, a stag soon disdains those favours which are enjoyed without contest and without courtship. After a few days, he wanders in search of another, facing new dangers, and combating other rivals. While under the impulse of this powerful appetite, he scarcely eats, sleeps, or rests, but continues to fight, and to enjoy. At length, his appetite is fatigued, and his vigour exhausted; from strong, bold, plump, and glossy, he becomes feeble, lean, and timid. Conscious of his imbecility, he retires from the herd, to recover his flesh and recruit his strength in solitude. Through winter, he continues to live apart from the hinds; and it is not till spring, that his fatness and vigour begin to be renewed. In winter, only the hinds and young stags, not above a year old, are to be found together. A stag become capable of procreation at the age of eighteen months.

The hind goes between eight and nine months with young, and brings forth, in May, or the beginning of June, scarcely ever above one, but never more than two, at a birth. When the period of parturition comes on, she retires from the young stags, in whose society she spent the winter. She feels the tenderest affection for her calf, and displays great sagacity in protecting and bringing it up: she carefully hides it in some dark thicket, from those numerous enemies of whom its life is in danger; for the eagle, the falcon, the osprey, the wolf, the dog, and the rapacious family of the felis kind, watch eagerly to discover her retreat, and rob her of her charge. Even the stag himself is its enemy: but, between courage and ingenuity, she shews herself a powerful protectress. In defence of her young, she

sometimes boldly opposes force to force; at other times, with the same unconcern for her own safety, she offers herself to the chace to mislead the hunter or the beast of prey from the covert where she has hid her calf. Through summer, the calf continues to follow its dam. In the rutting season, the old stags drive it to a distance. In winter, while the stags wander in solitude, it associates with the hinds and with the other young stags of its own age.

Thirty or forty years are the ordinary term of this animal's life: but, among the ancients, it was commonly believed to live, when it did not fall by a violent death, to a much more advanced age; and some wonderous instances of its longevity have been commemorated. Pliny says, that more than a hundred years after the death of Alexander the Great, some stags were taken, with golden chains about their necks, which appeared to have been put upon them by the command of that hero. Another tale is mentioned of a stag taken in the forest of Senlis, with a collar on his neck, bearing this inscription, *Cæsar hoc me donavit*; an inscription from which it was at first inferred that the stag had been once in the hands of Julius Cæsar, or some other Roman emperor. But, as the German emperors also take the name of Cæsar, the stag has been since supposed to owe his collar only to some cotemporary emperor of Germany.

The size and stature of the stag are influenced by the circumstances of his life, and the nature of the place which he inhabits. A stag who feeds in rich vales, or on hills abounding with corn, is larger and taller than those that inhabit dry rocky mountains. The red-deer of the mountains are low, thick, short, and slow, but persevering in flight. A stag, who passes his life undisturbed by men or dogs, grows larger and stouter, and shoots out more branchy horns, than one who lives in constant alarm, and is often harrassed and almost run down in the chace. This species are dif-

fused

fused over all Europe, and through the northern parts of America and Asia. Yet, though rather a northern animal, the stag never appears in the extreme north latitude. He is unknown at Hudson's Bay, in Kamtschatka, and in almost all the regions inhabited by the rein-deer. He is, at the same time, not impatient of the heat of some southern climates: Barbary affords red-deer; and in Mexico the species is well known, and an old inhabitant: they are numerous, and grow to a vast size in the southern part of Siberia: they have been exterminated from Russia: they abound in Canada, and are seen grazing among the bisons on the rich plains lying along the Mississippi, the Missouri, and other American rivers. The mild and peaceful character of the hind and stag affords them no protection from the hostilities of rapacious enemies. Wolves and other beasts of prey destroy vast numbers of this species, and have even exterminated the race from some countries where they were once numerous. Man, who wars with the beasts of prey in his own defence, tyrannizes over the domestic animals because he finds their services useful, and pursues the gentler wild animals, because they are overcome without danger and without resistance; he also takes peculiar pleasure in chasing the stag. So assiduously has this diversion been cultivated among civilized nations, as to be almost reduced to an art, and accommodated with a set of technical phrases. The English huntsmen calls the young animal of this species, in the first six months of its life, a calf or hind-calf; it then becomes a knobber; then a pricket, brock, or staggard; next a stag; and after that an hart: the female, from an hind-calf, becomes first a hearse, and then a hind. The stag is said to harbour in the place he resides; when he cries, he is said to bell; the print of the hoof is the slot; his tail the single; his excrement the fewmet; his horns are called his head; and are, in the first year, broches; in the third year, spears; in the fourth year, the part bearing

ing the antlers, is called the beam ; he has also antlers, fur-antlers, and royal antlers.

The hunting of the stag was a favourite diversion with the Greeks and Romans. Diana let loose her dogs and emptied her quiver upon stags ; and, as fabulous history informs us, when surprized naked with her nymphs by Actæon, she transformed the unhappy culprit into a stag, and drove him to be devoured by his own dogs. The Romans were accustomed sometimes shoot these animals with arrows ; sometimes, to hunt them down with dogs ; or, at least, to use against them dogs, who, by their barking, might fright them into the snares ; and sometimes to scare and perplex the timid deer by displaying before them bunches of red feathers. They were not absolutely strangers to stags in a domestic state ; Pliny relates, that Sertorius had a tame white hind, and persuaded the nations of Lusitania, whom he united against the power of Rome, that she was endowed with supernatural knowledge, and gave him intimation of future events.

The nobles of Sicily have, in a later period, employed bunches of red feathers in attacking the stag. Warned of the particular place where a herd of these animals was passing, they used to assemble in a body, each with a bow, a bundle of staves shod with iron and bored through the head, a cord passing through the staves, and a bunch of red feathers. Then, surrounding the herd of deer, they formed a sort of hedge or palisade, to confine the animals, with their staves set up in the ground, the cords joining them into one circle, and the bunches of crimson feathers dangling from the cords among the staves. Thus surrounded and inclosed, the deer were as effectually hindered from escaping as if confined within a wall of the greatest strength and height ; they durst not face the crimson feathers, and, when attacked, could only run about in confusion, within the circle. The huntsman rode in among them, and called on the persons in the party

individually, to shoot as he pointed out, till the whole herd was destroyed.

In France and England, countries in which the chase has long been a favourite amusement, the hunting of the stag is pursued in a much nobler manner; if the animal falls, he falls not by stratagem, but by open, generous, arts. The huntsman, with his dogs, seeks out his haunts, and rouses him before them. When the stag is unharboured, the huntsman traces his steps, to distinguish by the print of his foot, or by his dung, whether he be worthy of pursuit. He then lets loose his whole pack of hounds, winds his horn, and encourages them also by his voice to follow with steadiness and eager speed. The stag flees before them with the swiftness of the wind, leaving both dogs and men miles behind him. The hounds open in full cry, and trace his footsteps with amazing sagacity and delicacy of scent. At length, the fleeting animal so far outstrips his pursuers, that their noise and cries no longer reach his ear. He stops, gazes around, and fancies himself safe. But the noise approaches; he is again alarmed, and renews his flight. He now begins to practise stratagem and art, returns upon his former footsteps, attempts to mingle again with the herd from which he was singled out, or, springing aside, squats upon his belly, in hopes that his pursuers may pass without noticing him. When these arts fail, and he feels his strength exhausted; his pace becomes stiff and short, and his mouth black and dry; his tongue hanging out, and as it were tears starting from his eyes; he betakes himself, as his last hope, to the nearest river or lake, and swimming against the stream, with the most anxious care to avoid touching the boughs of any adjoining trees, or the herbage on the banks, tries thus to elude the quick scent of the hounds. When every art has been tried in vain, and all his resources are at length exhausted, he desperately turns upon his enemies, and, standing at bay, with the most furious

furious exertions of his remaining strength, aims at both men and dogs, and often dies not unrevenged. But numbers surround and overpower him, the huntman winds a loud blast with his horn, and the dogs, with redoubled fury, tear the stately animal to the ground.

This species were once numerous through Britain. The Saxon monarchs of England formed some uncultivated tracts into forests for deer. The princes of the Norman line, animated with the most extravagant passion for the chase, and careless of the welfare of their subjects, depopulated their kingdom, razing villages, and levelling churches and other religious houses, to form forests for the maintenance of these and other wild beasts. But, in the progress of liberty and civilization, the number and extent of those forests were greatly reduced. Our monarchs learned to consult the happiness of their subjects, and the population of their dominions, in preference to their own diversions. And, though there are still several royal forests in England, these are not many, nor are they guarded by the same sanguinary laws as formerly. Besides being a tyrannical encroachment on the liberties of the subject, and a savage depopulation of the kingdom, the existence of so many forests, and the forest-laws, were calculated to produce the most unfavourable effects on the morals of the lower classes of the people. Deer-stealing was a crime of which, when they could escape detection, the youth made very light. But the parties who engaged in such an enterprise were generally lost to sobriety and industry, and had their morals completely corrupted. We indeed owe the dramatic productions of our admired Shakespeare to the prosecution for deer-stealing which drove him from his original occupation. But the same circumstances which excited a Shakespeare to the exertion of powers of genius, that otherwise might have lain dormant, would

undoubtedly conduct many others to extremities of guilt and misery.

The deer-stealers practised some singular arts, and had often dangerous and surprizing adventures in pursuing their forbidden sports. They would sometimes watch the pregnant hind to her lair, and, when the calf was dropped, pare its feet to the quick; to prevent its escape till it became large and fat enough to be killed. Sometimes a brother deer-stealer was by moonshine mistaken for a deer, and shot at with a bullet. Some of those fellows once advancing, with a dog, to a place in Woolmer-forest, where they suspected a calf to have been deposited, the parent hind rushed out from the brake, and, making a vast spring, with all her feet close together, pitched upon the neck of the dog, who fell dead to the ground.

In the Highlands of Scotland, there are still large herds of red-deer. Before the hereditary jurisdiction of the Highland chieftains was abolished, and means employed to weaken the attachment by which their vassals were so absolutely devoted to their will, thousands used to be occasionally assembled to hunt the deer over the wild hills of the north; the head of a clan went out to pursue his sports with a parade of attendants, as if he had been a mighty monarch. So late as in the beginning of the present century, there were deer scattered over the hills of Galloway. But, by the eagerness with which the peasants pursued them, they have been long since exterminated from that district.

These animals afford various articles of utility to human life. The firm and solid texture of the horns fits them for handles to knives and other domestic utensils. The skin is dressed into excellent leather. The flesh, though when taken in the rutting season is of a disagreeable taste and smell, affords, at other times, wholesome and pleasant food. The tallow is made
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into very good candles. Spirit of hartshorn is a well-known stimulant.

THE FALLOW-DEER.

IN form, in manners, in swiftness, in timidity, and in bearing large branchy horns, the fallow-deer strikingly resembles the stag; but is considerably smaller, and has not round but palmated horns. The colours of this species too, are more various than those of the stag; they are reddish, dark-brown, spotted, and often white; and have a longer tail than the stag. The fallow-deer, like the stag, annually deposits and renews his horns: the doe is not furnished with this ornament: the fawn does not immediately shoot out horns; but, as he grows up, they are every year improved in size and magnificence, till the buck attains its full growth.

In the organs of sensation, fallow-deer appear not more imperfect than stags: they are a gentler and more delicate species. The elk, the rein, and the stag, seemed destined to inhabit colder climates, and to live in a state of more independence than the fallow-deer. Although inhabiting the same forests, this species never associate with the stag: their character approaches somewhat to that of a domestic race: they need the attention and care of mankind: they are generally inhabitants of parks prepared and appropriated for their use: they feed in herds: a large body feeding in one park, divides into separate herds; and among these contests frequently arise, in which the arts of attack and defence are practised with astonishing order, intrepidity, and obstinacy. The buck feels not the violent emotions of love so early in the season as the stag, nor is he so much infuriated by the impulse: he leaves not his usual haunts in search of a mistress: yet, in pursuing the gratifications of love, he is often involved in rivalry and fierce combats. The female goes between eight and nine months with young; and nurses
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and watches over her fawns with all the tender sollicitude becoming a mother. The rutting season does not enfeeble and emaciate the buck in so extreme a degree as the stag: but he is equally inconstant, rambling from doe to doe, till he ceases to feel the stings of his keen appetite. The life of fallow-deer seldom exceeds twenty years; and they continue capable of procreation till fifteen or sixteen. They feed on vegetable substances more indiscriminately than the last species. Both stags and fallow-deer, when thirsty, hold their noses for a considerable time under water, in drinking; and the minute holes with which they, as well as antelopes, are provided under the eyes, seem intended by nature as spiracula, through which they may breathe when their nostrils are filled up. Fallow-deer are, equally with the stag, objects of the chase; they run with less vigour and perseverance; but display greater cunning and dexterity in their doublings and shifts to escape. Hounds relish their flesh so much more than that of red-deer, that they instantly give up the pursuit of a stag or hind, if they happen on the track of a doe or buck.

Fallow-deer inhabit through almost all Europe. In France and Germany, they are not numerous. Wild fallow-deer are found in the forests of Lithuania and Moldavia, in Greece, and the north of China. They were not originally natives of America. In Spain, they grow remarkably large. They are more numerous in Great Britain than any other part of Europe. In Russia they are entirely unknown; in Sweden, preserved in parks. One of the breeds which have been propagated in Britain, was originally introduced from Norway by King James I. when he went to bring home his Danish bride. The flesh of the fallow-deer is perhaps the most agreeable species of animal food, and greatly preferable to that of the stag. The skin of the buck and the doe is dressed into the best leather for breeches, gloves, &c. The horns of this, as well as those

those of the species last described, being compact, solid, and weighty, are wrought into excellent handles for knives and other utensils. Spirit of hartshorn is extracted from them; and, after losing that spirit, they are reduced, by calcination, to what is called burnt hartshorn, which constitutes a valuable material in fluxes for promoting the fusion of metals.

THE ROE.

THE roe is inferior in size to the other species which have been described as belonging to this genus. A full grown roe is scarcely four feet in length, between the nose and the origin of the tail, and not above two feet and a half high. Its form is sprightly and elegant: its hair in summer short and smooth; but grows, against winter, to a great length. The summer-colour is a deep red at the point of the hair, and a dark grey beneath. In winter, the general colour is hoary, but on the back often very dark. The tail is only an inch in length. Each of the hind legs is furnished with a tuft of long hair, immediately under the first joint: the rump and the under side of the tail are white: the face is black: the horns of the roe are commonly from eight to ten inches long, upright, round, and divided only into three branches: they increase till the fourth year, and then appear complete. Its rounded horns, the paucity of its antlers, its diminutive size, and its annually losing and renewing the ornaments of its head, sufficiently distinguish the roe from all other animals of the deer or stag kind.

The favourite haunts of the roe are hilly and wooded tracts of country; yet he seldom climbs the lofty mountain, or plunges into the deep forest. He is a monogamous animal. Roes associate in families, but not in herds. A male and a female commonly form an attachment in infancy, by which they continue united through life, producing and sending out annually successive

ſucceſſive families of their progeny. The ſexual appetite does not rouse the roe to ſuch wild extravagance as the ſtag or fallow-deer. He feels the impuſe of love in the beginning of November, ſoon after depoſiting his horns. The female, after going with young between five and ſix months, produces in April, commonly twins, ſometimetmes three, and ſometimes only a ſingle fawn. She nurſes and watches over her progeny with tenderneſs. The buck is for a while hoſtile to them: and they are at the ſame time in danger from man, and from the birds and beaſts of prey. In protecting them, ſhe practiſes the ſame arts as the female of the ſpecies laſt deſcribed; hides them in a thicket; offers herſelf to miſlead an enemy; and even exerts herſelf with deſperate courage in their defence. Yet numbers of this ſpecies fall in their infancy; ſo numerous, ſo powerful, and ſo vigilant, are their enemies! They have been by degrees extirpated from ſeveral countries where they were once plentiful; and their numbers are continuing to decline.---In a ſhort time, the buck ceases to regard the fawn with an unfriendly eye; and the whole family then feed together. The fawns, after continuing eight or nine months under the protection of their parents, leave them, and form new families.

In ſummer, wild roes feed on graſs, and eat, with peculiar fondneſs, a plant called, in the Highlands of Scotland, the roe-buck-berry. In winter, they brouze on brambles, broom, heath, the tender branches of fir and birch, and the catkins of the hazel and the willow. They ſelect their favourite plants with faſtidious delicacy. Roes thrive not when much diſturbed by the attentions of mankind. The tracts of countries the moſt favourable to them, are thoſe which conſiſt of hills, woods, and cultivated lands, interſperſed. The roe does not abſolutely reſuſe familiar intercourse with mankind. Yet, no arts have ſucceeded ſo far as to render any individuals of this ſpecies entirely tame:
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they are subject to sudden starts of caprice, and apt to take up prejudices against certain persons, which render them disagreeable and dangerous companions, Impatience of confinement prompts them, at times, to leap with such violence against park-walls, even when they cannot possibly escape, that they are dashed down in a maimed and lacerated condition. The flesh of the fawn, when very young, is loose and soft. Killed at the age of eighteen months, it is in its highest perfection, and truly exquisite food. When the animal has been fed in plains or vallies, the flesh is always of an inferior quality; when on marshy grounds, absolutely bad; and, when in a narrow park, insipid.

The roe is a native of both Asia and Europe. According to Charlevoix, the species exists in great numbers in Canada. Although unknown in Russia, they are among the animals in Sweden and Norway. They are said to be found in Brazil. In Britain, they exist nowhere except in the Highlands of Scotland. Wales can no longer boast of the roe. The woods on the south side of Loch-Rannoch in Perthshire, those of Langwall, on the southern borders of Caithness, with the intermediate tracts, are inhabited by this species. But they are most numerous in the forests of Invercauld, in the midst of the Grampian hills.

Although the roe of the Highlands of Scotland be unknown in Russia, another race, allied to that in character, but marked with some discriminations, inhabits all the temperate parts of Russia and Siberia. It is the tail-less roe of Pennant, in his history of quadrupeds and arctic zoology. It seems to be merely a variety, not a distinct species. This animal is larger than our common roe-buck: but its chief distinction is the want of a tail. It is covered with a long thick coat, of a clay-colour on the under part of the body; white on the buttocks; and on the other parts coloured like our roe. Its horns divide, like those of our roe, into three branches, and are tuberculated at the base. In

summer, these tail-less roes inhabit the lofty mountains of Hykania, Siberia, and that part of Russia which lies north-east of the river Volga. In winter, they descend from the mountains into the adjacent plains.

THE AXIS.

THE axis is an animal nearly of the size of the fallow-deer; its horns dividing into three branches, all pointing upwards, and its tail being of the same length as that of the fallow-deer. But of this species there are several varieties, differing in size and colour. The spotted axis is of a light red colour, has its body beautifully variegated with white spots, and is marked on the lower part of its sides, next the belly, with a line of white: the tail is red above, and white beneath. Pliny mentions this as an animal of India sacred to Bacchus, characterizing it by the resemblance which it bears to a fawn, and its being sprinkled over with white spots. The same species still abounds in India. On the banks of the Ganges, and in the island of Ceylon, they are very common. From India they have been introduced into Europe. Nor is the temperature of our European climates at all unfavourable to them. In the parks lately belonging to the King of France, they have multiplied into flocks. In the Duke of Richmond's parks in England, they are said to have propagated with the fallow-deer. In their manners they are mild and peaceable, and refuse not the familiarity of mankind. Their powers of smelling are so exquisite, that, though they readily eat bread from the hand, they refuse a piece which has been breathed on.

Nearly of the same figure, but larger, and never spotted, but sometimes varying in colour from light red to white, is the middle-sized axis of Pennant, an inhabitant of the dry, hilly, forests of Borneo, Java, Celebes, Ceylon, and, probably, Sumatra. Hundreds are often associated in one herd: they grow very fat, and are often pursued in Java and Celebes by nume-

rous hunting parties, who kill multitudes in one expedition: their flesh, either salted or fresh, is excellent food: the tongue is a delicacy: the hides are articles of traffic. A pair of horns, similar in shape to those of the above varieties of the axis, but considerably larger and stronger, not less than two feet nine inches long, and two feet four inches from tip to tip, are to be seen in the British Museum. They are conjectured to belong to a still larger variety of this same species; a variety, which, as Mr. Pennant was informed by Mr. Loten, are as tall as a horse, and inhabit the low, marshy, grounds in the island of Borneo.

VIRGINIAN-DEER.

THE Virginian-deer are a distinct species, common to all the provinces of North America south of Canada, but more numerous in the more southern. Their horns are slender, with numerous branches on the interior sides, and much bent forwards, but without brow antlers: they are nearly of the same size as the English fallow-deer,---only sometimes rather larger: their colour is a light cinereous brown; the length of the tail ten inches. They are numerous on the extensive plains lying along the Mississippi and the rivers that run into it: they are very probably likewise natives of Guiana: their rutting season is in September: from September till March, the bucks and does herd together: the does then retire to bring forth, and live apart till, with the return of autumn, both they and the bucks again feel the influence of the genial passion: they are wandering restless animals: near the shores, they are infested by insects, which deposit their eggs on the head and throat of the deer; and worms are of consequence generated in these parts. From this and other causes, they are, in such pastures, always lean, and in a bad condition. On the hills and inland plains, they are not exposed to the same annoyances, and accordingly

thrive better : they are fond of salt, and resort eagerly to places impregnated with it : their skins have been an important article of commerce to the states, particularly of New York and Pennsylvania.

They are objects of great consequence to the Savages. War and the chase are the two great employments which occupy those simple people. The chase is a noble and interesting diversion. It not only affords the means of subsistence, but prepares the hunter for enduring the fatigues, and practising the arts and stratagems, of war. Vast numbers of those deer are annually destroyed by the Indian hunters ; who either surround them, fire the woods in which they are sheltered, and, driving them into some peninsula or narrow defile, slaughter crowds at once, without difficulty ; or, with greater artifice, disguise themselves in the skins of deer formerly killed, having the heads and horns still appended to them, and thus, deceiving the unwary animals to approach familiarly, slay them before they can suspect their danger.

MEXICAN-DEER,

THIS animal, in colour and figure, resembling our European roe, but of a larger size, and furnished with horns of a different form, is confined, perhaps, to the southern regions of the new world ; to Mexico, Guinea, and Brazil. Its head is large ; its neck thick ; its eyes large and bright. The skin of the young is marked with white rays. Its horns are strong, thick, rugged, and bent forwards ; trifurcated at the upper part, and furnished besides with a sharp erect snag, separating from the trunk of the horn, about an inch and an half above the root. It does not live always retired in the interior parts of the country ; but ventures out, at times, upon the borders of the plantations. Its flesh is not equal to that of our European roe. The sceenootung, an animal that has been ob-

ferred in the countries west of Hudson's bay, is supposed to belong to the same species.

THE PORCINE-DEER.

THE porcine-deer is an oriental animal, about three feet six inches long, and nearly two feet and a half in height: the figure of its body is thick and clumsy, like that of a hog: its legs are slender and elegant: its horns are thirteen inches long; its tail eight; its head ten and a half: the upper part of the neck, body, and sides, is brown; the body and sides are lighter coloured. They are natives of Borneo; and the late Lord Clive brought one to England from Bengal: they are entrapped in pit-falls dug in the ground, and covered over with slight materials, on which they heedlessly trust themselves: their feet are used for tobacco-stoppers.

THE MUNTJAC, OR RIB-FACED DEER.

THIS deer is peculiarly characterized by three longitudinal ribs extending between the horns and eyes: its horns are supported on a boney process, covered with hair, and rising three inches above the scull: they are trifurcated, and have the upper fork hooked: the upper jaw is, on each side, armed with a tusk. The muntjac is shaped like the porcine deer, but inferior in size to the British roebuck. Like the roe, this species associate only in families. They are inhabitants of Java and Ceylon.

THE GREY OR GUINEA DEER.

THIS deer is of the size of a cat; with long ears; grey on the upper part of its body, but black below; and marked between the eyes with a black line. This is an obscure species. The only description of it was furnished

furnished by Linnæus: and, as the horns were wanting in the specimen which he examined, he could not determine certainly whether it were a deer, a musk, or a female antelope.

The MOSCHUS, or MUSK, of the Order
P E C O R A.

THE distinguishing characteristics of this animal are as follow: they have no horns; there are eight small cutting teeth in the lower jaw; in the upper, no cutting or fore teeth; but two long tusks, one on each side, projecting out of the mouth. An odoriferous substance produced by some of these animals, and which has long been used in perfumery and medicine, is what has chiefly recommended them to notice. That substance was long known and valued in Europe before any authentic information could be obtained concerning the circumstances, form, and manners, of the animals that afforded it.

THE MOSCHIFERUS, OR MUSK OF THIBET.

IN form, this animal resembles a small roebuck. It measures three feet three inches in length, and in height between two and three feet. Its upper jaw is considerably longer than the lower: its tusks are nearly two inches long, and project, naked, beyond the lower jaw: its ears are long and narrow, within of a pale yellow, and without of a deep brown colour: the hair of the body is very long, and stands erect; each hair is marked from tip to root with short waves; the colour at the root of the hair is black, in the middle cinereous, and at the tips ferruginous. Each jaw is armed with six grinders: the hoofs are black, long, and divided for a considerable length: the tail is only an inch long, and hid in the hair: the female is smaller than the male, has a sharper nose, wants the two tusks, and has two small teats, but no musk-bag: the male

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is furnished with a small bag, of the size nearly of an hen's egg, situated under the prepuce, near the extremity of the genital organ, and containing the celebrated musk. It has the appearance of a brown fat friable matter, and may be squeezed out by the orifice of the bag. Before the animal attains its full growth, the bag is empty. In adult males it contains usually a drachm and a half or two drachms of musk. This animal is a native of Asia, and is found between 44 or 45 degrees and 60 degrees of north latitude. It inhabits the kingdom of Thibet, the province of Mohang Meng in China, Tonquin, and Bontan. In the Russian dominions, and on the confines between Russia and China, it is found in the country around the lake Baikal, and near the rivers Jenesea and Argun.

Naturally a mild and timid animal, the Thibet musk, in the rutting season, in the months of November and December, acquires new courage from the impulse of love. Rival males then combat fiercely with their tusks. As it is naturally timid, so it is also solitary and unsocial. It seeks the cliffs and pine-clad summits of steep and lofty mountains; descending at times into the deep vales by which those are separated. In running, leaping, climbing, swimming, it displays astonishing agility. Few animals that the hunter pursues, lead him through greater dangers, or require him to exert such address and activity in the chase. But the value of the musk causes danger to be overlooked; and the animal is shot with arrows, or taken in snares, or sometimes falls by a sudden discharge from a cross-bow placed in its tracks. Among the many fabulous tales which were formerly related of this species, and the manner in which the musk was obtained from them, one fact appears not improbable, that they often empty the musk-bag, and leave it, in rubbing themselves upon the rocks. What they deposit in this manner is said to be superior in quality to that which is taken from the bag. The best musk is obtained directly from Thibet.

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That of Moscow and of China is for the most part adulterated: the flesh, though infected, especially about the rutting time, with the musk, is tolerable food: the skin and hair are not without their uses.

THE INDIAN MUSK.

THIS species are inhabitants of India; somewhat larger in size than the former; and distinguished by slender legs, oblong, erect, ears, and the resemblance which their head bears, in shape, to that of a horse: the hair is short, and of a tawny colour on the upper part, and whitish on the under part of the body; and, like the former species, the feet have spurious hoofs.

THE BRAZILIAN MUSK.

IN size, this animal approaches to an equality with European roebuck. Its back, sides, chest, and thighs, are of a bright rust colour; but the lower part of the belly, and the inside of the thighs, white: its eyes are large and black; its ears four inches long; the tail six inches long; the legs slender, yet muscular. These creatures, peculiar to Guinea and Brazil, are remarkable for their timidity, and for a correspondent lightness of form, and agility of motion. Like goats, they are sometimes seen standing with their four legs together on the point of a rock. The delicacy of their flesh draws upon them a number of enemies. The Indians, tygers, and other beasts of prey, all eagerly pursue them: their safety is most endangered when they attempt to swim; for their legs are but very ill adapted to that exercise. They are ranked in this genus, not as affording musk, but as wanting horns.

THE MEMINNA, OR CEYLON CHEVROTIN.

THIS animal, an inhabitant of Java and Ceylon, possesses also the generic characteristics of the musk.

Its

Its form is diminutive: it is not more than one foot five inches in length: its whole weight is only five pounds and a half: its ears are large and open; its tail very short; its sides and haunches are variegated with spots, and transverse bars of white on a cinereous olive ground: the rest of the upper part of its body is a cinereous olive, without spots: its throat, breast, and belly, are white.

THE JAVA, OR PIGMY MUSK.

PECULIAR to Java is another animal of this genus, no larger than a rabbit, with remarkably slender, puny, legs; its snout and ears bare, without pits in the groin, or under the eye; having tufts on its knees; and under its throat two long divergent hairs: the neck is hoary, with an intermixture of yellow; a black line marks the crown of the head; the general colour of the body is ferruginous; the neck and belly are white, but the neck variegated with two dusky spots: the tail is of a moderate length, and terminates in a white tuft: It has no spurious hoofs.

THE GUINEA MUSK.

THIS animal, notwithstanding its name, is an inhabitant of the continent of India, and the Oriental islands, rather than of Guinea. It is only nine inches and a half in length; has two small tusks in its upper jaw; large ears; and a tail an inch long: its belly is white, and the rest of its body tawny; but the specimens vary in colour. Among the Malays, they are caught in great numbers, carried to market in cages, and sold at a very moderate price.

The CAMELUS, or CAMEL, of the Order
P E C O R A.

THIS genus of quadrupeds are characterized, by wanting cutting teeth in the upper jaw; having the upper lip divided in the same manner as hares; having six cutting teeth in the lower jaw; small hoofs; and neither spurious hoofs nor horns. The species are as follow:

THE ARABIAN CAMEL, OR DROMEDARY,
with only one Bunch on the Back.

THE height of this animal, from the top of its bunch to the ground, is six feet six inches: its head is small; its ears short; its neck long, slender, and bending: the hoofs are, in part, but not thoroughly, divided: the bottom of the foot is tough and pliant: the tail is long, and terminates in a tuft, also of considerable length. On the legs this animal has six callosities; four on the fore legs, and two on the hinder; besides another on the lower part of the breast. These are the parts on which it rests. Its hair is fine, soft, and of considerable length; longest, indeed, upon the bunch, the neck, and the throat: in the middle of the tuft terminating the tail, the hair is soft and fine: on the exterior parts, coarse, and often black: on the protuberance it is dusky; over the rest of the body, of a reddish ash colour. Besides the same internal structure as other ruminating animals, the camel is furnished with an additional bag, which serves as a reservoir, to contain a quantity of water, fresh and pure, till it become necessary to quench his thirst, and macerate his food.

The Arabian camel possesses the powers of sensation in a high degree. His eye is sufficiently acute: he is said to smell water at half a league's distance: his taste indeed is not very refined; for he eats with
high

high satisfaction, thistles, acacia shrubs, and other insipid plants of a similar nature: his ear is not insensible to the power of music: even in his native climate, and in the best condition, he has a pitiful complaining aspect: his manners are gentle, peaceable, and submissive. The unruly horse submits to restraint, and receives a rider or a burden, with indignant impatience; but the camel kneels obligingly for his master to load him, or mount upon his back. Though of a heavy and apparently unwieldy form, this animal moves with considerable speed. With a bale of goods on his back, an ordinary camel will travel a journey of many days, at the rate of seven or eight leagues a-day. Dromedaries of a superior breed, and trained, not for beasts of burthen, but solely for the purposes of travelling and war, have been known to travel at the rate of thirty leagues a-day; though bearing, each, two or three soldiers, with their war equipage: yet it is not the quickness of his motions, but the length of his legs, his travelling with a steady, equal, pace, and his seldom needing to stop for rest or refreshment, that enables this animal to perform such journies. The passion of love exerts the same infuriating influence on this as on the other species of the animal creation. His negligence of food, his wild cries, the foam issuing from his mouth, and the restlessness of his motions, all indicate the violence of impulse he then feels. Becoming a stranger even to the person of his master; his jaws must be confined with a strong muzzle, otherwise he bites furiously and indiscriminately. The female kneels to receive the male, who crouches behind to cover her. After going nearly a year with her young, she brings only one at a birth; which she suckles and rears with due tenderness: it is left under her care for twelve months. They live at least for forty or fifty years.

The dromedary is an inhabitant of the warmer regions of the globe: the sandy deserts of Arabia are his favourite abode: but the species wander northward

to the confines of Siberia: they are numerous in Persia: they have, in all ages, been known in Syria and Palestine: they have penetrated even into Barbary and Morocco, and the burning regions near the line: they abound in Indostan and China, and other countries in the East Indies. Not only the negroes, but also the camels, of Africa have been introduced by the European planters into the West-India islands. Attempts have been made to enrich Europe with this species. But those which have been imported, have all either died without procreating their species, or produced a puny, sickly, progeny, that scarcely survived their birth. Yet in the drier and more mountainous parts of Tartary, Persia, and Turkey, where the temperature of the air is not milder than in the southern countries of Europe, camels thrive even better than in hotter climates; a circumstance which affords a presumption, that judicious treatment might preserve and multiply the species, at least in Italy, France, or Spain.

Were it not for the camel, the wilds of Arabia would scarcely be habitable by mankind. Its sandy plains must have hitherto remained unexplored, did not this animal present itself to conduct the traveller through those dreary regions. He who is by any unfortunate accident deprived of his camel in that journey, inevitably perishes. In vain might the Arab expect his horse to convey him through a country where he must travel, perhaps, for a long series of days, without approaching any human habitation; without finding a brook, a well, or even a puddle, from which he might quench his thirst, or a few tufts of grass to allay his hunger. The graceful form, the keen spirit, the generous magnanimity, of that animal, qualify him not for such a task. But the camel, patient, submissive, and indefatigable; unsubdued by toil, by heat, by hunger, or by thirst; content with little food, and that little of the simplest kind; carrying in his belly a capacious reservoir, from which he can quench his thirst;

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and having his feet armed by nature with a tough and yielding substance on which slipping sand or pointed stones can make no impression; this animal is destined to enlarge the abilities of man, and to assist him to triumph over the austerity and barrenness of nature. His size and strength enable the camel to bear without difficulty, not only a rider, but the baggage and provisions which his rider may need in a long journey: for himself but little provision is necessary. A few balls of flour prepared from beans or barley, or a small quantity of these substances in their natural state, are all that he needs, in addition to the shrubs of the desert. The milk of the female diluted with water, or even drunk without dilution, affords a pleasant and wholesome beverage. In cases of extreme distress, when his provisions are all consumed, and his leathern bottles entirely emptied of water, the traveller, before sinking in despair to perish of thirst and hunger, kills his camel, drinks the water remaining in the reservoir in his stomach, and makes a meal on his flesh. Few travellers have ever had greater occasion to try the perseverance of the camel, and receive all the services which this animal is capable of affording, than Mr. Bruce, on his return from the court of Abyssinia to Cairo; on his way between Sennaar and Seyne, in the deserts east of the Nile, after a long and dreary journey, in which he and his attendants had exhausted their provisions, to the last remains of "their miserable stock of black bread and dirty water;" the strength of his camels was so far overcome, or so much were they benumbed by cold, that no arts nor efforts could raise them from the ground; or, at least, prevail with them to stand but two minutes, without kneeling down again. In this hopeless situation, his only resource was, to kill two of those fainting animals, to draw out the water that remained in their stomachs for drink, each affording about four gallons, and take a part of their flesh for food. The same traveller relates, that the

camels of the caravans, which travel from the Niger across the desert of Selima, are said to take at once as much water as they need for forty days. He asserts, as an unquestionable fact, that even an ordinary camel will live, upon occasion, fourteen or fifteen days without water.

Mankind owe also other benefits to this animal. The Arabs, and other nations among whom they are common, use their flesh and milk, not merely in cases of extreme necessity, but even for their ordinary food. The flesh is dry, but of an agreeable taste; though, except for feasts, none are ever killed but the old, and those without any pains being taken to fatten them. The milk is wholesome, nourishing, and antiseptic; but always faintly acid in its taste. In the more temperate latitudes of Asia and Africa, the hair is of a silky fineness, and sells at a considerable price. It is wrought into some valuable stuffs. His skin is another article of great value. Camel's dung is the only fuel which travellers use to kindle their fires with in the desert. If dry, it kindles instantaneously, and affords a strong heat, and a bright flame. No wonder then, that the Arabians have, from the earliest ages, assiduously availed themselves of the services which this animal is qualified to afford. Six thousand camels were part of the immense wealth of the patriarch Job; to tend, to train, to improve the breed, and to multiply the numbers of their camels, is to this day the chief employment of many of the Arabians. In tracing the annals of remote antiquity, we cannot discover the period when camels existed only in a wild state. But so gentle an animal, would, the instant he became known to man, be subjected to his authority. In Egypt, the camel has been perhaps as long known and serviceable as in Arabia. He is there used chiefly as a beast of burden. A loaded camel travels between Cairo and Suez, a journey of six-and-forty hours, without needing either food or water. The food on
which

which the Egyptians sustain him, is bruised stones or kernels of dates. The Persians have several excellent breeds of camels. Their strongest, which they call chotornain, carry a load, a thousand or eleven hundred pounds in weight. Those of a secondary character, called in Persia, chotor, in Arabia, Jemal, and in Indostan, oatt, bear six or seven hundred. The feeblest race, named, in Arabic, ragahill, carry at least five hundred weight. When the camel-drivers wish their camels to quicken their pace, they chant to them wild irregular airs, or beat rude tunes on small kettledrums. The Persians have yet a more delicate and better-shaped breed, denominated, in their language, chotodor, or chotobaad; and by the Arabians, deloul, or elmecharis. These they train to make long marches, and feed with choice and substantial food. In the English dominions in India, the temper of the camel is said to be so froward, and his motions so violent, that the days of his hircarah or groom are frequently shortened by the trouble and fatigue which he suffers in managing him. Wild camels are said to subsist still in the deserts, in the temperate latitudes of Asia.

THE BACTRIAN, OR TURKISH DROMEDARY, with two Bunches on the Back.

THIS animal is distinguished from the foregoing species, in that it has two bunches, the body longer, the tail lower, and the hair of a yellowish brown; instead of which the camel has only one bunch, and that very high, and which is generally covered with white or ash-coloured hair. These animals are naturally very tractable, and of great strength; for they can carry from fifteen hundred to two thousand pounds weight, and travel faster than the other camels, many leagues a day, without eating; and also like them will continue without drinking for twelve days together. These animals often weigh three thousand pounds, and
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are from six to eight feet high. The form of their body is neither disproportionable nor ugly: the head and nostrils are oblong; and the lips and mouth like those of a goat: its cutting teeth are very large, and at a great distance from the double teeth, of which there are three in the upper jaw, and two in the under: the ears are hairy, small, and something like those of a horse; the neck is thick and handsomely arched; it lies low in the back, and seems to be inserted between the fore-legs: from the throat, as far as the breast, it is adorned with beautiful hair, long and curled, of a dark-brown chefnut colour: the whole body is covered with the same, which on the back is yellowish; towards the belly, brown; and under quite dark: the belly is grey; under the breast a hard skin forms a kind of shield or defence, which comes down in a point towards the fore-legs, so that, when he sits down, he rests himself entirely upon it: there is a thick protuberance growing round the thigh, crowned with a tuft of long black hair; from that place the legs seem to lessen towards the bottom, where they again grow large: the hoofs are cloven; the fore feet much larger than the hind: probably because the fore-part of the body carries the greatest share of burden: the tail is short, adorned at the end with hair, like that of an ass: the skin is thick and hard; on this account perhaps all perspiration is suppressed, which may be the reason why this animal drinks so seldom. Dromedaries feed on grafs like oxen, and are very well satisfied with it. This species inhabit the more temperate climates, and, being of superior strength, they move with a firmer step, and are covered with finer hair. Tartary, Turkey, and Persia, are the regions which the camels chiefly prefer; but dromedaries are most numerous in Arabia and Barbary. February is their season for copulation. The female is a year pregnant; produces only one at a birth; and suckles her young for two years. The Arabian merchants, every year,

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This del.

The Stromedary.

A. H. S. sculp.

conduct troops of dromedaries into the provinces of Turkey and Persia; where they procure camels to copulate with them; and, by thus crossing the breed, obtain a mongrel race, in whom the vigour of the camel is united with the mild docility of the dromedary. These animals are still found in the northern parts of India, and in the deserts on the confines of China. They are possibly descended from a domestic race that may have accidentally become wild. Dr. Ruffel relates, that, except in caravans coming from Bagdad to Bassora, the dromedary with two bunches is scarcely ever seen in Syria.

THE LAMA, OR PERUVIAN CAMEL.

IN form and manners, this American quadruped bears so considerable a resemblance to the dromedary and camel of Asia and Africa, that, notwithstanding the inferiority of its size, naturalists agree in considering it as a congeneric species. The lama is scarcely four feet and a half high, and not more than six feet in length; his neck is arched, but not so much as the camel's; his back does not rise into so large a bunch; his tail is graceful; his feet are elegantly formed; he has a bunch on his breast, which constantly exudes a yellowish, oily, matter; his hair is long and soft; his colours are of a beautiful clouding of black, white, and a dusky yellow; his body is often swelled with a considerable depth of fat, immediately under the skin; his head is not armed with horns; his nose is short; his hoofs are divided; his eyes are large, black, and sparkling. In the structure of his stomach, he has four ventricles, one of which is cellular: he has neither cutting nor canine teeth in his upper jaw; his feet are armed with a sort of spur, which assists in supporting the animal on rugged, difficult, ground; his wool or hair is long on his flank and belly, but short on his back, crupper, and tail: his voice is a sort of neighing

found. Though naturally mild and inoffensive, he defends himself when teized or attacked, by butting, kicking, and squirting at his enemy, through a fissure in his upper lip, an acrid spittle which inflames and blisters the skin. His motions are slow; he bears up his head, and walks on with a grave, regular, majestic, pace: he eats but little, and scarcely ever drinks: his food is the coarsest and most ordinary plants. With the mildness, the lama possesses all the obstinacy, of the camel. He cheerfully receives any load to which his strength not unequal; and, if the place to which his burthen is to be conveyed be known to him, he proceeds to it without a guide. But when overloaded, or fatigued with travelling, he squats down on his belly, with his feet under him; and no severity of blows will compel him to rise. Squeezing his testicles sometimes succeeds, when every other art has been tried in vain. By continued abuse, the poor animal is sometimes driven to despair, and strikes his head from side to side upon the ground, till he dies. He feels the transports of the genial passion in the end of summer, or beginning of autumn. They actuate him with extraordinary violence. Yet the structure of the parts of generation in both the male and the female, renders copulation a very tedious and difficult task. The male lama sometimes compels she-goats to receive his embraces; but does not impregnate them. The female lama goes five or six months with young; never produces more than one at a birth, and is furnished with two paps to suckle it. The young male becomes capable of procreation at the age of three years. The term of his life never extends much beyond fourteen. Peru is the native country of the lama. He has been settled by nature on the mountains of that elevated tract of country. The species at present abound through the whole extent of the kingdom of Peru, from Potosi to Caracacas; and the industry of the Spaniards has propagated them through other parts of their American dominions.

nions. When the Spaniards first penetrated into South America, they were astonished to find it destitute of the domestic animals to which they had been accustomed in Europe. The Indians had no horses, oxen, asses, or mules, to assist their industry. The lama and the pacos were the only animals which they cultivated as domestic. And to see them use sheep, (for such did these seem) as beasts of burthen, heightened the contempt which their European visitants had conceived for their character. There appeared a remarkable similarity between the temper and manners of the lama and those of his Indian master. The same mildness, the same cool phlegmatic temper, the same perseverance in labour, distinguished both. Rude and inartificial as were the manners of the simple Peruvians; they had, however, learned, not only to load the lama as a beast of burthen, but also to yoke him in the plough.

The Spaniards, upon settling in Peru, soon found that this species, whom they had thought too pitiful to be cultivated as the principal domestic animal, was not ill qualified for the labours in which the nature of the country induced them to have recourse to its assistance. The roads were so rugged and uneven, that an animal, less sure footed, or of a temper less cool and phlegmatic, than the lama, could scarcely travel along them with safety. For the labours of the mines, a creature of a more impetuous, generous, spirit, would have been very ill qualified. The lama conveys the ore of Potosi over the most rugged hills, and through the narrowest paths of the Andes. He fears not to descend precipices, and climb steep ascents, where even man himself dares not accompany him. An hundred and fifty pounds is his ordinary load. The strongest carry two hundred. With this load, the animal will travel four or five days without indicating the smallest fatigue. He stops to rest, without waiting for the directions of his driver; and obstinately reposes four-and-

twenty or thirty hours, before he can be prevailed with to resume his journey. Requiring but a small portion of food, he takes that by browsing; as he travels, on any shrubs or herbage that happen to fringe his path. At night he only rests and ruminates.

Besides serving as a beast of burthen, the lama affords various articles of no small utility to human life. His wool, though of a strong, disagreeable, scent, is used as a material for cloth. It forms likewise so thick a covering on the animal, that he needs not a saddle to protect his back under a load. His skin is of a very close texture; and is accordingly made into shoes by the Indians, and used for harnesses by the Spaniards. The flesh, especially of the young lama, is wholesome and of a pleasant taste. As our principal domestic animals, the horse, the ass, the sheep, and the goat, have, by the cares of the European settlers, been introduced into America; so the lama has also been imported into Europe. But the climate of Spain, the country into which he has been brought, has always proved too hot for him. Norway, Scotland, or the summits of the Alps or Pyrenees, might perhaps prove more favourable; the temperature of these regions approaching nearer to the cold of the Andes.

THE GUANACO.

IN form and manners, the guanaco so nearly resembles the lama, that he has been viewed by some eminent naturalists as merely a lama in a wild state. But, as besides various other distinctions of character, the guanaco, whether tame or wild, constantly refuses with abhorrence, to copulate with the lama, we cannot hesitate to rank these animals as distinct species. The guanaco inhabits that range of mountains in South America, called the Cordilleras. The severities of winter oblige him to descend into the plains of Chili and Peru. A full-grown guanaco is about seven feet

in length; and four feet three inches in height: his ears resemble those of a horse: his tail is formed like a stag's: the upper parts of his body are yellow; the lower white: he has no protuberance on his breast, no bunch on his back: his fore-feet are longer than those behind: he moves with a sort of leaping pace. This species are gregarious. On the summits of the Cordilleras, they often assemble in flocks of several hundreds. They are stronger, more active, and nimbler, than the lama. Although in a state of liberty, they are not secure from the persecution of man. The value of their fleeces renders them an object of profit to the Indian hunter. When he surprises them in places of easy access, he cannot fail of being successful in the chase. But give them time to escape among the precipitous cliffs, which are their favourite haunts; and both men and dogs must desist in disappointment from the pursuit. They seem incapable of subsisting in either a warm climate, or a thicker atmosphere, than that of the elevated region in which they at present abound.

THE PACOS.

BESIDES the lama, the Indians, before the arrival of the Spaniards in South America, had domesticated no other animal but the pacos; which is, in shape, nearly similar to the lama, but much inferior in size, and is covered with long, fine, wool, sometimes entirely black, and sometimes of a brown colour, intermixed with yellow. In dignity it seems to bear nearly the same relation to the lama as the ass bears to the horse. The lama bears a load of an hundred and fifty pounds; the pacos is overloaded, if more than fifty be laid upon him.

The pacos, as well as the lama and the guanaco, is confined to that stupendous range of mountains, which terminates the southern extremity of the American continent.

continent. His fleece is an article of great value. It is manufactured into gloves, stockings, bed-clothes, and carpets. Neither the beaver of Canada, the goat of Angora, nor the sheep of Caramania, affords a finer material for cloth than the pacos. His wool feels like silk, and is sold at as high a price. His flesh is eaten, though not very delicate food.

THE VICUGNA.

IN the vicugna, we have an animal which bears nearly the same relation to the pacos, as the guanaco bears to the lama. In figure, and in the form of his tail, he somewhat resembles our goat. But his neck is twenty inches in length: his head thick, short, and destitute of horns; his ears small, erect, and sharp-pointed. His wool is shorter, but still finer, than that of the pacos, of a beautiful rose-colour, and of such a nature, that a dye may be easily fixed upon it. His belly often affords a bezoar. This is a wild, but a gregarious, animal. Like the lama, the guanaco, and the pacos, he is confined within that lofty range of country, which bounds the southern continent of America. He climbs and leaps among the lofty cliffs of the Cordilleras. The greatest numbers are found in the provinces of Chili, Coquimbo, and Copiapo. Naturalists have generally regarded the vicugna as being no other than the pacos in a wild state. But, however favourable circumstances may be, the intercourse of love never takes place between these two animals.

The vicugna is remarkably swift and timid, and formed to endure the severest extremities of cold. It is scarcely possible to tame one of these creatures. Their fleeces are a very alluring prize to the Indian hunters. Their flesh too, is very delicate and juicy. The method of taking them, is to drive a flock, or as many as possible, into some narrow defile, surrounded to the height

height of three or four feet, with cords, hung with small pieces of linen or woollen cloth; these wave in the wind, and so fright and confound the timid animals, that they cannot possibly make their escape. There are probably varieties of this, and of the three foregoing species, which have not been yet distinctly described by naturalists.

SUS, the HOG, of the Order BELLUÆ.

THE characteristics of this genus of quadrupeds are as follow: there are four cutting teeth in the upper jaw, whose points converge; and, for the most part, six in the lower jaw, which stand forwards: there are two tusks in each jaw, those in the upper jaw being short, while those of the under jaw are long, and extend out of the mouth: the snout is prominent, moveable, and has the appearance of having been cut off, or truncated: the feet are armed with divided or cloven hoofs: there are six species; the scrofa, æthiopicus, tajassu, babyrussa, porcus, and africanus.

THE SCROFA, OR COMMON HOG.

THIS animal is covered over with bristles. The ears of our tame hog are long, sharp-pointed, and slouching. White is the most general colour; but other colours are often intermixed in various proportions.---The wild boar of Europe, merely a variety of the same species, has, under his bristles, a covering of soft, short, curled, hair: his ears are short, and somewhat rounded: he is of a dark, brindled, colour.---The Siam hog is another variety, distinguished from these merely by the greater length of its tail. In some respects the hog seems to form an intermediate link between the whole and the cloven footed animals; in others he seems to occupy the same rank between the cloven-footed and digitated. Destitute of horns; furnished with teeth in both jaws; with only one stomach;

mach; incapable of ruminating; and producing at one birth a numerous progeny: the union of these characteristics confers on the hog a remarkable peculiarity of character. He does not, like other animals, shed his fore teeth, and shoot out a second set; he retains his first set throughout life.

Hogs enjoy none of the powers of sensation in eminent perfection. They indeed hear distant sounds; and the wild boar distinguishes the scent of the hunter and his dogs, long before they can approach him. But so imperfect is their feeling, that they sometimes suffer mice to burrow in the fat of their backs, without discovering any uneasiness, or even appearing sensible of the intrusion. In their taste they shew a singular degree of caprice. In the choice of herbs, they are more delicate than any other herbivorous animal; yet devour the most nauseous and putrid carrion with more indiscriminate voracity than any beast of prey. Nay, at times, they scruple not to gorge their appetite with the living limbs of their young: and, though their ferocity and courage are seldom to be feared, yet even the domestic hog has been often known to mangle infants, out of desperate voracity. The hog is remarkable for the smallness of his eyes. A person whose eyes are very diminutive, and deep sunk in his head, is commonly said to be pig-eyed. The form of the hog is inelegant; and his carriage is equally mean as his manners. His unwieldy shape renders him no less incapable of swiftness and sprightliness, than he is of gracefulness of motion. His appearance is always drowsy and stupid. He delights to bask in the sun, and to wallow in the mire. His grunting voice is well known. An approaching storm seems to affect his feelings in a singular manner. On such an occasion, he runs about in a frantic state, and utters loud shrieks of horror.

The wild boar is a nobler animal than our domestic hog. His senses are more acute, his manners more dignified, his courage and activity greatly superior.

When

When young, they associate in herds: after attaining their full growth, individuals become less diffident of their own strength, and keep less carefully together. But many of the old still continue to associate with the young; and, when danger approaches, as they are the ablest, so they are the first to face. The wild sow is peaceful, except when her young are injured. Parental fondness then prompts her to the most desperate fury in their defence. The wild boar is never formidable, till roused and provoked. He is frequently an object of the chase. He retreats slowly before the dogs; diffusing, as he flees, a strong odour, by which his path is easily traced. Dogs find it dangerous to follow too fast. He turns, and defends himself with resolute valour, inflicting often severe, and sometimes mortal, wounds on his pursuers. A young wild boar, being swifter and more timid than the old, is not easily hunted down. These animals are sometimes taken by surprise, as well as by the open and more generous arts of the chase. The snout of the wild boar is esteemed a luxurious dish. His testicles must be cut off immediately after he dies, otherwise they soon taint the flesh, so as to render it unfit for being eaten. The young of the wild boar have been sometimes taken and castrated; and, after that, dismissed into the woods, till they should grow up and fatten.

Roots and fruits are the principal food of both the wild and the domestic variety of this species. They eat grains very willingly; and a proportion of salt mixed with their food contributes to fatten hogs, as well as other animals. In Scotland, potatoes, which are raised in such abundance, and form so considerable a part of the sustenance of the poor, are also administered in great plenty to gratify the voracity of the hog, and seem to be an article of food excellently adapted to his constitution. The snouts of these animals are formed for digging in the ground; and nature has taught them to employ them in that manner.

Tame hogs are often very troublesome in cultivated grounds; ploughing them up with their snouts, and thus entirely frustrating the labours of the cultivator. Worms, the wild carrot, and other roots, are the objects of their search. The wild boar, having a longer and stronger snout than the domestic, digs deeper, and continues his furrow nearly in a strait line. The inhabitants of America find the hog very beneficial in clearing their lands of rattle-snakes, to whom he is a constant enemy, and whom he devours without suffering injury.

These animals are fit for procreation at the age of nine, or at most of twelve, months: their venereal ardour is keen and gross: the sow admits the boar at almost all seasons: she brings forth in the beginning of the fifth month after conception; and, as the suckling of their young does not hinder her from soliciting the embraces of the male in a short time, she often produces two litters in the course of the year. She generally brings a numerous progeny at her birth; her first litter is less numerous than those which follow. She bears often not fewer than twenty pigs at once; and is furnished with a number of paps to suckle them. Many of the pigs are killed young. A considerable number of the males, which are preserved to be brought up, are castrated at the age of six months, or earlier. These animals, when suffered to see the natural term of life, live from fifteen to five-and-twenty, or thirty, years. Their size and strength continue to improve till the fifth or sixth year. They are infested by lice, and afflicted by scurvy, measles, and other diseases which attend a scrophulous habit of body.

Almost every region over the globe possesses animals of this species, either in a tame or in a wild state: they are indeed found to be incapable of subsisting in Kamtschatka, and the frigid zones, where the cold is too intense for their constitutions. Wild hogs abound through all Europe, except in the British isles, and the countries

countries north of the Baltic. They are equally diffused through Asia, from Syria to the borders of the lake Baikal; and in Africa, on the coast of Barbary: they abound in the Oriental isles, Ceylon, Celebes, and Java: they were not originally natives of America; but, being introduced by the European settlers, they have multiplied in the warmer climates of that hemisphere, to an astonishing degree. Vast droves of wild hogs inhabit the forests of South America; which appear to be merely the descendants of those originally introduced from Europe, relapsed, in the course of time, into a state of nature.

Contemptible as he may appear, the hog is, in a very considerable degree, beneficial to mankind. His flesh is a pleasant, substantial, and not unwholesome, article of food. It affords numberless materials to the table of the epicure; and, among others, brawn, a preparation peculiar to England. The paps of a fat, pregnant, sow, newly cut off, was a dish in high reputation among the luxurious eaters of ancient Rome. Pork is always an important article among naval stores. It takes salt better than the flesh of any other animal; and is, of consequence, preserved longer. The lard of the hog is used by the apothecary in preparations of various plaisters, and other medicines; and is made by the perfumer into pomatum. The bristles are made into brushes; and likewise used by the shoemaker. The skin is made into coverings for pocket-books, saddles, and several other articles. I have heard of an economical epicure, who being unwilling to lose even the ears of his hogs, had them dressed into pies.

Jews and Mahometans religiously abstain from pork. To transgress any precept in the code of morality, appears to them scarcely so heinous a crime, as to eat a piece of sow's cheek.

THE PORCUS, OR CHINESE HOG.

THE Chinese hog is distinguished from the hogs common through Europe, by having the upper part of its body almost bare, its belly hanging nearly to the ground, short legs, and a tail still more disproportionately short. This species are also of a smaller size; and their flesh is whiter and more delicate: their colour is commonly a dark grey: they abound in China, and are also diffused through New Guinea, and many islands of the South Sea. The New Hebrides, the Marquesas, the Friendly, and the Society, isles, possess this species; and the inhabitants of these islands cultivate it with care, as it is almost their only domestic animal. The Chinese hog is found likewise in Batavia, Sumatra, and other Oriental islands: the Sumatran name is *babee*. They have been even introduced into France.

In the islands of the South Sea, the hog, being the principal quadruped, is more carefully cultivated than among us. Bread-fruit, either in the natural state, or made into four paste, yams, eddoes, and other vegetables, are the food on which it is nourished. Such a choice of food renders the flesh juicy and delicious; and the fat not less rich, nor less agreeable to the taste, than the best butter. The Otaheiteans, and the inhabitants of the other islands in the southern seas, in which these animals are found, often present roasted hogs at their morais, as acceptable offerings to the deities whom they worship: covering the offering with a piece of fine cloth, and leaving it to decay near the sacred place.

We are ignorant concerning the original introduction; as well of hogs as of men, into those islands. But it has been conjectured, that the former may have proceeded from the continent of the East, and penetrated, by degrees, from island to island, till they at length advanced as far as the Marquesas.

THE TAJASSU, OR MEXICAN HOG.

IN size and figure, this animal bears an imperfect resemblance to the hog of China. Its body is about three feet in length. Its mouth is furnished with four cutting teeth in the upper jaw, with six in the lower, and with two tusks in each: its head is not of such a taper, wedge-like, form as that of the common hog: its ears are short, erect, and pointed: its eyes are neither sunk nor prominent: the bristles covering its body are longer and more stiff than those of the former species: they resemble indeed, rather the quills of the porcupine, than the bristles of the hog: on the neck and back they are longer than on the sides: the belly is almost entirely bare: a band of white extends between the shoulders and the breast: there is no tail to protect the hinder parts. A gland on the back, from which there constantly distils a wheyish foetid liquor, is the most remarkable peculiarity of this species. The first Europeans who became acquainted with this animal, fancied this gland the navel, preposterously disposed by nature on the back, instead of the belly.

The manners of the Mexican hog are not very different from those of the hogs of Asia and Europe. Mexico, and all the warm climates of South America, possess numerous herds of this species. Their instincts and arms for offence and defence are the same as those of our hog; they seem more social in their dispositions, and are generally found associating together in parties: though only an individual be singled out, the whole body join, with generous valour, against an enemy. They grunt with a stronger and harsher voice than the hogs of Asia or Europe; but are scarcely ever prompted, either by fear or rage, to squeak in the same wild tone. Forests are their most favourite haunts: they resort not, like our domestic hog or the wild boar, to marshes and mires. Fruits, seeds, and oots, are their favourite food; they eat also serpents,

toads, and lizards, and display great dexterity in tearing off the skins of those reptiles with their feet.

Their economy has not been very minutely studied by naturalists. A number of young ones are produced at a birth; and the mother treats them with the tenderness and solicitous care of a parent. Although existing chiefly in a wild state, they are susceptible of domestication; but no pains can overcome their natural stupidity and indocility. The beasts of prey, not less than man, are hostile to this species. The American leopard, or jaguar, one of their most formidable enemies, often falls amid a herd, after destroying the greatest part of them; weary with slaughter, and rather exhausted by his own exertions than overcome by theirs. If killed in full health, the flesh of this animal is agreeable food; provided the gland on the back be cut off, and the liquor which it secretes carefully washed from the carcase at the instant of death. There are probably several varieties of this species, distinguished by diversities of colour and size. The cojametl constantly refuses to copulate with our European swine.

THE ÆTHIOPICUS, OR ÆTHIOPIAN HOG.

THIS animal has a longer body and shorter legs than our common swine. It is near five feet long, and between two and two feet and a half in height. Its body is of a thick, broad, form; its nose almost of a corneous consistency, truncated and depressed; its mouth narrow, and destitute of fore teeth; but furnished with uncommonly hard gums to supply their functions. The tusks in the lower jaw are small, in the upper very large: the eyes are small, and situated high in the forehead; a horizontal lobe or wattle, lying under them, intercepts from the sight of the animal all objects placed immediately below: the skin is of a dusky hue; the bristles are thinly dispersed in separate parcels over the body. Between the ears and on the shoulders,
they

they are longer than upon any other parts of the body.

These animals inhabit the hottest regions of Africa; they are diffused from Sierra Leone to Congo, and are also found in the adjacent island of Madagascar. Dampier seems to inform us, that they are found also in the isle of Mindanao; for, though his account of the hogs of that island does not correspond in every minute particular to this species, yet it corresponds better to them than to any other. The manners and economy of these animals are but imperfectly known. They live chiefly under ground, where the form and texture of their snout enables them to make their way as readily as the mole. They are lively, swift, fierce, and cunning. At the Hague, one of them gave his keeper a fatal wound in the thigh. They disdain all commerce with the Chinese, or with our European, domestic hog.

AFRICANUS, OR CAPE VERD HOG.

THIS hog is of a superior size, and peculiar to Africa. The species are diffused through the tract of country between Cape Verd and the Cape of Good Hope. The head is long; the nose slender: the tusks are large, hard as ivory, and, in the upper jaw, thick and truncated obliquely: the ears are narrow, erect, and pointed: the tail is slender, and terminates in a tuft, reaching down to the highest joint of the leg: each jaw is furnished with twelve grinding teeth: the body is covered all over with long, fine, bristles. This species has been, by some naturalists, confounded with that immediately preceding. But the form of the head, the structure of the mouth, and the manner in which the body is covered, establish a sufficient distinction between them.

THE BABYROUSSA.

THE babyroussa is of a plump, square, form, and nearly equal to the stag in size; but what chiefly distinguishes it, is the size and the shape of its tusks: each jaw is furnished with two: those in the inferior jaw rise eight inches out of their sockets, towards the eyes: the sockets of those above are placed on the outside of the jaw; and the tusks rise twelve inches out of them; they bend like horns, till their points nearly touch the forehead: the ears are small, erect, and pointed: a few weak bristles cover the back; the rest of the body is covered with a sort of soft wool: the tail is long, often twisted, and terminates in a point.

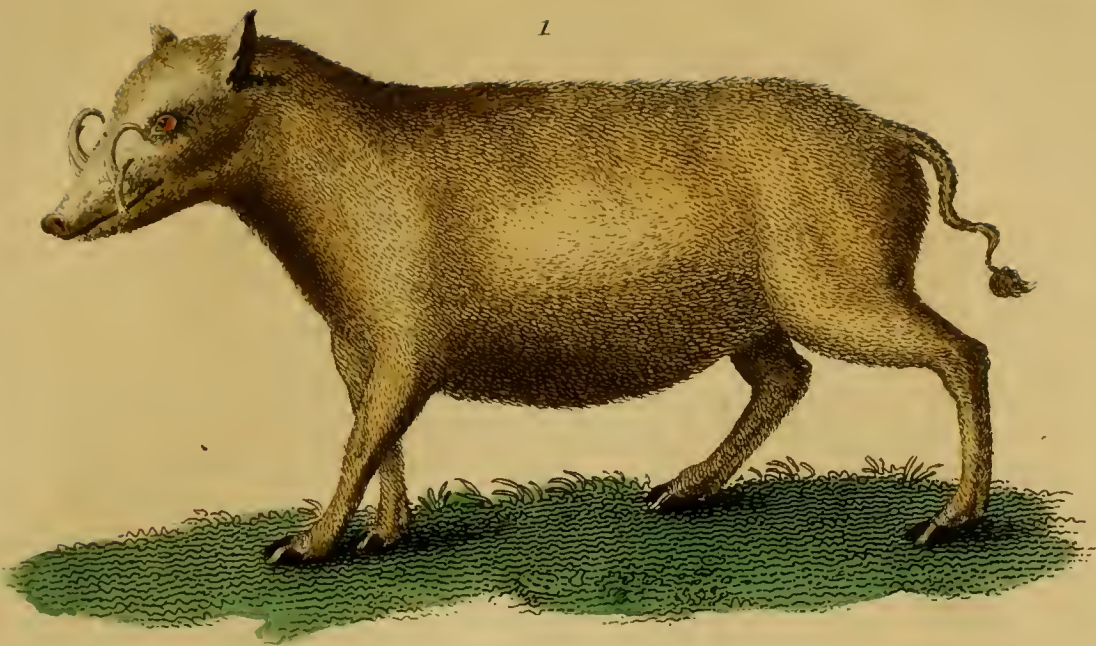
The babyroussa is found in the islands of Java, Celebes, and Boero, in the East. A few individuals are often diffused through the other islands of the Indian Ocean. The species are naturally gregarious: their sense of smelling is extremely acute: plants and leaves of trees are their favourite food: they grunt like our common hogs: they are not unsusceptible of domestication. To escape from a pursuer, they often rush into the sea, and swim to a distance, or conceal themselves by diving. They even swim occasionally from isle to isle. A babyroussa is often seen to rest its head in a forest, by hooking its upper tusks on some bough. None of these animals ever commits any devastations in gardens.

THE RHINOCEROS.

ANIMALS of this genus are distinguished, sometimes by one, sometimes by two, large, solid, conical, horns on the nose; and by having each hoof cloven into three parts. There are only two species, the descriptions of which are as follow:

RHINOCEROS

1



2



Seba del.

J. Pons sculp.

1. The Babyrussa, or Indian Hog. 2 The American Hog.



T. J. ...

The RHINOCEROS.

W. ...

RHINOCEROS with one Horn; or UNICORN.

THIS animal is among the largest of quadrupeds. His body equals the bulk of the elephant; and, were not his legs shorter, he would exhibit a no less stately figure. A single, black, smooth, horn, sometimes three feet and a half long, and situated near the extremity of the nose, constitutes his specific character: the upper lip is disproportionably large, hanging over the lower, and terminating in a point: it is furnished with muscles, which enables the animal to move it with great dexterity in collecting his food, and introducing it into the mouth: the nostrils are in a transverse direction: the ears are large, erect, and pointed: the skin is naked, rough, and extremely thick: about the neck it is gathered into enormous folds; a fold extends between the shoulders and the fore legs, and another from the hinder part of the back to the thighs: the tail is slender, flat at the end, and covered on the sides with very stiff, black, hairs. In consequence of the vast bulk of the body, and the disproportionate shortness of the legs, the belly hangs low. The breadth of the feet does not exceed the circumference of the legs.

This animal was well known to the ancients. Several of the sacred writers make frequent allusions to them, as an animal familiarly known to the people to whom their writings were directly addressed. They have not indeed condescended to a minute description; but the terms in which they have mentioned it sufficiently indicate the species. Pliny mentions the rhinoceros as an animal that appeared in the Roman circus, in games exhibited by Pompey. He was opposed to the elephant, and shewed himself no unequal antagonist. In addition to this information, the Roman natural historian fables, that the elephant and the rhinoceros are natural enemies; and that the latter carefully whets his horn upon stones, to tear up the belly

of the former. Though not described by Aristotle, the rhinoceros is mentioned by the historians of Alexander, as one of the strange animals discovered by his army in their progress into India.

But from the time when they ceased to be exhibited on the Roman amphitheatres, till within the sixteenth century, no animals of this species appeared in Europe. It was forgotten that any had ever appeared. Those who were acquainted with what the ancients relate concerning the rhinoceros, concluded, or at least suspected, either that no such species of animals had ever existed; or that, though they might once exist, they were now extinct.

In the sixteenth century, the existence of the species was fully ascertained. A number of individuals have since been, at different times, introduced into Europe. Many figures have been drawn; and the form of the rhinoceros is no longer strange. His character and manners are also tolerably known.

He is a native inhabitant of Bengal, Siam, Cochin-China, Quangsi in China, and the isles of Java and Sumatra. He is a solitary, stupid, animal. Shady forests adjoining to rivers, and miry, marshy, plains, are his favourite haunts. Unless provoked by injuries, he is commonly mild and inoffensive: his rage is desperate and dangerous. The mode in which copulation takes place between the two sexes is not certainly known: the female produces only one at a birth. During the first month of its age, the young rhinoceros does not rise above the size of a large dog: the horn is at first almost imperceptible, and increases by slow gradations: the bulk of the animal is indeed but very slowly enlarged: at the age of two years he has scarcely attained half his full height: his eyes are small, and his sight dull: but he possesses the senses both of hearing and smelling in high perfection: thorns and prickly shrubs are his chief food: his tongue was once said to be rough and hard; but, from later and more accurate observation,

observation, we learn, that it is as smooth and soft as the tongue of any other animal. It has been conjectured, that sixty or seventy years may be the natural term of the life of the rhinoceros. His skin has been represented as impenetrable, even by balls; but we now find that this vast animal is liable to be mortally wounded by missile weapons of all kinds. The flesh is not unlike pork; but of a coarser grain, and a stronger taste.

RHINOCEROS with two Horns.

IN size, form, and manners, and almost all other characteristics, this species appears nearly allied to the former. The only, or at least the chief, distinction is an additional horn. The former rhinoceros bears only one horn on his nose; but this species are furnished with two,---one standing strait behind the other. We know not whether the unicorn and the bicorn copulate and breed together indifferently. It has even been doubted, whether all animals of the rhinoceros character may not naturally possess two horns; and an unicorn appear only in consequence of an accidental loss.

The anterior is always larger than the posterior. Both horns are universally of a conical shape, with the tips reclining somewhat backward. The posterior horn of an old rhinoceros has always the appearance of being worn away. Dr. Sparrman relates, from the information of the Hottentots and colonists at the Cape, that the horns are remarkably loose on the nose of the living rhinoceros; he moves them backwards and forwards at pleasure; as he walks carelessly, they shake and clatter against each other; and in digging roots, which he eats, as well as prickly shrubs, he reclines the anterior horn, and, employing only the posterior, thus wears the latter by degrees to a stump, while the former remains entirely uninjured. The tips of both horns are slightly bent backwards: their texture seems

composed of parallel horny fibres : near the root, the surface of the horn is rough and unequal ; towards the point smooth and plain like the horns of oxen. The anterior horn of a rhinoceros of moderate size, shot by Dr. Sparrman, was a foot in length, and five inches in circumference at the base. The anterior horn of a larger rhinoceros was a foot and an half in length, and seven inches in circumference at the base : the posterior horn stands rather on the forehead than on the snout.

Dissecting the smaller rhinoceros, Sparrman found its stomach filled with masticated roots and branches of trees, and succulent plants, several of which seemed to be prickly. It had no fore-teeth ; but the lips were of so hard a texture, that they might easily serve to perform all the same functions as the fore-teeth of other animals. The jaws of a full-grown rhinoceros were furnished with four-and-twenty grinders : the anterior part of the os palati exhibits a tooth-like process ; but so distant from the lower jaw, that it can scarcely serve any of the purposes of a tooth : the skin is hard and thick in proportion to the bulk of the animal ; but not proof against the impression even of blunt-pointed weapons : on the feet, the skin is thicker, and more callous than on the other parts : the skin is not gathered into folds, as that of the former species : it is smooth and flesh-coloured between the legs ; a few stiff bristles are thinly scattered over the other parts of the body ; they are most numerous about the ears and the end of the tail : the skin is of a deep cinereous grey colour ; and numerous warts appear all over the body : the foot is divided into three parts, the hoofs of which project but a little beyond the leg. Such, according to Dr. Sparrman, are the more remarkable external characteristics of the rhinoceros with two horns.

Another observer of nature ascribes to this species a very different appearance, and treats Sparrman with great asperity, for advancing what appears to him absolutely

folutely fabulous. These writers difagree fo remarkably, that I fhould confider them as describing different fpecies, or different varieties, did I not fee reafon to fufpect that wonder, or partial obfervation, or a fpirit of oppofition, may have contributed to create the differences which appear in their descriptions.

Mr. Bruce represents the rhinoceros of Abyffinia as having his fkin gathered into folds, on the neck, the fhoulders, the buttocks, and fome other parts of his body. His mouth he describes as furnifhed with twenty-eight teeth: the upper lip he allows to be remarkably large: the fkin is always fmooth, except when flies and other troublefome infects have broken it, fo as to produce puftules; a diftrefs to which the animal is very liable: the tongue of the young rhinoceros is indeed fmooth; but, as he grows old, it becomes very rough: the anterior horn is round, and bends flightly back at the point; behind it appears the fecond, which is flat and ftrait; and behind this have been obferved the rudiments of a third.

It is only in Africa that this animal has been difcovered in modern times. In the fouthern parts of the African continent, the fpecies are well known. The Europeans, who have penetrated into Abyffinia, represent them as not lefs numerous in that country. From an epigram of Martial, and fome coins of Domitian, we learn that the rhinoceros with two horns was not unknown to the Romans.

The manners and economy of this fpecies differ but little from thofe of the laft. But the bicorn has been more accurately obferved than the unicorn. He refides almoft constantly in deep forests: he never eats hay or grafs: large fucculent plants, prickly fhubs, the branches, and even the trunks, of trees, are the articles of food which he prefers. The ftrength of his jaws and teeth enables him to break off and mafenticate the thickeft branches of the hardeft and tougheft trees. But the forests of Abyffinia afford trees of a fofter confiftency,

sistency, and peculiarly succulent; which he eats in preference to others: his upper lip is his chief instrument in collecting his food: he extends and twists it, so as to perform with it many of the functions which the elephant performs with his proboscis. After stripping a tree of its branches, a rhinoceros often applies his horn to the trunk, and, splitting it into so many lathes, devours it with as much ease and avidity as an ox would eat up a bunch of celery. In the forests inhabited by animals of this species, there appear sometimes trees divested of their leaves and branches, sometimes a trunk divided into lathes, a part of which have been eaten, and another part left for a future repast; and sometimes short stumps, of which the leaves, branches, and trunks, have been devoured. The horns of the rhinoceros suffer greatly in the preparation of his food; he often leaves a part of a horn either fixed in a tree, which he has in vain attempted to tear, or lying beside it on the ground. The sensibility of the rhinoceros in this part, must render such an accident as the breaking of a horn, if not fatal, at least extremely painful and dangerous. Mr. Bruce relates, that he saw a rhinoceros so affected, on having the point of his foremost horn broken off by a musket ball, as to appear, for an instant, absolutely incapable of sense and motion.

However unwieldy his form, the rhinoceros displays astonishing swiftness. He moves with a sort of trot; quickening his pace by degrees, as he runs. His speed is not equal to that of a swift and vigorous horse; but, between speed and cunning, he seldom suffers a hunter, mounted on horseback, to overtake him. The Hottentot and Caffrarian hunters are accustomed to steal upon the rhinoceros when asleep, and gore him with several deep wounds. After which they follow his footsteps, even for several days, till he drops down of weakness, or dies of his wounds. But they commonly poison their darts immediately before the enterprise; and,

and, in this case, the animal does not long survive. As he moves through the forest, the trees are crushed under his weight, like so many dry reeds. His eyes are so small, and his sight so feeble, that he sees only a very short way before him. The Abyssinians pursue him, two on a horse; and, as he seldom looks behind him, commonly overtake him before he is aware. The one, armed with a sword, then drops down; and, cutting the hams of the rhinoceros, the vast animal falls to the ground, alike incapable of flight and of resistance. Although naturally peaceable, he is disposed, as well as other animals, to defend himself when attacked. His rage is impetuous, and generally ill directed; he injures himself as readily as an antagonist; he knocks his head against a wall or manger; strikes against a tree with as much satisfaction as against the hunter who attacks him.

It may be naturally conceived, that so large an animal as the rhinoceros must require a considerable quantity of water to macerate his food. The tracts of country which he inhabits are interspersed with marshes, lakes, and rivers. The district of Shangalla, the favourite abode of this species, in Abyssinia, is, for six months in the year, deluged by constant rains, and overspread with woods which prevent evaporation. The rhinoceros, as well as most other species, is pestered by flies. Being destitute of hair, he is peculiarly exposed to the persecution of these insects. Nature has taught him, however, to roll occasionally in the mire, till he acquires a crust of dirt, which may, for some time at least, protect him from their stings. But this dries, cracks, and falls off in pieces. The flies then renew their attacks, and often pierce through his skin; so that his body is at length covered over with pustules. It is in the night chiefly, that he rolls in the mire; and the hunters often steal on him at that period, while he is enjoying one of his favourite pleasures, and stab him with mortal wounds in the belly, before

before he is aware of their approach. By wallowing in the mire, he often gathers reptiles and insects upon his body; such as millepedes, scolopendræ, worms, and snails.

The rhinoceros, though next in size, yet in docility and ingenuity greatly inferior, to the elephant, has never yet been tamed, so as to assist the labours of mankind, or to appear in the ranks of war. The Romans introduced him on the amphitheatre, and opposed him to the elephant; it is even pretended, that he appeared no unequal match. The bear was a contemptible antagonist to the rhinoceros. The flesh of this animal, though not a delicate dish, is with the Shangalla, and great part of the inhabitants of Lower Abyssinia, a principal article of food. The soles of his feet, consisting of a gristly substance, soft like the soles of a camel, are the most delicate part. The rest of the flesh is said to taste like pork; but is much coarser, and smells of musk. The negro hunters of Abyssinia eat it without salt. The hairs about the tail are so thick and strong, that with ten of them a whip may be made, which will draw blood at every stroke. The skin cut into thongs forms excellent whips: the horns are made into cups, which have been fancied to act as antidotes against poison. In Abyssinia, the handles of daggers are always made of the horn of the rhinoceros. The second horn is scarcely ever applied to any use. The surface is susceptible of a perfect polish; and beautiful snuff-boxes might be formed of this material, were it not that it is a substance easily scratched, and extremely liable to crack or splinter.

THE HIPPOPOTAMUS.

THIS genus consists only of one solitary species. Even the rhinoceros yields to the hippopotamus in size. He is sometimes not less than seventeen feet long, and generally about seven feet in height: his head



Edwards del.

The Hippopotamus.

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head is of an enormous size; his mouth amazingly wide; the jaws are armed, each with four cutting teeth, and two tusks: the teeth in the lower jaw are strait, and point forwards; the two middlemost longer than those on the sides; those in the upper jaw are disposed at regular distances from each other: the tusks in the upper jaw are short; those in the lower very long, and truncated obliquely: a tooth is sometimes twenty-seven inches long, and weighs six pounds nine ounces. In figure, the hippopotamus resembles an ox more nearly than any other common animal: his eyes and nostrils are disproportionately small: his ears are small, pointed, and covered within with a thick lining of short, fine, hairs: a few slender tufts of hair are scattered over the lips: the body is thinly covered with whitish hair, at first sight scarcely discernible: on the neck the hair is thicker than on the rest of the body, but not so thick as to form a mane: the tail is almost bare, and about a foot in length: the legs are short and thick; the hoofs divided into four separate parts. Though an amphibious animal, the hippopotamus has no membranes connecting the divisions of his hoofs.

Africa seems to be the only division of the globe inhabited by this species. The Nile, the Niger, the Gambia, the Zaira, are the chief rivers in which they have been discovered. But they are observed through all the other considerable rivers, and the lakes of the African continent. From the information of the Jesuits, and of a later and more accurate observer, Dr. Bruce, we learn, that they abound in all the lakes and rivers of Abyssinia, Nubia, and Upper Egypt. Cultivation has expelled them from Lower Egypt. Sparrman represents them as not less numerous in the southern parts of Africa. It had been imagined, that hippopotami never ventured into the ocean, and scarcely ever descended so low as to the mouths of rivers; but this philosophical traveller relates, that he actually

observed several hippopotami in salt water, at the mouths of the rivers Kromme and Camtour; and in the district of Krakekama, saw on the sea-beach, evident traces of one of these animals that had come out of the sea, but instantly retired back: he was also informed by a Captain Burtz, that on the eastern coast of Africa, he had often seen hippopotami raise their heads above the surface of the sea, to breathe and neigh. In Guinea, the rivers, lakes, and marshy grounds, afford numbers of hippopotami. Dr. Sparrman was informed by a party of Caffrarians, that about Konaprivier in Caffraria, hippopotami appeared on land in bodies as numerous as the pebbles on the bed of the river; a comparison which the doctor, with great judgment, understands as hyperbolical.

To the ancient Greeks and Romans, this animal was known only as a native of the Nile. Their ideas of its form and manners were indistinct and inaccurate. Aristotle and Pliny describe it as hoofed like an ox; adorned with the mane of a horse; with a flat nose, and a tail like that of a boar; with teeth also like those of a boar, but less fit for mischief; its back resembling the back of a horse. Although the hippopotamus had appeared in the Roman circus, Pliny seems merely to copy the imperfect description of Aristotle. But the ancients knew no other arts of description, save the comparing of the parts of the unknown animal with those of such animals as were commonly known; and many of their errors seem to arise from this cause. A strange animal was often to be compared, not to a known animal which it perfectly resembled, but to that known animal to which it was the least unlike. The behemoth of Job is understood to have been no other but the hippopotamus; his strength, his size, and his manners, are beautifully alluded to by that sublime writer.

The manners of this species are pretty well known. Their awful size has attracted attention. They are
said

said to be polygamous, and the females much more numerous than the males. It is asserted that they copulate in the same manner as common cattle. The female brings forth her young on land, but suckles it under water. The calf is but of a very moderate size for some time after birth. One caught by Dr. Sparrmann, which was supposed to be about a fortnight or three weeks old, measured three feet and a half in length, and two feet in height. It is suckled by the mother, and remains for a while under her protection; how long we know not. When caught, this calf uttered a squeaking noise, like a scared or wounded hog. The voice of the adult animal is a neighing sound, which some describe as having a perfect resemblance to the neighing of a horse; while others represent it as a loud sonorous noise, between the bellowing of an ox and the roaring of an elephant.

Although an inhabitant of the waters, the hippopotamus is well known to breathe air like land animals. On land he finds the chief part of his food. He may perhaps occasionally feed on aquatic plants; but he very often leaves the waters, and commits wide devastations through all the adjacent cultivated fields. On the banks of the Nile, he often defeats the hopes of the husbandman; even a large field of corn or clover is soon entirely despoiled of verdure by his capacious jaws. In the south of Africa, he commits similar ravages. Not only grass, but boughs and roots of trees, and shrubs, are articles of his ordinary food. In cultivated tracts, it is commonly in the night that the hippopotamus leaves his retreats in the rivers, and wanders into the fields. He descends to the bottom of the deepest river, and walks along it with the same slow, stately, pace, as if on land, and breathing the open air. But he cannot continue under water beyond a certain length of time. He must ascend at intervals to the surface to discharge the contents of his lungs, and draw in fresh air. He appears at times

in the sea, and is seen going out with the tide; but it appears probable, that sea-water does not serve him to drink; for Sparrman relates, that a hippopotamus, who, having been disturbed in the rivers, had taken refuge in the sea, was observed to come every night on shore to drink water out of a neighbouring well, till he was at last shot. It has been pretended, that the hippopotamus devours great quantities of fish; but it appears with the fullest evidence, both from the relations of many travellers and from the structure of the stomach in specimens which have been dissected, that he is nourished solely, or almost solely, on vegetable food. He walks with a tardy pace; and is capable of so little agility, that even a hillock or wall of a very moderate height presents to him an insurmountable barrier. Unless when accidentally provoked or wounded, he is never offensive. But, when his fury is provoked, revenge is easily in his power. With his teeth he easily breaks a boat in pieces; or, where the river is not too deep, he will raise it on his back, and overturn it.

The Egyptians practise a very artful contrivance for destroying this animal. On some place where they expect an hippopotamus to pass, they throw a large quantity of pease; these the hungry animal eagerly devours as soon as he perceives them; such a quantity of dry food soon disposes him to drink; and the water, swelling the pease in his belly, bursts the vessels, and he falls dead on the shore. The Hottentots sometimes practise the same stratagem. But they more commonly either intercept the animal in pits dug in places through which he has been observed to pass, or shoot him with tin balls.

Pliny relates, that this animal, when he feels his habit overcharged, repairs to some place covered with sharp reeds, and obtains a discharge of blood, by lying down upon them in such a posture, that they pierce the tenderest parts of his skin. This is not a very probable tale. He indeed retires to sleep on islands

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overgrown with reeds; and, it may sometimes happen, that, notwithstanding the enormous thickness of his skin, it may be torn in the tenderest parts. The body of the hippopotamus is said to be infested with a peculiar kind of vermin. On a calf which Sparrman caught, he found only a species of leech which resided about the anus, and of which some had even penetrated a good way up the rectum. These, he thinks; might be beneficial, by abstracting any excess of blood generated in so vast a body.

The hippopotamus is not merely harmless. He affords many articles of considerable utility to human life. His flesh is a wholesome and not unpleasant food. The Hottentots, the Caffrarians, and even the European colonists at the Cape, eat it with great eagerness. In Egypt likewise this animal has been sought for its flesh. Dr. Pocock saw it sold in the market. The negroes of Angola, Congo, and of the whole west coast of Africa in general, though they venerate this mighty inhabitant of the rivers as a deity, yet scruple not to eat him. The flesh is said to be tender: the fat is not so rancid and greasy as that of most other animals: the gelatinous part of the feet, when well dressed, is a great delicacy: the dried tongue of an hippopotamus is considered, even at the Cape of Good Hope, as a rare and favourable dish. Dr. Sparrman, on his return to Europe, furnished the King of Sweden's table with one of these tongues, two feet eight inches in length. The teeth of the hippopotamus are of a harder and whiter substance than those of the elephant. Dentists prefer them on account of these qualities, even to ivory, for the purpose of replacing lost teeth in the human jaw. The hide is rather thicker than that of the rhinoceros. It is a sufficient load for a camel. The inhabitants at the Cape make excellent whips of it, which, after being used for some time, become more pliable than those made of the hide of the rhinoceros. The blood
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value. His flesh is eaten by the native Americans, but is not a very delicate species of food. The legs, if roasted for four-and-twenty hours, became not disagreeable even to the palate of an European. The Indians use the skin chiefly for bucklers.

THE ELEPHANT.

THE elephant is well known as the largest of quadrupeds. An elephant's body has been sometimes found to weigh four thousand and five hundred pounds. The height of a full grown elephant is from nine to fifteen feet. The trunk is a remarkable organ, almost peculiar to the elephant; although, indeed, the long, dependent, flexible, snout of the tapiir bears some resemblance to it. It is a cartilaginous substance, composed of numerous rings, terminating in a small moveable hook, and having the nostrils in its extremity. The elephant can, at pleasure, contract, and dilate, and bend, it in any direction. His tusks also distinguish the elephant in a singular manner. Neither jaw is furnished with fore-teeth: each has four large flat grinders: but in the upper are two enormous tusks, of a solid, white, and fine-grained, substance, which, as they proceed from the gums in which they are rooted, first point forwards, and then bend slightly upwards. These are often seven feet long, and frequently weigh an hundred and fifty pounds.

It is not easy to convey in words a distinct idea of the form of any animal. Words may assist the imagination to recal a form with which it is already familiar; but scarcely any clearness or vigour of verbal description will give the mind a strong and distinct impression of an image entirely new to it. In attempting to describe the elephant, this difficulty is felt. His eyes are small; his ears are long, broad, and pendulous; his neck is short; his back considerably arched; his legs thick, clumsy, and shapeless; his feet undivided,



The Elephant.

J. G. Smeath

vided, but having their margins terminated by five round hoofs; his tail similar to the tail of a hog, and fringed at the extremity with a few long hairs of the thickness of a packthread. The female has two small teats, placed a little behind the fore-legs. The body is bare.

The manners of this animal are naturally mild and inoffensive. He is nourished on vegetable food; fruits, leaves, branches, and even young trees, corn, and other grains, which he devours in large quantities. Contradictory accounts have been alleged of the mode in which the act of copulation is performed among this species. It seems now to be agreed, that they copulate in the same manner as the generality of other quadrupeds. In their natural state, elephants associate in herds; but the impulse of love separates them into pairs, who retire, each to some secret sequestered spot, to gratify the genial passion. Mankind are never suffered to witness those rites; and the precise period of gestation with the female elephant is not certainly known; yet it is supposed to be about nine months, from the circumstance of some tamed ones producing, after an interval of that length, from their wandering into the woods in search of the males. The young elephant has been said to suck with its trunk. The ancients pretended, that it sucked with its mouth. The moderns contradict them; but d'Obsonville has incontrovertibly vindicated the veracity of the ancients. In a herd of old and young elephants, the young have been observed to suck any of the females indiscriminately. The elephant grows slowly, and is supposed to live to a great age. The ordinary term of his life is at least between one and two hundred years. With his trunk this animal utters occasionally a sound like that of a trumpet. When enraged or alarmed, his voice, which seems to proceed from his throat and mouth, is a wild shrill note, which pierces the human heart with unspeakable terror.

Plains, forests, and gently-rising hills, are the favourite abodes of the elephant. He is a native of Asia and Africa. He cannot bear the heat of the torrid regions under the line; but is still more impatient of cold. All the elephants imported into Europe, however liberally fed, and carefully managed, have perished by a premature death. At Peterburgh, though clothed and kept in houses warmed by stoves, they could not bear the severity of the climate. The species are diffused over the whole continents of Asia and Africa, except where intense heat, or extreme cold, or uniform cultivation, and the hostilities of mankind, keep them at a distance. They are also natives of the greatest part of the Asiatic isles.

Ceylon is famed for its elephants. Some of the Dutch have observed the manners of the wild elephants in that island with singular attention. - They live in small troops, or distinct families. The old ones often stand while they sleep. In wandering from place to place, the males, who are armed with the largest tusks, put themselves at the head of the troops. These are the first to face every difficulty. In swimming over any large river, these lead the van, and seek out a landing place; next follow the young elephants that have not yet attained their full growth, clinging together by the trunks; the rest of the full-grown bring up the rear. A solitary elephant, who seems to have been expelled from the herd to which he belonged, is sometimes met with in the woods. Such a vagabond is uncommonly fierce and dangerous. The enormous bulk of the elephant renders his air grave and stupid, and all his motions slow. A nimble Indian will out-run the swiftest. To avoid danger, or attack an enemy, an elephant lengthens and quickens his step, so as to keep up with a horse at a brisk gallop, but not at full speed.

Elephants have in all ages been eagerly hunted. Some of the arts which have been used in order to kill

or take them alive, are singular. Mankind could not employ any other animal to hunt down the elephant. The Hottentots, in the district of Litficamma, near the Cape, shoot him with tin balls: the chace is attended with considerable danger. To irritate an elephant in the woods, or any where but in the open plains, would be almost certain death. With every precaution, the sagacity of the elephant is sometimes more than a match for the cunning of the hunter. His delicacy of smell enables him to discover the approach of an enemy before he can possibly see him. And, when discovered, the hunter, unless he can, by an instant shot, lame or wound him mortally, will scarcely escape being trampled, or beat, or tossed, to-pieces. Even though he may escape, he will scarcely fail to be plentifully soufed with cold water from the elephant's trunk.

In the island of Sumatra, where the herds of wild elephants prove extremely troublesome; wandering over the cultivated grounds, and partly by the impression of their feet, partly by devouring the plantanes and sugar-canes, obliterating all traces of cultivation; the inhabitants often split and impregnate a part of their canes with poison; and of these the elephant eating unwarily, dies. The Ceylonefe sometimes surround, in numerous bands, the woods which the elephants inhabit, and with flaming torches, the discharge of guns, and other noises, drive the animals before them into a park previously prepared, and inclosed with strong palisades. Sometimes persons, eminent for activity and courage, will single out an elephant in the woods, pursue him till they can sling a sort of springe made of cord round his hinder legs, and, winding and fastening the other end of this round a tree, bring two tame elephants, between whom he is conducted home to captivity, and who, if he prove refractory by the way, are directed to beat him with their trunks. Tame females are also led out, at times, to inveigle wild males. As soon as one of these females has enticed a male

from the savage herd, a part of her conductors seize her captive, while the rest make a noise to frighten away his companions.

Mankind have, in all ages, been at great pains in taming elephants. When Alexander penetrated into India, the natives opposed him upon the tame elephants, whom they had trained to military discipline. The Greeks, who at first beheld them with terror, after triumphing over the nations of the east, introduced them into their own armies. Either a part of those very elephants, which Alexander brought from India, or others brought soon after into Greece, were carried by Pyrrhus into Italy, when he went to oppose the Romans. His elephants, with the Macedonian tactics, rendered him, at first, no unequal match to the warriors of Rome. But Roman discipline, and Roman magnanimity, soon triumphed over his military skill, and his gigantic cavalry. Elephants were often after that exhibited at Rome. The Carthaginians, as well as Pyrrhus, found them but weak aids against Roman valour. In the circus they were at first driven about, and slain with darts. They were afterwards opposed to bulls, and to the rhinoceros. Pliny relates that a number of elephants, exhibited in the circus by Pompey, when they found themselves destined to immediate death, made a vigorous, but ineffectual, effort to break through the iron railing in which they were inclosed: frustrated in the attempt, they, with a wailing voice, and, in a suppliant posture, seemed to implore the compassion of the spectators; and so impulsively were the whole people affected with the distress and the sensibility of those majestic animals, that they with one assent arose, and in tears imprecated destruction on the head of the magnificent general who entertained them with that splendid spectacle; imprecations, says the historian, which soon after took effect.

The successors of Alexander appear to have long continued the use of elephants in their armies. One
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of the brave Jewish brothers, the Maccabees, terminated his life in a glorious manner, by piercing the belly of an elephant, in the army of one of those monarchs fighting against his countrymen, with a deadly wound, and suffering himself to be crushed to death under the falling mass. Elephants trained to war among the Greeks, had turrets raised on their backs, from which troops of armed men annoyed the enemy; while a person sitting on the neck, directed the motions of the elephant, and animated him to fight with his trunk. But, when scared or wounded, they disdained all government, and spread confusion, not less readily among their friends than thro' the adverse army.

The East is the great theatre on which the strength, the ingenuity, and the generous qualities, of this species have been chiefly displayed. The Indian princes estimate their power and grandeur by the number of their elephants. Many of the Indians are persuaded that so majestic a body must be animated by the soul of a departed king or hero. In Siam, Pegu, Laos, white elephants are viewed with peculiar veneration, as the living manes of deceased emperors. Each has a palace, domestic, golden vessels, choice food, splendid robes. They are subjected to no servile labours, and are taught to bow the knee to the emperor, but before none else.

A tame elephant is perhaps the most docile, gentle, and obedient, of all animals. He forms an attachment to his keeper; comprehends signs; learns to distinguish the various tones of the human voice, as expressive of anger, approbation, or command; is even capable of being taught to understand the import of articulate language; adopts, in many instances, the manners and the sentiments of mankind; discovers a sense of probity and honour, and expects to be honestly dealt with; is generous, grateful, patient, magnanimous, and humane. Like mankind, the elephant is fond of gorgeous trappings, and gay attire. But, in
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a state of servitude, though at times infuriated by the impulse of the genial passion, elephants constantly refuse to copulate.

Historians and travellers relate many tales concerning the prudence, penetrating sagacity, and obliging temper, of the elephant, which can scarcely appear credible. The ancients have ascribed to this species sentiments of religion, and the tenderest emotions of social affection. They practise, say some ancient naturalists, rites of ablution with religious solemnity; they venerate the sun and moon, and the other powers of heaven; they are endowed with a spirit of divination, and their foresight penetrates through the mists which veil futurity: his fellows gather round a dying elephant, cheer his last moments with friendly sympathy and kind offices, bedew his corpse with their tears, and deposit it decently in the grave. A modern traveller relates a no less wonderful story; that when a wild elephant is taken, and his feet tied, the hunters accost him, make apologies for binding him, and promise him the fairest usage; upon which the elephant becomes perfectly satisfied with his change of condition, and follows his new masters quietly home. Did this story ascribe to the elephant no more than human sagacity, and human placidity of temper, I should not presume to question its truth. But it supposes him endowed with an intuitive knowledge of human languages, and, at the same time, attributes to him a degree of simple credulity inconsistent with his penetration, and a tameness of spirit derogatory from his dignity of mind.

But many more plausible anecdotes are told of him. When he wishes merely to terrify any person, he runs upon him with an aspect of fury, but stops when near, without inflicting any injury. He lades a boat in a river with amazing dexterity, carefully keeping all the articles dry, and disposing them so that their arrangement needs not to be changed. In raising wheeled car-

riages, heavily loaded, up a declivity, he pushes the carriage forward with his front, advances, supports it with his knee, and renews his effort. If dragging a beam of wood along the ground, he removes obstacles, to make it run smoothly and easily.

The majestic elephant on which Porus rode in the battle in which he opposed Alexander, displayed a strong attachment to his master. When the Indian monarch, though exhausted with fatigue, and covered with wounds, obstinately refused to retire or yield himself a prisoner, and the Grecian soldiers pressed hard upon him, his elephant still obeyed his direction, though all his companions had fled, still defended his master, and attacked those who approached against him, with firm and ardent courage.

Some eastern monarchs employ elephants to execute those criminals whom they have condemned to death. They execute the sentence with great dexterity, seize the unhappy victims, toss them in the air, and then trample them to death.

M. d'Obsonville relates an anecdote of an elephant which represents him in a very amiable light. In the Laknaor, the capital of Soubah, during the rage of an epidemic distemper, the principal road to the palace gate was covered with sick and dying wretches, extended on the ground, and incapable of removing, at a time when the nabob was to pass on his elephant. The indifference of the prince about the lives of his perishing subjects, the haste with which he was to pass, and the aukward motions and heavy steps of the elephant, seemed to threaten inevitable death to a number of those unhappy wretches. But the generous quadruped, without receiving any command to the purpose, and even without slackening his pace, very dexterously assisted the poor creatures with his trunk, removing some, raising others, and stepping over the rest; so that none suffered the slightest injury. In what is an animal, capable of such prudence, such dexterity, and such gentle

gentle humanity, inferior to man? In this action, both intelligence and virtue conspicuously appear.

Elephants are more influenced by a regard to the consequences of their actions than almost any other domesticated animals. On the promise of a reward, they are often induced to extraordinary exertions of ingenuity and strength. The same curious observer of the economy of animals, d'Obsonville, relates, that he has seen two elephants employed in concert in beating down a wall; who, encouraged by their cornacks with a promise of fruits and brandy, doubled up their trunks to save them from injury, combined their efforts, thrust with repeated shocks against the strongest part of the wall, carefully marked the success of their exertions, and at last, with one grand impulse, levelled the fabric, retiring hastily to avoid suffering from its falling fragments.

A still more singular fact is related by the same author. An elephant, who, in the course of the last war between the French and the British in the East Indies, had received a flesh-wound by a cannon ball, after being once or twice conducted to the hospital to have his wound dressed, constantly attended of himself at the proper time, till it was healed. That the surgeon might operate, he readily extended himself on the ground. He bore with patience the application even of fire to his wound. The acuteness of the pain would sometimes force from him a plaintive groan; but to the hand who, by inflicting momentary torments, sought to accomplish his cure, he expressed none but emotions of gratitude. Gratitude is indeed represented by all who have had opportunities of observing his manners, as the most eminent feature in the character of the elephant. At the sight or the cry of his master or benefactor in danger, he forgets all regard to his own safety.

At Decan, an elephant, in revenge for the violation of a promise of reward for some extraordinary exertions,

tions, killed his cornack. The poor man's wife witnessed the scene. Wild with despair for the loss of her husband, she threw her two children at the feet of the furious animal, crying, "Why spare me or my children, since you have slain my husband?" The elephant became instantly calm, took the eldest boy on his trunk, placed him on his neck, and, adopting him for his cornack, would never obey any other conductor.

At Pondicherry, a soldier, who had used to share his arrack with an elephant whenever he received his pay, happening one day to get drunk, was pursued by the guard, who meant to put him into confinement. He retreated under the belly of his friend the elephant, who with his trunk beat off his pursuers. The soldier fell asleep. When he awaked next day, having slept away his intoxication, he was much alarmed to find himself under the belly of so enormous an animal. The elephant, however, eased his fears by caressing him with his trunk, and dismissing him in the most friendly manner.

An elephant at Versailles was very carefully observed by the members of the French academy of sciences, and many other visitors. He discovered considerable penetration, seemed to know when he was mocked, and waited for an opportunity to revenge the affront. A man pretending to throw something in his mouth, made him gape for nothing. The disappointed elephant, in high resentment, knocked the wag down, and broke two of his ribs with a blow of his trunk; then trampled on him with his feet, and kneeling, endeavoured to pierce his belly with his tusks. He was however rescued.

A painter wanted to draw this same elephant in an unusual attitude, with his trunk elevated, and his mouth open. To make him remain in this position, an attendant threw fruits, from time to time, into his mouth. But he often only pretended to throw, without giving any. The elephant at length, teased and

irritated, and observing that it was to gratify the painter the servant treated him with such impertinence, turned his eye upon the master and his work, and by squirting a quantity of water from his trunk, entirely spoiled the drawing.

In India, a large elephant employed to launch a vessel, found his exertions unequal to the task. His master, in a contemptuous sarcastic tone, bade the keeper take away that lazy beast, and bring another of greater spirit and activity. The poor animal, with generous indignation, renewed his efforts, till he fractured his skull, and died on the spot.

In Delhi, an elephant, passing through the streets, put his trunk into the door or window of a taylor's shop, where were several people at work. A wag of the company pricked the end with his needle. The beast removed his trunk and passed on. But, in the first puddle, filling it with water, he returned and spouted the whole upon the people in the shop, which entirely spoiled their work.

An elephant in Adsmeer, had been accustomed to receive always a mouthful of greens from a certain herb-woman, as he passed through the bazar or market. After some time, happening to be seized with one of those periodical fits of madness to which these animals are subject, he broke his fetters, and ran furious through the market, while the trembling multitude fled before him. His benefactress fled among the rest; but, in her trepidation, left her child. The animal recollecting the child of so good a friend, on the spot where she had used to sit, took up the infant in his trunk, and gently placed it in safety, on a stall before a neighbouring house.

The natives of Africa greedily eat the flesh of the elephant. The Hottentots and Boshiesmen, in the neighbourhood of the Cape of Good Hope, esteem it a very agreeable article of food; but the colonists regard the eater of elephant's flesh with little less horror than

than a cannibal. Sparrman relates that he saw the huts of some Hottentots in the service of a farmer on Diep-rivier covered over with zig-zag slips of elephant's flesh, some inches in breadth, and several fathoms in length, which they had thus laid out to dry; some of those slips were wound round the huts, and others stretched between two. It was in the beginning of November; they had lately been successful in the chase; and, "at this time," says this lively naturalist, "men, women, and children, had here no other employment, but sleeping, smoking, and eating elephant's flesh."

The tusks of the elephant have long been applied, under the denomination of ivory, to a variety of important uses, in the arts. Ivory is a material as well for the fine, as for the mechanic arts. In the country of Sogno, in Lower Æthiopia, the natives distil a water from the bones of the elephant's legs, which they esteem an excellent remedy for asthmas, sciaticas, and several other complaints. The Giaghi regard the tail of this animal with religious veneration. When a chief or sovereign dies, an elephant's tail is consecrated to preserve his memory. The animal is hunted merely for his tail. A sacred tail must always have been cut off from a living elephant, and at a single stroke.

Over all the north of Asia, and through several other parts of the globe, entire or partial skeletons of elephants are occasionally found in a fossil state. Grinders and tusks are numerous through Siberia. These were once ascribed to an imaginary animal under the name of mammoth. Through America too, there are large animal skeletons found in a fossil state, which, though their structure be somewhat different from that of the elephant, approach, however, nearer to this than to any other known species.

When the elephant is properly managed, he lives very long in a state of slavery and labour. That some have lived in this state one hundred and thirty years,

is pretty well authenticated. In a natural state they often exceed two hundred years, and propagate their species till they are one hundred and twenty; it is thirty years before they come to their full growth.

CANIS, the DOG, of the Order of FERÆ.

THE distinguishing characters of the dog are these: He has six fore-teeth in the upper-jaw, those in the sides being longer than the intermediate ones, which are lobated; in the under jaw there are likewise six fore-teeth, those on the sides being lobated. He has six grinders in the upper, and seven in the lower, jaw. The teeth called dog-teeth are four, one on each side both in the lower and upper jaw; they are sharp-pointed, bent a little inward, and stand at a distance from any of the rest.

The services of this truly valuable creature have been so eminently useful to the domestic interests of men in all ages, that to give the history of the dog would be little less than to trace mankind back to their original state of simplicity and freedom, to mark the progress of civilization through the various changes of the world, and to follow attentively the gradual advancement of that order which placed man at the head of the animal world, and gave him a manifest superiority over every part of the brute creation. If we consider for a moment the state of man without the aid of this useful domestic;---with what arts shall he oppose the numerous hosts of foes that surround him on all sides, seeking every opportunity to encroach upon his possessions, to destroy his labours, or to endanger his personal safety? or how shall he bring into subjection such as are necessary for his well-being? His utmost vigilance will not be sufficient to secure him from the rapacity of the one, nor his greatest exertions enable him to overcome the speed of the other. To maintain his independence, to insure his safety, and to provide
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for his support, it was necessary that some one among the animals should be brought over to his assistance, whose zeal and fidelity might be depended on: and where, amidst all the orders of animated beings, could one be found so entirely adapted to this purpose? where could one be found so bold, so tractable, and so obedient, as the dog?---To confirm the truth of these observations, we need only turn our attention to the present condition of those nations not yet emerged from a state of barbarism, where the uses of the dog are but little known or attended to, and we will find that they lead a precarious and wretched life of perpetual warfare with the still more savage inhabitants of the forest, with which they are obliged to dispute the possession of their uncultivated fields, and, not unfrequently, to divide with them the fruits of their labours. From hence we may conclude, that the attention of mankind, in the earliest ages, would be engaged in training and rendering this animal subservient to the important purposes of domestic utility; and the result of this art has been, the conquest and peaceable possession of the earth.

Of all animals the dog seems most susceptible of change, and most easily modified by difference of climate, food, and education; not only the figure of his body, but his faculties, habits, and dispositions, vary in a surprising manner: nothing appears constant in them but their internal conformation, which is alike in all; in every other respect, they are very dissimilar: they vary in size, in figure, in the length of the nose and shape of the head, in the length and direction of the ears and tail, in the colour, quality, and quantity, of the hair, &c.

Linnæus was the first who remarked that the tail of the dog bends towards the left; a character common to the whole species, in all its varieties. As the economy of this animal has been delineated with all that fidelity, precision, and elegant conciseness, which render the writings of Linnæus an inestimable treasure, we shall
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avail ourselves of his description: "The dog, the most faithful of animals, the companion of mankind, fawns at the approach of his master, and will not suffer any one to strike him; runs before him in a journey, passing frequently backward and forward over the same ground. On coming to cross-ways, he stops and looks back; is very docile; will find out what has been dropt; is watchful by night; announces the coming of strangers, and guards any goods committed to his charge: he drives the cattle home from the field; keeps herds and flocks within bounds, and protects them from wild beasts. By virtue of his acute sense of smelling, he points out the game to the sportsman, and brings the birds that are shot to his master. At Brussels, and in Holland, he draws little carts to the herb market: in Siberia, he draws a sledge, with his master in it, or one loaded with provisions; he will turn a spit; sits up, and begs at table; when he has committed a theft, he flinks away with his tail between his legs; eats enviously with oblique eyes; strives to be master among his fellows at home; is an enemy to beggars, and attacks strangers without provocation: he is fond of licking wounds, assuages the pain of the gout, and of cancerous ulcers; howls at certain notes in music, and often urines on hearing them: he bites at a stone flung at him; is sick at the approach of bad weather; gives himself a vomit, by eating grass; is afflicted with tape worms; spreads his madness; grows deaf and blind with age, *et sæpe gonorrhœa infectus*: he eats flesh, carrion, and farinaceous vegetables, but not greens; drinks by lapping; is fond of rolling on carrion, sheep's dung, &c. his scent is exquisite: he goes obliquely, foams and hangs out his tongue when hot, but scarcely ever sweats; about to lie down, he goes often round; his sleep is attended with a quick sense of hearing; and during sleep he frequently dreams; he makes water side-ways with his leg up; is very apt often to repeat it, where another has done the same,

same, and dungs upon a stone; his dung is the greatest of sceptics. *Canis odorat anum alterius; menstruans catullit cum variis; mordet illa illos; cohæret copula junctus.* The female goes sixty-three days with young, brings forth from four to ten; the males generally like the dog, the females like herself; the largest and tallest are more prolific than the smaller kinds: though driven as unclean from the house of the Mahometans, yet the same people establish hospitals for dogs, and allow them a daily portion of food."

No less just and elegant, though more diffuse, is the following extract from Buffon: "The dog, independent of the beauty of his figure, his strength, vivacity, and nimbleness, possesses every internal excellence which in a brute can attract the regard of man. A passionate, and even a ferocious and sanguinary temper, renders the wild dog formidable to all animals; but in the domestic dog, these hostile dispositions vanish, and are succeeded by the softer sentiments of attachment, and the desire of pleasing; he runs with cheerfulness and alacrity to his master's foot, where he lays down his courage, his strength, and his talents: he attends for orders, which he is always solicitous to execute: he consults, he interrogates, he supplicates, his master; a single glance of the eye is sufficient, for he knows the external signs of our intentions and wishes: his feelings are extremely delicate, and he has more fidelity and steadiness in his affections than man: he is not corrupted by ambition, rarely by interested views, or by a desire of revenge; and he has no fear but that of displeasing: he is all zeal, ardour, and obedience; more apt to recal benefits than outrages: he is not to be discouraged by blows or bad treatment, but calmly suffers, and soon forgets, them; or he remembers them only to increase his attachment: instead of flying, or discovering marks of resentment, he exposes himself to torture, and licks the hand from which he received the blow; to the cruelty of his master,

ter, he only opposes complaint, patience, and submission: surely the master must be void of humanity that can abuse such a servant. Equally furious against thieves as against rapacious animals, he attacks and wounds them, and forces them from whatever they have been attempting to carry off: but, contented with victory, he lies down upon the spoil, and will not touch it even to satisfy his appetite, exhibiting at the same time, an example of courage, temperance, and fidelity: he reigns at the head of a flock, and is better heard than the voice of the shepherd; safety, order, and discipline, are the fruits of his vigilance and activity; sheep and cattle are a people subjected to his management, whom he prudently conducts and protects, and never employs force against them, but for the preservation of peace and good order.

“ But in war against his enemies, or wild animals, he makes a full display of his courage and intelligence; he shares with his master the pleasure and fatigue of the chase; here too his natural and acquired talents are united and exerted; by the acuteness of his scent, he unravels all the windings of the labyrinth, all the false routs which were intended to deceive him; and, instead of abandoning the object of his pursuit for a different animal, he redoubles his ardour, he overtakes, attacks, slays, and extinguishes his thirst and his rage in the blood of the victim. The lion and the tiger, whose strength is so great as to ensure them of victory, hunt alone, and without artifice. Wolves, foxes, and wild dogs, hunt in packs, assist each other with much art, and mutually share in the prey. When the natural talents of the dog have been improved by education; when he has learned to repress his ardour, and to regulate his movements, he then hunts artificially, and is almost certain of success.

“ The predominant attachment of the whole race of dogs towards mankind, prevents these animals from separating from us, till deserted, or, by some accident,

left in places where there was no possibility of reunion: as before observed, it seems beyond the power of ill usage to subdue the faithful and constant qualities inherent in them. They are found in great numbers wild, or rather without masters, in Congo, Lower Æthiopia, and towards the Cape of Good Hope. Those are red-haired; have slender bodies and turned up tails like greyhounds; others resemble hounds, and are of various colours, have erect ears, and are of the size of a large fox-hound: they run very swiftly, destroy cattle, hunt down antelopes, as our dogs do the stag, and are very destructive to the animals of chase: they have no certain residence, and are very seldom killed, being so crafty as to shun all traps; and of so sagacious noses as to shun every thing that has been touched by man: they go in great packs; attack lions, tigers, and elephants, but are often killed by them: the sight of these dogs is pleasing to travellers, who suppose that they have conquered the wild beasts, and rendered their journey secure, by driving them away: they sometimes attack the sheep of the Hottentots, and commit great ravages among them. There are also multitudes of wild dogs in South America, derived from those carried over, and left there, by the European discoverers of that continent: they breed in holes like rabbit-holes: when found young, they instantly attach themselves to mankind, and will never afterward join the wild dogs, or desert their masters: they have not forgot to bark, as some have alleged: they have the look of a greyhound: their ears stand erect: they are very vigilant, and excellent in the chase."

The dog was quite unknown in America, before it was introduced there by the Europeans. The also of the Peruvians, a little animal which they were so fond of; and kept as a lap-dog, is too slightly mentioned by Acolta, for us to determine what it was. But it is certain that the dog of North America, or rather the substitute the natives had for a dog, on its discovery by

the English, was derived from the wolf, tamed and domesticated; these substitutes cannot bark, but betray their savage descent by a sort of howl: that wolfish breed want the sagacity of a true dog, and are detested by European dogs, who worry them on all occasions, retaining still that dislike, which it is well known all dogs have to the wolf: they are commonly white, have sharp noses and upright ears.

The dog is subject to more varieties than any other animal. While a superficial observer would be ready to pronounce each of these varieties a distinct and separate species, each will mix with the other, and produce a variety still more unlike the original stock. Mr. Pennant remarks, that the original stock of dogs in the old world is, with great reason, supposed to be the schakal or jackal; that from their tamed offspring, casually crossed with the wolf, the fox, and even the hyæna, have arisen the numberless forms and sizes of the canine race. Before him, Buffon, with much ingenuity, had traced out a genealogical table of all the known dogs, deducing all the other varieties from the shepherd's dog, variously affected by climate, and other casual circumstances. This variety in Britain is small and weak; but in France, and among the mountains of the Alps, large and strong, and is sometimes called the wolf dog. We shall give it the preference as the first variety, and arrange under it, its nearest allies as subordinate varieties.

I. The SHEPHERD'S DOG, or *Canis Domesticus* of Linnæus. The characters of this variety are, that they are sharp-nosed, erect and sharp eared; very hairy, especially about the neck, and have their tails turned up or curled; they are naturally the most sensible: they become, without discipline, almost instantly, the guardians of the flocks; they keep them within bounds, reduce the stragglers to their proper limits, and defend them from the attacks of the foxes and of the wolves. In temperate climates, they are very numerous,

merous, though greater attention has been paid to the rearing of more beautiful kinds, than to the preservation of this race, which has no recommendation but its utility, and for that reason has been abandoned to the care of the sheep farmers. Notwithstanding their inelegance, and melancholy aspect, they are superior, in instinct, to all others: they are of a decided character, independent of education, though, no doubt, that improves them: guided solely by their natural powers, they apply themselves, as it were spontaneously, to the keeping of flocks; an employment which they execute with amazing fidelity, vigilance, and assiduity: their talents at the same time astonish and give repose to their masters, while other dogs require the most laborious instruction to train them to the purposes for which they are destined.

The subordinate varieties of the shepherd's dog are, 1. The Pomeranian dog, *le chien loup*, or wolf dog of Buffon. Linnæus describes it as having longer hair on its head, erect ears, and its tail very much curled. 2. The Siberian dog, a variety of the former, very common in Russia. The other varieties in the inland parts of the Russian empire and Siberia, are chiefly from the shepherd's dog; and there is a high-limbed taper-bodied kind, the common dog of the Calmuc and independent Tartars, excellent for the chase, and all other uses. Of the same kind are the dogs in Greenland and Kamtschatka. The Greenlanders sometimes eat their flesh: they make garments of their skins, and use them in drawing sledges; to which they yoke them, four, five, and sometimes six, together. The dogs of Kamtschatka are also very useful in drawing sledges, the only method of travelling in that dreary country during winter. They travel with great expedition. Captain King relates, that, during his stay there, a courier with dispatches, drawn by them, performed a journey of two hundred and seventy miles in less than four days.

The sledges are usually drawn by five dogs; four of them yoked two and two abreast: the foremost acts as leader to the rest. The reins, being fastened to a collar round the leading dog's neck, are of little use in directing the pack; the driver depending chiefly upon their obedience to his voice, with which he animates them to proceed.---Great care and attention are consequently used in training up those for leaders, which are more valuable according to their steadiness and docility; the sum of forty roubles, or ten pounds, being no unusual price for one of them. The rider has a crooked stick, answering the purpose both of whip and reins; with which, by striking on the snow, he regulates the speed of the dogs, or stops them at his pleasure. When they are inattentive to their duty, he often chastises them by throwing it at them. He discovers great dexterity in regaining his stick, which is the greatest difficulty attending his situation; for, if he should happen to lose it, the dogs immediately discover the circumstance, and seldom fail to set off at full speed, and continue to run till their strength is exhausted, or till the carriage is overturned, and dashed to pieces, or hurried down a precipice.

II. The HOUND, or *Canis Sagar* of Linnæus. This variety is a dog with long, smooth, and pendulous, ears. It is the *canis gallicus* of Linnæus, the same with the blood-hound of the British Zoology, and is the head of the other kinds with smooth and hanging ears. The subordinate variations are, 1. The beagle, harrier, or fox-hound. 2. The Dalmatian dog, or harrier of Bengal, a beautiful spotted kind, vulgarly called the Danish dog. 3. The turnspit with bent or strait legs; and, 4. The water-dog, great and small, the *canis aviarius aquaticus* of Ray, well known and exceedingly serviceable to the sportsman. 5. The Spanish pointer, from whom is derived the English species, crossed with the fox-hound, harrier, &c. The hounds,

hounds, the harriers, the spaniels, the terriers, and the water dogs, are the true hunting dogs.

No country in Europe can boast of harriers and fox-hounds equal in swiftness, strength, or agility, to those of Britain; where the utmost attention is paid to their breeding, education, and maintenance. The climate also seems congenial to their nature; for it has been said, that, when hounds of the English breed have been sent into France or other countries, they quickly degenerate, and in some degree lose those qualities for which they were originally so admirable. In England, the attachment to the fox-chase is in some measure considered as a trait in the national character; consequently it is not to be wondered at, that our dogs and horses should excel all others in that noble diversion. This propensity appears to be encreasing in the nation; as no price seems now too great for hounds of known excellence. The fox-hounds generally preferred are tall, light made, but strong, and possessed of great courage, speed, and activity. Dogs of the same kind are also trained to the hunting of the stag and other deer. The following anecdote affords a proof of their wonderful spirit in supporting a continuity of exertion:

“ Some years since, a very large stag was turned out of Whinfield-park, in the county of Westmoreland; and pursued by the hounds, till, by fatigue or accident, the whole pack was thrown out, except two staunch and favourite dogs, which continued to chase the greatest part of the day. The stag returned to the park from whence he set out; and, as his last effort, leapt the wall, and expired as soon as he had accomplished it. One of the hounds pursued to the wall; but being unable to get over it, laid down, and almost immediately expired: the other was also found at a small distance. The length of the chase is uncertain: but, as they were seen at Red-kirk, near Annan, in Scotland, distant, by the post-road, about forty-six miles, it is conjectured, that the circuitous and uneven course

course they might be supposed to take, would not be less than one hundred and twenty miles!"

The blood-hound was in great request with our ancestors; and, as it was remarkable for the fineness of its scent, it was frequently employed in recovering game that had escaped wounded from the hunter. It could follow, with great certainty, the footsteps of a man to a considerable distance: and in barbarous and uncivilized times, when the thief or murderer had fled, this useful creature would trace him through the thickest and most secret coverts; nor would it cease its pursuit till it had taken the felon. For this reason, there was a law in Scotland, that whoever denied entrance to one of these dogs, in pursuit of stolen goods, should be deemed an accessory. Blood-hounds were formerly used in certain districts lying between England and Scotland, which were much infested by robbers and murderers; and a tax was laid upon the inhabitants for keeping and maintaining a certain number of them. But, as the arm of justice is now extended over every part of the country, and there are no secret recesses where villainy may lie concealed, these services are no longer necessary. In Scotland it was distinguished by the name of the sleuth-hound. Some few of these dogs are still kept in the southern parts of the kingdom, and are used in pursuit of deer that have been previously wounded by a shot to draw blood, the scent of which enables them to pursue with most unerring steadiness,---They are sometimes employed in discovering deer-stealers, whom they infallibly trace by the blood that issues from the wounds of their victims.---They are also said to be kept in convents, situated in the lonely and mountainous countries of Switzerland, both as a guard to the sacred mansion, as well as to find out the bodies of men that have been unfortunately lost in crossing those wild and dreary tracts. The blood-hound is taller than the Old English hound, most beautifully formed, and superior to every

every other kind in activity, speed, and sagacity. They seldom bark, except in the chase; and are commonly of a reddish or brown colour. Somerville thus beautifully describes their mode of pursuing the nightly spoiler:

Soon the sagacious brute, his curling tail
 Flourish'd in air, low bending, plies around
 His busy nose, the steaming vapour snuffs
 Inquisitive, nor leaves one turf untry'd,
 Till, conscious of the recent stains, his heart
 Beats quick; his snuffing nose, his active tail,
 Attest his joy: then with deep-op'ning mouth,
 That makes the welkin tremble, he proclaims
 Th' audacious felon: foot by foot he marks
 His winding way, while all the list'ning crowd
 Applaud his reas'nings: o'er the wat'ry ford,
 Dry sandy heaths, and stony barren hills;
 O'er beaten paths, with men and beasts distain'd,
 Unerring he pursues, till at the cot
 Arriv'd, and seizing by his guilty throat
 The caitiff vile, redeems the captive prey:
 So exquisitely delicate his sense!

III. The SPANIEL, or *Canis Avicularius* of Linnaeus. Dogs of this variety vary in size, from the water spaniel and setting dog, to the springing spaniels, and some of the little lap-dogs, such as, 1. King Charles's, so named from Charles II. who was very fond of this kind, and was always attended by several of them whenever he went out. This is the gremlin of Buffon; it is black, and has its palate also black. 2. The pyrame. There is no English name for this kind: it is le pryame of Buffon; generally black, marked on the legs with red, and above each eye, with a spot of the same colour, and is a very playful creature. 3. Shock, the Maltese dog, with very soft, silky, long, hair: and, 4. The lion dog, with shorter hair

hair towards its loins, its belly, and tail, except the point of the tail, which is tufted.

IV. The GREYHOUND, or *Canis Graius* of Linnæus. This variety consists of dogs with short pendent ears; long legs and bodies. Of this kind are, 1. The Irish greyhound, a variety once very common in Ireland, and used in the chase of the wolf, but now very scarce. This is a dog of great size and strength; it is le matin of Buffon, and the canis graius Hibernicus of Ray. 2. The common greyhound; this is the levrier of Buffon, and the canis graius of Linnæus, a creature so well known, that any description of it would be unnecessary. Every one that has seen it, must admire the elegance and beauty of its form. Its German name of windspiel, indicates its swiftness; its French name of harehound, its use; and its English name, though corrupted, announces its Grecian original. There are two varieties of it. 1. The Italian greyhound, small, and smooth; and, 2. The Oriental, tall, slender, with very pendulous ears, and very long hair, the tail hanging down a great length. 3. The Danish dog, which is the largest of dogs, and is of a stronger make than the Irish greyhound. Buffon mentions his having seen only one of these; that when sitting, was about five feet high. From this race sprung the Newfoundland dog, which is varied only by the peculiar nature of the climate: and such, in all probability, were the dogs of Epirus mentioned by Aristotle; and those of Albania, the modern Shirwan, or East Georgia, so beautifully described by Pliny, as presented to Alexander the Great. While Alexander was on his march to India, the King of Albania sent him a dog of unusual bigness, as a present. Delighted with his appearance, he ordered bears, then wild boars, and last of all, deer, to be turned out loose before him. The dog, through contempt of such game, lay still without seeming to take the least notice of them. That high spirited prince, provoked at such indolence in a creature

creature of such size, ordered him to be put to death. Fame carried the news to the king. Therefore, sending him a second, he added this message, that he should not wish to try him on small beasts, but on a lion or an elephant; that he had only two: that, if this were slain, he should have none left. Alexander did not delay, and soon saw a lion quite overpowered. Then he ordered an elephant to be brought, and was never more entertained with any fight. Bristling up all his hair over his whole body, he opened upon him with a bark like a peal of thunder. Instantly he begins the attack, rising against the elephant, now on this side, now on that, with artful combat, attacking or retreating, as he saw it necessary, till, by continually wheeling round, he at last brought him to the ground, the earth being greatly shaken all around by his weighty fall.

To this head may also be referred the vast dogs of Thibet, said by Marco Polo to be as big as asses, and used in that country to take wild beasts, and especially the wild oxen called beyamini. Another kind belonging to this variety is, the mastiff; a dog very strong and thick made, with a large head and great lips hanging down on each side; he has a fine and noble countenance, and grows to a great size. This is the *canis moluffus* of Linnæus. He seems every way formed for the important trust of guarding and securing the valuable property often committed to his care. Houses, gardens, yards, &c. are safe from depredations whilst in his custody. Confined during the day, as soon as the gates are locked he is left to range at full liberty: he then goes round the premises, examines every part of them, and by loud barkings gives notice that he is ready to defend his charge. Dr. Caius, in his ingenious treatise on British dogs, tells us, that three of these animals were reckoned a match for a bear, and four for a lion. We have a curious account recorded in Stow's Annals, of an engagement between three

mastiffs and a lion, in the presence of James I. "One of the dogs, being put into the den, was soon disabled by the lion; which took it by the head and neck, and dragged it about: another dog was then let loose, and served in the same manner: but the third, being put in, immediately seized the lion by the lip, and held him for a considerable time; till, being severely torn by his claws, the dog was obliged to quit his hold; and the lion, greatly exhausted in the conflict, refused to renew the engagement; but, taking a sudden leap over the dogs, fled into the interior part of his den. Two of the dogs soon died of their wounds: the last survived, and was taken great care of by the king's son; who said, "he that had fought with the king of beasts should never after fight with any inferior creature." The mastiffs of Great-Britain were noted in the time of the Roman emperors; who appointed an officer, whose sole business it was to breed, and send them from hence, such as would prove equal to the combats of the amphitheatre.

V. The fifth variety consists of dogs, with short pendent ears, short compact bodies, short noses, and generally long legs. At the head of this class stands, 1. The bull-dog, a breed peculiar to England, and less frequently to be met with even there, since the barbarous custom of bull-baiting has declined; he is cruel and fierce, often biting before he barks, and is easily distinguished by his short nose, and by the under jaw being longer than the upper. Buffon calls him *le dogue*. 2. The pug dog is a small species, an innocent resemblance of the last, and is marked by Buffon with the name of *le doguin*. 3. The bastard pug, nearly allied to the former, he calls *le roquet*. These dogs have very short muzzles, little scent, and often send forth a disagreeable smell. 4. The naked dog, by Buffon called the Turkish dog, is a degenerate species, with a naked body, having lost its hair by the heat of the climate.

The bull-dog is the fiercest of all the dog kind, and is probably the most courageous creature in the world. It is low in stature, but very strong and muscular. Its nose is short; and the under jaw projects beyond the upper, which gives it a fierce and unpleasing aspect.---Its courage in attacking the bull is well known: its fury in seizing, and its invincible obstinacy in maintaining, its hold, are truly astonishing. It always aims at the front; and generally fastens upon the lip, the tongue, the eye, or some part of the face; where it hangs, in spite of every effort of the bull to disengage himself. The uncommon ardour of these dogs in fighting will be best illustrated by the following fact, related by an eye-witness; which at the same time corroborates, in some degree, the wonderful account of the dogs of Epirus given by Elian, and quoted by Dr. Goldsmith in his history of the dog:--- Some years ago, at a bull-baiting in the north of England, when that barbarous custom was very common, a young man, confident of the courage of his dog, laid some trifling wagers, that he would, at separate times, cut off all the four feet of his dog; and that, after every amputation, it would attack the bull. The cruel experiment was tried; and the dog continued to seize the bull as eagerly as if he had been perfectly whole. Of late years, this inhuman custom of baiting the bull has been almost entirely laid aside; and, consequently, there are now few of this kind of dogs to be seen. As the bull-dog always makes his attack without barking, it is very dangerous to approach him alone, without the greatest precaution.

DOGS of the SOUTH SEA ISLANDS, &c. These were brought originally from New Guinea, which the natives of the South Sea islands call the mother of lands, and are now found in the Society Islands, New Zealand, and the Low Islands: there are also a few in New Holland. Of these there are two varieties; the first resembling the sharp-nosed prick-eared shepherd's

cur. Those of New Zealand are of the largest sort. In the Society Islands they are the common food, and are fattened with vegetables, which the natives cram down their throats when they will voluntarily eat no more. They are killed by strangling, and the extravasated blood is preserved in cocoa-nut shells, and baked for the table. They grow very fat, and are allowed, even by the Europeans who have got over their prejudices, to be very sweet and palatable. But the taste for the flesh of these animals was not confined to the islanders of the Pacific Ocean. The ancients reckoned a young and fat dog excellent food, especially if it had been castrated. Hippocrates placed it on a footing with mutton and pork; and in another place says, that the flesh of a grown dog is wholesome and strengthening. The Romans admired sucking puppies; they sacrificed them to their divinities, and thought them a supper in which the gods themselves delighted.

The second variety is, the barbet, whose hair being long and silky, is much valued by the New Zealanders for trimming their ornamental dress. This variety is not eaten. The islanders never use their dogs for any purposes but their fur; and take such care of them as not to suffer them ever to wet their feet. They are excessively stupid; they have a very bad nose for smelling, and seldom or never bark, only now and then they howl. The New Zealanders feed their dogs entirely on fish. The dog found at Botany-bay, or in New Holland, has short, erect, sharp-pointed, ears; a fox-like head; and the colour of the upper part of the body is pale brown, but grows lighter towards the belly; the hind part of the fore legs, and fore part of the hind legs, are white: the feet are all of the same colour; the tail very bushy; length about two feet and a half; of the tail not a third of that of the body; the height about two feet. Two of these have been brought alive to England; they are excessively fierce,
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and do not shew any marks of being brought to a state of domesticity. It laps like other dogs; but neither barks nor growls when provoked; but erects its hairs like bristles, and seems quite furious. It is eager after its prey; and is fond of rabbits and fowls, but will not touch dressed meat; it is very agile. It once seized a French dog by the loins, and would have soon destroyed it had not help been at hand. It leaped with great ease on the back of an ass, and would have worried it to death had not the ass been relieved, for it could not disengage itself from the assailant. It was known to run down deer and sheep.

The Marquesas, Friendly Isles, New Hebrides, New Caledonia, and Eastern Isles, have not yet received any of these animals.

With regard to the propagation of dogs, the females admit the males before they are twelve months old. They remain in season ten, twelve, or even fifteen, days, during which time they will admit a variety of males. They come in season generally twice in the year, and more frequently in the cold than in the hot months. The male discovers the condition of the female by the smell; but she seldom admits him the first six or seven days. One coition will make her conceive a great number of young; but, when not restrained, she will admit several dogs every day; she seems to have no choice or predilection, except in favour of large dogs: from this circumstance it sometimes happens, that a small female, who has admitted a mastiff, perishes in bringing forth her young. During the time of copulation, these animals cannot separate themselves, but remain united so long as the erection subsists. This is owing to the structure of the parts. The dog has not only a bone in his penis, but in the middle of the corpus cavernosum there is a large hollow, which is blown up in the time of erection to a considerable bulk. The female, on the other hand, has a larger clitoris than perhaps any other animal: besides,
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a large firm protuberance rises in the time of copulation, and remains perhaps longer than that of the male, and prevents him from retiring till it subsides: accordingly, after the act of penetrating is effected, the male turns about in order to rest himself on his legs, and remains in that position till the parts turn flaccid. The female goes with young about nine weeks. They generally bring forth from six to twelve puppies. Those of a small size bring forth five, four, and sometimes but two. They continue to copulate and bring forth during life, which lasts generally about fourteen or fifteen years. The whelps are commonly blind, and cannot open their eyes till the tenth or twelfth day: the males are like the dog, the females like the bitch.--- The dog, the wolf, and the fox, are certainly derived from one original parent; and all dogs whatsoever, from the terrible boar-dog to Pompey the little, were all one in the first creation. All the variety we behold in them, is either produced by change of climate, or the accidental effect of soil, food, or situation; or from the issue of human care, experiment, or caprice. Every huntsman knows what a vast alteration may be made in dogs, by industriously improving the breed for twenty or thirty years. Nature wisely tends to render every kind of creature fit for the country where it is to inhabit, or be employed, which is the reason why hounds, and all other animals, degenerate, by being removed into contrary climates. This is manifest from the following experiment; if a couple of right southern hounds be removed to the north, and suffered to propagate without art or mixture, they will, by sensible degrees, decline into lighter bodies, and shriller accents; and in the same way are all dogs varied, by being carried from one country to another. But the utmost efforts of human industry and contrivance, whether assisted by change of climate, or mixture of breed, could never add one new species to the works of the creation. Nature is still uniform as to the main,

nor suffers the Almighty Creator to be imitated by short-sighted mortals. In spite of art, the most curious projector cannot produce one amphigeneous animal that will encrease and multiply. There appears a distinct specific difference in all living creatures; the horse, the dog, the bear, the goat, however diversified by art, by copulation, or by climate, either in size, shape, or figure, will ever discover something that approximates to the character of their species. Above all, the peculiar instinct and appetite for generation will prompt them to own and indicate their relation. This is one of the most undeniable arguments that wolves, foxes, and dogs, are originally the same species, because in coition they are not only all held together in the same manner, but we have frequent instances of litters of puppies both from the dog and fox, and from the dog and wolf. Mr. Brooke, animal-merchant in Holborn, turned a wolf to a Pomeranian bitch in heat; the congress was immediate, and as usual between dog and bitch: she produced ten puppies. Mr. Pennant saw one of them at Gordon-castle, that had very much the resemblance of a wolf, and also much of its nature: being slipped at a weak deer, it instantly caught at the animal's throat and killed it. "I could not learn (says Mr. Pennant) whether this mongrel continued its species; but another of the same kind did, and stocked the neighbourhood of Fochabers, in the county of Moray (where it was kept), with a multitude of curs of a most wolfish aspect." There was lately living a mongrel offspring of this kind. It greatly resembled its wolf parent. It was first the property of Sir Wolstein Dixey; afterwards of Sir Willoughby Aston. During day it was very tame; but at night sometimes relapsed into ferocity. It never barked, but rather howled; when it came into the fields where sheep were, it would feign lameness, but if no one was present would instantly attack them. It had been seen in copulation with a bitch, which afterwards pupped:

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the breed was imagined to resemble in many respects the supposed fire. It died between the age of five and six.---The woodman of the manor of Mongewell, in Oxfordshire, had lately a bitch, which constantly followed him, the offspring of a tame dog-fox by a shepherd's cur; and she again has had puppies by a dog.

Many and wonderful are the instances of sagacity, fidelity, and attention, and even of foresight, which these faithful animals have evinced towards their masters. Some such will doubtless occur to the mind of every reader, as falling under his own observation; I shall therefore only recite two or three such instances, of unquestionable authenticity.---In the year 1791, a person went to a house in Deptford, to take lodgings, under pretence that he was just arrived from the West-Indies; and, after having agreed on terms, said he should send in his trunk that night, and come himself the next day. About nine o'clock in the evening, the trunk was brought by two porters, and was carried into his bed-room. Just as the family were going to bed, their little house-dog, deserting his usual station in the shop, placed himself close to the chamber door where the chest was deposited, and kept up an incessant barking. The moment the chamber door was opened, the dog flew to the chest, against which it barked and scratched with redoubled vehemence and fury. At first they tried to get the dog out of the room; but in vain. Calling in some neighbours, and making them eye-witnesses of the circumstance, they began to move the trunk about, when they quickly discovered that it contained something alive. Suspicion falling very strong, they were induced to open it, when, to their utter astonishment, who should present himself but their new lodger, who had been thus conveyed in, to rob the house!

In the summer of the year 1792, a gentleman went down to Portsmouth for the benefit of sea-bathing. He went to Mr. Bradley's machines, to be conducted into
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the water. Being unacquainted with the depth of the water, and no swimmer, he found himself, the instant he quitted the machine, nearly out of his depth. Fright increased the peril of his situation, and, unnoticed by the person who attends the machines, he had sunk for the last time in the agonies of drowning. A large Newfoundland dog, standing by accident on the shore, and seeing the distress of this stranger, plunged in after him; and, seizing him by the hair of the head, conducted him safely on shore, though it was some time before he recovered. The gentleman afterwards purchased the dog at a high price, but values him equally with the sum total of his fortune.

At the seat of the late Earl of Litchfield, three miles from Blenheim, there is a portrait in the dining-room of Sir Henry Lee, by Johnston, with that of a mastiff dog which saved his life. It seems a servant had formed the design of assassinating his master and robbing the house; but the night he had fixed on, the dog, which had never been much noticed by Sir Henry, for the first time followed him up stairs, got under his bed, and could not be got from thence by either master or man; in the dead of night, the same servant entered the room to execute his horrid design, but was instantly seized by the dog, and, being secured, confessed his intentions. There are ten quaint lines in one corner of the picture, which conclude thus:

But in my dog, whereof I made no store,
I find more love than those I trusted more.

In December, 1784, a dog was left by a smuggling vessel near Boomer, on the coast of Northumberland. Finding himself deserted, he began to worry sheep; and did so much damage, that he became the terror of the country within a circuit of above twenty miles. We are assured, that, when he caught a sheep, he bit a hole in its right side, and, after eating the tallow about the kidneys, left it: several of them, thus lacerated,

were found alive by the shepherds; and, being taken proper care of, some of them recovered, and afterwards had lambs. From his delicacy in this respect, the destruction he made may in some measure be conceived; as it may be supposed, that the fat of one sheep in a day would hardly satisfy his hunger.---The farmers were so much alarmed by his depredations, that various means were used for his destruction. They frequently pursued him with hounds, greyhounds, &c. but, when the dogs came up with him, he laid down on his back, as if supplicating for mercy; and in that position they never hurt him: he therefore laid quietly, taking his rest till the hunters approached, when he made off, without being followed by the hounds, till they were again excited to the pursuit, which always terminated unsuccessfully. And it is worthy of notice, that he was one day pursued from Howick to upwards of thirty miles distance; but returned thither, and killed sheep the same evening.---His constant residence, during the day, was upon a rock, on the Heugh-hill, near Howick, where he had a view of four roads that approached it; and, in March, 1785, after many fruitless attempts, he was at last shot there.

During a severe storm, in the winter of 1789, a ship, belonging to Newcastle, was lost near Yarmouth; and a Newfoundland dog alone escaped to shore, bringing in his mouth the captain's pocket-book. He landed amidst a number of people, several of whom in vain endeavoured to take it from him. The sagacious animal, as if sensible of the importance of the charge, which in all probability was delivered him by his perishing master, at length leapt fawningly against the breast of a man, who had attracted his notice among the crowd, and delivered the book to him. The dog immediately returned to the place where he had landed, and watched with great attention for every thing that came from the wrecked vessel, seizing them, and endeavouring to bring them to land.

At another time, a gentleman walking by the side of the river Tyne, and observing, on the opposite side, a child fall into the water, gave notice to his dog, which immediately jumped in, swam over, and, catching hold of the child with its mouth, brought it safe to land.

The sagacity and attachment of this animal in directing the steps of the blind man are not the least worthy of notice. There are few who have not seen an unfortunate object of this description, led by his dog, through the various passages of a populous town, to the accustomed place where he sits to supplicate the contributions of passengers. It may sometimes be seen to stop at particular houses, to receive the morsel from the hand of charity, or pick from the ground the money thrown out to relieve its miserable owner. When the day is passed, it conducts him home again; and gratefully receives, as the reward of its services, the scanty pittance which poverty and wretchedness can bestow.

Dogs will sometimes imitate the actions of their masters, will open a door that is fastened with a latch, or pull a bell, where they are desirous of gaining admittance.---Faber mentions one, belonging to a nobleman of the Medici family, which always attended at its master's table, took from him his plates, and brought him others; and, if he wanted wine, would carry it to him, in a glass placed upon a silver plate, which it held in its mouth, without spilling the smallest drop. The same dog would also hold the stirrups in its teeth, whilst its master was mounting his horse.

That dogs are capable of attachment to each other, is evident, from the well-known story of the dog at St. Alban's; which, being left by his master at an inn there till he returned from London, and being ill-treated by a large dog belonging to the house, stole privately off. It soon returned with a friend, that was much larger and stronger than itself; and both fell upon the

aggressor, and punished him severely for his cruelty to a stranger.

A similar fact is related in Stolberg's travels through Switzerland, of a dog which belonged to the Franciscan convent at Acradina. The region about was infested by a wolf, whom his powers alone were not competent to subdue. For several days successively, he buried his allotment of meat and bones; then collected several other dogs, feasted them from this hoard, conducted them to the chace, and by their assistance tore in pieces the wolf.

LUPUS, THE WOLF.

THIS animal, though very different in its dispositions, and in many other particulars, yet is the *canis lupus* of Linnæus; and by Pennant is ranked as the second species of the dog. Both externally and internally, indeed, there is a resemblance; but there are also striking and essential marks of distinction. Pennant describes the wolf as having a long head; a pointed nose; ears erect and sharp; a tail bushy and bending down; its lips black; pretty long hair; long legs, and large teeth; his head and neck cinereous; his body generally a pale brown, tinged with yellow: he is sometimes found white, and in Canada sometimes black: he is taller and stronger made than a large greyhound. Wolves inhabit the continents of Europe, Asia, and America, even in as high latitudes as the arctic circle; but they are not found in any part of Africa, notwithstanding what has been asserted by Mr. Adanson, Dr. Sparrman, and others. It is clear that what they mistook for the wolf, is the spotted hyæna.

The wolves of North America are the smallest that are known. When tamed, they are, as before observed, the dogs of the natives. The wolves of Senegal are the largest and fiercest: they hunt their prey in company with the lion. Some are of opinion that
there



I Chapman, Sc.

1. The Wolf. 2. The Fox. 3. The Jackall. 4. The Wild Dog of Ceylon.

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there are wolves in New Holland; but we leave it to time, and the settlers at Botany-bay, or others who may explore that vast island, to ascertain the fact. As only five other quadrupeds have yet been discovered there, the dog, the kangaroo, an opossum, a species of polecat, and a straw-coloured beast like a hare, every carnivorous animal not qualified to catch the feathered tribes must on that vast island be as scarce and as miserable as the native inhabitants of the human species themselves.

The wolf is one of those animals whose carnivorous appetite is excessively strong. Though he has received from nature the means of gratifying this taste; though she has bestowed on him arms, craftiness, strength, agility, and every thing necessary for discovering, seizing, conquering, and devouring, his prey; yet he often dies of hunger; because men have declared war against him, put a price on his head, and forced him to flee to the forests, where he finds only a few species of wild animals, who escape from him by their swiftness, and whom he cannot surprise but by chance, or by a patient lying in wait at the places they are wont to haunt: he is naturally clownish and dastardly; but want makes him ingenious, and necessity gives him courage: when pressed with famine, he braves danger; he issues forth in the night, traverses the country, roams about the cottages, kills all the animals that have been left without, digs the earth under the doors, enters with a dreadful ferocity, and puts every living creature to death, before he chooses to depart, and carry off his prey. When his hunger is extreme, he loses the idea of fear; he attacks women and children, and even sometimes darts upon men, till, becoming perfectly furious by excessive exertions, he oftens falls a sacrifice to pure rage and distraction. He is a solitary animal. When several wolves appear together, it is an association, not of peace, but of war. It is attended with tumult and dreadful growlings, and indicates an intended

tended attack upon some of the larger animals, as a stag, an ox, or a formidable mastiff: horses generally defend themselves against their attacks; but all weaker animals fall a prey to them. This depredatory expedition is no sooner over, than they return in silence each to his solitude.

Though wolves prefer living to dead animals, yet, when the former fail them, and the latter fall in their way, they devour the most putrid carcases. They are fond of human flesh: could they always procure this, perhaps they would eat no other: they have been known to follow armies, to come to the field of battle where the bodies of the slain are carelessly interred, to tear them up, and to devour them with insatiable avidity: and, when once accustomed to human flesh, these wolves ever after attack men, prefer the shepherd to the flock, devour women, and carry off children. The French peasants suppose such wolves possessed with an evil spirit: such was the were-wulf of the old Saxons.

Wolves are most suspicious animals; they sally forth with great caution, stop on the borders of the forest, smell on all sides, and catch the emanations of animals living or dead brought from a distance by the wind: they have an exquisite scent: their sense of smelling extends farther than their eye: they are said to smell the odour of carrion at the distance of more than a league: they hunt by the nose; and, though voracious, are capable of long abstinence: to allay their hunger, they have been known to fill their bellies with clay or mud. They are such solitary creatures, that there is little intercourse even between the males and the females: they feel the mutual attractions of love but once a year, and never remain long together: the females come in season in winter, the oldest first, and the younger later, from December to February, or the beginning of March. Many males follow the same female; then they growl, chase, fight, and tear one another. The female commonly lies a long time,

2

fatigues

fatigues her admirers, and retires while they sleep with the most alert or most favourite male, though he frequently falls a sacrifice to the resentment of the rest. The season of this savage brutal love continues only twelve or fifteen days. With regard to the period of gestation, there is some little uncertainty: Linnæus and Pennant say, they go with young seventy or seventy-three days; Buffon says, three months and a half, or a hundred days; Mr. Smellie says, seventy-three days or more; but Buffon tells us that young whelps are found from the end of April to the month of July.

When the females are about to bring forth, they seek out a concealed place in the inmost recesses of the forest: after fixing on the spot, they make it smooth for a considerable space: they then bring great quantities of moss, and prepare a commodious bed for their young ones, which are, in number, from three to nine at a litter: like dogs, they are brought forth blind, and the mother suckles them during several weeks, and afterwards procures them food, and prepares it for them with great attention. Though naturally more timid than the male, yet, when her young are attacked, she defends them with intrepidity; she loses all sense of danger, and becomes perfectly furious: she never leaves them till they are so strong as no longer to need either her assistance or protection, which is the case when they are about sixteen months old: they acquire their full growth at the end of two or three years, and live fifteen or twenty: when old, they turn whitish, and their teeth appear to be much worn: when full, or fatigued, they sleep, but more during the day than the night; it is always a kind of light slumber: they drink often; if supplied with water, they can pass four or five days without meat.

The wolf has great strength in the muscles of his neck and jaws: he carries a sheep in his mouth, and at the same time outruns the shepherds; so that he can be
stopped,

stopped, or deprived of his prey, only by dogs: his bite is terrible; hunters therefore clothe their dogs, and guard their necks with spiked collars. The hunters distinguish wolves into young, old, and very old: the older the wolf, the larger his feet: the she-wolf's feet are longer and more slender; her heel also is smaller, and her toes thinner. A good blood-hound is necessary in hunting the wolf; but, when he falls into the scent, he needs to be coaxed and encouraged, for all dogs have an aversion to the wolf, and proceed with coldness in the chace: when the wolf is raised, the greyhounds are let loose in pairs: he may also be hunted with beagles or hounds; but as he darts always strait forward, and runs for a whole day without stopping, the chace is irksome, except the beagles be supported by greyhounds, to teaze him, and give the hounds time to come up: then the whole together soon reduce him to the last extremity; and the hunters complete the business by stabbing him with a dagger: the dogs have such a reluctance to his flesh, that it must be prepared and seasoned before they will eat it. Though men, attended with mastiffs, beat the bushes, lay snares and baits, dig pitfalls, and scatter poisoned pieces of meat; yet the number of these destructive animals never decreases in woody countries. Whole provinces are sometimes obliged to arm in order to destroy them. When shot, they utter a cry; but they die in silence under the blows of a bludgeon. The Cossacks are said to take wolves by the help of a large sort of hawk called Berkhut, which is trained for the diversion, and will fasten on them and tear out their eyes.

Wolves are now so rare in the populated parts of America, that the inhabitants leave their sheep the whole night unguarded: yet the governments of Pennsylvania and New Jersey some years ago allowed a reward of twenty shillings, and the last even thirty shillings, for the killing of every wolf. Tradition informed them what a scourge those animals had been to the colonies

lonies; so they wisely determined to prevent the like evil. In their infant state, wolves came down in multitudes from the mountains, often attracted by the smell of the corpses of hundreds of Indians who died of the small-pox, brought among them by the Europeans: but the animals did not confine their insults to the dead, but even devoured in their huts the sick and dying savages.

Britain, a few centuries ago, was much infested by them. It was, as appears by Hollingshed, very noxious to the flocks in Scotland in 1577; nor was it entirely extirpated till about 1680, when the last wolf fell by the hand of the famous Sir Ewen Cameron. It has been a received opinion, that the other parts of these kingdoms were in early times delivered from this pest by the care of King Edgar. In England he attempted to effect it, by commuting the punishments of certain crimes into the acceptance of a certain number of wolves tongues from each criminal; and in Wales by converting the tax of gold and silver into an annual tax of three hundred wolves heads. But, notwithstanding these endeavours, and the assertions of some authors, his scheme proved abortive. We find, that, some centuries after the reign of that Saxon monarch, these animals were increased to such a degree as to become again the object of royal attention: accordingly Edward I. issued out his royal mandate to Peter Corbet to superintend and assist in the destruction of them in the several counties of Gloucester, Worcester, Hereford, Salop, and Stafford; and, in the the adjacent county of Derby, certain persons at Wormhill held their lands by the duty of hunting and taking the wolves that infested the country, whence they were styled *wolve-bunt*. To look back into the Saxon times, we find, that in Athelstan's reign, wolves abounded in Yorkshire; that a retreat was built at Flixton in that county, "to defend passengers from the wolves, that they should not be devoured by them:"

and such ravages did these animals make during winter, particularly in January, when the cold was severest, that the Saxons distinguished that month by the name of the *wolf-month*. They also called an outlaw *wolf's-bead*, as being out of the protection of the law, proscribed, and as liable to be killed as that destructive beast. Ireland was infested by wolves for many centuries after their extinction in England; for there are accounts of some being found there as late as the year 1710, the last presentment for killing of wolves being made in the county of Cork about that time.

In many parts of Sweden the number of wolves has been considerably diminished by placing poisoned carcasses in their way: but in other places they are found in great multitudes. Hunger sometimes compels them to eat lichens: these vegetables were found in the body of one killed by a soldier; but it was so weak, that it could scarcely move. It probably had fed on the lichen *vulpinus*, which is a known poison to these animals. Madness, in certain years, is apt to seize the wolf. The consequences are often very melancholy. Mad wolves will bite hogs and dogs, and the last again the human species. In a single parish fourteen persons were victims to this dreadful malady. The symptoms are the same with those attendant on the bite of a mad dog. Fury sparkles in their eyes; a glutinous saliva distils from their mouths; they carry their tails low, and bite indifferently men and beasts. It is remarkable that this disease happens in the depth of winter, so never can be attributed to the rage of the dog-days. Often, towards spring, wolves get upon the ice of the sea, to prey on the young seals, which they catch asleep: but this repast often proves fatal to them; for the ice, detached from the shore, carries them to a great distance from land, before they are sensible of it. In some years a large district is by this means delivered from these pernicious beasts; which are heard howling in a most dreadful manner, far in the sea. When wolves
come

come to make their attack on cattle, they never fail attempting to frighten away the men by their cries; but the sound of the horn makes them fly like lightning.

Buffon mentions a variety of the wolf common both to France and Germany, which is less destructive than the common wolf. These, he says, have thicker hair, and are more yellow coloured: they never trouble the flocks, nor the habitations of men, but live entirely by hunting. But the wolf, even in his best state, and most favourable appearance, is far inferior to the dog. The dog, even when wild, is not so fierce; he is easily tamed, and attaches himself with fidelity to his master. The young wolf may also be tamed, but he feels no attachments; nature in him is too powerful for education. With age he resumes his ferocious character, and returns, with the first opportunity, to his savage state. Dogs, even those of the most clownish race, love to associate with other animals; by instinct alone, they know how to conduct and guard the flocks. The wolf, on the contrary, is an enemy to all society, and keeps no company even with those of his own species.

The dispositions of the dog and wolf, are repugnant by nature, and inimical by instinct. A young dog trembles at the first glance of a wolf. The odour of the wolf, though new and unknown, excites such an aversion and horror in the dog, that he flies, and comes quivering to the feet of his master. A mastiff, who knows his own strength, though terrified at the appearance of a wolf, attacks him with courage, endeavours to put him to flight, and exerts every effort to get rid of the object of his detestation. They never meet, but either flight or death is the consequence: when the wolf is strongest, he mangles and devours his prey: the dog, with more generosity, contents himself with victory; he finds no favourable odour in the body of his dead enemy, but abandons him to be food for the ravens, and even for other wolves; for wolves eat the carcases of each other, and, when one is much wound-

ed, the others follow the blood, and assemble in troops to dispatch him.

Their time of gestation proves a difference of constitution between the wolf and dog; the former brings forth only once a year, the latter twice or thrice. Besides, the appearance of the head and form of the bones are by no means the same: the cavity of the eye in the wolf is placed obliquely; the orbits are inclined: his eyes sparkle and shine in the dark: his body is stronger, but not so flexible; his limbs are firmer, his jaws and teeth larger than those of the dog; and his hair coarser and thicker.

When an animal can defend itself, the wolf is cautious and circumspect; he never fights but from necessity, never from motives of courage: the dog is gentle and courageous; the wolf, though ferocious, is timid: when he falls into a snare, he is so overcome with terror, that he may either be killed or taken alive without resistance: he allows himself to be chained, muzzled, and led where you please, without exhibiting the least symptom of resentment or discontent. But to conclude the character of this robber of the fold; there is nothing valuable in the wolf but his skin, which makes a warm and durable fur: his flesh is so bad, that it is rejected with abhorrence by all other quadrupeds; as no animal but a wolf will voluntarily eat a wolf: the smell of his breath is exceedingly offensive: as he is gross in his manner of feeding, he vomits frequently what he had formerly greedily swallowed, and is most consummately disagreeable: his aspect is base and savage, his voice dreadful, his odour insupportable, his dispositions perverse, his manners ferocious: he is odious and destructive when living; and when dead, except his skin, is perfectly useless. We should almost be sorry that the mode of classification obliges us to bring him into such good company, in ranging him under the genus of the dog; were

were it not that we could wish the mastiff and him to meet still more frequently than they do.

In the immense forests of Germany, where these animals mostly abound, the following methods are taken to destroy them: In some very sequestered part of the forest, they hang up a large piece of carrion to the branch of a tree, having previously made a train of some miles long, leaving small pieces of putrid flesh here and there to allure the wolves to the spot: they then wait till it is dark, and approach the place with great circumspection; where they sometimes find two or three wolves assembled, leaping up, and straining themselves to catch the bait, which is placed just within their reach; and, while the animals are busily employed in this way, the hunters, being provided with fire-arms, seldom fail to dispatch them. In a convenient place, at the foot of a declivity, they make a small inclosure of strong pales, so high, that the wolf having once entered, cannot return again. An opening is left at the top of the bank; and a sheep that has been long dead is the bait; to which he is allured by long trains, made from different places where he is known to haunt. As soon as he arrives at the spot, he examines every part of the inclosure; and, finding no other way to come at the booty, he precipitates himself to the bottom; and, having made a plentiful meal, endeavours in vain to reascend. His disappointment at not being able to get back is productive of the most dreadful howlings, which alarm his enemies; and they either take him alive, shoot him, or dispatch him with bludgeons. It is remarkable, that, when this animal finds there is no possibility of escaping, his courage entirely forsakes him; and, he is for some time so stupified with fear, that he may be killed without offering to resist, or taken alive without much danger. Wolves are sometimes taken in strong nets, into which they are driven by the hunters, who surround a large tract of land, with drums, horns, and other instruments, accompanied

accompanied with loud cries from a large company assembled upon the occasion, drive the animals towards the entrance of the nets; where they are entangled, and killed with clubs and hatchets. Great care is however taken to secure them at first; for, if they recover from their consternation, they easily escape by tearing the net to pieces.

The MEXICAN WOLF has a very large head, ash-coloured, striped transversely, with bending dusky lines; great jaws, vast teeth; with very strong bristles on the upper lips, reflected backwards, not unlike the softer spines of a porcupine: its colour is grey and white: its ears are large, erect, and ash-coloured; the space between them is marked with broad tawny spots: its neck is fat and thick, covered with a loose skin, marked with a long tawny stroke; on the breast is another of the same kind: the body is ash-coloured, spotted with black; and the sides are striped, from the back downwards, with the same colour; the belly is cinerous; the tail long, of the colour of the belly, tinged in the middle with tawny: the legs and feet are striped with black and ash-colour. This is the most beautiful of all wolves, and its skin should be esteemed for its variety of colours. Sometimes this variety is found white. It inhabits the hot parts of Mexico or New Spain; and agrees with the European wolf in its manners. It attacks cattle, and sometimes men. No wolves are found farther south on the new continent.

VULPES, THE FOX.

PENNANT describes him as a dog with a sharp nose, lively hazel eyes, and sharp erect ears: his body is of a tawny red, mixed with ash-colour: the fore part of his legs is black: his tail is long, strait, bushy, tipped with white: he is subject to much variety of colour. The following are the principal varieties of this species:

1. The

1. The fox with his tail tipped with black, the *canis alo-pex*, *vulpes campestris* of Linnæus. 2. The cross-fox, with a black mark passing transverseley from shoulder to shoulder, and another along the back to the tail; the *vulpes crucigera* of Gesner, and *le renard croisé* of Buffon. This variety inhabits the coldest regions of Europe, Asia, and North America, and furnishes a valuable fur, thicker and softer than the common sort. Great numbers of these skins are imported from Canada. 3. The black-fox, the most cunning of any: its skin too is the most valuable: in Russia, a lining of it is preferred to one of the finest fables: a single skin will sell for four hundred rubles. It inhabits the northern parts of Asia, and of North America; its fur is superior even to that of the cross-fox. 4. The brant-fox, described by Gesner and Linnæus, of a small size, and of a fiery redness. One that was the property of Mr. Brook, London, and which was sent him from Pennsylvania, was scarcely half the size of the common fox: its nose was black and much sharper; the space round its ears ferruginous; its forehead, back, shoulders, sides, and thighs, black, mixed with red, ash-colour, and black; the ash-colour predominated, which gave it a hoary look: the belly was yellowish; the tail black above and red beneath. The *karagan*, a small species found in the Kirghisian deserts, and in Great Tartary, is allied to the brant-fox. Its head is yellowish above, reddish above the eyes: behind the whiskers it has a black spot: its ears are black without and white within; the exterior edge and base red, and near the base of that edge, a white spot: the colour of its back and sides is like that of a wolf, and its hair is coarse in the same degree: between its shoulders, there is a dark spot, from which, along the back to the tail, extends a reddish or yellowish track: a deep grey or blackish space, mixed with white, covers the throat, and is continued over the breast and part of the belly, the rest of which is whitish. This is a small species described from

from the skins by Dr. Pallas. 5. The corsak-fox. This variety is of a small size, has upright ears, soft downy hair, a bushy tail as long as the body, a white throat, the irides of its eyes a yellowish green: its colour, in summer, is pale tawny; in winter, grey: its hair is coarser than that of the common fox. The base and tip of its tail are black; the rest of an ash-colour. It inhabits the deserts beyond the Yaik; and from the Don to the Amur. It lives in holes and burrows deep: it howls and barks, and is never found in woody places: it is caught by the Kirghis-Kaisacks, with falcons and greyhounds. Forty or fifty thousand of them are taken annually, and sold to the Russians at twenty-pence each. Great numbers of them are also sent into Turkey: their skins were formerly in those parts the medium of exchange instead of money.

The common fox inhabits all Europe; the cold and the temperate parts of Asia; Barbary also; but not the hotter parts of Africa. He abounds in North America; he is also found in South America. In all countries, they have the same cunning disposition, the same eagerness after prey, and commit the same ravages among game, birds, poultry, and the smaller quadrupeds.

The fox is esteemed to be the most sagacious and most crafty of all beasts of prey. The former quality he shews in his method of providing himself with an asylum, where he retires from pressing dangers, where he dwells, and where he brings up his young: and his craftiness is chiefly discovered by the schemes he falls upon in order to catch lambs, geese, hens, and all kinds of small birds. The fox fixes his abode on the border of a wood, in the neighbourhood of cottages: he listens to the crowing of the cock, and the cries of the poultry. He scents them at a distance; he chooses his time with judgment; he conceals his road as well as his design; he slips forward with caution, sometimes even trailing his body, and seldom makes a fruitless expedition. In this manner he has been seen, on a

moon-light night, enter a pasture where several hares were feeding, when lying down, and taking his tail in his mouth, has trailed along like a rolling stone, unsuspected by his prey, till he had got too near for them all to escape. If he can leap the wall, or get in underneath, he ravages the court-yard, puts all to death, and then retires softly with his prey, which he either hides under the herbage, or carries off to his kennel. He returns in a few minutes for another, which he carries off, or conceals in the same manner, but in a different place. In this way he proceeds till the progress of the sun, or some movements perceived in the house, advertise him that it is time to suspend his operations, and to retire to his den. He plays the same game with the catchers of thrushes, woodcocks, &c. He visits the nets and bird-lime very early in the morning, carries off successively the birds which are entangled, and lays them in different places, especially near the sides of highways, in the furrows, under herbage or brushwood, where they sometimes lie two or three days; but he knows perfectly where to find them when he is in need. He hunts the young hares in the plains, seizes old ones in their seats, never misses those which are wounded, digs out the rabbits in the warrens, discovers the nests of partridges and quails, seizes the mother on her eggs, and destroys a vast quantity of game. The fox is exceedingly voracious; besides flesh of all kinds, he eats, with equal avidity, eggs, milk, cheese, fruits, and particularly grapes. When the young hares and partridges fail him, he makes war against rats, field-mice, serpents, lizards, toads, &c. Of these he destroys vast numbers; and this is the only service he does to mankind. He is so fond of honey, that he attacks the wild bees, wasps, and hornets. They at first put him to flight by a thousand stings; but he retires only for the purpose of rolling himself on the ground, to crush them; and he returns so often to the charge, that he obliges them to abandon

don the hivè, which he soon uncovers, and devours both the honey and the wax. In a word, he eats fishes, lobsters, grafs-hoppers, &c.---Foxes produce but once a year; and the litter commonly consists of four or five, seldom six, and never less than three. When the female is full, she retires, and seldom goes out of her hole, where she prepares a bed for her young. When she perceives that her retreat is discovered, and that her young have been disturbed, she carries them off one by one, and goes in search of another habitation. The fox, as well as the congenerous wolf, will produce with the dog kind, as noticed before.---The fox sleeps sound, and may be easily approached without awakening: he sleeps in a round form, like the dog; but when he only reposes himself, he extends his hind legs, and lies on his belly. It is in this situation that he spies the birds along the hedges, and meditates schemes for their surprize. The fox flies when he hears the explosion of a gun, or smells gun-powder. Being exceedingly fond of grapes, he does much mischief in vineyards.---When pursued by the hounds, he seldom fails to deceive and fatigue them, because he purposely passes through the thickest parts of the forest or places of the most difficult access, where the dogs are hardly able to follow him; and, when he takes to the plains, he runs strait out, without stopping or doubling.---It is a great admirer of its bushy tail, with which it frequently amuses and exercises itself, by running in circles to catch it: and, in cold weather, wraps it round its nose. The smell of this animal is generally very strong, but that of the urine is remarkably fetid. This seems so offensive even to itself, that it will take the trouble of digging a hole in the ground, stretching its body at full length over it; and there, after depositing its water, covers it over with the earth, as the cat does its dung. The smell is so obnoxious, that it has often proved the means of the fox's escape from the dogs; who have so strong an aversion to the filthy effluvia, as to avoid

avoid encountering the animal it came from. It is said the fox makes use of its urine as an expedient to force the cleanly badger from its habitation: whether that is the means, is rather doubtful; but that the fox makes use of the badger's hole is certain; not through want of ability to form its own retreat, but to save itself some trouble; for, after the expulsion of the first inhabitant, the fox improves as well as enlarges it considerably, adding several chambers, and providently making several entrances to secure a retreat from every quarter. In warm weather, it will quit its habitation for the sake of basking in the sun, or to enjoy the free air; but then it rarely lies exposed, but chooses some thick brake, that it may rest secure from surprize. Crows, magpies, and other birds, who consider the fox as their common enemy, will often, by their notes of anger, point out his retreat. When attacked, he defends himself to the last with great courage and bravery, and dies under the teeth of the dogs, or the strokes of the bludgeon, without complaint, in silence, and without a groan.

His flesh is not so bad as that of the wolf: dogs, and even men, eat it in many countries. These creatures are extremely common in the Holy Land. From the earliest to the present time, they have always been particularly noxious to the vineyards. "Take us the foxes, the little foxes that spoil the vines; for our vines have tender grapes."---*Solomon*. Whether they were the species that Samson used to destroy the corn of the Philistines, is undecided. Since jackals are found, to this day, in great abundance about Gaza, it is much more probable, from their gregarious nature, that he should have caught three hundred of them, than of the solitary quadruped the fox.

The ARCTIC FOX has a sharp nose, and sharp rounded ears, almost hid in its fur; its hair is long and soft, and somewhat woolly: its legs are short, having the toes covered with fur on all parts, like

those of a hare: its tail is shorter and more bushy than that of a common fox, of a bluish grey or ash-colour, sometimes white: the young of the grey are black, before they come to maturity: their hair is much longer in winter than in summer, as is usual with animals in cold climates. They inhabit the countries bordering on the Frozen Sea, as far as the land is destitute of woods, which is generally from seventy to sixty-eight degrees of latitude: this species extends to Kamtschatka, and Berings, and Copper Islands; but are found in none of the other islands between Kamtschatka and the other opposite parts of America, discovered by Captain Bering in 1741. They are found in Greenland, Iceland, Spitzbergen, Nova Zembla, and Lapland: they burrow under ground, in holes many feet in length, the bottom of which they line with moss. In Greenland and Spitzbergen, they live in the clefts of the rocks, not being able to burrow by reason of the frost. Two or three pair, as a family, inhabit the same hole. They are in heat about Lady-day, and continue during that time in the open air: they afterwards take to their holes, and go with young nine weeks, like dogs, which they resemble in other respects also. The Russians indeed call them dogs: but they have all the cunning of the common fox, and prey on the young of geese, ducks, and other water-fowl, before they can fly; on the grouse and the hares of the country; on the eggs of birds; and in Greenland (through necessity) on berries, shell-fish, or any thing the sea throws out; but their principal food in the north of Asia, and in Lapland, is the lemin or Lapland rat; and hence, they are very migratory, following the lemin, a very wandering animal. Sometimes these foxes desert the country for three or four years, probably in pursuit of their prey. The people in Jensea suppose they go to the banks of the Oby. They are taken in traps; and often the glutton and great owl destroy them before the hunter can come to take them out.

out. Their skins are of small value: they are found in great troops on the banks of the Frozen Sea, and of the rivers that flow into it.

There are two other varieties of the arctic fox; one with a dusky fur on every part, nearly the same size as the former; and they inhabit Iceland in great numbers. The other is of a sooty brown, the ears round and white within; the lower part of the throat, the belly, and inside of the haunches, is also white; the tail half white and half black; and a white spot under each eye. This is a small species, found plentifully in Greenland.

The ANTARCTIC FOX is mentioned under the name of wolf-fox in Bougainville's voyages: it is one-third less than the common fox; has pointed ears, lined with white hair, and hazel irides; its head and body are of a cinereous brown; its hair is more woolly than that of the common fox, and resembles the arctic: its legs are dished with a rust colour: its tail is dusky and tipped with white; shorter and more bushy than that of the common fox: it has much the appearance and habit of a wolf in ears, tail, and strength of limbs. Pennant suspects it to be the small Mexican wolf degenerated. It inhabits the Falkland isles, and is the only quadruped in those distant isles that lives near the shores: it kennels like a fox, and forms regular paths from bay to bay, probably for the convenience of surprizing the water-fowl, on which it lives: it is at times very meagre, from want of prey, very tame, fetid, and barks like a dog. The Antarctic islands were probably stocked with these animals by means of islands of ice, broken from the continent and carried by the currents.

The CULPEU, or CHILIAN FOX, has a strait tail, covered with short hair, like the domestic dog; the colour deep brown; in all respects of form resembles the common fox, but larger; length of the tail two feet and a half. It inhabits the open countries of Chi-
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li, in which it forms its burrows. Its voice is feeble, but has some resemblance of barking. If it sees a man at a distance, will march strait towards him; stop at a distance, and regard him attentively. If the man makes no movement, will remain long in the same situation, but without doing him the least harm, and then retires the same way it came. This Molina often had occasion to remark; for it never failed doing the same thing: this subjects it to the shot of the sportsmen: the Chilians call it *culpeu* from *culpem*, which signifies *fally*.

There is another variety, with its neck and sides tawny; ears tawny within, tipped with black; crown and back mixed with grey, black, and white; throat, breast, and belly, white; and less than the common fox. It inhabits North America, and is possibly the young of the preceding.

The BLUE or GREY FOX, is the largest and most beautiful of the species. It is all grey, except a little redness about the ears; has a sharp nose; sharp-pointed, long, upright, ears, and long legs. It inhabits Carolina and the warmer parts of North America. It agrees with the common fox in form, but differs from it in the nature of its dwelling; as it never burrows, but lives in hollow trees: it gives no diversion to the sportsman; for, after a mile's chase, it takes to its retreat: it has no strong smell like the common fox; it feeds on poultry, birds, &c. and is easily tamed: their skins, when in season, are made use of for muffs, and are both elegant and costly.

The SILVERY FOX, resembles in form the common fox, and abounds in the wooded eminences of Louisiana, which are every where pierced with their holes: their coat is very beautiful: they have short hair of a deep brown; over this springs long silvery hairs, which give the animal a very elegant appearance. They live in forests abounding in game, and
never



The Blue Fox!
London Published as the Act directs July 1st 1797

J. Pine sculp.

never attempt the poultry, which run at large without any danger.

The BENGAL FOX, is of a light brown colour; face cinereous, with a black stripe down the middle, and a white space round the eyes and middle of the jaws; with fulvous legs: tail tipped with black: a species scarcely half the size of the European fox. It inhabits Bengal, and feeds chiefly on roots and berries. The English, at a vast expence, import into India hounds for the purpose of hunting this fox; but which quickly degenerate.

The BARBARY FOX, is the chacal-adive, or small jackal of Buffon, with a long and slender nose, sharp upright ears, and a long bushy tail: its colour is a pale brown, with a space above and below the eyes, black: from behind each ear it has a black line, each of which soon divides into two: these extend to the lower part of the neck: its tail is surrounded with three broad rings: it is of the size of a common fox; but its limbs are shorter, and its nose more slender.

The fox is frequently taken in gins or traps; but great caution must be used to deceive him. The trap must be placed in the midst of a field, where there is neither hedge nor path near it, and so nicely covered with mould, that not the least vestige can be seen where it lies: about the trap, and at a small distance from it, in different places, a few pieces of cheese, or other strongly-scented food, must be carelessly scattered: then with a sheep's-paunch, or some other animal substance, a trail is made, about a mile in length, to the different places where the bait is laid, and from thence to the trap: the shoes of the person who carries the trail must be likewise well rubbed with the paunch, that the fox may not discover his scent. He then approaches with more confidence; and, if the design be well conducted, seldom fails of being caught.

The JACKAL, or SCHAKAL. This creature, vulgarly called the lion's provider, inhabits all the hot
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and temperate parts of Asia, India, Persia, Arabia, Great Tartary, and all about Mount Caucasus, Syria, and the Holy-Land. It is to be met with in most parts of Africa, from Barbary to the Cape of Good-Hope. It is the *canis aureus* of Linnæus. In size, it is near two feet and a half from the nose to the tail: its tail, which is the thickest in the middle, and tapers to the point, is near eleven inches long, and descends to the top of the hind legs: its height, at the shoulders, is about eighteen inches and a half: the hind parts are a little higher. The irides of its eyes are of a yellowish brown: its ears are erect, formed like those of the fox, but shorter, and less pointed; hairy and white within; but brown without, tinged with dusky yellow; its head is shorter than that of the fox, and its nose blunter: its lips are black, and somewhat loose: its neck and body very much resemble those of the fox; only its body is more compressed; the legs too have the same resemblance, but are longer; its hair is much stiffer than that of the fox, though not so stiff as that of the wolf; it is short about the nose, but on the back three inches long; on the belly it is shorter; that of the tail measures four inches. Its colour on the upper part is a dirty tawny, on the back this colour is mixed with black; the lower part of the body is of a yellowish white; its tail is tipped with black; its legs are of a tawny brown; the fore knees marked, but not always, with a black spot. Some, it is said, are of a brilliant yellow; but Pennant will not allow that on any part they have those vivid colours which could merit the title of golden, bestowed on this species by Kæmpfer, who calls it the golden wolf.

Anatomists have remarked that the *cæcum* of this animal agrees with that of the dog, and differs from that of the wolf and fox. John Hunter took some pains to ascertain the classification of this animal; he obtained a female, whilst a cub, from an East-Indiaman at Bombay. He had her warded by a dog, and during

the voyage she brought six puppies, one of which afterwards had puppies by another dog; and now lost their wild and ferocious nature. He afterwards dissected the original dam, and found no difference in the internal structure from the common dog. The same remark has been made with regard to its teeth too; they have so much the nature of dogs, says Mr. Pennant, as to give reasonable cause to imagine, that they are at least the chief stock from which have sprung the various races of those domestic animals. When taken young, they grow quickly tame, and attach themselves to mankind; they wag their tails, love to be stroked, distinguish their masters from others, will come when called by the name that has been given them, drink water lapping, make water side-ways with their leg up: their dung is hard; *odorat anum alterius*; *coheret copula junctus*. When they see dogs, instead of flying, they court their friendship and play with them. They will eat bread eagerly, notwithstanding that they are carnivorous in a wild state: they have a great resemblance to some of the Calmuc dogs. Our dogs may probably be derived from those domesticated in the first ages of the world; and altered, by numberless accidents, into the many varieties which now appear among us.

The schakals go in packs of forty, fifty, or even two hundred, together, and hunt, like hounds in full cry, from evening to morning: they destroy flocks and poultry, but in a less degree than the wolf or fox: they ravage the streets of villages, and gardens near towns, and will even destroy children if left unprotected: they enter stables and out-houses, and devour skins, or any thing made of leather: they are bold thieves; they will familiarly enter a tent, and steal whatever they can find from the sleeping traveller. In default of living prey, they will feed on fruits and roots; and even on the most infected carrion: they disinter the dead, and greedily devour the most putrid

carcasses ; for which reason, in countries infested by these animals, the graves are usually made very deep, and covered with stones, or fortified with sharp stakes. They attend caravans, and follow armies, in hopes that death, or a battle, will provide them a banquet. Their voice is naturally a howl, though a bark is latently inherent : their howlings and clamours in the night are dreadful, and so loud, that when they are near, people can scarcely hear one another speak : when one begins to howl, the whole pack join in the cry : during the day they are silent : they dig burrows in the earth, in which they lie all day, and come out at night to range for prey : they hunt by the nose, and are very quick of scent. The females breed only once a-year, and go with young only four weeks. This last circumstance seems to make strongly against the supposition of their being the parent stock of the domestic dog. They bring from six to eight young ones at a time.

This creature has been called the lion's-provider, from an opinion that it rouzes the prey for that bad-nosed quadruped. The fact is, that every creature in the forest is set in motion by the fearful cries of the jackals : the lion, and other beasts of rapine, by a sort of instinct, and the calls of appetite, attend to the chace, and seize such timid animals as betake themselves to flight at the noise of this nightly pack. Buffon concludes their character thus : the jackal unites the impudence of the dog with the dastardliness of the wolf, and, participating the nature of each, seems to be an odious creature, composed of all the bad qualities of both.

The **CAPE SCHAKAL** : this species inhabits the countries about the Cape of Good Hope, and may probably be found as high as the line : its length is two feet and three quarters ; its tail one foot, bushy, of a yellow brown ; marked on the upper part with a line of black along it ; and, towards the end, encircled
with

with two rings of black: it is tipped with white: his ears are erect, of a yellowish brown, mixed with a few scattered black hairs; his head the same, only having some white hairs intermixed, and growing darker towards the hind part; his sides are of a light brown, varied with dusky hairs; his throat, breast, and belly, are white; on his neck, shoulders, and back, there is a bed of black, broad on the shoulders, and growing narrower to the tail. When the hair lies smooth, the part on the neck seems barred with white; that on the shoulders with white conoid spots, one within the other, with the end pointing to the back. When the hair is ruffled, these marks vanish, or grow less distinct, and a hoariness appears in their stead.

The WILD DOG, or JACKALL, of CEYLON, has a long thick nose, blunt at the end; ears erect at their bottom, and pointing forwards at their ends; the legs strong, with claws more like a cat than dog; colour cinereous yellow; belly ash-coloured; legs almost entirely brown; the hair close set, and soft. The length of the body is near twenty-three inches, and the tail sixteen, tapering to a point. It is a native of Ceylon; but its history is quite unknown.

The WILD DOG, FOX or JACKAL, of SURINAM. This species is of the size of a large cat, has upright ears, little warts on the cheeks, above the eyes, and under the throat; its tongue is fringed on the sides: the colour of the upper part of its body is greyish, the lower white; its tail bends downwards, and is smooth: it has five toes before, and four behind. It has its name from that part of South America where it is found. This is the *canis thous* of Linnæus.

The ZERDA. This is a singular and very beautiful animal, an inhabitant of the vast desert of Saara or Zara in Africa. It has a very pointed visage, long whiskers, large, bright, black, eyes, very large ears, of a bright rose-colour, lined with long hair, and having

their orifice so small as not to be visible, probably covered with a valve or membrane; its legs and feet are like those of a dog: its tail taper. Its colour is between a straw and a pale brown. Its length, from the nose to the tail, ten inches; its ears three and a half; its tail six; its height not five. It burrows in the sandy ground; is so excessively swift, that it is very rarely taken alive; feeds on insects, especially locusts; sits on its rump, and is very vigilant. It barks like a dog, but much shriller, and that chiefly in the night: it has never been observed to be sportive. Doctor Sparman suspects that he saw it during his travels in Caffraria.

We are indebted to Mr. Eric Skioldebrand, the Swedish consul at Algiers, for our knowledge of this singular animal. He never could procure but one alive, which escaped before he examined its teeth: the genus is very uncertain: the form of its head and legs, and some of its manners, determined its place here. That which was in possession of Mr. Skioldebrand fed freely from the hand, and would eat bread or boiled meat. Mr. Skioldebrand had a drawing made of the animal; and we are informed that he communicated a copy of it to Mr. Bruce, at that time the British consul at Algiers. This is a secret betrayed by Doctor Sparman, which brings on him the wrath of Mr. Bruce, expressed in terms highly indignant. Mr. Bruce claims the honour of the drawings, and asserts, that Mr. Skioldebrand acquired the copy by unfair means; that he corrupted his servant, and gained his end. This would never have been known, but by the accident of a death-bed repentance: the poor lad fell ill; nor could he depart in peace till he had discharged his conscience by a full confession of his grievous crime. The world will probably think,

*Nec Deus interfit, nisi dignus vindice nodus
Inciderit.*



Paris sculp.

The Lerda.

London, Published Oct. 1st 1797

M. de Buffon has given a figure of this animal, communicated to him by Mr. Bruce; but from his authority ascribes to it a different place, and different manners. He says that it is found to the south of the Palus Tritonides, in Libya; that it has something of the nature of the hare, and something of the squirrel; and that it lives on the palm-trees, and feeds on the fruits. Yet, when Mr. Bruce favoured the public with his splendid work, he gives at p. 128 of his fifth volume a different account. From a hare or a squirrel, it is converted into a weasel; and the place of its habitation is changed from the Palus Tritonides to Biscara, a southern province of Mauritania Cæsariensis, many hundred miles from the first position.

“ I will not dare (says Mr. Pennant) to fix any genus to this curious and seemingly anomalous animal. To judge by Mr. Bruce’s or Mr. Skioldebrand’s figure (I will not attempt to decide the property), it has all the appearance of the vulpine: its face strongly shews the alliance; and the length and strength of limbs are other very satisfactory proofs, of its being no more able, with limbs so formed, to climb a tree than a dog. All the weasel tribe have very short legs: they can climb; they do creep. Our great Ray makes the last the character of the class, and for that reason styles them vermineum genus, the vermes, or worm-like class. Had the figure received that form of limb, I would have assented to the genus, nor even have troubled the public or myself with my difference of opinion with the great traveller.”

THE HYÆNA.

THE species of this genus, hitherto described, are few: they are only two, the striped, and the spotted. The striped hyæna is of the size of a large dog, but very strongly made: it has long, sharp-pointed, naked, ears; an upright mane; high shoulders; the

the fore longer than the hind legs; the hair on the body coarse, rough, and pretty long, of an ash-colour, marked with long black stripes from the back downwards, and with others across the legs: its tail is very full of hair, sometimes plain, sometimes barred with black. It inhabits the mountains of Caucasus, and the Altaic Chain, Asiatic Turkey, Syria, Persia, Barbary, and Senegal. Like the jackal, it violates the repositories of the dead, and greedily devours the putrid contents of the grave: it preys by night on herds and flocks; yet, for want of other food, it will eat the roots of plants, and the tender shoots of the palms: it is a solitary, unsociable, animal, and inhabits the chasms of the rocks; yet will venture into towns. When people sleep in the open air, it will sometimes snatch away children from the sides of their parents. The superstitious Arabs, when they kill one, carefully bury its head, lest it should be applied to magical purposes. The ancients were wild in their opinion of the hyæna: they believed that its neck consisted of one bone; that it changed its sex; that it imitated the human voice: that it had the power of charming the shepherds, and of rivetting them, as it were, to the place they stood on: no wonder then that an ignorant Arab should attribute to its remains preternatural powers.

They are cruel, fierce, and untameable, animals, with a most malevolent aspect: they have a sort of obstinate courage, which will make them face quadrupeds stronger than themselves. Kæmpfer relates that he had seen one that had put to flight two lions. Their voice is a hoarse disagreeable mixture of growling and roaring. There have been instances of their being tamed. Mr. Pennant mentions his having seen one as tame as a dog; and M. Buffon mentions another. Mr. Bruce, when he meets them, makes no more of them than so many hogs grunting about him. Linnæus indeed says, that it is of the size of a swine; has the appearance of a wild boar; the hairs of its back near a span long, and

146 ad.



THE SPOTTED LEOPARD.

London 1847

tipped with black; and that it ought to be classed with the bear perhaps, or with the badger, as, like him, it has, between the anus and its tail, a bag filled with a fetid ointment. It is probable, that, if taken very young, they might be reclaimed by good usage; but in exhibitions, they are commonly kept in a perpetual state of ill humour by the provocations of their masters.

The SPOTTED HYÆNA is superior in size to the former; has a large and flat head, with some long hairs above each eye, and very long whiskers on each side of its nose: it has a short black mane; the hair on its body is short and smooth: its ears are short, and a little pointed; black on the outside, and ash-coloured within: its face, and the upper part of its head, are black: its body and limbs are of a reddish brown, marked with distinct round black spots; and its hind legs with transverse black bars: its tail is short, black, and full of hair. It inhabits Guinea, Æthiopia, and the Cape, and lives in holes of the earth, or clefts of the rocks; it preys by night, howls horribly, breaks into the folds, and kills two or three sheep, devours as much as it can, and carries away one for a future repast; it will also attack mankind, scrape open graves, and devour the dead; it has very great strength. A story is told of one that seized a female negro, flung her over its back, held her by one leg in its teeth, and ran away with her till she was fortunately rescued. But Mr. Bruce tells us of one that would lay hold of a man, lift him up with the greatest ease, and run a league or two with him, without once putting him on the ground. Mr. Bruce too was the first who remarked of the hyæna, that when forced to flee, they are lame of the left hind leg, which continues so remarkably so for about a hundred paces, that the animal seems as if he would tumble down on its left side.

Kolben, and Dr. Sparrman, in their accounts of the Cape of Good Hope, call this animal the tiger-wolf; and say that formerly they were so bold as to attack
the

the Hottentots in their huts, and sometimes carry off their children, while they lay carelessly by, or were a-sleep.

FELIS, of the Order of FERÆ.

THE feline genus contains from twenty to thirty different species, consisting of the lion, tiger, panther, leopard, lynx, &c. down to the common domestic cat. The characteristics of this order are as follow: the fore-teeth are equal; the molares or grinders have three points; the tongue is furnished with rough sharp prickles, pointing backwards; and the claws are sheathed and retractile. The animals of this order are divided into two classes, the one with long, and the other with short, tails. We begin with the former, and with the largest and most formidable.

L E O, T H E L I O N.

THE largest lions are from eight to nine feet in length, and from four to six feet high: those of a smaller size are generally about five feet and a half long, and about three and a half high. His head is very thick, and his face is beset on all sides with long bushy yellowish hair; this shaggy hair extends from the top of the head to below the shoulders, and hangs down to his knees: the belly and breast are likewise covered with long hair. The rest of the body is covered with very short hair, excepting a bush at the point of the tail: the ears are roundish, short, and almost entirely concealed under the hair of his front: the shagginess of the fore-part of his body makes the hinder-part have a naked appearance: the tail is long and very strong; the legs are thick and fleshy; and the feet are short; the length of the claws is about an inch and a quarter, are of a whitish colour, very crooked, and can be extended or retracted into the membranous sheath at pleasure; their points are seldom blunted, as they are never extended but when he seizes his prey. The female,



The Lion

female, or lioness, has no mane, or long hair about her head or shoulders; in her we see distinctly the whole face, head, ears, neck, shoulders, breast, &c. all these parts being in some measure concealed under the long hair of the male, give the female a very different appearance: besides, she is considerably less than the male. The hair of both male and female is of a yellowish colour, and whitish on the sides and belly.

In warm countries, quadrupeds in general are larger and stronger than in the cold or temperate climates. They are likewise more fierce and hardy; all their natural qualities seem to correspond with the ardour of the climate. The lions nourished under the scorching sun of Africa or the Indies, are the most strong, fierce, and terrible. Those of mount Atlas, whose top is sometimes covered with snow, are neither so strong nor so ferocious as those of Biledulgerid or Zaara, whose plains are covered with burning sand. It is in these hot and barren deserts, that the lion is the dread of travellers, and the scourge of the neighbouring provinces. But it is a happy circumstance that the species is not very numerous: they even appear to diminish daily. The Romans, says Mr. Shaw, brought many more lions out of Lybia for their public shows, than are now to be found in that country. It is likewise remarkable, that the lions in Turkey, Persia, and the Indies, are less numerous than formerly. As this formidable and courageous animal makes a prey of most other animals, and is himself a prey to none, this diminution of the number of the species can be owing to nothing but an increase in the number of mankind: for it must be acknowledged, that the strength of this king of animals is not a match for the dexterity and address of a negro or Hottentot, who will often dare to attack him face to face, and with very slight weapons.

The ingenuity of mankind augments with their number; that of other animals continues always the same. All the noxious animals, as the lion, are reduced

to a small number, not only because mankind are become more numerous, but likewise because they have become more ingenious, and have invented weapons which nothing can resist. This superiority in the numbers and industry of mankind, at the same time that it has broke the vigour of the lion, seems likewise to have enervated his courage. This quality, though natural, is exalted or lowered according to the good or bad success with which any animal has been accustomed to employ his force. In the vast deserts of Zaara; in those which seem to separate two very different races of men, the Negroes and Moors, between Senegal and the boundaries of Mauritania; in those uninhabited regions above the country of the Hottentots; and, in general, all the meridional parts of Africa and Asia, where mankind have disdained to dwell; lions are still as numerous and as ferocious as ever. Accustomed to measure their strength by that of all other animals which they encounter, the habit of conquering renders them haughty and intrepid. Having never experienced the strength of man, or the power of his arms, instead of discovering any signs of fear, they disdain and set him at defiance. Wounds irritate, but do not terrify, them: they are not even disconcerted at the sight of numbers. A single lion of the desert has been known to attack a whole caravan; and if, after a violent and obstinate engagement, he found himself weakened, he retreats fighting, always keeping his face to the enemy. On the other hand, the lions which live near the villages or huts of the Indians or Africans, being acquainted with man and the force of his arms, are so dastardly as to fly and leave their prey at the sight of women or children.

This softening in the temper and disposition of the lion, shews that he is capable of culture, and susceptible, at least to a certain degree, of the impressions that he receives: accordingly, history informs us of lions yoked in triumphal chariots, trained to war, or the chase;

chace; and that, faithful to their masters, they never employed their strength or courage but against their enemies. It is certain, that a lion, taken young, and brought up among domestic animals, will easily be accustomed to live and sport with them; that he is mild and caressing to his master, especially when he is young; and that, if his natural ferocity sometimes breaks out, it is rarely turned against those who have been kind to him. But, as his passions are impetuous and vehement, it is not to be expected that the impressions of education will at all times be sufficient to balance them: for this reason it is dangerous to let him suffer hunger long, or to vex him by ill-timed teazings: bad treatment not only irritates him, but he remembers it long, and meditates revenge. On the other hand, he is exceedingly grateful, and seldom forgets benefits received. He has been often observed to disdain weak or insignificant enemies, to despise their insults, and to pardon their offensive liberties. When led into captivity, he will discover symptoms of uneasiness, without anger or peevishness: on the contrary, his natural temper softens, he obeys his master, caresses the hand that gives him food, and sometimes gives life to such animals as are thrown to him alive for prey: by this act of generosity he seems to consider himself as for ever bound to protect them; he lives peaceably with them; allows them a part, and sometimes the whole, of his food; and will rather submit to the pangs of hunger than fill his stomach with the fruits of his beneficence. We may likewise observe, that the lion is not a cruel animal: he kills rather from necessity than choice, never destroying more than he eats; and whenever his appetite is satisfied, he is mild and peaceable. For his ordinary subsistence, he requires about fifteen pounds of raw flesh each day.

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. One morning the gentleman was awakened by an unusual noise in his room; and, drawing his curtains, he perceived it to proceed from the lion, which was growling over the body of the unhappy man, whom it had just killed, and had separated his head from his body. The terror and confusion of the gentleman may easily be conceived: he flew out of the room; and, with the assistance of some people, had the animal secured from doing other mischief.

The aspect of the lion corresponds with the noble and generous qualities of his mind. His figure is respectable; his looks are determined; his gait is stately, and his voice tremendous. In a word, the body of the lion appears to be the best model of strength joined to agility. The force of his muscles is expressed by his prodigious leaps and bounds, often twenty feet at once; by the brisk motion of his tail, a single sweep of which is sufficient to throw a man to the ground; by the ease with which he moves the skin of his face, and particularly of his forehead; and, lastly, by the faculty of erecting and agitating the hair of his mane when irritated.

Lions are very ardent in their amours: when the female is in season, she is often followed by eight or ten males, who roar incessantly, and enter into furious engagements, till one of them completely overcomes the rest, takes peaceable possession of the female, and carries her off to some secret recess. The lioness brings forth her young in the spring, and produces but once every year. All the passions of the lion, the soft passion of love not excepted, are excessive; the love of offspring is extreme: the lioness is naturally weaker, less bold, and more gentle, than the lion; but she becomes perfectly rapacious and terrible when she has young. Then she exhibits more courage than the male; - she regards no danger; she attack indifferently men and all other animals, kills them, and carries them

to her young ones, whom she thus early instructs to suck their blood and tear their flesh. The lioness goes with young five months, and brings forth three or four at a time. The young ones are about the size of a large pug-dog, harmless, pretty, and playful. They continue at the teat twelve months, and are above five years in coming to perfection. She generally brings forth in the most secret and inaccessible places; and, when afraid of a discovery, she endeavours to conceal the traces of her feet, by effacing them with her tail; and, when the danger is great, she carries off her young, and conceals them somewhere else. But, when an actual attempt is made to deprive her of her young, she becomes perfectly furious, and defends them till she be torn to pieces.

The lion seldom goes abroad in the middle of the day; but sallies forth in the evening and night in quest of prey. He is afraid of fire, and seldom or never approaches the artificial fires made by the shepherds for the protection of their flocks; he does not trace other animals by the scent, but is obliged to trust to his eyes. Many historians have even misrepresented him as incapable of finding out his prey; but that he is obliged to the jackal to provide for him, and that this animal either accompanies or goes before him for this purpose. The jackal is a native of Arabia, Lybia, &c. and, like the lion, lives upon prey: perhaps sometimes he follows the lion, but it is with a view to pick up what he leaves behind, not to provide for him; for, being a small and feeble animal, he ought rather to fly from than to serve the lion.

The lion, when hungry, will attack any animal that presents itself: but he is so very formidable, that all endeavour to avoid his rencounter; this circumstance often obliges him to conceal himself, and lie in wait till some animal chances to pass. He lies squat on his belly in a thicket; from which he springs with such force and velocity, that he often seizes them at the first bound.

bound. He endures hunger longer than thirst; he seldom passes water without drinking, which he does by lapping like a dog. In burning deserts, where rivers and fountains are denied, they live in a perpetual furor, a sort of madness fatal to every animal they meet with. The author of the *Oeconomy of Nature* gives a wonderful proof of the instinct of these animals in those unwatered tracts. There the pelican makes her nest; and, in order to cool her young ones, and accustom them to an element they must afterwards be conversant in, brings from afar, in their great gular pouch, sufficient water to fill the nest: the lion, and other wild beasts, approach and quench their thirst; yet never injure the unfledged birds, as if conscious that their destruction would immediately put a stop to those grateful supplies.

The roaring of the lion, which is strong and loud, is his ordinary voice; but when he is irritated, his cry is shorter, repeated more suddenly, and is still more terrible than the roaring: besides, he beats his sides with his tail, stamps with his feet, erects and agitates the hair of his head and mane, moves the skin of his face, shews his angry teeth, and lolls out his tongue. The roaring of the lion, according to Dr. Sparrman, “ consists in a hoarse inarticulate sound, which at the same time seems to have a hollowness in it, something like that proceeding from a speaking trumpet. The sound is between that of a German *u* and an *o*, being drawn to a great length, and appearing as if it came from out of the earth; at the same time that, after listening with the greatest attention, I could not exactly hear from what quarter it came. The sound of the lion’s voice does not bear the least resemblance to thunder, as M. de Buffon, tom. ix. p. 22, from the *Voyage of Boullaye le Gouz*, affirms it does. In fact, it appeared to me to be neither peculiarly piercing nor tremendous; yet, from its slow prolonged note, joined with nocturnal darkness, and the terrible idea one is

apt to form to one's self of this animal, it made one shudder, even in such places as I had an opportunity of hearing it in with more satisfaction, and without having the least occasion for fear. We could plainly perceive by our cattle when the lions, whether they roared or not, were reconnoitring us at a small distance. For in that case the hounds did not dare to bark in the least, but crept quite close to the Hottentots; and our oxen and horses sighed deeply, frequently hanging back, and pulling slowly with all their might at the strong straps with which they were tied up to the waggon. They likewise laid themselves down upon the ground and stood up alternately, appearing as if they did not know what to do with themselves: or rather just as if they were in the agonies of death. It is, indeed, a wonderful circumstance, that the brute creation should have been taught merely by nature to be in dread of the lion; for our horses and oxen were all from places where I am certain they could have no knowledge of this dreadful adversary of theirs; so that in this we must admire the bounty of Providence, which, while it has sent such a tyrant as the lion amongst the animal creation, has likewise taught them to discern and distinguish it with trembling and horror."

The lion, when he leaps upon his prey, makes a bound of twelve or fifteen feet, falls above it, seizes it with his fore-feet, tears the flesh with his claws, and then devours it with his teeth. If he chances to miss his leap, he will not, as the Hottentots unanimously assured Dr. Sparrman, follow his prey any farther; but, as though he were ashamed, turning round towards the place where he lay in ambush, slowly, and step by step, as it were, measures the exact length between the two points, in order to find how much too short of, or beyond, the mark he had taken his leap. The lurking-place of the lion is generally chosen near a spring, or by the side of a river; where he frequently
has

has an opportunity of catching such animals as come to quench their thirst.

One would suppose that the roaring of the lion would prove serviceable to the other animals, as being a warning for them to betake themselves to flight; but as, when he roars, according to all report, he puts his mouth to the ground, so that the sound is diffused equally all over the place, without, as we have already mentioned, its being possible to hear from what quarter it comes, the animals are intimidated and scared to such a degree, as to fly about backwards and forwards in the dark to every side; in consequence of which, they often chance to run on to the very spot from whence the sound actually proceeds, and which they meant most to avoid.

Dr. Sparrman, in his account of the lion, detracts considerably from the character of courage and generosity generally ascribed to that animal. "It is not in magnanimity (says he), as many will have it to be, but in an insidious and cowardly disposition, blended with a certain degree of pride, that the general character of the lion consists; though hunger must naturally have the effect of now and then inspiring so strong and nimble an animal with uncommon intrepidity and courage. Moreover, being accustomed always itself to kill its own food, and that with the greatest ease, as meeting with no resistance, and even frequently to devour it reeking and weltering in its blood, it cannot but be easily provoked, and acquire a greater turn for cruelty than for generosity: but, on the other hand, not being accustomed to meet with any resistance, it is no wonder that, when it does, it should sometimes be faint-hearted and crest-fallen. A yeoman, a man of veracity (Jacob Kok, of Zeekoe-river), related to me an adventure he had, in these words:---One day, walking over his lands with his loaded gun, he unexpectedly met with a lion. Being an excellent shot, he thought himself pretty certain, in the position he was

in, of killing it, and therefore fired his piece. Unfortunately he did not recollect, that the charge had been in it for some time, and consequently was damp; so that his piece hung fire, and the ball, falling short, entered the ground close to the lion. In consequence of this he was seized with a panic, and took directly to his feet; but being soon out of breath, and closely pursued by the lion, he jumped up on a little heap of stones, and there made a stand, presenting the butt end of his gun to his adversary, fully resolved to defend his life as well as he could to the utmost. My friend did not take upon him to determine, whether this position and manner of his intimidated the lion or not: it had, however, such an effect upon the creature, that it likewise made a stand; and, what was still more singular, laid itself down at the distance of a few paces from the heap of stones seemingly quite unconcerned. The sportsman, in the mean while, did not dare stir a step from the spot: besides, in his flight, he had the misfortune to lose his powder-horn. At length, after waiting a good half hour, the lion rose up, and at first went very slowly, and step by step, as if it had a mind to steal off; but as soon as it got to a greater distance, it began to bound away at a great rate."

Dr. Sparman also relates the following occurrence, as serving to shew the cowardice and insidious disposition of the lion:---"An elderly Hottentot, in the service of a Christian, near the upper part of Sunday river on the Cambdebo side, perceived a lion following him at a great distance for two hours together. Thence he naturally concluded, that the lion only waited for the approach of darkness, in order to make him his prey: and in the mean time, could not expect any other than to serve for this fierce animal's supper, inasmuch as he had no other weapon of defence than a stick, and knew that he could not get home before it was dark. But, as he was well acquainted with the nature of the lion, and the manner of its seizing upon

its prey, and at the same time had leisure between whiles to ruminate on the ways and means in which it was most likely that his existence would be put an end to, he at length hit on a method of saving his life. For this purpose, instead of making the best of his way home, he looked out for a kilpkrans (so they generally call a rocky place level and plain at top, and having a perpendicular precipice on one side of it), and, sitting himself down on the edge of one of these precipices, he found, to his great joy, that the lion likewise made a halt, and kept the same distance as before. As soon as it grew dark, the Hottentot, sliding a little forwards, let himself down below the upper edge of the precipice upon some projecting part or cleft of the rock, where he could just keep himself from falling. But in order to cheat the lion still more, he set his hat and cloak on the stick, making with it at the same time a gentle motion just over his head, and a little way from the edge of the mountain. This crafty expedient had the desired success. He did not stay long in that situation, before the lion came creeping softly towards him like a cat, and, mistaking the skin-cloak for the Hottentot himself, took his leap with such exactness and precision, as to fall headlong down the precipice, directly close to the snare which had been set up for him ;” by which means the poor Hottentot was safely delivered from his insidious enemy.

This is not the only instance of lions in Africa being ensnared in the midst of their leap. In the out-houses and waste-grounds about farms, where a lion has been upon the watch for some animal and missed it, or where they have other reasons to expect him, they set up the figure of a man close by the side of several loaded guns ; so that these discharge themselves into the body of the beast at the very instant that he springs or throws himself upon the dressed figure. As this is done with so much ease and success, and as they hardly ever think it worth while in Africa to take lions alive,

they seldom give themselves the trouble of catching them by means of pit-falls.

“ It is singular (Dr. Sparman remarks), that the lion, which, according to many, always kills his prey immediately if it belongs to the brute creation, is reported frequently, although provoked, to content himself with merely wounding the human species; or at least to wait some time before he gives the fatal blow to the unhappy victim he has got under him. In several places through which I passed, they mentioned to me by name a father and his two sons, who were said to be still living, and who being on foot near a river on their estate in search of a lion, this latter had rushed out upon them, and thrown one of them under his feet: the two others, however, had time enough to shoot the lion dead upon the spot, which had lain almost across the youth so nearly and dearly related to them, without having done him any particular hurt. I myself saw, near the upper part of Duyven-hock-river, an elderly Hottentot, who at that time (his wounds being still open) bore under one eye and underneath his cheek-bone the ghastly marks of the bite of a lion, which did not think it worth his while to give him any other chastisement for having, together with his master (whom I also knew) and several other Christians, hunted him with great intrepidity, though without success. The conversation ran every where in this part of the country upon one Bota, a farmer and captain in the militia, who had lain for some time under a lion, and had received several bruises from the beast, having been at the same time a good deal bitten by him in one arm, as a token to remember him by; but, upon the whole, had in a manner had his life given him by this noble animal. The man was said then to be living in the district of Artaquas-kloof.”

At St. Catherine Cre's church, Leadenhall-street, London, provision is made, under the will of Sir John Gager, who was lord-mayor in the year 1646, for a

fermon to be annually preached on the 16th of November, in commemoration of his happy deliverance from a lion which he met in a desert as he was travelling in the Turkish dominions, and suffered him to pass unmolested. The minister is to have twenty shillings for the sermon, the clerk two shillings and six-pence, and the sexton one shilling. The sum of eight pounds sixteen shillings and six-pence is likewise to be distributed among the necessitous inhabitants, pursuant to the will of Sir John.

Sparman, in his remarks on such instances of apparent clemency in the lion, observes as follows:---“ I do not know rightly how to account for this merciful disposition towards mankind. Does it proceed from the lion's greater respect and veneration for man, as being equal to, or even a mightier tyrant than, himself among the animal creation? or is it merely from the same caprice which has sometimes induced him not only to spare the lives of men or brute creatures who have been given up to him for prey, but even to caress them, and treat them with the greatest kindness? Whims and freaks of this kind have perhaps in a great measure acquired the lion the reputation it has for generosity; but I cannot allow this specious name, sacred only to virtue, to be lavished upon a wild beast. Slaves, indeed, and wretches of servile minds, are wont with this attribute to flatter their greatest tyrants; but with what show of reason can this attribute be bestowed upon the most powerful tyrant among quadrupeds, because it does not exercise an equal degree of cruelty upon all occasions? That the lion does not, like the wolf, tiger, and some other beasts of prey, kill a great deal of game or cattle at one time, perhaps proceeds from this, that, while he is employed in attacking one or two of them, the remainder fly farther than it accords with the natural indolence of this beast to follow them. If this be called *generosity*, a cat may be styled generous with respect to the rats; as I have seen this creature

creature in the fields among a great number of the latter, where she could have made a great havock at once, seize on a single one only, and run off with it. The lion and the cat, likewise, very much resemble each other, in partly sleeping out, and partly in passing away in a quiet inactive state, a great part of their time, in which hunger does not urge them to go in quest of their prey."

The lion's strength, as already observed, is very great. Mr. Sparman informs us, that "this animal was once seen at the Cape to take an heifer in his mouth, and, though the legs of the latter dragged on the ground, yet seemed to carry her off with the same ease as a cat does rat. It likewise leaped over a broad dike with her, without the least difficulty. A buffalo perhaps would be too cumbersome for this beast of prey, notwithstanding his strength, to seize and carry off with him in the same manner above mentioned. Two yeomen, upon whose veracity I can place some confidence, gave me the following account relative to this matter. Being hunting near Boshiesman-river with several Hottentots, they perceived a lion dragging a buffalo from the plain to a neighbouring woody hill. They, however, soon forced it to quit its prey, in order to make a prize of it themselves; and found that this wild beast had had the sagacity to take out the buffalo's large and unwieldy entrails, in order to be able the easier to make off with the fleshy and more eatable part of the carcase. The lion's strength, however, is said not to be sufficient alone to get the better of so large and strong an animal as the buffalo; but, in order to make it his prey, this fierce creature is obliged to have recourse both to agility and stratagem; insomuch, that, stealing on the buffalo, it fastens with both its paws upon the nostrils and mouth of the beast, and keeps squeezing them close together, till at length the creature is strangled, wearied out, and dies. A certain colonist, according to report, had had an opportunity of seeing

seeing an attack of this kind; and others had reason to conclude, that something of this nature had passed, from seeing buffaloes, which had escaped from the clutches of lions, and bore the marks of the claws of these animals about their mouth and nose. They asserted, however, that the lion itself risked its life in such attempts, especially if any other buffalo was at hand to rescue that which was attacked. It was said, that a traveller once had an opportunity of seeing a female buffalo with her calf, defended by a river at her back, keep for a long time at bay five lions which had partly surrounded her; but did not, at least as long as the traveller looked on, dare to attack her. The lion will sometimes spring on the back of the buffalo, and upon horses, by which means they become an easy prey: the lion never quitting his hold till they sink down in the agonies of death. I have been informed, from very good authority, that on a plain to the east of Kromme-river, a lion had been gored and trampled to death by a herd of cattle; having, urged probably by hunger, ventured to attack them in broad day-light." This the reader will, perhaps, not so much wonder at, when he is told, that in the day-time, and upon an open plain, twelve or sixteen dogs will easily get the better of a large lion. Nor is there any necessity, Dr. Sparman says, for the dogs with which the lion is to be hunted to be very large and trained up to the sport, as M. de Buffon thinks they should be, the business being perfectly well accomplished with common farm-house dogs. When these have got pretty near the lion, the latter, from a greatness of soul, does not offer to fly any farther, but sits himself down. The hounds then surround him, and, rushing on him all at once, are thus, with their united strength, able to tear in pieces, almost in an instant, the strongest of all wild beasts. It is said, that he has seldom time to give more than two or three slight strokes with his paws (each of which strokes is instant death) to an equal number of his assailants. M.

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de Buffon asserts also, that the lion may be hunted on horseback, but that the horses as well as the dogs must be trained to it. Dr. Sparman, however, assures us, that the colonists hunt the lion with common hunting horses.

It is said, that horses in battle, or in other dangerous enterprizes, suffer themselves more willingly to be caparisoned by their riders than at other times. This circumstance Dr. Sparman likewise remarked in these animals on the above expeditions. "Our horses (says he), the very same as had several times, in the manner above mentioned, shewn their disquietude when the lion happened to be in the vicinity of them, and which were not in the least trained to the chace, once exhibited a spirit in the pursuit of two large lions, equal to that which they had shewn at other times in chasing the timid gazels; though, in fact, hunting horses seem to partake much more of their master's pleasure in the chace. I remember, in particular, at Agter Bruntjes Hoogte, I rode a horse, which, by a tremulous sound issuing from its chest, cocking up its ears, and prancing and capering, discovered, in an unequivocal manner, its ardour for the chace, whenever it came in sight of the larger kind of game. There have ever been instances of hunting horses, who, when the hunter has jumped off their backs in order to discharge his piece, but has missed his mark, have in their eagerness for the chace, not allowed him time sufficient to mount again, but followed the game alone for hours together, close at its very heels, in all its turnings and windings."

The chace of the lion on horseback is carried on at the Cape in the following manner, as described by Dr. Sparman.---"It is only on the plains that the hunters venture to go out on horseback in this chace. If the lion keeps in some coppice or wood, on a rising ground, they endeavour to teize it with dogs till it comes out; they likewise prefer going together two or more in
number,

number, in order to be able to assist and rescue each other, in case the first shot should not take place. When the lion sees the hunters at a great distance, it is universally allowed that he takes to his heels as fast as he can, in order to get out of their sight; but, if they chance to discover him at a small distance from them, he is then said to walk off in a surly manner, but without putting himself in the least hurry, as though he was above shewing any fear, when he finds himself discovered or hunted. He is therefore reported likewise, when he finds himself pursued with vigour, to be soon provoked to resistance, or at least he disdains any longer to fly. Consequently he slackens his pace, and at length only slides slowly off, step by step, all the while eying his pursuers askant; and finally makes a full stop, and turning round upon them, and at the same time giving himself a shake, roars with a short and sharp tone, in order to shew his indignation, being ready to seize on them, and tear them in pieces. This is now precisely the time for the hunters to be upon the spot, or else to get as soon as possible within a certain distance of him, yet so as at the same time to keep a proper distance from each other; and he that is nearest, or is most advantageously posted, and has the best mark of that part of the lion's body which contains his heart and lungs, must be the first to jump off his horse, and, securing the bridle by putting it round his arm, discharge his piece; then, in an instant recovering his seat, must ride obliquely athwart his companions; and, in fine, giving his horse the reins, must trust entirely to the speed and fear of this latter to convey him out of the reach of the fury of the wild beast, in case he has only wounded him, or has absolutely missed him. In either of these cases, a fair opportunity presents itself for some of the other hunters to jump off their horses directly, as they may then take their aim and discharge their pieces with greater coolness and certainty. Should this shot likewise miss, (which, however,

however, seldom happens), the third sportsman rides after the lion, which at that instant is in pursuit of the first or the second, and, springing off his horse, fires his piece, as soon as he has got within a proper distance, and finds a sufficiently convenient part of the animal present itself, especially obliquely from behind. If now the lion turns upon him too, the other hunters turn again, in order to come to his rescue with the charge which they loaded with on horseback while they were flying from the wild beast. No instance has ever been known of any misfortune happening to the hunters in chacing the lion on horseback. The African colonists, who are born in, or have had the courage to remove into, the more remote parts of Africa, which are exposed to the ravages of wild beasts, are mostly good marksmen, and are far from wanting courage. The lion that has the boldness to seize on their cattle, which are the most valuable part of their property, sometimes at their very doors, is as odious to them as he is dangerous and noxious. They consequently seek out these animals, and hunt them with the greatest ardour and glee, with a view to exterminate them."

The lion is a long-lived animal, although naturalists have differed greatly as to the precise period of its existence. Buffon limits it to twenty, or twenty-two years at most. It is however certain, that it lives much beyond that time. The great lion, called Pompey, which died in the year 1760, was known to have been in the Tower above seventy years; and one, brought from the river Gambia, died there not long ago at the age of sixty-three.---Several of these animals have been bred in the Tower; so that the time of their gestation, the number they produce, and the time of their arriving at perfection, are all pretty well known.

The flesh of the lion is said to have a strong, disagreeable, flavour; yet it is frequently eaten by the negroes.---The skin, which was formerly a robe of distinction for heroes, is now made use of by those people

as a mantle or a bed. They also preserve the grease, which is of a penetrating nature, and is used in medicine.

THE TIGRIS, OR TIGER.

THE tiger is the most rapacious and destructive of all carnivorous animals. Fierce without provocation, and cruel without necessity, its thirst for blood is insatiable: though glutted with slaughter, it continues its carnage, nor ever gives up so long as a single object remains in its sight: flocks and herds fall indiscriminate victims to its fury: it fears neither the sight nor the opposition of man, whom it frequently makes its prey; and it is even said to prefer human flesh to that of any other animal.

The size of this animal, according to some authors, is larger, and, according to others, somewhat less, than the lion. M. de la Landemagon assures us, that he has seen a tiger in the East-Indies fifteen feet long, including undoubtedly the length of the tail, which, supposing it to be four feet, makes the body about eleven feet in length. This is called the *royal* tiger; and is indeed of a most tremendous bulk; Hyder Ally presented one to the Nabob of Arcot, which measured eighteen feet in length. The head of the tiger is large and roundish; and the ears are short, and at a great distance from each other. The form of the body has a great resemblance to that of the panther. The skin is of a darkish yellow colour, striped with long black streaks; the hair is short, excepting on the sides of the head, where it is about four inches long. The point of the tail is black, and the rest of it is interspersed with black rings. His legs and claws resemble those of the lion, only the legs are much shorter in proportion to the size of the animal.

The tiger is more ferocious, cruel, and savage, than the lion. Although gorged with carnage, his thirst for blood is not appeated; he seizes and tears in pieces a new prey with equal fury and rapacity, the very moment



The Royal Bengal Tiger.

Wm. Woodcut.



ment after devouring a former one; he lays waste the country he inhabits; he neither dreads the aspect nor the weapons of men; puts to death whole troops of domestic animals; and attacks young elephants, rhinoceros's, and sometimes even braves the lion himself. The tiger seems to have no other instinct, but a constant thirst after blood, a blind fury which knows no bounds or distinction, and which often stimulates him to devour his own young, and to tear the mother in pieces for endeavouring to defend them. He lies in wait on the banks of rivers, &c. where the heat of the climate obliges other animals to repair for drink. Here he seizes his prey, or rather multiplies his massacres; for he no sooner kills one animal, than he flies with equal fury upon the next, with no other view but to plunge his head into their bodies and drink their blood. However, when he kills a large animal, as a horse or a buffalo, he sometimes does not tear out the entrails on the spot; but, to prevent any interruption, he drags them off to the wood, which he performs with incredible swiftness. This is a sufficient specimen of the strength of this rapacious animal. They seldom pursue their prey; but bound upon it from the place of their ambush, with an elasticity, and from a distance, scarcely credible. It is highly probable, that, from this circumstance, the tiger may derive its name, which, in the Armenian language, signifies *an arrow*; to the flight of which this creature may very properly be compared, in the quickness and agility of its bounds.

Neither force, restraint, or violence, can tame the tiger. He is equally irritated with good as with bad treatment: he tears the hand which nourishes him with equal fury as that which administers blows: he roars and is enraged at the sight of every living creature. Almost every natural historian agrees in this horrible character.

A beautiful young male tiger, lately brought over from China in the Pitt East-Indiaman, at the age of

ten months, was so far domesticated, as to admit every kind of familiarity from the people on-board. It seemed to be quite harmless, and was as playful as a kitten. It frequently slept with the sailors in their hammocks; and would suffer two or three of them to repose their heads upon its back, as upon a pillow, whilst it lay stretched out upon the deck. In return for this, it would, however, now and then steal their meat. Having one day taken a piece of beef from the carpenter, he followed the animal, took the meat out of its mouth, and beat it severely for the theft; which punishment it suffered with all the patience of a dog. It would frequently run out on the bowsprit; climb about the ship like a cat; and perform a number of tricks, with an agility that was truly astonishing. There was a dog on-board the ship, with which it would often play in the most diverting manner.---From these circumstances, one might be led to suppose, that the disposition of the tiger, like that of many other animals, was capable of some degree of culture. But it ought to be remembered, that, at the time this one was taken on-board the ship, it was only a month or six weeks old; and, when arrived in this country, it had not quite completed a year. How much longer its good humour might have continued, it is impossible to say: but it is much to be doubted whether the same innocent playfulness would have formed a part of its character when arrived at its full state of maturity.

There is a sort of cruelty in their devastations, unknown to the generous lion; as well as a poltroonry in their sudden retreat on any disappointment. "I was informed (says Mr. Pennant) by very good authority, that in the beginning of this century, some gentlemen and ladies, being on a party of pleasure, under a shade of trees, on the banks of a river in Bengal, observed a tiger preparing for its fatal spring; one of the ladies, with amazing presence of mind, laid hold of an umbrella, and furled it full in the animal's face,

which instantly retired, and gave the company opportunity of removing from so terrible a neighbour. Another party had not the same good fortune: a tiger darted among them while they were at dinner, seized on one gentleman, and carried him off, and he never more was heard of." A fate similarly shocking was experienced by the son of Sir Hector Munro, who with a shooting party, in Saugur-island, in the East-Indies, was seized by a tiger. The particulars are copied from a letter written to England by one of the party, dated December 23, 1792, as follows: "Yesterday morning, Mr. Downey, of the company's troops, Lieutenant Pyefinch, and poor Mr. Munro, and I, went on shore on Saugur-island to shoot deer; we saw innumerable tracks of tigers and deer, but still were induced to pursue our sport. About half past three we sat down on the edge of the jungle to eat some cold meat sent us from the ship, and had just commenced our meal, when Mr. Pyefinch and a black servant told us that there was a fine deer within six yards of us: Mr. Downey and I immediately jumped up to take our guns---mine was the nearest, and I had but just laid hold of it, when I heard a roar, like thunder, and saw an immense royal tiger spring on the unfortunate Munro, who was sitting down; in a moment his head was in the beast's mouth, which rushed into the jungle with him, with as much ease as I could lift a kitten, tearing him through the thickest bushes and trees---every thing yielding to his monstrous strength. The agonies of horror, regret, and, I must say, fear (for there were two tigers, a male and female), rushed on us at once; the only effort I could make was to fire at him, though the poor youth was still in his mouth. I relied partly on Providence, partly on my own aim, and fired a musquet. I saw the tiger stagger and agitated. Mr. Downey then fired two shots. and I one more. We retired from the jungle, and a few minutes after Mr. Munro came up to us, all over blood, and fell; we
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took him on our backs to the boat, and got every medical assistance for him from the Valentine Indiaman, which lay at anchor near the island; but in vain. He lived twenty-four hours in the extreme of torture; his head and skull were all torn and broke to pieces, and he was wounded by the beast's claws all over his neck and shoulders; but it was better to take him away, though irrecoverable, than leave him to be devoured limb by limb. I must observe, there was a large fire blazing close to us, composed of ten or a dozen whole trees: I made it myself on purpose to keep tigers off, as I had always heard it would. There were eight or ten of the natives about us; many shot had been fired at the place, and much noise and laughing at the time; but this ferocious animal disregarded all. The human mind cannot form an idea of the scene; it turned my very soul within me. The beast was about four and a half feet high, and nine long. His head appeared as large as an ox's, his eyes darted fire; and his roar, when he first seized his prey, will never be out of my recollection."

The tiger attacks all sorts of animals, even the lion; and it has been known that both have perished in their combats. There is in some parts of India a popular notion, that the rhinoceros and the tiger are in friendship, because they are often found near each other. But, according to Mr. Pennant, the fact is, that the rhinoceros, like the hog, loves to wallow in the mire; and on that account frequents the banks of rivers: the tiger, to quench its raging thirst, is met with in places contiguous to them.

Father Tachard gives an account of a battle between a tiger and two elephants, at Siam; of which he was an eye-witness. The heads and part of the trunks of the elephants were defended from the claws of the tiger by a covering made for the purpose. They were placed in the midst of a large inclosure. One of them was suffered to approach the tiger, which was confined
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by cords, and received two or three heavy blows from the trunk of the elephant upon its back, which beat it to the ground, where it lay for some time as if it were dead: but, though this attack had a good deal abated its fury, it was no sooner untied, than, with a horrible roar, it made a spring at the elephant's trunk, which that animal dexterously avoided by drawing it up; and, receiving the tiger on its tusks, threw it up into the air. The two elephants were then allowed to come up; and, after giving it several heavy blows, would undoubtedly have killed it, if an end had not been put to the combat.---Under such restraints and disadvantages, we cannot wonder that the issue was unfavourable to the tiger. We may, however, by this, judge of its great strength and fierceness,---that, after being disabled by the first attack of the elephant, whilst it was held by its cords, it would venture to continue such an unequal engagement.

Pliny has been frequently taken to task by the moderns, for calling the tiger *animal tremendæ velocitatis*: they allow it great agility in its bounds, but deny it swiftness in pursuit. Two travellers of authority, however, both eye-witnesses, confirm what Pliny says: the one indeed only mentions in general its vast fleetness; the other saw a trial between one and a swift horse, whose rider escaped merely by getting in time amidst a circle of armed men. The chase of this animal was a favourite diversion with the great Cam-hi, the Chinese monarch, in whose company Mr. Bell, that entertaining traveller, and the Pere Gerbillion, saw these proofs of the tiger's speed.

The tiger, according to Mr. Pennant, is peculiar to Asia; and is found as far north as China and Chinese Tartary, and about lake Ararat and the Altaic mountains. It inhabits mount Ararat and Hyrcania, of old famous for its wild beasts; but the greatest numbers, the largest, and the most cruel, are met with in India and its islands. In Sumatra the natives are so infatu-
ated,

ated, that they seldom kill them, having a notion that they are animated by the souls of their ancestors.

The tiger has always been a more rare animal than the lion; and yet brings forth an equal number of young, namely, four or five at a litter. The female is furious at all times; but, when her young are attempted to be taken from her, her rage is redoubled: she braves every danger; she pursues the ravishers, who are obliged, when hard pressed, to drop one of the young in order to retard her motion; she stops, takes it up, and carries it into some secret part of the forest; but she instantly returns and pursues the hunters into their villages or boats.

The tiger moves the skin of his face, grinds his teeth, and roars, like the lion; but the sound of his voice is different.

The skin of this animal is much esteemed all over the East, particularly in China. The mandarins cover their seats of justice with it; and, during the winter, use it for cushions and pillows.

THE PARDUS, OR PANTHER.

THIS animal is about the size of a large dog, and has a great resemblance to a domestic cat. The tongue is rough, and remarkably red; the teeth are strong and sharp; the skin is exceedingly beautiful, being of a yellow colour, variegated with roundish black spots, and the hair is short. It has a cruel and ferocious aspect; his motions are brisk and lively; his cry resembles the growl of an enraged dog, but is more strong and rough.

The panther inhabits Africa, from Barbary to the remotest parts of Guinea. This species is next in size to the tiger; next to it in cruelty, and in its general enmity to the animal creation: it is to Africa what the former is to Asia, with this alleviation, that it prefers the flesh of brutes to that of mankind; but, when pressed with hunger, attacks every living creature without distinction.

distinction. Its manner of taking its prey is the same with that of the tiger, always by surprise, either lurking in thickets or creeping on its belly till it comes within reach : it will also climb up trees in pursuit of monkies and lesser animals ; so that nothing is secure from its attacks. He is not so perfectly ungovernable as the tiger : but, notwithstanding all attempts to render him obedient and tractable, he may rather be said to be subdued than tamed ; for he never entirely loses his natural ferocity. Accordingly, when kept with a view to the hunting of bucks, goats, or other animals, great care is necessary in training him, and still greater in conducting him. When leading out to the field, they put him in a cage and carry him on a cart. When the game is sprung, they open the door of the cage ; he instantly springs towards the animal, often seizes him in a few bounds, throws him to the ground, and strangles him. But, if he happens to miss his aim, he becomes mad with rage, and sometimes falls upon his master, who, in order to prevent accidents of this kind, generally carries along with him pieces of flesh, or perhaps a lamb or a kid, which he throws to him in order to appease his fury.

The ancients were well acquainted with these animals. These, and the leopards, were the *variae* and *pardi* of the old writers : one should think that the Romans would have exhausted the deserts of Africa by the numbers they drew from thence for their public shows. Scaurus exhibited at one time one hundred and fifty panthers ; Pompey the Great, four hundred and ten ; Augustus, four hundred and twenty. Probably they thinned the coasts of Mauritania of these animals, but they still swarm in the southern parts of Guinea.--- Oppian describes two species of panthers, a large species and a small one ; the first of which has a shorter tail than the other, and may possibly be this kind.--- An animal of this species is found in Buckharia, called there babr : it is seven feet long, very destructive to

horses, and even camels; the skin is fine, and valued in Russia at one pound sterling.---In China there is a most remarkable kind, called there louchu, whose skins sell at six pounds sterling a-piece. It must here also be observed, that there are in the furriers shops in London, skins in most respects resembling those of the panther; which, they assure us, come from the Spanish settlements in the West Indies: these skins equal those of the old continent in beauty and size.

M. Buffon denies the panther to be an inhabitant of America, in which he was contradicted by Mr. Pennant, who asserted that the same animal was found there; in his third edition of quadrupeds, however, (2 vols. 4to.) he corrects this mistake, in the following words: "In my former edition, I used some arguments in favour of these animals being also natives of South America. I had seen the skins at the furriers shops, which had been brought from the Brazils: but, as that country has a great intercourse with Congo and Angola on account of the slave-trade, I have no doubt but that they were brought from those kingdoms, and re-exported to Europe. The largest congenerous animals that South America has is the Brazilian, hereafter to be noticed."

THE LEOPARDUS, OR LEOPARD.

THIS species is less than the former; its length from the nose to the tail is only four feet; and its tail is two feet long. It is of a lively yellow colour, marked on the back and sides with small spots, disposed in circles, and placed pretty closely together; its face and legs are marked with single spots; its breast and belly are covered with longer hairs than the rest of its body, of a whitish colour; the spots on its tail are large and oblong.

It inhabits Senegal and Guinea, and spares neither man nor beast. When the beasts of chase fail, the leopards descend in crowds from the interior parts of Africa,



The Leopard.

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J. P. Kemp's

Africa, and make vast havock among the numerous herds that cover the rich meadows of the Lower Guinea: they tear their prey in pieces with both claws and teeth, and, though perpetually devouring, they are always thin; the panthers are their enemies, and destroy numbers of them. The negroes take them in pitfalls covered at the top with slight hurdles, on which is placed some flesh as a bait: when they have killed one, they feast on its flesh, which is said to be as white as veal, and very well tasted. The negresses make beads or collars of its teeth, and attribute to them certain virtues. The skins are frequently brought to Europe, and are reckoned very valuable. Buffon says, that when it is of a bright yellow, and has its spots black and well defined, one skin will fetch eight or ten louis d'ors.

In Asia, it is found in the mountains of Caucasus, from Persia to India; and also in China, where it is called poupi. The Buckharian traders, who often bring their skins to Russia, call them bars. It inhabits Arabia also, where it is called nemr. It is said that in that country, as well as Egypt, it does no hurt to man unless provoked; but will enter houses by night and destroy cats.---The manners and dispositions of the leopard are similar to those of the panther; but we have not heard of his being ever trained to hunting, or any way tamed. This species seems to be subject to more varieties than the former; but these affect chiefly the darkness or lightness of its colour. In the Tower of London is a black variety of the leopard, brought from Bengal by Warren Hastings, Esq. The colour universally is a dusky black, sprinkled over with spots of a glossy black, disposed in the same forms as those of the leopard: on turning aside the hair, beneath appears a tinge of the natural colour.

THE SMALLER LEOPARD.

THIS species is not half the bulk of the former; its tail is also shorter in proportion, and tapers to a point, whereas the tails of the panther and great leopard are of equal thickness from top to bottom; its face is spotted with black; it has a great black spot on each side of its upper lip; its breast is marked with small spots; its belly is white spotted with black; its back, sides, and rump, are covered with hair of a bright yellow, marked with circles of spots like the former, but the circles are less. One of these was kept some years ago in the Tower, and seemed a good-natured animal.

THE HUNTING LEOPARD.

THIS animal is of the size of a large greyhound, of a long make, and has long legs and a narrow chest; it has a small head; its eyes are of a pale orange; the end of its nose black; a dusky line runs from each corner of the mouth to the corner of each eye; its ears are short, and of a tawny colour, marked with a brown bar; its face, chin, and throat, are of a pale yellowish brown; the face is slightly spotted, and the body is of a light tawny brown, marked with numbers of small round black spots, not in circles, but each distinct. The spots on the outside of the legs are larger; the hair on the top of the neck is longer than the rest; that on the belly is white and very long; the tail is of a reddish brown, longer than the body, marked above with large black spots, with very long hair on the under side.

It inhabits India, and is tamed and trained for the chase of antelopes; it is carried in a small kind of waggon, chained and hood-winked, till it approaches the herd. When first unchained, it does not immediately make its attempt, but winds along the ground, stopping and concealing itself till it gets a proper advantage, then darts on the animals with surprising swiftness,

ness, and overtakes them by the rapidity of its bounds; but if it does not succeed in its first efforts, consisting of five or six amazing leaps, it misses its prey; losing its breath, and finding itself unequal in speed, it stands still, gives up the point for that time, and readily returns to its master. This species is called in India, chittah: it is used for the taking of jackals, as well as other animals.

THE OUNCE.

THIS species is of a strong make, has a long back and short spotted legs; and is about three feet and an half in length from the nose to the tail; the tail full of hair, with large black spots, is upwards of three feet; its head is large, marked with small round spots; its ears are short; the hair on the body is long; its colour ash, tinged with yellow; behind each ear it has a large black spot; the upper part of its neck is also varied with large single spots; it has also long spots almost touching each other along the sides of the back.

It inhabits Barbary, Persia, Hyrcania, and China, the Bucharian and Altaic chain, and to the west of Lake Baikal. It is an animal of a more gentle and mild nature than most of the preceding, and is, like the last, used for the chase of antelopes, and even hares: but, instead of being conveyed in a waggon like the panther or hunting leopard, it is carried on the crupper on horseback, and is as much under command as a setting dog, and returns at the least call, and jumps up behind its master; it is supposed to be the panther of Pliny, and the lesser panther of Oppian: their skins are brought from China, and sold in Russia for twenty shillings a-piece.

THE BRASILIAN TIGER, OR JAGUAR.

THE hair of this animal is of a bright tawny colour; the top of its back is marked with long stripes of black; its sides with irregular oblong spots, open in
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the middle, the middle of these is of the ground colour of the hair; the thighs and legs are marked with full black spots; the breast and belly are whitish; the tail is not so long as the body; the upper part deep tawny, with large irregular black spots, the lower with small spots.

It grows to the size of a wolf, or even larger, and inhabits the hottest parts of South America, from the isthmus of Darien to Buenos Ayres; it is fierce and destructive to man and beast. Like the tiger, it plunges its head into the body of its prey, and sucks out the blood before it devours it; it makes a great noise in the night like the howling of a hungry dog; it is a very cowardly animal, and easily put to flight, either by the shepherds dogs or by a lighted torch, as it is afraid of fire; it lies in ambush near the sides of rivers, where it sometimes fights a singular combat with the crocodile. When the jaguar comes to drink, the crocodile, ready to surprise any animal that approaches, raises his head out of the water; the former instantly strikes its claws into the eyes, the only penetrable part of this dreadful reptile, who immediately dives under water, pulling his enemy along with him, where they commonly both perish.

THE MEXICAN TIGER.

THIS animal is about four times the size of a large cat, and is very strongly made; its upper parts are of a bright tawny, its sides whitish, marked length-ways with long stripes of black, hollow, and tawny in the middle, in which are sprinkled some small black spots; from the neck towards the shoulders point others of the same colour; a black stripe extends along the back from head to tail; there is also a black stripe from the nostrils to the corner of the eyes; its forehead is spotted with black; its legs are whitish, varied with small black spots; the tail is also spotted with small spots near its base, and with larger near the end, which is black.

black. An animal, supposed to be the female of this species, was shewn some years ago in London. Its shoulders were both barred and spotted; the tail not so long as the body, with large spots above and small beneath.

It inhabits Mexico, the neighbourhood of Carthage and Brasil, lives in the mountains, and is very voracious, but afraid of mankind; it preys on calves, and different sorts of game, lurks amidst the leaves of trees, and sometimes will extend itself along the boughs as if dead, till the monkeys, tempted by natural curiosity, approaching to examine it, become its prey. Buffon says, of all spotted animals, the skin of the male of this species is unquestionably the most beautiful, and the most elegantly variegated. Even that of the leopard is not to be compared with it for vivacity of colours, and symmetry of design; far less those of the jaguar, panther, and ounce. But in the female the colours are fainter, and the design more irregular. They prefer blood to flesh; hence, they destroy a great number of animals, because, instead of satiating themselves by devouring their flesh, they only quench their thirst by drinking the blood; the males have a remarkable superiority over the females; the latter never presume to partake of the prey till the former have enough. They produce but two young  a litter.

THE CINEREOUS TIGER.

THIS species is of a cinereous colour, palest on the legs and belly; irides hazel; tip of the nose red; ears short and rounded, black on the outside, grey within; from the nose to the eye, on each side, is a black line; above and beneath each eye a white one; sides of the mouth white, marked with four rows of small black spots; from the hind part of the head, to the back and shoulders, are some long, narrow, hollow, stripes; along the top of the back two rows of oval black spots; the

the marks on the sides long, hollow, and irregular, extending from shoulders to thighs; shoulders both barred and spotted; legs and belly only spotted; tail not so long as the body, with large spots above, and small beneath. It is about the size of the preceding, and inhabits Guinea.

THE PUMA.

THIS animal has a very small head, ears a little pointed, large eyes, and a white chin; his back, neck, rump, and sides, are of a pale brownish red, mixed with dusky hairs; his breast, his belly, and the inside of his legs, cinereous; the hair on his belly long; his tail is dusky and ferruginous, the tip of it is black; his teeth are of a vast size, his claws are white, the outmost one of the fore feet much larger than the others; he is long bodied, and stands high on his legs; his length from the nose to the tail, is five feet three inches, his tail two feet eight.

He inhabits the continent of America, from Canada to Brasil, and has been mistaken for the lion; he is the scourge of the colonies in the hotter and less populous parts of America; fierce and ravenous to the highest degree; he swims over broad rivers, and attacks cattle even in the inclosures; and, when much pressed with hunger, spares not even the human species. In North America, however, their fury seems to be subdued by the rigour of the climate; the smallest cur in company with its master, makes them seek for security, by running up trees; but they are equally destructive to domestic animals, and are the greatest plague the planter has. When they lie in wait for the moose or other deer, they lie close on the branch of some tree, till the animal passes underneath, then they drop on it, and soon destroy it. They also make the wolf their prey. They conceal such part of their prey as they cannot eat; they purr like a cat, and have soft fur of some value among the Indians, who cover themselves with it

it during the winter; their flesh is also eaten, and said to be as good and as white as veal.

THE JAGUAR.

THIS name having been applied to different species, is apt to create some degree of confusion of ideas; it is the name given by the natives of South America to most of those ravenous animals that are to them objects of terror. This species grows to the size of a heifer a year old, and has vast strength in its limbs. It inhabits Brasil and Guiana, and is much dreaded by the Indians. It is cruel, and fierce; but happily it is a scarce species. Its head, back, sides, fore part of the legs, and its tail, are covered with short and glossy hair of a dusky colour, sometimes spotted with black, but generally plain; its upper lip is white; it has a black spot at each corner of its mouth, long hairs above each eye, and long whiskers on the upper lip; its lower lip, its throat, belly, and the inside of its legs, are whitish, or of a very pale ash-colour; its paws are white, and its ears pointed. Buffon suspects this and the Brasilian tiger to be varieties of the same species; but Pennant is of a contrary opinion, as this is not spotted.

The ant-eater, though he has no teeth to defend himself, is the most cruel enemy the jaguars have to encounter. As soon as the jaguar attacks the ant-eater, it lies down on its back, and suffocates or strangles him with its long claws.

THE CAPENSIS, OR CAPE TIGER.

THE history of this animal is very little known. Mr. Pennant describes it as having short hair, of a bright ferruginous colour; the face marked with black stripes, tending downwards; from the hind part of the head to the tail, the back is marked with oblong stripes of black; the sides with very numerous small

and round spots of black ; belly white ; tail long, of a bright tawny-colour, annulated with black ; ears long, narrow, pointed, and very erect ; length from the nose to the tail near three feet. This is described from a skin in a furrier's shop in London. It inhabits the neighbourhood of the Cape of Good Hope, and as high north as Congo. It inhabits the woods, and is very destructive to lambs, young antelopes, and all the smaller animals ; it is well described by Dr. Foster, in *Phil. Trans.* lxxi. p. i. tab. i. The specimen he made his description from was only eighteen inches long, and was probably quite a young animal.

THE CAYENNE CAT.

THIS animal, of a bright tawny colour, is of the size of a common cat. Its face is striped downwards with black. Its shoulders and body are also marked with stripes, and oblong large black spots ; its legs with small ones. Its breast, the inside of its legs and thighs whitish, spotted with black. The tail is very long, marked with black, tawny, and grey. It inhabits South America, and perhaps Louisiana, and lives on feathered game and poultry : it is very active : it goes by bounds or leaps, and lives much on trees : its voice is like that of the common cat : it brings forth in all seasons of the year, in hollow trees, and has two at a time. It seems a species of wild cat ; but its hair is shorter than that of those creatures in general, its head more square, and its muzzle and tail longer. It is quite untameable.

THE BENGAL CAT.

THESE cats have white whiskers, large dusky ears, with a white spot in the middle of the outside ; between each eye and the nose, a white line, and another under each eye : their colour is a beautiful pale yellowish brown : the head and face is striped downward with black : along the back there are three stripes
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of the same colour, pointing towards the tail: behind each shoulder to the belly, there is a black line: the chin and throat are white, surrounded with a semicircle of black: the breast, belly, and inside of the limbs, are white: the spots on those parts, as well as those on the legs and rump, are round: the tail is long, full of hair, brown, annulated with black.

This species is distinguished from the common cat by this peculiarity, that it is not afraid of being wet, but takes to the water like a water-dog. There was one of them brought to England, which swam on-board a ship at anchor off the coast of Bengal. After it was brought to England, it coupled with the female domestic cats, which produced young, resembling the male in marks on the body and in character; but the ground colour was cinereous. Mr. Pennant says, that he saw one of these plunge into a vessel full of water about two feet deep, and bring up a bit of meat, flung in by way of trial; that it was a far better mouser than the tame cat, and in a short time destroyed swarms of rats, which, in spite of the domestic breed of cats, had made most terrible ravages.

These small spotted species are called by the general name of tiger-cats. Several kinds of them are found in the East Indies, and in the woods near the Cape of Good Hope. Kolben mentions two kinds at the Cape. One he calls the *wild red cat*, having a streak of bright red running along the ridge of the back to the tail, and losing itself in the grey and white on the sides. The skins of this species are said to give ease in the gout, and are much valued on that account at the Cape. The other he calls the *bush cat*, which, he says, is the largest of the wild cats in the countries about the Cape. The *saka* is an obscure species of wild cat, said to be found in Madagascar. They are very beautiful, and couple with the tame cats. The tails of the domestic kinds in that island are, for the most part, turned up.

THE MANUL.

THIS cat, of the size of a fox, in its robust limbs and dusky colour very much resembling a lynx, inhabits all the middle parts of the northern Asia, from the Ural to the Amur. It loves open, woodless, and rocky, countries, and preys on the smaller quadrupeds. It has a large head: its colour is universally tawny, mixed with a few white and brown hairs: the crown of its head is speckled with black; its cheeks are marked with two dusky lines, running obliquely from the eyes: its feet are striped obscurely with dark lines: its tail is longer in proportion than that of the domestic cat, of an equal thickness in all parts, and beset thickly with hair: it is also encircled with ten black rings; the three next to the tip almost touch one another, the rest are more remote.

THE COMMON WILD CAT.

THIS animal has long soft hair, of a yellowish white colour, mixed with grey: the grey is disposed in stripes, pointing downwards from a dusky list that runs from the head to the tail, along the middle of the back: its tail is marked with alternate bars of black and white, its tip is black: the hind part of its legs are also black. It is three times as large as the common domestic cat, and is very strongly made. It inhabits the woods of the most part of Europe, yet none are found in the vast forests of Russia and Siberia. Animals of this species dwell with the common lynx in all the wooded parts of the mountains of Caucasus and their neighbourhood; and are most destructive to lambs, kids, and fawns, and to all sorts of feathered game. This species is the stock or origin of the domestic cat, which is subject to many varieties, viz.

1. The *Angora cat*, with long hair, of a silvery whiteness and silky texture, very long, especially about the neck, where it forms a fine ruff; has very long
and

and spreading hair on the tail, and is of a large size. Its name marks its country, the same which produces the fine-haired goat, to which it also gives name.

Cats of this species degenerate in our climate after the first generation. A variety of this species, with pendent ears, is found in China. The Chinese are very fond of them, and ornament their necks with silver collars. They are cruel enemies to rats. Perhaps the domestic animals, which the Chinese call *sumxi* or *sumxu*, of a black or yellow colour, are of this species.

2. The *tortoiseshell-cat* has his name from his colours, black, white, and orange, and the mode of their arrangement. This is the Spanish cat of Buffon.

3. The *blue cat*, *le chat des chartreux* of Buffon. This variety is properly of a dun colour, or greyish black, or slate colour. Many of them are reared in Siberia, on account of their fine fur; but they were brought there, as well as other species of domestic animals, by the Russians.

4. The *long-headed cat*, with a sharp nose, from New Spain, is of the size of a common cat. It has short legs, weak claws, and flat ears. It is of a reddish yellow colour, of a tame nature, and is an animal but little known.

Such are the varieties of this species that have hitherto been discovered and described. It were perhaps unnecessary to enlarge on the character of the domestic and common cat. Those with whom they are favourites need no information with regard to the natural history of cats; and those who have an antipathy against them, will not wish to dwell on a disagreeable subject.---We shall therefore be as concise as possible.

The cat, though a useful, is generally allowed to be a deceitful, domestic. When pleased, it purs and moves its tail; when angry, spits, hisses, and strikes with its foot. In walking, it draws in its claws: it drinks little: it is fond of fish, of flesh, and of milk; but does not

always

always reject vegetables: it hates wet, moisture, and bad smells: it is very cleanly, and loves to repose in a soft warm place, or basking in the sun: it is the natural enemy of mice and rats, and watches their motions with great gravity: it sees by night with very little light; the brightness of the noon-day sun almost blinds it: its eyes shine in the dark; and its hair, when rubbed in the dark, emits electric fire: it is fond of perfumes, marum, valerian, cat-mint, and any thing of an aromatic flavour: it washes its face with its fore-feet at the approach of a storm: it always lights on its feet, and is tenacious of life to a proverb: its urine is corrosive, and very offensive to the smell: it buries its dung: the female is very salacious, and is a piteous, jarring, squalling, lover; she brings forth in seven weeks, twice, thrice, or oftener, in the year, four or more at a litter: the male is apt to devour the young: when young, they are very frolicsome; when old, sober and grave.---Though some have an unaccountable antipathy at cats, they are beloved and caressed by many. The Mahometans in general are very fond of them. Maillet says, that the cats of Egypt are very beautiful; and adds, that the inhabitants build hospitals for them.

They delight in watching, attacking, and destroying, all weak animals indiscriminately, as birds, young rabbits, hares, rats, mice, bats, moles, frogs, toads, lizards, and serpents. They hunt by the eye only; neither do they properly pursue, but lie in wait and attack animals by surprise; and, after sporting with them, and tormenting them for a long time, they put them to death, without necessity, even when well fed, purely to gratify their sanguinary appetite. Unlike the faithful dog, they are attached rather to places than to persons. They require fifteen or eighteen months to come to their full growth, and live nine or ten years. Their colours are various, black, white, grey, red, mixed, spotted, striped, and marked multifariously.

THE CAT OF JAPAN.

THIS hath upright pointed ears; colour of the face and lower part of the neck whitish; breast and lower belly a clear grey; the body is part yellow and clear grey, mixed with black disposed in transverse rays. Along the back, quite to the tail, is a broad band of black; it also extends over the upper part of the tail; the lower part semi-annulated with black and grey. It is the size of a common cat; the tail is ten inches and a half long; and it is said to be of gentle manners. Its cry is the mewing of a great cat. It appears to be a native of Japan.

THE BLOTCHED CAT.

THIS species hath a round head, short nose, pointed ears, white whiskers, yellowish white nose and cheeks; a round black spot on each side of the former; a dusky line down the middle of the forehead; back and outside of the limbs a reddish brown; sides and thighs yellowish white, blotched with deep brown; tail as long as the body, of a reddish brown colour, marked spirally near the end with black; and is about the size of a common cat. Mr. Pennant, on re-consideration of this animal, is induced, not only by its form, but also its manners, to transfer it to this genus. It purrs and murmurs like a cat; its manners are also treacherous; but its appearance in general is gentle.

It inhabits the neighbourhood of the Cape of Good Hope, and is much sought after for its skin. Kolben says its scent is of musk, and that it is called the Bi-guam cat.

THE GUIGNA, OR CHILIAN CAT,

IS of a bright tawny colour, elegantly marked with round black spots, about five lines in diameter, extending along the back to the tail. This also is about
the

the size of the common cat. It inhabits Chili; and all the forests throughout that region.

THE COROLO.

THIS is of a beautiful white colour, marked with irregular spots of black and yellow; the tail encircled with black quite to the point. Like the other, it inhabits the forest of Chili, and lives on birds and mice; and sometimes infests the poultry yards. A distinguishing character of these two species is the having the head and tail larger in proportion than the common cat.

THE CAT OF NEW SPAIN.

THIS species, though it stands the last of this division, is by no means the least. Its length is four feet, and its height three: it has small eyes, and the tail is the shortest in proportion to its size of any of the division of the genus: its colour is a cinereous blue, marked with long streaks of black: its hairs are strong enough to make pencils with firm points. It inhabits the country whence it derives its name. We may presume that its character is similar to that of others of the same genus.

LYNXES, OR CATS WITH SHORT TAILS.

The Mountain LYNX, or WILD CAT of CAROLINA,

THE length of this animal is two feet and a half, and his tail, which is barred with black, measures only eight inches: his ears are upright and pointed, marked with two brown bars across: the colour of the head, and of the whole upper part of the body, is a reddish brown: he is marked with long narrow stripes on the back, and with numerous round small spots on the sides and legs. His belly is whitish, his chin and throat are of a pure white.

He inhabits North America, is a mild and gentle animal, and grows very fat. The quauhpecotli of Mexico agrees in nature with this; but is of a brown



The Leopard

1854

or dusky colour, darkest on the back, and glossy: its feet are black; the hair on its belly is long and white; and its tail is thick and long.

THE SERVAL, OR MOUNTAIN CAT.

THIS animal, four times the size of a common cat, differs widely from the preceding in these particulars: the orbits of its eyes are white; the spots on its body universally round. In its nature it is very fierce and untameable. It inhabits the woods in the mountainous parts of India, lives and breeds on trees, and scarcely ever descends to the ground. It leaps with great agility from tree to tree. It is called by the natives of Malabar marapauté, and by the Portuguese the serval.

THE LYNX.

THIS species of wild cat has also a short tail, black at its tip; its eyes are of a pale yellow: the hair under its chin is long and full; the hair on its body is also long and soft, of an ash colour, tinged with red, and marked with dusky spots, more or less distinct on different subjects; in some they are scarcely visible: its belly is whitish; its ears are erect, and tufted with long black hairs; these pencils of hairs at the ears are characteristic of the different species of lynxes: its legs and feet are very thick and strong. A Russian lynx will measure, from nose to tail, four feet six inches, while the tail is only six inches long: they vary sometimes in their colour. The irbys, from Lake Blackash, situated to the west of the river Irtysh, as also the katlo of the Swedes, is whitish spotted with black, and larger than the common kind. This large variety is called by the Germans, wolf-lucks, and kalb-lucks, on account of its size. In the British Museum are two most beautiful specimens, said to have been brought from Spain.

Perhaps it was a variety of this which Dr. Pallas saw killed in the pine woods, on the banks of the Volga, below Casan. It was of an uniform whitish yellow above, and unspotted; beneath white; the ears tipped with black. That might also be the variety seen by Dr. Forster, in the empress's menagery at Petersburgh, brought from the kingdom of Thibet. With dusky spots on a yellowish white ground; and of a fierce and piercing aspect. It inhabits the vast forests of the north of Europe, Asia, and America, but not the hot regions of Africa, or of India, though the poets have harnessed them to the chariot of Bacchus, in his conquest of that country. The female brings two or three at a time. It is a long-lived animal; it climbs trees, and lies in wait for the deer that pass under; drops on them; and, seizing the jugular vein, soon makes them its prey. It does not attack man, but is very destructive to the rest of the animal creation; since, after sucking the blood and devouring the brains, it frequently abandons its prey, and goes in quest of fresh game.

The furs of these animals are valuable for their softness and warmth; but their colour varies according to the season and climate. Numbers of them are annually imported from North America, and the north of Europe and Asia. The farther north and east they are taken, the whiter they are, and the more distinct the spots. The most elegant kind is the irbys already mentioned. Their skins sell on the spot for one pound sterling each.

The ancients celebrated the lynx for its great quickness of sight, and feigned that its urine was converted into a precious stone. Our lynx, though his sight cannot penetrate stone walls, has brilliant eyes, a mild aspect, and an agreeable and sprightly air. His urine is not converted into precious stones, though it may chance to fall upon such; but, like the cat, he covers it with earth. He is generally about the size of a fox.

The

The skin of the male is more spotted than that of the female. He does not run out like the wolf, but walks and springs like the cat. The wild cats, the pine weasels, the ermines, and the squirrels, are unable to escape him. He likewise seizes birds when opportunity serves. His fur is more beautiful and richer in winter than in summer.

THE BAY LYNX.

THIS animal, about twice the size of a cat, derives its name from the ground colour of its head, back, and sides, and the exterior parts of its limbs, which are of a bright bay, obscurely marked with dusky spots. Its irides are yellow; and the orbits of its eyes are edged with white; its tail is short; its ears are upright, sharp pointed, and tufted with long black hairs; its face is marked with black stripes pointing to the nose. On each side of the upper lip, there are three rows of small black spots, with long stiff hairs issuing out of them; its cheeks are marked with black curved stripes; its cheeks, lips, and lower parts, are white; the inside of the fore legs is marked with two black bars, and the upper part of the tail with dusky strokes, and next the end with one of deep black; its tip and under side are white. It is a creature of a strong make, and inhabits the inner parts of the province of New York.

THE CASPIAN LYNX.

THE head of this lynx is a little more oblong than that of the common cat. Its restless shining eyes are adorned with a most brilliant golden pupil; its nose is oblong and bifid; its whiskers are scarcely two inches; its ears are erect, oval, and lined with white hairs; the outside is reddish, and their summits are tufted with black hairs; its hair is coarser than that of the cat or common lynx, but less so than that of the wolf; it is shortest on the head, but on the back it is two

inches long: the colour of its head and body is a yellowish brown, or dusky; its breast and belly are of a bright brown, nearly orange; it has two obscure transverse dusky bars near the bending of the knee; its feet are like those of the cat, clothed with hair, and black below; its tail, thick and cylindric, reaches only to the flexure of its leg; it is of the same colour with the back, tipped with black, and having three black rings near its end. In its general appearance it has the form of the domestic cat; its length is two feet six inches, its tail eleven inches, its height before nineteen inches, behind twenty: it is sometimes found so large as to measure three feet. It inhabits the reeds and woods in the marshy parts that border on the western side of the Caspian Sea. In manners, voice, and food, it agrees with the wild cat; it conceals itself during the day, and in the night wanders over the flooded tracts, in search of prey; it feeds on rats, mice, and birds, but seldom climbs trees; it is exceeding fierce, and never frequents the haunts of men. It is so impatient of captivity, that one taken in a trap, by which it had its leg broken, refused for many days the food placed by it; but, in its rage, devoured the fractured limb, with pieces of the stake it was fastened to, and broke all its teeth in its mad efforts to get loose.

THE PERSIAN LYNX.

THIS is the caracal of Buffon, and is nearly of the size of a fox; it has a lengthened face, and small head; its ears are black, very long and slender, and terminated with a tuft of black hairs; the inside and bottom of the ears are white, its nose is also white; its eyes are small; the upper part of its body is of a pale reddish brown, the tail somewhat darker; its belly and breast are whitish; its limbs are strong, and pretty long; the hind part of each leg is marked with black; its tail is about half the length of its body. It inhabits Persia, India, and Barbary. They are often brought

up tame, and used in the chace of the smaller quadrupeds, and the larger sort of birds, as cranes, pelicans, and peacocks, which they surprize with great address. When they seize their prey, they hold it fast with their mouth, and lie for some time motionless upon it; they are also said to attend the lion, and to feed on the remains of his prey. They are fierce when provoked. Dr. Charleton says, he saw one fall on a hound, which it killed and tore to pieces in a moment, though the dog defended himself to the utmost.

LYBIAN LYNX.

THIS species hath short black tufts to the ears, which are white within, and of a lively red without; its tail has four black rings, and is white at the tip; it has black marks behind its legs; is greatly inferior in size to the former, not being larger than a common cat. It inhabits both Lybia and Barbary.

URSUS, THE BEAR.

THIS genus, of which there are seven species, with a few subordinate varieties, is distinguished by six cutting teeth, and two canine teeth in each jaw, and five toes on each foot. Animals of this genus, in walking, rest on the hind feet, as far as the heel.

THE BROWN BEAR.

THIS species has a long head, small eyes, and short ears, rounded at the top; its limbs are strong, thick, and clumsy; its feet are large, and its tail is very short; its body is covered with very long shaggy hair, the colour is various. The largest bears of this species are of a rusty brown; the smallest of a deep black. Some on the confines of Russia are black, mixed with white hairs, called by the Germans silver bear. Some are found in Tartary of a pure white; but they are very rare. They inhabit the northern parts of Europe,

rope, Asia, and Arabia; the Alps of Switzerland and Dauphiné; Japan and Ceylon, North America and Peru; and Dr. Shaw informs us they are found in Barbary. Thus they appear to be confined to no one climate, but seem to bear with almost any, except the burning sands of Africa. They must have been very plentiful, for Pliny says that Domitius Ænobarbus produced at one of the shows a hundred Numidian bears, and as many Ethiopian hunters.

The brown bears are sometimes carnivorous, and will destroy cattle, and eat carrion; but their general food is roots, fruits, and vegetables; they will rob the fields of pease; and, when they are ripe, they pluck up great quantities of them, beat them out on some hard place, eat them, and carry off the straw. They will also, during winter, break into the farmer's yard, and make great havock among his stock of oats. Bears are particularly fond of honey. They live on berries, fruits, and pulse, of all kinds, and feed much on the black mulberry; are remarkably fond of potatoes, which they very readily dig up with their great paws; make much havock in the field of maiz, and are great lovers of milk and honey: they feed much on herrings, which they catch in the season when those fish come in shoals up the creeks, which gives their flesh a disagreeable taste, and the same effect is observed when they eat the bitter berries of the tupelo.

Bears strike with their fore foot, like a cat; they seldom or never use their mouths in fighting: but seizing the assailant with their paws, and pressing him against their breast, almost instantly squeeze him to death. Some imagine the Latin name, *ursus*, to be derived from this mode of hugging an antagonist.

The females, after conception, retire into the most secret places; lest, when they bring forth, the males should devour the young. So impenetrable is their retreat during their pregnancy, that out of five hundred, killed in one winter in two counties of Virginia,
only

only two females were found, and those not pregnant. Winter is their breeding season; they bring two, rarely three, young at a time; the cubs are deformed, but not a shapeless mass, to be licked into shape, as the ancients pretended. The cubs, even of the brown bear, are of a jetty blackness, and often have round their necks a circle of white. The flesh of a bear in autumn, when they are most excessively fat, by feeding on acorns and other mast, is most delicate food; and that of the cubs still finer; but the paws of the old bears are reckoned the most delicate morsel; their fat is very white and sweet. Their oil is excellent for strains and old pains.

In the latter end of autumn, after they have fattened themselves to the greatest degree, the bears withdraw to their dens, where they continue for a great number of days in total inactivity and abstinence from food; having no other nourishment than what they get by sucking their feet, where the fat lodges in great abundance. In Lapland, they pass the long night in dens lined warmly in a vast bed of moss, in which they roll themselves secure from the cold of that severe season. Their retreats are either in clefts of rocks, in the deepest recesses of the thickest woods, or in the hollows of ancient trees, which they ascend and descend with surprising agility. As they lay in no winter provisions, they are in a certain space of time forced from their retreats by the urgent calls of hunger, and come out extremely lean. Multitudes of them are killed annually in America for the sake of their flesh or skins; which last make a considerable article of commerce.

There are no bears in Britain or in France, except, perhaps, a few in the most unfrequented mountains of the latter. They are solitary animals, but the young follow the mother so long as they need her assistance; they are said to live twenty or twenty-five years; the male and female live not together, but have each a separate place of retreat; their amazing fatness makes them

them light for swimming, and accordingly they traverse with ease rivers and lakes. Upon their sides and thighs their fat is sometimes ten inches thick. The soles of their feet appear to be composed of small glands; when wounded, there issues out a white milky juice: it is this perhaps that they suck from their paws.

Buffon mentions two domestic bears, that in 1772 were at Berne; they had been brought from Savoy thirty years before that period; they began to generate at the age of five; the female thereafter was in season every year in the month of June, and brought forth in January; she produced the first time one cub only, and afterwards sometimes one, sometimes two, but never more than three; she was exceeding fond of them; their eyes were shut during four weeks. At first they exceeded not eight inches in length; at the end of three months they measured only fifteen. After the death of the male, which happened in consequence of a fall from a high tree, the female appeared to be much afflicted, and refused every kind of nourishment for several days; but, unless these animals be brought up together from their earliest youth, they cannot endure one another; and, after being accustomed to this kind of society, the survivor will not admit another mate. They are said to have weak eyes, but acute senses of hearing, touching, and smelling. When the bear is hunted, and finds himself overpowered, he leans his back against a rock or tree, collects turf and stones, which he throws at his enemies: it is generally in this situation that he receives the finishing blow.

THE BLACK BEAR,

WITH a long pointed nose, and narrow forehead; the cheeks and throat of a yellowish brown colour; hair over the whole body and limbs of a glossy black, smoother and shorter than that of the European kind. They are usually smaller than those of the old world; yet Mr. Bartram gives an instance of an old he-bear
killed



The Black Bear.

Published Feb^r 1800.

F. W. G. S. P.



killed in Florida, which was seven feet long, and, as he guessed, weighed four hundred pounds.

These animals are found in all parts of North America, from Hudson's Bay to the southern extremity; but in Louisiana and the southern parts they appear only in the winter, migrating from the north in search of food. They spread across the northern part of the American continent to the Asiatic isles. They are found in the Kurilski islands, which intervene between Kamtschatka and Japan, Jesso, Masima, which lies north of Japan, and probably Japan itself; for Kämpfer says, that a few small bears are found in the northern provinces.

It is very certain that this species of bears feed on vegetables. Du Pratz, who is a faithful as well as intelligent writer, relates, that in one severe winter, when these animals were forced in multitudes from the woods, where there was abundance of animal food, they rejected that, notwithstanding they were ready to perish with hunger, and, migrating into the lower Louisiana, would often break into the courts of houses. They never touched the butchers meat which lay in their way, but fed voraciously on the corn or roots they met with.

THE POLAR OR WHITE BEAR.

THIS species has a long head and neck, and short round ears; the end of its nose is black, its teeth are very large, its hair long, soft, and white, tinged in some parts with yellow; its limbs are of great size and strength. Animals of this species grow to a vast size; the skins of some are thirteen feet long. They are confined to the coldest part of the globe, and have been found as far as navigators have penetrated northward, above the parallel of eighty degrees. The frigid climates alone seem adapted to their nature; even the north of Norway, and the country of Mesen in the north of Russia, are destitute of them; they are found

on the shores of Hudson's Bay, Greenland, and Spitzbergen: they are also met with in great abundance in Nova Zembla, and from the river Oby along the coast of Siberia to the mouths of the Jenesei and Lena; but are never seen far inland, unless they lose their way in mists. None are found in Kamtschatka or its islands. They have been seen as far south as Newfoundland; but they are not natives of that country, being only brought there accidentally on the islands of ice that float along the northern seas, from the polar regions southward.

During summer, the white bears are either resident on islands of ice, or passing from one to another. They swim admirably, and can continue that exercise six or seven leagues; they dive with great agility; they bring forth two young at a time, and so strong is the affection between their parents and them, that they die rather than desert one another. Their winter retreats are under the snow, in which they form deep dens, supported by frozen pillars of the same, or else under some great eminence, beneath the fixed ice of the frozen ocean.

They feed on fish, seals, and the carcases of whales, and on human bodies, which they will greedily disinter; they seem to be very fond of human blood, and are so fearless as to attack companies of armed men, and even to board small vessels. When on land, they live on birds and their eggs. Allured by the scent of the seals flesh, they often break into the houses of the Greenlanders. Their greatest enemy of the brute creation is the morse, with which they have terrible conflicts, but are generally worsted; the vast teeth of the former giving it a decided superiority. Their flesh is white, and said to taste like mutton; but their liver is very unwholesome; their fat is melted for train oil, and that of the feet is used in medicine. One of this species was brought over to England a few years ago, and exhibited in many places. It was very furious,
almost



A. Bosc sculp.

T. 101

almost always in motion, roared loud, and seemed very uneasy, except when cooled by having pail-fulls of water poured upon it.

Callixenus Rhodius, in his description of the pompous procession of Ptolemæus Philadelphus at Alexandria, speaks of one great white bear, *Αρκτος λευκη μεγαλη* *μια*, among other wild beasts that graced the show; notwithstanding the local situation of this species at present, it is possible that Ptolemy might procure one; whether men could penetrate, in those early times, as far as the present residence of these Arctic animals, I will not venture to affirm, nor to deny; but, since the Honourable Daines Barrington, has clearly proved the intense cold that in former ages raged in countries now more than temperate, it is most probable that in those times they were stocked with animals natural to a rigorous climate; which, since the alteration, have necessarily become extinct in those parts: the Polar bear might have been one; but that it was the species meant by Callixenus is clear to me, by the epithet *μεγαλη*, or great, which is very applicable to it; for the white Tartarian land bear (which Ptolemy might very easily procure) differs not in size from the black or brown kind, but the bulk of the other is quite characteristic.

Land bears, sometimes spotted with white, at other times wholly white, are sometimes seen in the parts of Russia bordering on Siberia, in a wandering state, and are supposed to have strayed out of the lofty snowy mountains which divide the two countries. They are said to dread the whale, who scents and pursues them, from a natural antipathy; because they eat her young.

THE WOLVERENE BEAR.

THIS species of the bear has a black sharp-pointed visage, and short round ears, almost hid in the hair. The hair on its head, back, and belly, is reddish, tipped with black; so that, at first sight, those parts appear

quite black; its sides are of a yellowish brown. This colour passes, in form of a band, quite over the hind part of the back above the tail; it has a white spot on its throat, and on its breast another white mark, in form of a crescent; its legs are very thick and short, of a deep black; it has five toes on each foot, but they are not deeply divided. Like the brown and the black bear, it rests on its foot as far as the first joint of the leg, and walks with its back greatly arched: its claws are strong and sharp, white at their ends; its tail is clothed with long coarse hairs; those at the base are reddish; those at the end black: some of the hairs are six inches long. The length of the animal itself is about twenty-eight inches; the trunk of the tail measures seven inches, and its hair six more. Its whole body is covered with very long and thick hair, which varies in colour according to the season. It inhabits Hudson's Bay and Canada, as far as the straits of Michilimackinac.

It is a voracious animal, but slow of foot; it is consequently obliged to take its prey by surprise. In America it is called the beaver eater; for it watches those animals as they come out of their houses, and sometimes also breaks into their habitations and devours them.

In a wild state it is extremely fierce, and is a terror to both the wolf and the bear. They will not prey on it when they find it dead, perhaps on account of its being so very fetid, smelling like a pole-cat. It makes a strong resistance when attacked. If it can lay hold on it, it will tear the stock from a gun, and pull the traps it is caught in to pieces. It burrows, and has its den under ground. Mr. Graham, a gentleman long resident in Hudson's Bay, says, that it will lurk on a tree, and drop on a deer passing underneath, and fasten on it till the animal is quite exhausted. Charlevoix applies the American name carcajou, which properly
belongs



The Marmoset.

belongs to this animal, to the puma, or brown panther of North America.

THE GLUTTON.

THIS is a bear with a round head, a thick blunt nose, and short ears, rounded except at the tip. Its limbs are large, and its back is strait, marked along its whole length with a tawny line; its tail is short, and very full of hair; its hair in all other parts is finely damasked, or watered like a silk, and very glossy; but it sometimes varies to a brown colour. One brought from Siberia, and kept alive at Dresden, measured forty-four inches, and nineteen in height.

It inhabits Lapland, the northern and eastern parts of Siberia and Kamtschatka. Those of Kamtschatka differ and vary to white and yellowish. The natives prefer the skins of these to such as are black; they say the heavenly beings wear no other garments. The women wear the paws of the white sort in their hair, and esteem the skin of one the most valuable present their husbands or lovers can make them.

These animals derive their name from their voracious appetite. That one already mentioned as being kept at Dresden, would eat thirteen pounds of flesh in a day, and not be satisfied; but the report of their filling themselves so full as to be obliged to go between two trees, in order to force out a part of the food, seems to be fabulous. The hunters of the isatis, or Arctic fox, on the banks of the frozen sea, complain much of their depredations on those animals when caught in a trap or snare, as they go in quest of these, but are too cunning to be ensnared themselves.

Like the lynx and Canadian carcajou, or wolverene, it lurks on the boughs of trees, and falls on any animal that passes beneath, fastens on it, and destroys it. Its favourite game is deer, and, about the Lena, horses. It may be tamed. It differs from the bear in its lean habit, and by not lying inactive during the winter, and also

also by its living entirely on animal food ; it is also more bold, voracious, and cunning. Being more voracious than any other of our carnivorous animals, it has been called the vulture of quadrupeds.

The Russians call it *rosomak* ; the Kamtschatkans, *timmi* ; and the Koratski, *haeppi*. An animal called by the Greenlanders *amanki*, and thought by some to be the same as the glutton, Mr. Pennant thinks to be a fabulous creature, as Greenland is destitute of wood.

THE RACON.

THIS species of the bear, of the size and figure of a small badger, is said to partake of the qualities of the fox, the dog, and the monkey. He has a sharp-pointed black nose, the upper jaw longer than the under ; his ears are short and rounded : his eyes are surrounded with two broad patches of black ; a dusky line runs down his forehead to his nose ; the rest of his face, his cheeks, and chin, are white. The upper part of his body is covered with hair, ash-coloured at the root, whitish in the middle, and tipped with black ; his tail is as long as his body, very bushy, and annulated with black ; his fore legs are much shorter than the hind ones ; he has five toes on each foot, armed with strong sharp claws ; his toes are also black, and quite divided ; he sometimes varies in colour. Mr. Pennant mentions his having seen one of a cream-colour.

He inhabits the warm and temperate parts of America ; he is found also in the mountains of Jamaica, and in the islands about the mouth of the Gulph of California ; he appears not in Canada, and yet he can support excessive cold ; he is easily tamed, very good natured and sportive, familiar and caressing, but as unlucky as a monkey, and implacable in his resentment ; he is almost always in motion, very inquisitive, examining every thing with his paws, which he uses as hands ; he rests upon the first joints of his hind legs, and sits up to eat ; he softens, or rather dilutes, every
kind

kind of dry food that is given him, when confined; he is extremely fond of sweet things, and of strong liquors, and will get excessively drunk; he delights in hunting spiders, grasshoppers, snails, and worms; he retires to a distance to obey the calls of nature; he has all the cunning of a fox, and is very destructive to poultry, but will eat all sorts of fruits, green corn, &c. yet he prefers fish and eggs to almost every thing. At low water, he feeds much on oysters; though he is very dexterous at opening them himself, to save himself the trouble, he will watch their opening, and snatch out the fish with his paw. Sometimes his foot is caught in the shell, and he is kept there till he is drowned by the coming in of the tide: he is fond of crabs also. He climbs trees very nimbly; he goes by leaps, and rather gambols than walks; his movements, though oblique, are quick and light; his fur is esteemed next to that of the beaver for making hats.

A letter from M. Blanquart to M. Buffon gives us an amusing delineation of the manners of this animal: "My racoon, before he came into my possession, had always been chained. In this state of captivity, he was very gentle, but had little inclination to caresses. The people of the house were all equally kind to him, but he received them differently; for what pleased him in one, he revolted against in another; and in this his conduct was invariable. His chain sometimes broke, and liberty rendered him insolent. He took possession of an apartment, and would allow none to enter it; it was with some difficulty that he could be again reconciled to bondage. Since he came under my management, I have frequently given him his liberty. Without losing sight of him, I allowed him to walk about with his chain; and each time his gratitude was expressed by a thousand caressing gambols; but this is by no means the case when he makes his escape himself: he then roams about, sometimes for three or four days together, upon the roofs of the neighbouring houses,

descends

descends during the night time into the neighbouring court-yards, enters the hen-houses, strangles all the poultry, and eats their heads. His chain does not render him more humane, but more circumspect only; he then employs every artifice to make the fowls grow familiar with him, he permits them to partake of his victuals, and it is only after having inspired them with the highest notions of security that he seizes one and tears it to pieces. Some young cats have met with the same fate.

“ This racoon is not very grateful for the caresses he receives; but is extremely sensible of bad treatment. A servant one day gave him several lashes with a whip, but the man has endeavoured ever since in vain to accomplish a reconciliation: neither eggs nor fish, of which the animal is very fond, can appease his resentment. At the approach of the servant, he flies into a rage, his eyes kindle, he springs at the man, utters dolorous cries, and rejects every thing that is presented to him, till the object of his resentment disappears. If any person strikes him, or if he be attacked by an animal that he thinks stronger than himself, he makes no resistance, but, like the hedge-hog, conceals his head and feet, by rolling up his body in the form of a ball; no complaints escape him, and in this position he calmly submits to be killed. He abhors children, their crying irritates him, and he makes every effort to spring upon them. A small bitch, of which he is fond, he chastises severely if she bark too loud. I know not why, several other animals equally detest sharp cries.” This species acquires not its full growth till it be two years and a half old.

THE NEW HOLLAND BEAR.

THIS species is of the same external form as the American racoon, except the ears, which are pointed. It hath six cutting teeth in the upper jaw, and two in the lower; back of a dark grey, growing lighter on

the sides; belly of a fine brown; tail as long as the body, covered with long hair; the lower part near the end is naked, and has a prehensile quality, like some species of monkies, or the common opossum. It inhabits New Holland, and is called at Botany-bay wha-tapoua-row.

THE COMMON BADGER.

THIS species has small eyes, short round ears, and a short thick neck; his nose and chin, the lower side of his cheeks, and the middle of his forehead, are white; his ears and eyes are inclosed in a pyramidal bed of black; the hair on his body is long and coarse; its bottom is of a yellowish white, its middle is black, and it is ash-coloured at the ends; his throat, breast, and belly, are black; his tail is covered with long hair, of the same colour with that of the body; his legs are very short and thick; the claws on his fore feet are very long; a fetid white matter exudes from the orifice beneath his tail. He is an animal of a very clumsy make, commonly two feet six inches in length; his tail measures six inches; he weighs from fifteen to thirty-four pounds. Mr. Pennant met with a male of the weight last mentioned in the year 1779; but such are very rare.

It inhabits most parts of Europe, as far north as Norway and Russia, and the Step or desert beyond Orenburgh in the Russian Asiatic dominions; in Great Tartary, and in Siberia about the river Tom, and even about the Lena; but there are none to the north. It inhabits China also, and is often found in the butchers shops in Peking, the Chinese being fond of them for the table. It is a scarce animal in most countries; it is a diffident and solitary creature; it seldom appears in the day; it confines itself much to its hole, and is an indolent, sleepy, creature, but generally very fat. It feeds by night, and eats roots, fruits, grass, insects, and frogs, but is not carnivorous, according to Mr.

Penrant, while Buffon asserts that it prefers flesh to every thing else. It runs very slowly; when overtaken, it comes to bay, and defends itself vigorously; its bite is hard and dangerous. It is hunted during the night for the skin, which serves for pistol furniture, and its hair for making brushes to soften the shades in painting. Its flesh makes good bacon. The division of this species into two, the swine and the dog badger, Mr. Pennant thinks unnecessary, as he asserts there is only one. It burrows under ground, and makes several apartments, but forms only one entrance from the surface.

M. Buffon says, the badger retires to the most secret places, to the inmost recesses of the forest, and there digs a subterranean habitation; he seems to fly society, and even the light, and spends three-fourths of life in his dark abode, from which he never departs but in quest of subsistence. As his body is long, his legs short, his claws, especially those of the fore feet, very long and strong, he digs and penetrates the earth with greater facility than any other animal; he makes his hole winding and oblique. The fox, who cannot dig with equal dexterity, avails himself of the operations of the badger. Being unable to make him quit his habitation by force, the fox practises every art to render him uneasy. He stands sentinel at the entrance of the hole, and even defiles it with his ordure. He afterwards takes possession, enlarges, and fits it up for his own accommodation; the badger, though obliged to change his habitation, leaves not his country; he goes to a small distance only, where he digs a fresh hole. When hunted, and found at some distance from his hole, he is soon overtaken by the dogs. They seldom, however, accomplish their purpose without assistance. The hair of the badger is very thick, and his legs, jaws, teeth, and claws, are exceedingly strong. These natural weapons he uses with courage and dexterity. He lies on his back, and resists all the efforts
of

of the dogs, and wounds them in the most dangerous manner. He is besides tenacious of life, fights long, makes a brave defence, and persists to the last extremity.

The young ones are easily tamed; they play with the dogs, and follow the person who feeds them; but, when taken old, they continue always savage: they are neither mischievous nor ravenous, like the wolf and the fox: they often remain in their holes three or four days together, especially during snow: they keep their habitations extremely clean, and never defile them with their ordure: the male is seldom found with the female: when about to bring forth, she cuts down herbage, bundles it up, and trails it with her feet to the bottom of her hole, where she makes a commodious bed for herself and her young ones. She brings forth in summer, and the litter consists of three or four.

It is probable that the badger was quite unknown to the Greeks, as it is not mentioned by Aristotle in his Natural History; nor is there any name for it in the Greek language. In Latin it has two names, *meles* and *taxus*; and in French it has also two, *blaireau* and *taïsson*. The circumstance of a double name has led many to believe that there are two distinct species of the badger in Europe; but both Pennant and Buffon assert the contrary. The author last mentioned says, this species of quadruped, an original native of the temperate climates of Europe, has never spread beyond Spain, France, Italy, Germany, Britain, Poland, and Sweden; and it is every where very scarce. It does not approach to any other species; its characters are deeply marked, and very singular. The alternate belts upon his head are peculiar; his body is nearly white above, and almost black below, which is contrary to all other wild animals, whose bellies are always of a lighter colour than their backs. In walking, the badger treads on its whole heel, like the bear, which brings its belly very near the ground. It lives

to a very great age, and, when blind and disabled, is fed by the younger animals.

THE AMERICAN BADGER,

IN Pennsylvania called the ground hog. This badger has a white line from the tip of the nose passing between his ears to the beginning of his back, bounded on each side with black, as far as the hind part of the head, then by a white one, and, immediately between that and the ears, there is another of long black hair. His back is coloured like that of the common badger; his sides are yellowish, and his belly cinereous; his thighs are dusky; his tail is covered with long, dirty, yellow, hairs, tipped with white, the end dusky.

THE INDIAN BADGER.

THIS animal has a small head, a pointed nose, and scarcely any external ears, only a small prominent rim round an oval orifice: the colour of its nose and face a little beyond the eyes is black; its crown, the upper part of the neck, and back, are white, inclining to grey; its legs, thighs, breast, belly, and sides, and the upper part of the tail, are black; it has five toes on each foot, the inner ones are small; its claws are very long and strait; its length is about two feet, the length of its tail about four inches; its hair is short and smooth: it derives its name from the country it inhabits: it is very lively, playful, and good natured: it sleeps rolled up, with its head between its hind legs. One, that was some years ago in the possession of Mr. John Hunter, London, refused all commerce with an English badger that was turned in to it, and lived some time in the same place. It was wont to climb very readily over a division in its cage, and slept very little during the day-time.



Seba del.

J. Purr sculpt.

1. The Badger. 2. The Opossum. 3. The Kangaroo.

THE DIDELPHIS, OR OPOSSUM.

THIS genus belongs to the Order of Feræ, the distinguishing characters of which are, that they have two canine teeth in each jaw, but the number of cutting teeth differs in different subjects; also five toes on each foot; those on the hind feet are formed like a hand, with a distinct thumb; the tail is very long, slender, and usually naked. There are fifteen species comprehended under this genus, which are as follow:

VIRGINIA OPOSSUM.

THIS animal has a long sharp-pointed nose, large, round, naked, and very thin, ears, of a black colour, edged with pure white; it has small, lively, black eyes, with long stiff hairs on each side of its nose, and behind its eyes; its face is covered with short, soft, white, hair; the space round its eyes is dusky; its neck is very short, its sides are of a dirty yellow; the hind part of its neck and its back are covered with hair above two inches long, soft, but uneven, having its bottom of a yellowish white, the middle part black, and the ends whitish; its sides are covered with dirty-coloured dusky hair, its belly with soft, woolly, dirty, white, hair; its legs and thighs are black, its feet dusky, and its claws white; the base of its tail is clothed with long hair like that on its back, the rest of the tail is covered with small scales, the half next the body is black, the rest white; it has a disagreeable appearance, looking like the body of a snake: it has the same prehensile qualities as that of some monkeys.

Its body is round and very thick, and its legs are short; the female has a large pouch on the lower part of her belly, in which the teats are lodged, and where the young shelter themselves as soon as they are brought forth. The usual length of this animal when full grown, is about twenty inches, of its tail twelve.

It inhabits Virginia, Louisiana, Mexico, Brazil, and Peru: it is very destructive to poultry, the more so as it sucks their blood without eating their flesh: it feeds also on roots and wild fruits: it is very active in climbing trees, will hang suspended by its tail, and, by swinging its body, fling itself among the boughs of a neighbouring tree: it continues frequently hanging by the tail, with its head downwards: it hunts eagerly after birds and their nests: it walks very slow; when overtaken it will feign itself dead, but is not easily killed, being as tenacious of life as a cat.

When the female is about to bring forth, she makes a thick nest of dry grass, in some close bush, at the foot of a tree, and brings four, five, or six, young ones at a time. As soon as the young are brought forth, they take shelter in the pouch or false belly, and fasten so closely to the teats, that they are not to be separated without difficulty. They are small, blind, and naked, when new born, and resemble fœtuses; it is therefore necessary that they should continue in that receptacle that nature has prepared for them, till they attain perfect shape, strength, sight, and hair, and are prepared to undergo what to them may be called a second birth; after which, they run into this pouch, as into an asylum, in time of danger, and the parent carries them about with her. During the time of this second gestation, the female shews an excessive attachment to her young, and will suffer any torture rather than permit the place of their retreat to be laid open; for she has the power of opening or closing it, by the assistance of some very strong muscles. The flesh of the old ones is very good, like that of a sucking pig. Their hair is dyed by the Indian women, and woven into garters and girdles; but their skins are very fetid.

Mr. Pennant says, that Buffon seems not to be acquainted with this animal; but has compiled an account of its manners, and collected the synonyms that

belong to it. His figures and descriptions both belong to the following species.

THE MOLUCCA OPOSSUM.

THIS species has long, oval, and naked, ears; its mouth is very wide; over each eye it has an oblong white spot; the lips of its upper jaw, its throat, breast, and belly, are of a white ash-colour, the rest of its hair is of a cinereous brown, tipped with tawny, and darkest on the back; its tail is as long as the body; near the base it is covered with hair, the rest of it is naked; its claws are hooked. On the belly of the female there is a pouch, like that of the former species, in which the young shelter. Margrave found six young ones in the pouch of one female; she had ten cutting teeth above, and eight below. The length of the animal is ten inches, its tail exceeds the length of both head and body; its whole figure is of a much more slender and elegant make than that of the former. Its tail pulverised, and taken in a glass of water, is reckoned, in New Spain, a sovereign remedy against the gravel, colic, and several other disorders.

This genus is not confined to America, as Buffon asserts; it is frequently found in Java, the Molucca isles, and New Holland. This species is found in great numbers in Aroe and Solor. It is called in the Indies, pelandor Aroe, or the Aroe rabbit. They are reckoned very delicate eating, and are very common at the tables of the great, who rear the young in the same places in which they keep their rabbits. It inhabits also Surinam and the hot parts of America.

Mr. Pennant mentions a larger variety of this species, called the philander orientalis, described by Seba, and said to be brought from Amboina; but complains, that much is wanted to complete the history of this genus.

THE JAVAN OPOSSUM.

THIS species of the opossum has a narrow fox-like head, upright pointed ears, a brown stripe passing through the eyes, very short fore legs, five toes on the fore feet, three on the hind, two of which are very strong, the outmost slender and weak: his tail is thick, and shorter than the body. In the upper jaw are six cutting teeth, two in the lower, formed like those of a squirrel. They have no canine teeth.

On the belly of the female there is a complete pouch like that of the Virginia kind; the hair on the body is coarse; the face of the animal is seemingly that of a hare. They were first discovered by Mr. Le Bruyn, who saw, in Java, several of them in an inclosure along with rabbits; they burrowed like them, but preserved their young ones in their pouch; the young ones would often peep out when the old ones were full. Specimens of them have been sent from Java to Holland.

THE MURINE OPOSSUM.

THE murine opossum has long, broad, ears, rounded at the extremity, thin and naked; its eyes are encompassed with black; the face, head, and upper part of the body, are of a tawny colour, the belly of a yellowish white; its feet are covered with short hair; its toes are formed like those of the Virginian opossum, its tail is slender, covered with minute scales to the very rump; its length from the nose to the tail is about six inches and a half, and the tail the same. The female wants the false belly; but on the lower parts, the skin forms on each side a fold, between which the teats are lodged. This species varies in colour; some in Guiana are brown above, and white beneath.

It inhabits the hot parts of South America, and agrees with the others in its food and manners, and the
prehensile

prehensile power of its tail; the female brings from ten to fourteen young at a time, at least she has so many teats. The young affix themselves to the teats as soon as they are brought forth, and remain attached to them, like so many inanimate things, till they attain growth and vigour to shift a little for themselves. Both the Virginian, and Marmose or murine opossum, have each fifty teeth.

THE MEXICAN OPOSSUM.

THIS animal has large, angular, naked, and transparent, ears; its nose is thicker than that of the former kind; its whiskers are very large; a slight border of black furrounds its eyes; its face is of a dirty white, with a dark line running down the middle; the hair on the head and upper part of the body is ash-coloured at the roots, but of a deep tawny brown at the tips; its legs are dusky, its claws white, its belly dull cinerous, its tail is long, and pretty thick, varied with brown and yellow; hairy about an inch at its origin, the rest naked: the length of the animal and of its tail are the same, each about nine inches; the tail is prehensile, and serves instead of a hand.

This species inhabits the mountains of Mexico, and lives on trees, where it brings forth its young. When in any fright, they embrace their parent closely; and she carries them along with her wherever she goes.

THE CAYENNE OPOSSUM.

THE Cayenne opossum has a long, slender, face, ears erect and pointed, but short; its coat is woolly, but mixed with very coarse hairs, three inches long, of a dirty white from the roots to the middle, and thence to the ends of a deep brown; its sides and belly are of a pale yellow, its legs of a dusky brown, it has a thumb on each foot distinct from the toes; on the toes of the fore feet, and thumb of the hind, there are nails; on the toes of the hind feet there are crooked claws; its

tail is very long, naked, and scaly. A young one measured above sixteen inches, and its tail about fifteen. It inhabits Cayenne, the country from which it has its name; it is very active in climbing trees, on which it lives the whole day: in marshy places, on the shore, it feeds on crabs, which, when it cannot draw out of their holes with its feet, it hooks them by means of its long tail. If the crab however pinches its tail, a case not uncommon, it sets up a loud cry, which may be heard a great way off. Its common voice is a grunt, like a young pig: it is well furnished with teeth, and will defend itself stoutly against dogs. The female brings forth four or five young ones at a time, and secures them in a hollow tree. The natives eat these animals, and say their flesh resembles that of a hare. They are easily tamed, and will then refuse no kind of food.

THE NEW HOLLAND OPOSSUM.

THIS species was found near Endeavour River, on the eastern coast of New Holland; it lodges in the grass, but is not common: its length from the head to the tail, that is, the length of its body, is about thirteen inches, the tail the same: the upper part of the head, the back, and sides, are covered with long, soft, glossy, hairs, of a dark ash-colour at the bottom, of a rusty brown towards the ends; the belly is of a dirty white: its tail is taper, covered with short brown hair, except four inches of the end, which space is white, and naked underneath: its toes are like those of the former species.

THE VULPINE OPOSSUM.

THIS species hath remarkable long whiskers; the ears erect and pointed; the upper parts of the body greyish, mixed with a dusky white, tinged with rufous about the shoulders; all the underside of the body and neck are of a tawny buff; about a quarter of the tail next the body is of the same colour with
the

the back, the residue is black; its length from the tip of the nose to the tail is two feet two inches, and the tail itself fifteen. This is likewise an inhabitant of New Holland, particularly described in Stockdale's edition of Botany-bay.

THE SHORT-TAILED OPOSSUM.

THE short tailed opossum has naked ears; its back is of a dull red, the belly paler: the tail is scarcely half the length of the body, it is thick at the base, and tapers towards the end: it has no false belly, but the young, as soon as they are brought forth, adhere to the teats of their mother. Seba says, she produces ten or twelve at a time. It inhabits South America, and lives in the woods.

THE PHALANGER OPOSSUM.

THIS species of the opossum has a thick nose, and short ears, covered with hair: it has eight cutting teeth in the upper jaw, and two in the lower: the hair on the upper part of the body is reddish, mixed with light ash-colour and yellow: the hind part of the head, and the middle of the back, are marked with a black line; the throat, belly, legs, and part of the tail, are of a dirty yellow white; the rest of the tail is brown and yellow; the body of the female is marked with white; the first and second toes of the hind feet are closely united; the claws are large; the thumb on the hind feet is distinct, like that of the other species; the bottom of the tail is covered with hair for near two inches and a half, the rest of it is naked: the length of the animal, from the nose to the tail, is near nine inches. Dr. Pallas says, that this species inhabits the East India islands, but that it is not found in Surinam, as Buffon conjectures.

THE MERIAN OPOSSUM.

THIS animal derives its name from Sibilla Merian, a German paintress, who first discovered and drew the figure of this species at Surinam. The Merian opossum has long, sharp-pointed, naked ears; its head and body are of a yellowish brown colour; its belly is white, tinged with yellow; its fore feet are divided into five fingers, the hind ones into four fingers and a thumb, each furnished with flat nails: its tail is very long and slender, and, except at the base, quite naked. The length of the animal, from the nose to the tail, is ten inches, the tail exceeds the length of the body and the head. It inhabits Surinam, and burrows under ground. The female brings five or six young at a time.

THE FLYING OPOSSUM.

THIS is a beautiful species, and clothed with fur of the most exquisite texture; it is an inhabitant of New South Wales. In length, from the tip of the nose to the root of the tail, it is twenty inches; the tail itself is twenty-two inches, at the base quite light, increasing gradually to black at the end; the ears are large and erect; the coat or fur is of a richer and most delicate texture; appearing, on the upper parts of the body, at first sight, of a glossy black, but on a nicer inspection found to be mixed with grey; the under parts are white, and on each hip is a tan-coloured spot nearly as big as a shilling; at this part the fur is thinnest, but at the root of the tail it is so rich and close that the hide cannot be felt through it. The fur is also continued to the claws. On each side of the body is a broad flap or membrane (as in the flying squirrels), which is united to both the fore and the hind legs. The jaws are furnished with teeth, placed as in some others of this genus: in the upper jaw forwards are four small cutting teeth, then two canine ones, and backwards
five

five grinders; the under jaw has two long large cutting teeth, five grinders, with no intermediate canine ones, the space being quite vacant. The fore legs have five toes on each foot, with a claw on each; the hinder ones four toes, with claws (the three outside ones without any separation), and a thumb without a claw, enabling the animal to use the foot as a hand, as many of the opossum tribe are observed to do.

THE KANGUROO.

THIS curious animal, a native of New Holland, has a small head, neck, and shoulders, but its body increases in thickness to the rump; its head is oblong, like that of a fawn, tapering from the eyes to the nose; the end of the nose is naked and black, and its upper lip is divided; its nostrils are wide and open; its lower jaw is shorter than the upper; the aperture of its mouth is small; it has whiskers on both jaws, those on the upper strongest; it has strong hairs also both above and below its eyes; the eyes are not large, the irides are dusky, and the pupil of a bluish black: its ears are erect, four inches long, oblongly ovated, rounded at the ends, and thin, covered with short hair.

It has no canine teeth: there are four cutting teeth in the upper jaw, and two long lance-like teeth in the lower, pointing forward; there are four grinding teeth in each jaw, remote from the others; its belly is convex, and great; the fore legs are very short, scarcely reaching to the nose, and are useless for walking; the hind legs are almost as long as the body, and the thighs are very thick; on the fore feet there are five toes, with long, conic, strong, claws; on the hind feet there are only three, of these the middle toe is very long and thick, like that of an ostrich, the two others are placed very distinct from it, and are small, with short, thick, blunt, claws; the bottom of the feet and their hind parts are black, naked, and tuberculated, as the animal rests often on them. Its tail is very long,

long, extending as far as the ears; it is thick at the base, and tapers to a point; its scrotum is large and pendulous. The hair on the whole animal is soft, and of an ash-colour, lightest on the lower parts. It is about three feet three inches long from the nose to the tail, the tail measures two feet nine.

It inhabits the western side of New Holland, and has not as yet been discovered in any other part of the world. It lurks among the long grass, feeds on vegetables, and goes entirely on its hind legs; making use of the fore feet only for digging, or bringing its food to its mouth: its dung is like that of a deer: it is very timid: at the sight of men, it flies from them by amazing leaps, springing over bushes seven or eight feet high, and going progressively from rock to rock. When it is in motion, it carries its tail quite at right angles to its body; and, when it alights, it often looks back; it is much too swift for greyhounds to overtake it in the chace; but, when surpris'd and shot, it makes very good eating. A full-grown one will weigh upwards of eighty or ninety pounds.

THE LESSER KANGUROO.

THIS species hath the visage of a rat, with two sharp-pointed cutting teeth in the upper, two large in the lower, with truncated ends; fore feet very short, furnished with four toes; hind legs and tail resembling the great species: three toes on each hind foot, the middle greatly exceeding the other two in length; on the belly is a pouch, within which were four nipples: the colour above is of a pale brown, lighter on the belly; in size double to that of the brown rat. From the form of its parts, the manners probably the same with those of the former. One was shewn in London in 1790, but so shy as to elude a perfect description, continually concealing itself in the straw of the box.

THE SPOTTED KANGUROO.

THIS hath a long canine visage; upright sharp ears; head and body black, the first plain; the body and thighs marked with large spots of white, thinly dispersed; tail covered with short hairs at the base, the rest very bushy, covered with very long black hairs: fore legs covered with short hairs for a small space next to the body, the remaining part naked; the feet furnished with five toes, the hind feet with four and a thumb, with a claw: length from the nose to the tail twenty-five inches: the tail about nine. It inhabits New Holland.

The MUSTELA, or WEASEL, and OTTER.

THIS genus of quadrupeds belong to the order of Feræ. The generic characters are, six cutting and two canine teeth in each jaw, a sharp nose, a slender body, and five toes on each foot. The weasels have their feet palmated or webbed; but the otters have their toes separate, or unconnected by any web or membrane.

Insignificant as this genus may appear, there are no fewer than fifty-six species, and some subordinate varieties, comprehended under it. Our aim is to be as concise as possible, but to omit nothing material.

THE VULGARIS, OR COMMON WEASEL.

THE weasel has small rounded ears; the whole upper part of its head and body is of a pale tawny brown, the under side is entirely white; it has a brown spot beneath the corners of its mouth; its length from nose to tail is between six and seven inches; its tail measures two and a half. Buffon says, it is tipped with yellow, even when the colour of the body is wholly changed to white, which is the case in cold climates,
and

and sometimes even in this country, as well as in France, during winter.

It is very common in the temperate and warm climates, but rare in the northern regions; yet it inhabits most parts of Europe, and is found in Siberia, as far as Kamtschatka. It is met with in North America, even as high as Hudson's Bay; it is found also in Barbary. The weasel dwells not, like the ermine, in woods and deserts, but near the habitations of men; it is very destructive to chickens, birds, and young rabbits and hares; it is also a great devourer of eggs: it does not eat its prey on the spot; but after killing it, by a bite near the head, it carries it off to the place of its retreat, where it eats it during the night: it is very active, climbs trees, and runs up the side of walls with great ease; no place is secure from its ravages; it frequents houses, barns, and granaries; it is a great enemy to rats and mice, and soon clears its haunts from those pernicious animals: as it can follow them to all their holes and haunts, one weasel will do more execution than many cats. In some parts of the country, people think their bite venomous, and suppose their breath dangerous to cattle; when the cattle swell much, they say they are weasel-blown. The female brings forth four or five young ones at a time; these, like the young of many other quadrupeds, are brought forth blind. By proper management they may be tamed, and will become familiar, caressing, and frolicsome as a dog or a squirrel: their odour is never offensive, but when they are irritated: they are fed with milk, boiled flesh, and water; they move with caution and with silence, and never cry but when they are hurt; their cry is sharp and rough, and very expressive of resentment; they attack serpents, water-rats, and moles; over-running meadow-grounds, they devour quails and partridges, together with their eggs.

Their excrements and skins are intolerably fetid. In Norway, Sweden, Russia, and Siberia, they always



1. The Weasel. 2. The Stoat. 3. The Ermine. 4. The Polecat. 5. The Ferret. 6. The Marten. 7. The Skunk.

change to white at the approach of winter. The skins of those of Siberia are sold to the Chinese for three or four rubles the hundred.

The synonimes or appellations given to this animal, are as follow: *Mustela Agricola An. Subter.* 485. *Gesner quad.* 752. Weasel or weefel, *mustela vulgaris*; in *Yorkshire*, the fitchet, or foumart. *Raii syn. quad.* 195. The Whitred. *Sib. Scot.* iii. 11. Wiesel. *Klein quad.* 62. *Mustela nivalis. Lin. syst.* 69. Sno-mus. *Faun. suec.* No. 18. *Mustela supra rutila, infra alba. Brisson quad.* 173. La Belette. *De Buffon*, vii. 225. *tab. xxix.* Weefel. *Br. Zool. illustr. tab. ci. Schreber*, cxxxviii.

THE TOUAN.

THE upper parts of the head and body are blackish; the size of the body, head, and legs, are of a bright ferruginous; the lower part of the neck and body of a more pure white; the length from the nose to the tail is rather more than five inches; and the tail is rather more than two inches long, and tapers to a point. It inhabits Cayenne; lives in hollow trees; feeds on worms and insects, and brings two young at a time, which it carries on its back. *Le Touan de la Cepedes, &c. vi. 252. tab. lxi.*

THE STOAT, OR ERMINE.

THIS species measures ten inches in length; its tail, which is always tipt with black, is five and a half: it is found in the north of Europe and Asia. It is the species most frequently met with in Scotland; and Mr. Pennant says, that in 1780 he saw, in his own grounds, two in the state of the most perfect and beautiful ermines. They become entirely white at the approach of winter, the tail excepted, and resume their brown colour in the spring.

They are met with also in Newfoundland and Canada; their skins are a great article of commerce in Norway and Siberia. In the latter country, they are found in plenty, in birch forests; but there are none in those of fir or pine. Their skins bring on the spot from two three pounds per hundred. In Norway they are taken in traps, baited with flesh; in Siberia, they are either shot with blunt arrows, or taken in a trap made of two flat stones, propped by a stick, to which is fastened a baited string, which, on the least touch of the animal, falls down and kills it.

Pontoppidan in his history of Norway says, that the furs of Norway and Lapland are better than those of Russia, which sooner turn yellow; and for this reason the former are in greater request, even at Petersburg. The ermine catches mice like the cat; and, when practicable carries off his prey. He is particularly fond of eggs, and, when the sea is calm, he swims over to the islands which are near the coast of Norway, where there are vast quantities of sea-fowls. It is alleged, that when the female brings forth in an island, she conducts her young to the continent upon a piece of wood, piloting them with her nose. This animal, though small, kills those of a much larger size, as the rein-deer and bear; he jumps into one of their ears when they are asleep, and adheres so fast by his teeth and claws, that those creatures cannot disengage him. He likewise surprises eagles and heath-cocks, by fixing on them, and never quitting them, even when they mount in the air, till the loss of blood brings them to the ground.

It is named by different authors as follow: *Mustela*. *Gesner quad.* 753. *Wiesel. Kramer Austr.* 312. *Meyer's An.* ii. tab. 23, 24. *Mustela erminea*. *M. plantis fissis, caudæ apice albo.* *Lin. syst.* 68. *Wesla. Faun. suec.* No. 17. Ermine, when white. *Mus Ponticus.* *Plinii lib.* viii. c. 37. *Agricola An. Subter.* 484. *Armelinus, Hermelein.* *Gesner quad.* 754. *Gornostay. Rzaczinski Polon.* 235. *Mustela candida, animal ermineum.*

neum. *Mustela hyeme alba*, æstate supra rutila infra alba, caudæ apice nigro. *Briffon quad.* 176. Le Roselet. *De Buffon*, vii. 240. *tab.* xxix. *Schreber*, cxxxvii. A. Stoat. *Br. Zool.* i. 84. *Raii syn. quad.* 198. L'Hermine. *De Buffon*, vii. 240. *tab.* xxix. *fig.* 2. *Briffon quad.* 176. *Schreber*, cxxxvii. B. Ermine. *Hist. Kamtschatka*, 99. *Pontop. Norway.* ii. 25. *Br. Zool.* i. 84.

THE QUIQUI.

THIS species hath a cuneiform nose; ears short and round, with a white spot in the middle; the general colour is brown; the legs and tail short; and the feet like those of a lizard; its length from nose to tail is thirteen inches. It inhabits Chili; is fierce and irritable; lives under ground, and feeds on mice. It is called *mustela quiqui*. *Molina Chili.* 273.

THE CUJA.

THIS animal hath black eyes; nose turned up at the end; hair black, very thick, and soft; the tail as long as the body, and well furnished with hair; it is very like the ferret in size, shape, and teeth. It inhabits Chili; lives on mice; breeds twice a year, and brings three or four at a time. It is named *mustela cuja*. *Molina Chili.* 272.

THE SOUTH AMERICAN FITCHET.

THIS is a weasel with a long sharp nose; its cheeks, its throat, and the sides of its neck, are black; its forehead, and the sides of its head, to its ears, are white; its ears are short, round, and edged with white; from each ear a narrow stripe extends along the sides of its neck: its body is covered with coarse hair, grey at the base, black and white at the ends; its legs and feet are black, tinged with red; its toes are not unlike those of a rat: the length of this animal is above twenty-one inches; its tail is bushy, of a bright chestnut,

mixed with white; it is rather shorter in proportion than the English fitchet, to which it bears a near resemblance. It inhabits Guiana. It is la fouine de la Guiane. *De Buffon*, Suppl. iii. 161. tab. xxiii.

THE POLE-CAT, OR FITCHET.

THIS is an animal well known, and easily distinguished. There is a proverbial expression, "I smell a rat;" but any one coming near it may soon smell a pole-cat, as it is excessively fetid. He has a white space round the mouth; the tips of his ears are also white; his head, body, and legs, are of a chocolate colour, almost black; his sides are of a tawny cast, and his tail is black; his body measures seventeen inches, his tail six. It inhabits most parts of Europe; it is common in the temperate parts of Russia, but grows scarcer in Siberia, except in the desert of Baraba, and beyond the lake Baikal; none are found north of those places; there they are usually found with white or yellowish rumps, bounded with black.

The pole-cat burrows under ground, forming a shallow retreat, about two yards in length, generally terminating under the roots of some large tree. It sometimes forms its lodging under hay-ricks, and in barns; it avoids the cold; its steps are never seen in the snow, either in the woods or in the fields; it is never found in warm climates, so that it seems to shun both extremes. In winter, it frequents houses, and will rob the dairy of milk; it preys on poultry, game, and rabbits; a single family of pole-cats is sufficient to destroy a whole warren; they are also very fond of honey; they attack bee-hives in the winter, and force the bees to abandon them; they climb trees in quest of the nests of birds, so that neither eggs nor birds are safe from their ravages, high or low. The spring is their season of love: the male fights for the female; they afterwards leave her, and go to pass the summer in fields or woods; she, on the contrary, continues in her habitation

tion till she brings forth; the female brings five or six young at a time: the time of gestation of this and the former species is said to be eight weeks: their skins are dressed with the hair on, and used, as other furs, for tippets, &c. they are also sent abroad to line clothes.

The synonyms are as follow: Putorius. *Gesner quad.* 767. *Yltis Agricola An. Subter.* 485. Pole-cat, or fitchet. *Raii syn. quad.* 196. Tchorz. *Rzacziński Polon.* 236. *Mustela foetida.* *Iltis.* Teuffels kind. *Klein quad.* *Mustela putorius.* *M. pedibus fissis, corpore flavo nigricante; ore auriculisque albis.* *Lin. syst.* 67. *Iller. Faun. suæc.* No. 16. *Mustela pilis in exortu ex cinereo albidis, colore nigricante terminatis, oris circumferentia alba.* *Briffon quad.* 186. Le Putois. *De Buffon, vii.* 199. *tab. xxiii.* *Schreber, cxxxii.* Pole-cat. *Br. Zool. i.* 77.

THE SARMATIAN WEASEL.

THIS species has broad, short, round, ears, edged with long white hairs; its mouth also, like that of the former species, is surrounded with white; its head, feet, and the under side of its body, are quite black; its head is crossed beyond each eye with a white band, passing beneath the ears along the sides of the neck, and down to the throat; from the hind part of the head another band of yellow passes on each side obliquely towards the shoulders, above is a third; the upper part of the body is of a brownish black, striped and spotted irregularly with obscure yellow; its tail, about six inches long, is dusky, with longer white hairs intermixed, but wholly black at the end. The animal is about fourteen inches long.

It inhabits only Poland and the southern provinces of Russia; in Asia, the mountains of Caucasus, Georgia, and Bucharia. It is a most voracious creature, feeding on the marmots, mice, and lesser animals, where it resides. It seizes its prey, and first sucks out the blood. Unlike the former species, it does not
meddle

meddle with eggs: it lives usually in holes made by other beasts; but is not incapable of digging a burrow for itself: it sleeps little, preys by night, and is very fierce and untameable; its eyes are of a flaming brightness, it is very active, and moves by frequent jumps; its smell is very fetid, especially when it erects its tail, which it does when it is angry. It copulates in the spring, goes two months, and brings from four to eight young ones, according to the report of the natives.

Its synonymes are, *Mustela farmatica*, *Ruffis* *Perugina*, *Pallas Itin.* i. 453. *Gueldenstaedt*, in *Nov. Com. Petrop.* xiv. 441. *tab. x.* *Zimmerman*, 486. *Schreber*, cxxxii. *Przewiaska*, or the girdled weasel? *Rzacinski*, *auct. hist. Polon.* 323.

THE SIBERIAN WEASEL.

THIS hath a black face, whitish about the nostrils, and spotted towards its eyes; the rest of the animal is of a deep yellow, nearly approaching to fox or orange colour; its throat is sometimes spotted with white; its tail is very bushy, and of a deeper colour than the body; its hair in general is loose and long, and the soles of its feet are deeply covered with fur; its body is more slender than that of the fitchet or pole-cat, and approaches nearer to the form of the stoat; its length is about twelve inches, its tail six.

It begins to appear in the Altaic mountains, between the Oby and the Irtysh; from whence it is common on wooded mountains, to the Amur and the lake Baikal. In its haunts, manners, and food, it has a great resemblance to the sable; but it does not extend so far north. It is called *mustela Siberia*, *Kolonnok*, *Ruffis*. *Pallas Itin.* 701.

THE FERRET.

THIS species of the weasel has a sharp nose, red and fiery eyes, and round ears; the colour of its whole
body

body is a very pale yellow; it measures about fourteen inches, and its tail only five. In its wild state it inhabits Africa, from whence it was originally brought into Spain, to free that country from the multitudes of rabbits with which that kingdom was over-run, and from thence the rest of Europe was supplied with it. It is a lively, active, animal, and the natural enemy of rabbits. Whenever a dead rabbit is presented for the first time to a young ferret, he flies upon it, and bites it with fury; but, if presented alive, he seizes it by the throat or the nose, and sucks its blood. When let into the burrows, they are muzzled, that they may not kill the rabbits in their holes, but oblige them to come out. Boys likewise use the ferret for catching birds in the holes of walls or old trees. It sucks the blood of its prey, but seldom tears it; it breeds in our climate, and brings from five to nine young ones; but it is apt to degenerate, and lose its savage nature. The keepers of rabbit-warrens are therefore obliged to procure an intercourse between the female ferret and a pole-cat, by leaving it near the haunt of the latter. The produce is a breed of a much darker colour than the ferret, partaking more of that of the pole-cat. The ferret has the same disagreeable smell as that animal.

The synonymes are: *Viverra. Plinii lib. viii. c. 55. Agricola An. Subter. 486. Mustela rustica, viverra, Furo, Ictis. Gesner quad. 762. Raii syn. quad. 198. Fret. Klein quad. 63. Schreber, cxxxiii. Viverra pilis subflavis, longioribus, castaneo colore terminatis (masc.) M. pilis ex albo subflavis vestita. (fœm.) Brisson quad. 177. Mustela Furo. M. pedibus fissis, oculis rubicundis. Lin. syst. 68.*

THE MARTEN.

THIS species of the weasel has broad rounded ears, and lively eyes; its head is brown, with a tinge of red; its body, sides, and legs, are covered with hair, ash-coloured at the bottom, bright chestnut in the middle,

and tipped with black; its throat and breast are white; its belly is of a deep brown; its tail is bushy, of a dusky colour; its feet are broad, covered at the bottom with thick down; its claws are white; its length eighteen inches, its tail ten. It inhabits most parts of Europe, even to the warmer parts of Russia, but does not extend far east in that empire. It is a most elegant, lively, animal, capable of being tamed, good-natured, and sportive. It lives in woods, and breeds in hollow trees; it brings from four to six young ones at a time. During winter, it frequently shelters itself in a magpie's nest. It destroys poultry and game, and will eat rats, mice, and moles; is also very fond of honey, and prefers hemp-seed to every other kind of grain: its skin and excrements have a musky smell. Their fur is of some value, and is used to line the robes of magistrates.

Its synonymes are as follow: *Martes gutture albo. Agricola An. Subter. 485. Gesner quad. 764. Steinmarter. Klein quad. 64. Martes, alias foyna, martin, or martlet. Raii syn. quad. 200. Kuna. Rzaczinski Polon. 222. Mustela pilis in exortu albidis castaneo colore terminatis vestita, gutture albo. Brisson quad. 178. Mustela martes, M. pedibus fissis, corpore fulvo nigricante, gula pallida. Lin. syst. 67. Mart. Faun. suec. No. 15. La Fouine. De Buffon, vii. 186. tab. xviii. Schreber, cxxix. Martin. Br. Zool. i. 79.*

THE GREY-HEADED MARTEN.

THE head, and upper part of the sides of the neck, are greyish; the throat, and under side of the neck, white; and all the rest of the body, limbs, and tail, black: its length from the tip of the nose to the tail is above two feet; of the tail (which is full of hair), eighteen inches. It inhabits Guiana. It is called, *Le grand marte de Guianne. de la Cepedes. de Buffon, Suppl. vi. 250. tab. lx.*

THE PINE WEASEL.

THIS species is distinguished by a yellow breast and throat; its hair is of a dark chestnut colour, and is far superior in fineness to that of the former species; in other respects it agrees with the common marten. It inhabits the north of Europe, Asia, and America; it is found also in Great Britain, but in no part of Siberia. It resides in large forests, especially those of pines, but never lodges near houses, as the other species are said to do. It brings two or three young at a time: its prey is much the same with that of the former; but its fur is of far greater value. The peninsula of Kamtschatka and North America abound with them: their skins furnish a prodigious article of commerce: those found about Mount Caucasus, with an orange throat, are esteemed the finest.

The synonymes are: *Martes gutture luteo. Agricola An. Subter. 485. Martes sylvestris. Gesner quad. 765. Martes abietum. Rai syn. quad. 200. Baum-Marter. Klein quad. 64. Mustela pilis in exortu ex cinereo albidis castaneo colore terminatis, gutture flavo. Brisson quad. 179. La Marte. Buffon. vii. 186. tab. xxii. Schreber, cxxx. Yellow-breasted martin. Br. Zool. i. 81. Faunul. Sinens.*

THE SABLE.

THIS species, highly valued for its fine fur, has long whiskers, round ears, large feet, white claws, and a long and bushy tail; the colour of the hair is black at the tips, cinereous at bottom; its chin is cinereous, sometimes white, yellow, or spotted; the edges of its ears also yellowish: sometimes its hair has a tawny cast; for in spring, after changing its coat, its colour varies: there are instances of some being found of a snowy whiteness. In size, it is equal to that of the marten, which it also very much resembles in form;

but there is one specific distinction worthy of notice; the tail of the marten is much longer than the hind legs, when extended: that of the sable is shorter. It inhabits Siberia, Kamschatka, and the Kurile isles, between Kamschatka and Japan. There are none to be found west of the Urallian mountains; but they increase in numbers as you advance thence to the eastward: they live in holes in the earth, or under the roots of trees: like the marten, they form nests in the trees, and will leap with great agility from one tree to another: they are very lively, and much in motion during the night, but sleep much in the day: they prey, during summer, on ermines, weasels, and squirrels; but, above all, on hares; in winter, on birds; in autumn, on hurtle-berries, cranberries, and the berries of the service-tree; but in that season their skins are the worst; as that kind of diet, it is said, causes them to itch, and to rub off their fur against the trees: they bring forth at the end of March or beginning of April, and have from three to five at a time, which they suckle for four or five weeks: their excrements are most excessively fetid.

In the most barbarous times of the Russian empire, the hunting of these animals was the employment, or rather the task, of those unhappy exiles that were sent into Siberia. As that country is now become more populous, the sables have, in a great measure, quitted it, and retired further north and east, to live in desert forests and mountains. They usually reside on the banks of rivers, or on the little islands in them.

At present, the sable hunters form themselves into parties or troops, from five to forty each; the last subdivide into lesser parties, and each chooses a leader; but there is one commander in chief that directs the whole. A small covered boat is prepared for each party, laden with provision, a dog and a net for every two men, and a vessel to bake their bread in: each party has also an interpreter for the country they intend

tend to penetrate: every party then sets out, according to the course their leader points out: they ascend the rivers, drawing up their boats, till they arrive in the hunting country: there they stop, build huts, and wait till the waters are frozen, and the season commences. Before they begin the chase, their leader assembles them, they join in prayer to the Almighty for success, and then separate. The first sable each party takes is called God's sable, and is dedicated to the church: they then penetrate into the woods, and mark the trees as they advance, that they may know their way back. In their hunting-quarters they form huts of trees, and bank up the snow around them: near these they lay their traps, then advance farther, and lay more traps; still building new huts in every quarter, and returning successively to every old one, to visit the traps, and to take out the game, and to skin it, which none but the chief of the party must do. During this time they are supplied with provisions by persons who are employed to bring it on sledges from the places on their route, where they are obliged to form magazines. The traps are a sort of pit-falls, with a loose board placed over each, baited with fish or flesh. When sables grow scarce, the hunters trace them on the new-fallen snow to their holes, place their nets at the entrance, and sometimes wait, watching, two or three days, for the coming out of the animal. It has happened that these poor people have, by the failure of their provisions, been so pinched with hunger, that, to prevent the cravings of appetite, they have been reduced to take two thin boards, one of which they apply to the pit of the stomach, the other to the back, drawing them tight together by cords placed at the ends. Such, says Mr. Penant, are the hardships our fellow-creatures undergo, to supply the wantonness of luxury!

The season of chase being finished, the hunters re-assemble, report to their leader the number of sables each has taken, make complaints of offenders against

their regulations, punish delinquents, and share the booty: they then continue at their head-quarters till the rivers are clear of ice; when they return home, and give to every church the dedicated furs.

The price of these furs varies from one to ten pounds sterling, and above. Fine and middling skins are sold without the bellies; the coarse ones with them: the finest sables are sold in pairs perfectly similar; and such pairs are dearer than single ones of the same goodness; for the Russians want those in pairs for facing caps, cloaks, and tippets: the blackest are reputed the best: sables are in season from November to February: those caught at any other time of the year are short-haired: the hair of sables differs in length and quality; the long hairs, which reach far beyond the inferior ones, are called *os*: the more a skin has of such long hairs, and the blacker they are, the more valuable is the fur: the very best have no other but those long black hairs: below the long hairs there are, in the greater part of sable furs, some shorter, called *podosie* or under *os*. The more *podosie* a fur has, the less valuable it is. Between the *os* and *podosie* there is a low woolly kind of hair called *podfada*: the more *podfada* a fur has, the less valuable it is reputed; for the long hair will, in that case, take no other direction than the natural one; but the character of sables is, that notwithstanding the hair lies from the head towards the tail, yet it will in any direction you stroke your hand over it. Besides various other particulars respecting the fur, the furriers attend much to the size, always preferring, *cæteris paribus*, the biggest, and those that have the greatest gloss. The gloss vanishes in old furs; the fresh ones have what dealers in furs call a bloomy appearance; the old ones are said to have done blooming. The dyed sables always lose their gloss, and become less uniform, whether the lower hairs have taken the dye or not; and the hairs are commonly twisted or crisped, and not so strait as the natural ones. Some
fumigate

fumigate the skins to make them look blacker; but the smell, and the crisped condition of the long hair, betray the cheat: but dying and fumigating are both detected, by rubbing the fur with a moist linen cloth, which grows black in such cases. The Chinese, however, have a way of dying the fables, so that the colour not only lasts, which is more than the Russian cheats can effect, but the fur keeps its gloss, so that the fraud can only be detected by the crisped hairs.

The country about the river Ud affords sometimes fables, of which one is often sold for twelve or fourteen pounds sterling. The bellies of fables, which are sold in pairs, are about two fingers breadth, and are, like the skins, tied together in parcels of forty each. One of these parcels sells from one to two pounds sterling; tails are sold by the hundred; the very best furs must have their tails, but ordinary ones are often cropped: a hundred sells from four to eight pounds. White fables are rare; they are not common merchandize, but bought only as curiosities: some are yellowish, and are bleached in the spring on the snow: the common fables are scarcely any thing better in hair and colour than the marten.

The fable is also found in North America. The Russians have often discovered the skins mixed with those of the martens in the fur dresses, which they get from the Americans by way of exchange. Their fur is more glossy than that of the Siberian fable, and of a bright chestnut colour, but of a coarser quality. The length of the American fable is about twenty inches; the trunk of the tail is only five; but from the rump to the end of the hairs eight: his ears are more pointed than those of the Asiatic fable; its feet are large and hairy, both above and below; it has five toes, with white claws on each foot: the colour of its head and ears is whitish; its whiskers are short and black; its whole body of a light tawny; its feet are brown.

The

The fynonymes are as follow: *Zobela. Agricola An. Subter.* 485. *Mustela fobella. Gesner quad.* 768. *Mustela zibellina, the fable. Raii syn. quad.* 201. *Klein quad.* 64. *Mustela zibellina, Aristotele faterius, Nipho cebalus, Alciato Mus Samarticus et Scythicus. Charleton Ex.* 20. *Mustela zibellina. M. pedibus fiffis, corpore obscurè fulvo, fronte exalbida, gutture cinereo. Lin. syst.* 68. *Mustela zibellina. Nov. Com. Petrop.* v. 330. *tab. vi. Martes zibellina. Mustela obscurè fulvo, gutture cinereo. Brisson quad.* 180. *La zibeline. De Buffon, xiii.* 309.

THE FISHER.

THIS species, notwithstanding its name, is not amphibious: it has a black nose, strong and stiff whiskers, six small weasel-like teeth above and below; it has six large canine teeth, four grinding teeth in each upper jaw; three of these are sharp-pointed, the fourth flat; in the lower jaw six, the last flatted, the next with three points, the next to those with two; its ears are round, dusky on their outsides, but edged with white; its face and the sides of the neck are of a pale brown, or ash colour, mixed with black; its back, belly, legs, and tail, are black, but the roots of the hair are brown; its sides are brown, its feet very broad, covered with hair even on their soles; it has five toes on the fore feet, on the hind feet generally four, but sometimes five, with sharp, strong, and crooked, white, claws; its fore feet are longer than those behind; its tail is full and bushy, smallest at the end, seventeen inches long: the length of the animal itself is twenty-eight inches. It inhabits North America; above five hundred skins are brought in a season from New York and Pennsylvania. Many of these vary in colour.

THE MADAGASCAR WEASEL.

THIS species hath short ears; the hair on its whole body is brown at the roots, and barred above with black

black and a rust colour; as is also the tail, which is near ten inches long: the animal itself is about fourteen inches in length; it inhabits Madagascar; whence it has its name. It is called *le vansire*. *Buffon*, xiii. 167. *tab.* xx. *de la Cepedes, de Buffon*, Suppl. vii. 249. *tab.* lix.

THE PEKAN WEASEL.

THE pekan has very long and strong whiskers, and his ears are a little pointed: the hair on his head, back, and belly, is cinereous at the roots, of a bright bay at the ends, and is very soft and glossy; there is a tinge of grey on the sides, and between the fore legs a white spot; the legs and tail are black; its toes, armed with sharp claws, are covered with thick hair, both above and below. In form it resembles the marten. Its length is one foot seven inches; the length of its tail is about eleven. It is an inhabitant of North America. It is called *le pekan*. *Buffon* xiii. 304. *tab.* xlii. *Schreber*, cxxxiv.

THE VISON WEASEL.

THE vison has rounded ears, brown hair tinged with tawny, very bright and glossy, with a thick ash-coloured down beneath, tipped with rust colour: its legs are very short, its tail dusky: its length is about seventeen inches, its tail nine. It inhabits North America. It is called *le vison*. *Buffon* xiii. 308. *tab.* xliii.

THE WHITE-CHEEKED WEASEL.

MR. PENNANT described this species from a living animal at London in 1774, but could not learn its native country. It had rounded ears, a broad and blunt nose, dusky irides, and a flat head: its face, crown, legs, rump, and tail, were black; its chin and cheeks white, its throat of a rich yellow; its back and belly were of a pale yellow, intimately mixed with ash colour.

colour. Its body was eighteen inches long, its tail was of the same length, covered with long hair.

THE GRISON WEASEL.

THIS species has a large head and eyes, and short, but broad, ears: the upper part of its body is of a deep brown, each hair being tipped with white, which gives it a hoary look: from each side of the forehead extends a broad white line, passing over the eyes, and reaching as far as the shoulders; its nose, throat, and the whole under side of its body, its thighs, and legs, are black: its length seven inches,; its tail is a little more than half the length of the body. It inhabits Surinam, but is a very scarce animal. It is called le grison. *Buffon* xvi. 169. *tab.* xxv. *Allamand*, v. 65. *tab.* vii. *Schreber*, cxxiv.

THE GUINEA WEASEL.

THIS species has the upper jaw much longer than the under: its eyes are placed mid-way between its ears and the tip of its nose: its ears are like those of the human species, its tongue is rough; its tail declines downward, and grows less toward the point; its feet are strong, and formed for digging: the shape of its body is like that of a rat: it is of the size of a small rabbit, of a dusky colour; its hair is rough.

It is common about the negro settlements in Guinea, burrows like a rabbit, and is very fierce; when driven to necessity, it will fly at man or beast: it is very destructive to poultry. Its synonymes are: *Galera*, *subfusca*, *cauda*, *elongata*, *auribus subnudis appressis*. *Browne's Jamaica*, 485. *tab.* xlix. *Le tayra*, ou *le galera*. *Buffon*, xv. 155. *Schreber*, cxxxv.

THE GUIANA WEASEL.

THIS has round ears covered with down, an ash-coloured space between its eyes, and a trilobated spot on

on the lower part of its neck. It is of a black colour, of the size of a marten; its hair is coarse. It inhabits Brazil and Guiana. When it rubs itself against the trees, it leaves an unctuous matter, that scents of musk. The synonymes are *Mustela barbara*. *M. pedibus fissis, atra, collo subtus macula alba triloba*. *Lin. syst.* 67. *Mustela maxima atra moscum redolens*. *Tayra*, grosse Belette. *Barrere France Æquin.* 155.

THE WOOLLY WEASEL.

THIS species has a long slender nose, the upper jaw longer than the lower, very short and round ears, its body covered with woolly hair, and a tail, above eight inches long, tapering to a point: its body measures between fifteen and sixteen inches. Mr. Pennant copies Buffon in this article, at the same time that he acknowledges he has some doubts whether it be not of the same species with the former. It inhabits Guiana; and is called *la petite fouine de la Guiane*. *Buffon, Suppl.* iii. 162. *tab.* xxiv.

THE ICHNEUMON.

THIS species of the weasel, frequently called Pharaoh's rat, has bright, flame-coloured, eyes; small rounded ears, almost naked; a long and slender nose, but a thicker body than others of this genus: its tail is very thick, and tapers to a point; its legs are short, its hair hard and coarse, the colour is various in different animals of this species from different countries. Some are alternately barred with a dull yellowish brown and white; others are of a pale brown or mouse-colour, and appear mottled: the throat and belly are of a uniform brown: beneath the tail it has an orifice not unlike that of a badger. Mr. Pennant mentions a specimen in the Ashmolean Museum, that measured thirteen inches and a half to the origin of the tail, and the tail itself eleven; but the Egyptian variety is the

largest. Some of these measure forty-two inches, from the point of the nose to the extremity of the tail.

It inhabits Egypt, Barbary, India, and its islands, and is a most useful animal, being the inveterate enemy of serpents, and of other noxious reptiles that infest the torrid zone. It attacks without dread that most fatal of serpents, the naia, or cobradi capello; and should it receive a wound in the combat, it instantly retires, and is said to obtain an antidote from a certain herb; after which it returns to the attack, and seldom fails of a victory. This fact, however, does not seem well established; nor are botanists agreed about the species of this sanative plant, whose use, it is pretended, this weasel pointed out to mankind; those who have seen the combats between the ichneumon and naia, never could discover it: Kæmpfer, a writer of the first authority, who visited India, and who had a tame ichneumon, and been witness to its battles with the serpent, says no more than it retired and ate the roots of any herb it met with. It is from the Indians he received the account of the root, whose veracity he speaks most contemptuously of. *Amœn. Exot.* 576. Rumphius never saw the plant growing, but describes it from a specimen sent him from Java; for he says the Indians would persuade him that it had no leaves. *Vide Herb. Amboin. App.* 71. All that seems certain is, that the Indians have a plant, of whose alexipharmic virtues they have a high opinion, and are said to use it with success against the dreadful macassar poison, and the bite of serpents. Kæmpfer says he had good success with one species, in putrid fevers, and found it infallible for the bite of a mad dog. As there is no doubt but a most useful plant of this nature does exist in the Indies, it is to be hoped that strict enquiry will be made after it.

The ichneumon is a great destroyer of the eggs of the crocodile, which it digs out of the sand, and even kills multitudes of the young of those terrible reptiles; it was not therefore without reason that the ancient
Egyptians

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G. Edwards del.

J. Pass sculpt.

1. The Egyptian Ichneumon, 2. The Indian Ichneumon or Mongoose. 3. The Fossane-Weasel.

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Egyptians ranked the ichneumon amongst their deities. It is at present domesticated, and kept in houses in India and Egypt: it is also more useful than a cat, in destroying rats and mice: it easily worries a cat, though larger and stronger than itself, and declines not the combat even with the dog: it grows very tame, and is very active: it springs with great agility on its prey, and will glide along the ground like a serpent, and seem as if without feet; it immediately catches any thing that is flung to it: it is a great enemy to poultry, and will feign itself dead till they come within its reach: like the cat, it is a great lover of fish: after sucking out the blood, it draws its prey to its hole. When it sleeps, it brings its head and tail under its belly, and appears like a round ball, with two legs sticking out. Rumphius observes how skilfully it seizes the serpents by the throat, so as to avoid receiving any injury; and Lucan beautifully describes the same address of this animal in conquering the Egyptian asp:

*Apsidas ut Pharias cauda solertior hostis
Ludit, et iratas incerta provocat umbra:
Obliquansque caput vanas serpentis in auras,
Effusa toto comprehendit guttura morsu
Letiferam citra sanie: tunc irrita pestis
Exprimitur, faucesque fluunt pereunte veneno.*

Lib. iv. 724.

Thus oft th' ichneumon, on the banks of Nile,
Invades the deadly aspic, by a wile;
While artfully his slender tail is play'd,
The serpent darts upon the dancing shade:
Then, turning on the foe with swift surprise,
Full on his throat the nimble creature flies:
The gasping snake expires beneath the wound,
And sheds his baneful poison on the ground.

Rowe.

Its synonymes are as follow: *Ichneumon*. *Aristot. Hist. An. lib. ix. c. 6.* *Oppian Cynege. iii. 407.* *Ichneumon.*

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Plinii

Plinii lib. viii. c. 24. L'icneumon que les *Egyptiens* nomment rat de Pharaon. *Belon. obs. 95. Portraits. 106. Prosp. Alp. i. 234. Gesner quad. 566. Raii syn. quad. 202. Shaw's Travels, 249, 376.* *Mustela Ægyptiaca. Klein quad. 64.* Indian. quill, vel quirpele. *Garcia. Arom. 214. Raii syn. quad. 197.* *Viverra mungo. Kæmpfer Amœn. 574.* De mongkos. *Valentyn Amboyn. iii.* Serpenticida sive moncus. *Rumph. herb. Amboin. App. 69. tab. xxviii.* Indian ichneumon. *Edw. 199.* Ichneumon feu vulpecula Ceilonica. Meles ichneumon digitis mediis longioribus, lateralibus æqualibus, unguibus subuniformibus. *Hasselquist itin. 19.* Ichneumon: Mus *Pharacnis* vulgo. *Briffon quad. 181.* *Viverra ichneumon. V. cauda e basi incrassata sensim attenuata, pollicibus remotiusculis, Lin. syst. 63. Schreber, cxvi. Seb. Mus. i. 66. tab. xli. fig. 1.* La mangouste. *Buffon, xiii. 150. tab. xix.* Le nems, *tom. xvi. 174. tab. xxvii.* *Viverra indica. V. ex griseo rufescens, Briffon quad. 177. Raii syn. quad. 198. Schreber, cxvi.*

THE CAFFRE WEASEL.

THIS hath short hairy ears; the hairs on the body shining, rude, mixed with yellow, black, and brown; the tail grows gradually more slender from the base, and its tip is black. It inhabits the Cape of Good Hope.

THE FOUR-TOED WEASEL.

THIS species hath a very sharp-pointed nose, depressed head, inflated cheeks, and a long upper jaw; it has black whiskers, arising from warty tubera; its irides are dusky, the space about its eyes is black; its ears are small, rounded, and black, and lie close to the head; its tongue is oblong, blunt, and rough; it has six small cutting teeth, two long canine teeth in each jaw, and five grinders on each side; its back is very broad, and a little convex; its belly is broad and flat, its legs are short, its feet small, and naked at the bottom,

tom, with four toes on each. This and the hyæna are the only quadrupeds which have four toes on all their feet. The claws on the fore feet are long, like those of the badger; those on the hind feet are short. Its hair is brown near the bottom, black near the ends, and hoary at the points; that on the back is undulated or wavy, the inside of its legs a yellowish brown; its tail is tufted with black. It is eleven inches long; its tail, which is thick at the base, ending pretty abrupt, measures eight inches.

It inhabits the Cape of Good Hope, where it is called meer rat. It feeds on flesh, preys on mice, and is a great enemy to blattæ. Like the squirrel, it employs its fore paw to convey its victuals to its mouth, and laps water like a dog; it is much in motion, and always makes a grunting noise: it utters two kinds of sounds; when uneasy or disturbed, it barks like a young dog; when pleased, it emits a sound like that of a small rattle in rapid motion. It may be tamed, but it bites those whose smell it finds disagreeable. It sits quite erect, dropping its fore legs on its breast, and moving its head with great ease, as if on a pivot, and appearing as if it listened, or had just spied something new: when pleased, it makes a rattling noise with its tail; for which reason the Dutch, at the Cape, call it klapper-maus: it is also found in Java, where the Javanese stile it jupe; the Dutch furacatje. It is called le furicate. *Buffon*, xiii, 72. *tab. viii. Schreber*, cxvii. *Miller's plates*, xx.

THE YELLOW WEASEL.

THIS hath a short dusky nose, and small eyes; its ears are short, broad, and flapping, and placed at a great distance from each other; its head is flat and broad, and its cheeks swell out; its tongue is very long; its legs and thighs are short, and very thick; it has five toes on each foot, separated, and standing all forward; its claws are large, a little hooked, and of a flesh-colour; its hair is short, close, soft, and glossy;

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on the head, back, and sides, it consists of a mixture of yellow and black; its cheeks, belly, and the inside of its legs, are yellow: half way down the middle of its belly there is a dusky list, ending at the tail; and another along the middle of the back to the tail; the tail itself is of a bright tawny, mixed with black; it is round, and has the same prehensile faculty with that of the sapajous. The body measures nineteen inches, the tail seventeen.

There was one shewn some years ago in London. Its keeper said it came from the mountains of Jamaica, and called it a potto, the name given by some writers to a species of sloth found in Guinea. It was very good-natured and sportive, and would catch hold of any thing, and suspend itself by its tail. It lay with its head under its legs and belly. It is called yellow maucauco. *Syn. quad.* No. 108. *Viverra caudivolvola.* *Schreber, tab. xlii.*

THE MEXICAN WEASEL.

THE Mexican weasel has a short dusky nose, a tongue of vast length, and small eyes, encircled with a dusky colour; its ears are short, rounded, and placed very distant from each other; its hair is short. On the head, the upper part of the body, and the tail, the colours are yellow, grey, and black, intermixed; the throat and inside of the legs of a lively yellow; the belly is of a dirty white, tinged with yellow; its toes are separated; the claws crooked, white, and guttered beneath.

This animal is about two feet four inches long, its tail near one foot three: the tail is taper, covered with hair, except beneath, near the end, where it is naked, and of a fine flesh-colour. It is extremely like the former, but larger in all its parts. Like the former, it has a prehensile tail, and is naturally very good-natured. It goes to sleep at the approach of day, wakes towards night, and becomes very lively: it makes use of its

feet to catch any thing, and has many of the actions of a monkey: it eats like a squirrel, holding its food in its hands: it has a variety of cries during the night, one like the low barking of a dog; its plaintive note is cooing like a dove; its menacing, hissing like a goose or a serpent; its angry is confused: it is very fond of sugar, and all sweet things; it eats fruits and vegetables of all kinds; it will fly at poultry, catch them under the wing, suck the blood, and leave them without tearing them: it prefers a duck to a pullet, yet hates the water. It is called kinkajou. *Buffon*, xvi. 244. *tab. i.*

THE BRAZILIAN WEASEL.

THE Brazilian weasel has the upper jaw lengthened into a pliant, moveable, proboscis; it is much longer than the lower jaw: its ears are round, its eyes small, its nose dusky; its hair is of a bright bay colour, and is smooth, soft, and glossy: its tail is annulated with dusky and bay: it has a whitish breast: its body measures eighteen inches, its tail thirteen.

The dusky Brazilian weasel is a variety of the former: its nose and ears are formed like those of the preceding, but beneath each eye it has two spots of white; the hair on its back and sides is dusky at the roots, black in the middle, and tipped with yellow: its chin and throat, the sides of its cheeks, and its belly, are yellowish; its feet are black, and its tail is annulated with black and white: sometimes the tail is of an uniform dusky colour. Linnæus has described the variety with the tail of a uniform dusky colour, as a distinct species. These inhabit Brazil and Guiana, they feed on fruits, eggs, and poultry; they run up trees very nimbly; they eat like a dog, holding their food between their fore legs; they are easily tamed, are very good-natured, and seem much inclined to sleep during the day. They make a sort of whistling noise. Margrave observes, that they are very apt to gnaw their own tails.

The

The synonymes of this animal are as follow: Coati. *Marcgrave Brasil.* 288. *De Laet*, 486. *Raii syn. quad.* 180. *Klein quad.* 72. *Vulpes minor*, rostro superiore longiusculo, cauda annulatim ex nigro et rufo variegatâ. *Quachy. Barrere France Æquin.* 167. *Viverra nasua.* *V. rufa*, cauda albo annulata. *Lin. syst.* 64. *Ursus naso producto et mobili*, cauda annulatim variegata. *Briffon quad.* 190. *Coati brun.* *Buffon*, viii. 358. *tab.* xlvi. *Schreber*, cxviii. *Badger of Guiana.* *Bancroft*, 141.

THE STIFLING WEASEL.

THIS weasel has a short slender nose, short ears and legs, and a long tail, of a black and white colour; its body is black, well covered with hair; its length from nose to tail is about eighteen inches. It inhabits Mexico, and perhaps some other parts of America. This and the four following species are remarkable for the pestiferous, suffocating, and most fetid, vapour they emit from behind, when attacked, pursued, or frightened. This is their only means of defence. Some turn their tail to their enemies, and keep them at a distance by a frequent crepitus; others send forth their urine, tainted with its horrid effluvia, to the distance of eighteen feet; the pursuers are stopped by the terrible stench. Should any of this liquid fall into the eyes, it almost occasions blindness; if on the clothes, the smell will remain for several days, in spite of all washing:--- in order to be sweetened, they must even be buried in fresh soil. Dogs that are not true bred to the chase, run back as soon as they perceive the smell; those who have been used to it, will kill the animal, but are often obliged to relieve themselves, by thrusting their noses into the ground. There is no bearing the company of a dog that has killed one, for several days.

Professor Kalm was one night in great danger of being suffocated by one of them that was pursued into a house where he slept. When driven into a house where cattle are kept, they bellow through pain:---indeed they

they are much disturbed at the sight or smell of any weasel in their stalls. One of these, that was killed in a cellar by a maid-servant, so affected her with its stench, that she lay ill for several days; and all the provisions that were in the place were so tainted, that the owner was obliged to throw them away.

Notwithstanding this, the flesh is reckoned good meat, and not unlike that of a pig; but it must be skinned as soon as killed, and the bladder taken carefully out. The Virginian species, or skunk, is capable of being tanned, and will follow its master like a dog, and never emits its vapour except it be terrified. It breeds in hollow trees, or holes under ground, or in the clefts of rocks. It climbs trees with great agility, kills poultry, eats eggs, and destroys birds.

The synonymes are: *Yzquiepatl. Hernandez Mex.* 332. *Raii syn. quad.* 181. *Klein quad.* 72. *Meles Surinamensis Brisson quad.* 185. *Ichneumon de yzquiepatl. Seb. Mus. i. tab.* xlii. *Le coase. Buffon, xiii.* 288. *tab.* xxxviii. *Schreber, cxx.*

THE STRIATED WEASEL.

THIS striped species of the weasel is about the size of an European pole-cat, but its back is more arched; its ears are rounded, its head, neck, belly, legs, and tail, are black; its back and sides are marked with five parallel white lines; there is one on the top of the back, and two on each side; the second extends some way up the tail, which is long and bushy towards the end; but it varies in the disposition of its stripes. It inhabits North America. When attacked, it bristles up its hair, and flings its body into a round form; its vapour, like that of the last, is horrid. Du Pratz says, that the male is of a shining black. Its synonymes are: Pole-cat, or skunk. *Lawson Carolina.* Pole-cat. *Catesby Carolina, ii.* *Mustela Americana foetida. Klein quad.* 64. *Mustela nigra tæniis in dorso albis. Brisson*

quad. 181. *Viverra putorius*. *V. fusca* lineis quatuor dorsalibus parallelis albis. *Lin. syst.* 64. Le conepate. *Buffon*, xiii. 288. *tab.* xl. *Schreber*, cxxii.

THE SKUNK.

THIS species of the weasel, like the rest, has short rounded ears; its cheeks are black; it has a white stripe from the nose, between the ears, to the back; the upper part of the neck, and the whole of the back, is white, but divided at bottom by a black line, commencing at the tail, and passing a little way up the back; its belly and legs are black; its tail bushy, being covered thick with long coarse hair; it is generally black, sometimes tipped with white; the nails on all the feet are very long, like those on the fore feet of the badger; it is rather less than the former species.

It inhabits Peru and North America, as far as Canada, and is of the same manners, and equally a stinkard as the others. Synonymes: Chinche. *Feuille obf. Peru*, 1714, p. 272. Skunk, fiskatta. *Kalm's voy. Forster's tr.* i. 273. *tab.* ii. *Josselyn's voy.* 85. *Enfant du diable*, bete puante. *Charlevoix Nouv. France*, v. 196. Le chinche. *Buffon* xiii. 294. *tab.* xxxix. *Schreber*, cxxi.

THE CINGHE.

THIS weasel is cloathed with black hair, changeable into blue; along the back a bed of white round spots from head to tail; the head long; the ears large, well covered with hair, and pendulous; and the hind legs longer than the fore. It inhabits Chili; carries its head low; its back arched; which it generally covers with its bushy tail, like the squirrel; it digs holes in the ground, in which it hides its young. In manners and food it agrees with the stinking; and also in its dreadful stench. Molina denies that the smell comes from the urine, but from a greenish oil coming from a bladder seated near the anus, from which it ejects the fetid

fetid liquor. The Indians value the skins highly, and use them as coverlets for their beds. It is called *vivera cinghe*, *Molina Chili*. 269.

THE ZORRINA.

ITS back and sides are marked with short stripes of black and white, but the latter is tinged with yellow; its tail is long and bushy, part white, part black; its legs and belly are black: in size it is less than the preceding. It inhabits Peru, and other parts of South America. Its pestilential vapour overcomes even the American panther, and stupifies that formidable enemy. Its synonymes are, *Annas* of the Indians, *zorras* of the Spaniards, *Garcilasso de la Vega*, 331. *Mariputa*, *mafutiliqui*. *Gumilla Orenoque* iii. 240. *Buffon*, *Schreber*, cxxiii.

THE RATEL.

THIS creature has a blunt nose: it has no external ears; in their place, it has only a small rim round the orifice of the auditory passage: its tongue is rough, its legs are short, and its claws very long and strait, like those of the badger, and guttered beneath; the colour of its crown, and of the whole upper part of its body, is grey, the rest black; but that from each ear to the tail, there runs along the sides a dusky line, leaving another of grey beneath it. The length of its body is forty inches, of the tail twelve; its fore claws measure an inch and three quarters, the hind ones one inch.

It inhabits the Cape of Good Hope. It lives on honey, and is a great enemy to bees, which, in that country, usually inhabit the deserted burrows of the Ethiopian boar, the porcupine, jackal, and other animals that lodge under ground. It preys in the evening; it ascends the highest part of the desert to look about, and will then put one foot before its eyes, to prevent the dazzling of the sun. The reason of its going to an

eminence is, for the sake of seeing or hearing the honey-guide cuckoo, which lives on bees, and, as it were, conducts it to their haunts. The Hottentots follow the same guide. This animal cannot climb, but, when he finds the bees lodged in trees, through rage at the disappointment, he will bite the bark from their bottoms. By this sign also, the Hottentots know that there is a nest of bees above. The hair is so stiff, and the hide so tough, probably formed so by nature as a defence against the sting of bees, that this animal is not easily killed. By biting and scratching, it makes a stout resistance, and the dogs cannot fasten on its skin. A pack, which could tear a middle-sized lion to pieces, can make no impression on the hide of this beast. By worrying, they will leave it for dead, yet without having inflicted on it any wound. The Hottentots give it the name of ratel. Synonymes: *Viverra ratel*. *Sparman Stock. Wettsk. Hondl.* 1777, 148. *tab.* iv. *Stink-bingsem. Kolben*, ii. 133. *Blaireau puant. Voy. de la Caille*, 182.

THE MARIPUTO.

THIS weasel is of a black colour, with a white bed, reaching from the forehead to the middle of the back; no ears; length twenty inches; tail nine. It was observed by Mutis, in New Spain, about the mines of Pampeluna; it sleeps in the day; forms deep borroughs; wanders about in the night; feeds on worms and insects; and is very swift. It is called *viverra mariputo*. *Gm. Lin.* 88.

THE CEYLON WEASEL.

THIS species is grey above, mixed with dusky hairs; below white. It is about the size of the marten. It inhabits the Philippine isles, and Ceylon.

THE HERMAPHRODITE WEASEL.

THIS animal hath three dusky lines along the back; the tail longer than the body, with the tip black. It inhabits Barbary; and is described by Dr. Pallas.

THE QUOLL.

TO the weasel tribe must be referred, in all probability, the quoll of New Holland, which is described as resembling a pole-cat, with a brown back, spotted with white, and the belly of a pure white; in which it differs from the others of these fetid animals. It was seen by Captain Cook in New Holland; the natives call it quoll. The late settlements may in time be the means of throwing more light on its history.

THE TAPOA TAFI.

THIS weasel hath long erect ears; colour brown, lightest on the tail; the tail is about the length of the body, covered with long hairs, and ending in a point. It is about the size of a rat. It inhabits New Holland. According to Mr. White's description in his Voyage to Botany-bay, the teeth are so anomalous as to render it difficult to reduce this animal to any certain genus.

THE SPOTTED TAFI.

THIS, according to Mr. White's account and figure, differs from the former only in having the body and sides marked with irregular white spots, with its tail plain.

THE MUSKY WEASEL.

THE nose, lower part of the cheeks, legs, and end of the tail, are black; on the middle of the cheeks is a white spot; the body cinereous, dashed with yellow; some obscure dusky lines and spots mark the body and
lower

lower part of the tail. It inhabits Bengal, and smells of musk. Sir Elijah Impey gave the first description of this animal.

THE CIVET WEASEL, OR CIVET CAT.

THIS species, though it has been called by that name, has no other resemblance to a cat than agility: it has short rounded ears, sky blue-eyes, and a sharp nose, tipped with black; the sides of the face, the chin, breast, legs, and feet, are also black; the rest of the face, and part of the sides of the neck, are white, tinged with yellow. From each ear there are three black stripes, ending at the throat and shoulders. The back and sides are ash-coloured, tinged with yellow, and marked with large dusky spots, disposed in rows: the hair is coarse; that on the top of the body stands up like a mane. The tail is sometimes wholly black, sometime spotted near the base; its length is about two feet three inches, the length of its tail about sixteen inches. Its body is pretty thick.

It inhabits India, the Philippine isles, Guinea, Ethiopia, and Madagascar. The famous drug, called musk or civet, is produced from an aperture between its privities and its anus, in both sexes, secreted by certain glands. The persons who keep them, procure the musk by scraping the inside of this bag twice a-week with an iron spatula, and get about a dram each time; but it is seldom sold pure, being generally mixed with suet or oil, to make it more weighty: the males yield the most, especially when they are previously irritated: they are fed, when young, with pap made of millet, and with a little flesh or fish; when old, with raw flesh. In a wild state, they prey on fowls, &c.

There is a variety of the preceding species, having short rounded ears, a sharp long nose, and a pale ash-coloured face; its head, and the lower part of its neck, are mixed with dirty white, brown, and black; the sides of its neck are marked with stripes of black, beginning



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ginning near the ears, and ending at the breast and shoulders. From the middle of the neck, along the ridge of the back, there is extended a black line, reaching some way up the tail; on each side of this there are two others: the sides are spotted with ash-colour and black; the tail is barred with black and white; the black bars are broader on the upper side than the lower. This variety was first distinguished from the other by Buffon, though it had been figured long before by Hernandez and Gesner. It was unknown in Mexico, till introduced there from the Philippine isles. These animals seem not to have been known to the ancients. It is probable the drug was brought to Europe without their knowing its origin; for it is certain the fine gentlemen at Rome used perfumes, either this kind, or some other. *Pastillos Rufillus olet.*

The synonyms, or names given it by different authors, are as follow: La civette qu'on nommoit anciennement Hyæna. *Belon obs.* 94. Zibettus. *Caii opusc.* 43. Felis zibethus. *Gesner quad.* 837. Animal zibethicum, masc. et fœm. *Hernandez Mex.* 580, 581. Civet cat. *Raii syn. quad.* 178. Coati civetta vulgo. *Klein quad.* 73. Meles fasciis et maculis albis nigris et rufescentibus variegata. *Briffon quad.* 186. Viverra zibetha. V. cauda annulata, dorso cinereo nigroque undatim striato. *Lin. syst.* 65. La civette. *Buffon*, ix. 299. *tab.* xxxiv. *Schreber*, cxi.

THE ZIBETH.

THIS hath short rounded ears; sharp long nose; pale cinereous face; head, and lower part of the neck, mixed with dirty white, brown, and black; sides of the neck marked with stripes of black, beginning near the ears, and ending at the breast and shoulders; from the middle of the neck, along the ridge of the back, extends a black line, reaching some way up the tail; on each side are two others; the sides spotted with ash-colour and black; the tail barred with black and white,

the

the black bars broader on the upper side than the lower. This variety was first distinguished from the other by M. de Buffon; but figured long before by Hernández and Gesner; unknown in Mexico till introduced there from the Philippine isles. These animals seem not to be known to the antients. Its synonymes are, animal zibethicum Americanum. *Hernandez Mex.* 538. *Felis zibethus.* *Gesner quad.* 836. *Le zibet.* *Buffon,* 299. *tab.* xxxi. *Schreber,* cxii.

THE MALACCA CIVET.

THIS species hath a long nose; short erect ears; the ground-colour of the whole animal perlaceous grey; face black; above each eye four black spots; from the hind part of the head are three black lines; one passes down the hind part of the neck, and one down each side of the neck and over part of the shoulders; from the breast another extends along the middle of the belly; three others begin at the small of the back, and reach to the tail; on the body and thighs are forty-one round black spots; the tail annulated with black and grey; legs and feet black; size of a common cat.

This animal lives by the chase; it leaps with great agility from tree to tree; is very fierce; emits a strong musky smell, produced from a liquor which exudes from an orifice above the parts of generation. The Malayes collect it, and pretend that it strengthens the stomach, and excites to love. The Chinese esteem it highly on account of the last quality; and buy it from the Malayes. It inhabits the peninsula of Malacca, and there is a good figure of it given in Sonnerat's *Voyages*, vol. ii. 144. *tab.* 91.

THE GENET.

THE ears of the genet are a little pointed; the body is slender, and the tail very long; the colour of the body is a pale tawny, spotted with black; and the
ridge

Ridge of the back is marked with a black line; the tail is annulated with black and tawny, and the feet are black; sometimes the ground-colour of the hair inclines to grey. It is about the size of a marten, but the fur is shorter. It inhabits Turkey, Syria, and Spain. It frequents the banks of rivers and rivulets, and other moist places; Buffon says there are some found in the southern provinces of France.

They smell faintly of musk, and, like the civet, have an orifice beneath the tail. They are kept tame in the houses at Constantinople, and are useful as cats, for the purpose of catching mice. The synonyms are, *La genetta*. *Belon obs.* 74. *Genetha*. *Gesner quad.* 549, 550. *Genetta vel ginetta*. *Raii syn. quad.* 201. *Coati, ginetta Hispanis*. *Klein quad.* 73. *Mustela cauda ex annulis alternatim albidis et nigris variegata*. *Briffon quad.* 186. *Viverra genetta*. *V. cauda annulata, corpore fulvo nigricante maculato*. *Lin. syst.* 65. *La genette*, *Buffon*, ix. 343. *tab. xxxvi. Schreber*, cxiii.

THE PILOSELLO.

THE nose is of a deep brown; the face and chin cinereous; with a dark line up the forehead; under side of the neck cinereous, mixed with rust; back and whole body of the same colour, varied with irregular black spots; outside of the hind legs and thighs dusky; soles of the feet and upper part down to the claws, clothed with down; tail tawny, annulated with black. It is less than the common ferret. It inhabits the rock of Gibraltar, and the mountains of Ronda: called by the Spaniards pilosello; and it is found also in France. After the famous victory near Tours, gained over the Saracens in 726 by Charles Martel, such quantities of rich garments, made of the skins of these animals, were found, as to give occasion to the hero to establish an order of knighthood called *L'ordre de la genette*. On the first institution there were sixteen knights; among them were the most illustrious princes

of the time. Martel himself was the sovereign. The collar consisted of chains of gold, mixed with enamelled roses of red; pendent was a genet of gold, enamelled with black and red. The order continued during the second race of kings. It is said to have given way afterwards to the order of the star. It is called *La genette de la France*, *Buffon*, Suppl. iii. tab. xlvii. p. 236.

THE FOSSANE.

THE fossane weasel has a slender body, rounded ears, and black eyes; its back and legs are covered with cinereous hair, mixed with tawny; the sides of its face are black: from the hind part of the head, four black lines are extended towards the back and shoulders; the tail is semi-annulated with black; the whole under side of the body is of a dirty white. It inhabits Madagascar and Guinea, Cochin China, and the Philippine isles. It is a fierce creature, and hard to be tamed. In Guinea it is called *berbe*, and by the Europeans, wine-bibber, as it is very greedy of palm-wine. Like the rest of its genus, it is destructive to poultry. When young, it is reckoned good to eat.

There is a specimen of this species in the Leverian museum, which Mr. Pennant describes thus: it is a weasel with a white spot on each side of its nose, and another beneath each eye; the rest of the nose, cheeks, and throat, are black; its ears are very large, upright, rounded, thin, naked, and black; its forehead, sides, thighs, rump, and upper parts of the legs, cinereous. On the back there are many long black hairs; on the shoulders, sides, and rump, there are dispersed some black spots; its tail is black towards the end; near the base it is mixed with tawny and slightly annulated with black; its feet are black, with white claws. It is of the size of the genet, to which it bears a great resemblance; its tail is of the same length with the body. Its synonyms are: *La fossane*, *Buffon*, xiii. 163. tab. xx. *Serheber*, cxiv.

THE GREATER OTTER.

BESIDES the generic distinctions with regard to teeth and toes already mentioned, this species has the following marks; short ears, eyes placed near the nose, thick lips, and large whiskers. The colour of his whole body is a deep brown, except two small spots on each side of the nose, and another beneath the chin; the throat and breast are ash-coloured; his legs are short and thick, loosely joined to the body, capable of being brought on a line with the body, and of performing the part of fins; each toe is connected to the other by a strong broad web. His usual length is twenty-three inches, his tail measures sixteen; the weight of the male from eighteen to twenty-six pounds, of the female from thirteen to twenty-two. Mr. Ives says that the otters of the Euphrates are no larger than the common cat. The otter inhabits all parts of Europe, the north and north-east of Asia, as far as Kamtschatka, and in the easternmost of the Fox islands. It abounds in North America, particularly in Canada, where the most valuable furs of this kind are produced. It dwells on the banks of rivers, and burrows, forming the entrance of its hole beneath the water, whence it works upward, making a small orifice or air-hole in the midst of some bush. It is a cleanly animal, and deposits its excrements only in one place. It swims and dives with great ease: it is very destructive to fish, but, when they fail, it makes excursions on land, and preys on lambs and poultry: it is said to hunt its prey against the stream, that it may return with greater ease with its booty: it frequents not only fresh waters, but also sometimes ventures out to sea, though it never goes far from the shore, in quest of prey: it frequently gives a sort of loud whistle, by way of signal to another. It is a fierce animal, and its bite dangerous; yet it is capable of being tamed, and made to follow its master like a dog, and even to fish for

him, and to return with its prey. They sometimes breed in sinks and drains: they dread neither cold nor moisture: the female comes in season in winter, and brings forth in the month of March, four or five young ones at a time. Contrary to what happens to most other animals, the young otter is not so handsome as the old.

Mr. Pennant thinks that the *latax* of Aristotle was a large variety of the otter. Its synonymes are, *Lutra Agricolaë An. Subter.* 482. *Gesner quad.* 687. *Raii syn. quad.* 187. *Wydra. Rzaczinski Polon.* 221. *Otter. Klein quad.* 91. *Mustela Lutra. M. plantis palmatis nudis cauda corpore dimidio brevior.* *Lin. syst.* 66. *Utter. Faun. juec.* No. 12. *Lutra castanei coloris. Brisson quad.* 201. *Le loutre. Belon Aquat.* 26. *Buffon, vii.* 134. *tab. xi. Screber, cxxvi.* A. B. *Otter. Br. Zool. i.* No. 19. *Br. Zool. illustr. tab. c.*

THE BRAZILIAN OTTER.

THE Brazilian otter has a round head like that of a cat; it has feline teeth too; eyes small, round, and black: large whiskers, and round ears; feet like those of a monkey, with five toes, the inner ones the shortest, all armed with sharp claws; its tail, which is flat and naked, reaches no lower than the feet; its hair is soft, and not long; it is entirely black, except the head, which is dusky, and the throat, which is yellow: it is about the bulk of a middling dog: it inhabits Brazil, Guiana, and the borders of Oronoko: it lives on fish, and crustaceous animals, such as cray-fish, and is very dextrous in robbing nets and weels of what it finds in them: it makes a noise like a young puppy. Its flesh is reckoned delicate eating, and does not taste fishy, notwithstanding its food. They are extremely cleanly, live in society, and go in troops; they are fierce, and make a vigorous defence against dogs; but, when taken young, are soon tamed. Its synonymes are, *Siya & cariguibeiu. Marcgrave Brasil* 234. *Des Marchais,*

chais, iii. 306. *Lutra Brasiliensis. Raii syn. quad.* 189.
Briffon quad. 202.

THE LESSER OTTER.

THIS species is of the form of the greater otter; but it is only one-third of its size. Linnæus and some other writers have classed it with the weasel tribe, as a sort of amphibious pole-cat; it has roundish ears, a white chin, and a tawny and dusky body; the short hairs being yellowish, and the long ones black: its feet are broad, webbed, and covered with hair; its tail is dusky, and ends in a point. It inhabits Poland and the north of Europe; but none of them are found beyond the lake Baikal, or in the north-east parts of Siberia. It lives on fish, frogs, and water-insects: its fur is very valuable: it is next in beauty to that of the sable: it is caught with dogs, and in traps; but, like the pole-cat, it is most excessively fetid. It is the same animal with the minx of North America. The skins are often brought over to England. The synonyms of this species are, *Noerza. Agricola An. Subter.* 485. *Gesner quad.* 768. *Latax. Germ. nutz. nobis nukrek. Rzaczynski Polon.* 218. *Mustela lutreola. M. plantis palmatis hirsutis ore albo. Lin. syst.* 66. *Fennis, tichurt; Suecis, mænk. Faun. suec. No.* 13. *Norka. Ritchkoff orenb. Topagr. i.* 295. *Schreber, cxxvi.*

THE CHINCHIMEN.

THIS species hath its head, whiskers, ears, eyes, shape, and length of the tail, exactly resembling the domestic cat; its feet are furnished with five toes, palmated, and with strong and crooked claws; body covered with two sorts of hair, one very short and fine, the other long and rude; length from nose to tail twenty inches. It inhabits the sea of Chili, and very seldom quits that element; goes always in pairs; loves to bask in the sun; creeps to the summits of the rock, where
it

it is taken in traps; has a hoarse voice, and all the fierceness of the wild cat. *Molina Chili, 265.*

THE SARICOVIENNE.

THIS otter is also of the size of a cat, with a fur as fine as velvet, grey and black; and web-footed. It lives more in the water than on land: the flesh is very delicate and good to eat. This appears to be the very same with la petite loutre d'eau douce de Cayenne, described and figured by M. Buffon. *Suppl. iii. 159. tab. xxii.* probably from a young animal. The body, says he, is seven inches (French) in length; the tail six inches and seven lines, slender, taper, tuberculated, convex above, flat beneath; ears rounded, and longer than usual with otters; head, cheeks, and back, dusky, and the sides marked regularly with the same colours, issuing from the back, extending almost to the belly; the spaces between of a yellowish grey; above each eye is a white spot; the throat, and whole under-side of the body, of the same colour; the toes before are divided, those behind webbed.

M. de la Borde, as quoted by M. de Buffon, mentions another species of otter frequent in the rivers of Guiana, weighing from twenty to twenty-five pounds, and of a yellowish colour.

THE SEA OTTER.

THE sea otter has a black nose; his upper jaw is both longer and broader than the under; he has long white whiskers, hazle irides, small, erect, conic, ears; six cutting teeth in the upper jaw, in the lower four; his grinders are broad, for breaking and comminuting shell-fish; his skin is thick, his hair is thick and long, excessively black and glossy, beneath there is a soft down; his colour sometimes varies to silvery; his legs are thick and short; his toes are covered with hair, and joined by a web; his hind feet are exactly like those of
a seal,

a seal, and have a membrane skirting the outside of the exterior toe, like that of a goose: the length of his body is about three feet, of his tail thirteen inches and a half; the tail is flat, fullest of hair in the middle, and sharp-pointed. The biggest of these animals weigh seventy or eighty pounds. They are found in great abundance in Bering's island, and the Fox islands between Asia and America, and in the interior sea as far as has been discovered to the east of De Fuca's streights. They are sometimes seen in troops of hundreds, and a hundred leagues from land: they are entirely confined between lat. 49. and 60 north; and between east long. from London 126 to 150. During winter they are brought in great numbers by the eastern winds from the American to the Kurilian islands. They are most harmless and inoffensive creatures, most affectionate to their young; they will pine to death for the loss of them, and die on the very spot where they have been taken from them. Before the young can swim, they carry them in their paws, lying in the water on their backs: they are swift in running, and very sportive: they embrace, and even kiss each other: they swim often on their backs, on their sides, and even in a perpendicular posture: they inhabit such shallows as abound with sea-weeds, and feed on lobsters, fish, sepia, and shell-fish: they breed only once a-year, bring but one a time, and suckle it for a year: they are dull sighted, but of a very quick scent: they are hunted for their skins, which are of great value; they are sold to the Chinese for seventy or a hundred rubles a piece. Each skin weighs three pounds and a half. The young are reckoned such delicate meat, that their flesh is scarcely to be distinguished from that of a sucking lamb. The synonymes of this animal are, *Mustela lutris*. *M. plantis palmatis pilosis, cauda corpore quadruplo brevior* *Lin. syst.* 66. *Schreber*, cxxviii. *Lutra marina*, *Kalan. Nov. Comp. Petrop.* ii. 367. *tab.* xvi. *Sea otter*, *Hist. Kamtschatka*, 122. *Muller's voy.* 57, 58.

THE SLENDER OTTER.

THIS species, from the nose to the tip of its tail, is four feet four inches; of the tail about thirteen inches; diameter of the body scarcely more than five inches and a half; the fore legs are about three inches and a half long; hind legs about four inches; head small, eyes small, ears most extremely small, scarcely visible; fore feet webbed, hind feet more strongly so; colour of the whole animal a very rich deep chestnut or dark brown, rather paler beneath; cheeks and throat paler than the other parts, or more inclining to whitish. It inhabits Staten-Land.

CAVIA, or CAVY, of the Order of GLIRES.

THE distinguishing characters of this genus are, two wedge-like cutting teeth in each jaw; generally four toes on the fore, and three on the hind, feet; short ears, and no tail, or else a very short one. Their pace is slow and creeping; and they are numerous breeders, but short lived. Mr. Pennant reckons eleven species of this genus, which are as follow :

THE CAPIBARA CAVY.

THE capibara has a very large and thick head and nose, small rounded ears, and large black eyes. Its upper jaw is longer than the lower. It has two strong and great cutting teeth, and eight grinders in each jaw. Each of these grinders forms, on its surface, seemingly three teeth, each flat at their ends. Its legs are short; its toes are long; these are connected, near their bottoms, by a small web, and guarded at their ends by a small hoof: it has no tail: the hair on the body is short, rough, and brown: on its nose it has long and hard whiskers: it grows to the size of a hog of two years old: it inhabits the country from the Isth-



*The Sea Otter. 2. The Capibara Cavy. 3. The Guinea Pig.
4 The Spotted Cavy.*

mus of Darien to the Brazils, and even to Paraguay, and lives in fenny parts, not remote from the banks of great rivers, such as the Oronoko, Amazon, and the Rio de la Plata. It runs slowly, but swims and dives remarkably well, and keeps under water so long, that the hunters frequently give up for lost those they have been in chace of. It feeds on fruits and vegetables, and is very dextrous in catching fish, which it brings on shore, and eats at its ease. It sits up, and holds its prey with its fore-feet, feeding like an ape. They keep always in pairs, a male and a female, or else in great herds, feed in the night, and commit great ravages in gardens: they make a noise somewhat like the braying of an ass: they are of a gentle and peaceable disposition, easily made tame, and grow very familiar. Their flesh is eaten; it is tender, but has an oily and fishy taste, in consequence of its food. Buffon thinks they might be propagated in Europe.

The following are the synonymes of this animal: Caby-bara. *Marcgrave Brasil.* 230. *Piso Brasil.* 99. *Raii syn. quad.* 126. River hog. *Wafer in Dampier,* iii. 400. Cochon d'eau. *Des Marchais,* iii. 314. *Sus maximus palustris.* Cabiari, cabionora. *Barrere France Æquin.* 160. Capivard. *Froger's voy.* 99. *Sus hydrochæris.* *S. plantis trydactylis cauda nulla.* *Lin. syst.* 103. *Hydrochærus,* le cabiai. *Briffon quad.* 80. *Buffon,* xii. 384. *tab. xlix.* Irabubos. *Gumilla Orenoque,* iii. 238.

THE RESTLESS CAVY, OR GUINEA PIG.

THIS species, besides the generic characters already enumerated, has its upper lip half divided: its ears are very large, broad, and rounded at the sides; its hair is erect, not unlike that of a young pig; its colour is white, or white varied with orange and black, in irregular spots: it has no tail; it has four toes on the fore-feet, and three on the hind. It inhabits Brazil. Writers make no mention of its manners in a wild

state; but it is domesticated and well known in Europe, as a restless grunting little animal, perpetually running from corner to corner. It feeds on bread, grain, and vegetables; breeds when two months old; has young every two months, and brings from four to twelve at a time. A single pair might be multiplied, so as to produce a thousand within a year: they are so prolific, that they would be absolutely innumerable, were not numbers of their young eaten by cats, and killed by the males, or destroyed by other means; they are very tender; multitudes of both young and old perish with cold or moisture; they never drink, though they frequently urinate: their temperament is very hot. When under the influence of love, they are susceptible of anger, fight cruelly, and even kill each other, in disputing the possession of a female: they pass their lives in sleeping, eating, and amours: a kind of chirping noise marks the time of these; they raise a sharp cry when they feel pain: their sleep is short, but frequent; they eat precipitantly, like the rabbit, little at a time, but often, every hour indeed, both day and night; and indulge in mutual embraces as often as they eat: they feed on all kind of herbs, but especially parsley, which they prefer to grain or to bread; they are likewise fond of apples and other fruits: their skins are hardly of any value, and their flesh, though eatable, is not so good as to be much demanded; but it might perhaps be improved, by keeping them in warrens, where they could have the benefit of fresh air, and the liberty of choosing herbs agreeable to their taste. Those kept in houses have nearly the same taste with warren rabbits: those kept in gardens, during summer, have an insipid, but less disagreeable, flavour. Buffon concludes their character and history thus: "By nature they are gentle and tame; they do no mischief, but they are equally incapable of good, for they never form any attachments; mild by constitution, docile through weakness, almost insensible to every object; they have the appearance

pearance of living machines constructed for the purposes of propagation, and of representing a species." They are called Guinea pigs in England, from a supposition that they came originally from that country. Rats are said to avoid their haunts. They are called by different authors as follows: *Cuniculus vel porcellus Indicus. Gesner quad. 367. Cavia cobaya. Marcgrave Brasil. 224. Piso Brasil. 102. Mus fus cuniculus Americanus et Guineensis, porcelli pilis et voce, cavia cobaya. Raii syn. quad. 223. Cavia cobaya Brasil. quibusdam mus Pharaonis. Tatu pilosus. Klein quad. 49. Mus porcellus. M. cauda nulla, palmis tetradactylis, plantis tridactylis. Lin. syst. 79. Amern. Acad. iv. 190. tab. ii. Cuniculus ecaudatus, auritus albus, aut rufus, aut ex utroque variegatus. Brisson quad. 102. Le cochon d'Inde. Buffon, viii. 1. tab. i.*

THE ROCK CAVY, OR APEREA.

THIS species has also its upper lip divided, short ears, four toes on the fore-feet, and three on the hind: it has no tail: the colour of the upper part of its body is black, mottled with tawny; but its throat and belly are white: it is one foot in length, and inhabits Brazil, living in the holes of rocks, whence it is driven out, and taken by dogs. For the table it is preferable to our best rabbits; its motions are like those of the hare. Some of them resemble the hare in colour too; but the head is longer, and the ears are not above an inch in length; the fore-legs exceed not three inches, those behind are a little longer. The synonymes of this species are as follow: *Aperea, Brasiliensis nobis veldratte, vel boschratte. Marcgrave Brasil. 223. Piso Brasil. 103. Raii syn. quad. 206. Cavia aperea. Klein quad. 50. Cuniculus ecaudatus auritus, ex cinereo rufus. Brisson quad. 103. L'Aperea. Buffon, xv. 160.*

THE MAGELLANICA, OR PATAGONIAN CAVY.

THE ears of the Patagonian cavy are long and much dilated near the bottom: its upper lip is divided: on each side of its nose, there are tufts of soft hair, and long whiskers: the tip of its nose is black; its face, its back, and the fore parts of its legs, are cinereous and rust coloured; its breast and sides are tawny, its belly is of a dirty white: on each thigh it has a white patch: its rump is black, its legs are very long, its claws are long, strait, and black; it has four on the fore-feet, three on the hind: its tail is a mere naked stump. Some of these creatures weigh six-and-twenty pounds: they are found in plenty about Port Desire in Patagonia: they live in holes of the earth like the rabbit: their flesh is of a snowy whiteness, and of an excellent flavour. Sir John Narborough, and other voyagers, call it a hare.

THE PACA, OR SPOTTED CAVY.

THIS species hath the upper jaw longer than the lower, large nostrils, long whiskers, short and naked ears, and a thick neck: its hair is short and hard, and on the upper part of the body dark brown: its sides, on the lower part, are marked lengthways with lines of grey spots: its belly is white: in some, perhaps young ones, the sides and spots are of a pale yellow: it has five toes on each foot, and only the mere rudiment of a tail: its make and voice resemble those of a pig. In some places it is called the hog-rabbit. It inhabits Brazil and Guiana, and lives in fenny places. It burrows under ground, grows very fat, and is esteemed a great delicacy in Brazil; even its skin is eaten, like that of a pig. It eats its meat on the ground, not sitting up as some others of this genus do. They are discovered by dogs, who point out the places they lie in: the mas-

ter digs over them, and, when he comes near, transfixes them with a knife; otherwise they generally escape. When they have an opportunity, they will bite dreadfully. There is a variety of them quite white, found on the banks of the river St. Francis.

Mr. Pennant says, that in size this species measures only ten inches; but Buffon says they are larger than any rabbit. Speaking of one that was kept in France, "Though our animal (says he) had not acquired his full growth, he was eighteen inches long in his natural contracted situation; but, when he extended himself, he was near two feet: his head, from the nose to the top of the front, was five inches; his eyes were about two inches distant: when upon his legs, his height before was seven inches, behind about nine inches and a half: the posterior part of the body measured nineteen inches and a half in circumference, the fore part only fourteen: five longitudinal rows of white spots ran along the sides, and approached each other at the extremities: his tail was hardly visible: upon search, we found a small button of two or three inches long." The count gives a long detail of the manner of living and acting of the above animal, which he kept in his house from the month of August, 1774, to the 28th of May, 1775, during which period its size continued to augment. Provided with a wooden cage or box, it remained perfectly tranquil during the day, especially when plentifully supplied with food. After feeding, he retired, of his own accord, to his box; but, when night approached, he discovered a violent inclination to get out. He was remarkably cleanly, and, when about to void his excrements, he always retired to the most private corner he could find. All obscure corners seemed agreeable to him. He would make himself a new nest in the bottom of an open press, or under the kitchen grate; and nothing but force would make him leave his new abode: he was fond of adulation, and licked the hand of the person

son that caressed him: when gently stroked on the back, he stretched himself out, and lay down on his belly: his skin was so sensible, that the slightest touch was sufficient to excite the most lively emotions. This great sensibility produced sometimes the most violent paroxysms of passion: the bare sight of an unknown dog was sufficient; he would dart suddenly on the dog, however innocent, and bite him severely: he was apt to treat people, with whom he was not acquainted, in the same manner, if they tried to irritate him: he had an aversion to children, and pursued them: he expressed his passion by chattering his teeth: he often sat on his posteriors, and seemed to comb his head and whiskers with his paws, which he licked, and moistened with his saliva: in this operation, he often used both paws at a time, and would afterwards dress all his body: he would eat bread equally well, whether it had been soaked in water, wine, or vinegar. When sugar or fruits were offered him, he expressed his joy by bounding and leaping: he ate, with equal relish, grapes, celery, onions, and garlic; he did not refuse grass, moss, or the bark of trees: he would eat wood even half charred: he seemed to like the flesh of any kind of food: he lapped like a dog. Mr. Buffon thinks he might be naturalized in France; and imagines, the introducing him would be a valuable acquisition, as a single individual of this species would furnish as much good meat as seven or eight rabbits. M. de la Borde says, that there are two or three species of the cavy at Cayenne, which are said not to intermix. Some of them weigh from fourteen to twenty pounds, and others from twenty-five to thirty.

The synonymes of the spotted cavy, or names given it by different authors, are as follow: *Paca. Martgrave Brasil.* 224. *Piso Brasil,* 101. *De Lact,* 484. *Mus Brasiliensis magnus, porcelli pilis et voce, paca dictus. Raii syn. quad.* 226. *Cavia paca. Klein quad.* 50. *Cuniculus major, palustris, fasciis albis notatus.*

Paca. *Marcgrave*. *Barrere*. *France* *Æquin.* 152. *Mus paca*. *M. cauda abbreviata, pedibus pentadactylis, lateribus flavescenti-lineatis. Lin. syst.* 81. *Cuniculus caudatis, auritus, pilis obscure fulvis, rigidis, lineis ex albo flavescens ad latera distinctis. Brisson quad.* 99. *Le paca. Buffon, x.* 269. *tab. xliii. Supplem. iii.* 203. *tab. xliii.*

THE BRISTLY CAVY.

THIS species hath short oval ears, covered within and without with hair; colour of the whole animal above grey and ferruginous; from the chin to the extremity of the belly white; on the upper lip a strong bristly mustachio, about three inches long; above the eyes another tuft, two inches and two eighths long; all over the body are scattered similar bristles, two inches and a quarter in length; the toes are fleshy, the lower part naked, the upper covered with black hairs; the claws somewhat resemble nails, and are ill adapted for burrowing; it has no tail; the length of the whole animal is about seventeen inches.

This species was first taken notice of by Prosper Alpinus, who calls it *Agnus filiorum Israel*; the daman Israel of the Arabs. He says that it is larger than a rabbit, an object of the chase, and that the flesh is sweeter than that of the rabbit. It inhabits, according to Mr. Bruce, mount Libanus, the mountain of the sun in Abyssinia, and in great numbers Cape Mahomet on the Arabian gulph, not far to the east of Suez. By Alpinus we find they are also inhabitants of Ægypt. They are gregarious, and sit by dozens on the great stones to bask in the sun, before the mouths of caves, or clefts in the rocks, their places of refuge at the sight of man. They are justly supposed by Mr. Bruce to have been the saphen (mistranslated the coney) of Holy Writ. Solomon says, "The hills are the refuge for the wild goats, and the rocks for the conies." See his saphen. "The saphen (adds he) are but a feeble

feeble folk, yet make they their houses in the rocks." They retire into the depths of the clefts, and there make themselves a house; i. e. a nest of straw. Neither the Christians of Abyssinia, nor the Mahometans, eat the flesh of these animals; but the Arabs of mount Libanus, and of Arabia Petræa, use them as food. The flesh is as white as a chicken, and free from any rankness. Synonymes: *Agnus filiorum Israel*. *Prosp. Alp. Egypt.* i. 232. *Daman Israel*. *Buffon, Suppl.* vi. 276. *tab.* xlii. *Ashnoko*. *Bruce's travels*, v. 139. *Hirax Syriacus*. *Gmel. Lin. syst.* 167. *Schreber, tab.* ccxi. B.

THE LONG-NOSED CAVY.

THIS species derives the name here given it from the length of its nose. Its upper lip is divided: it has short rounded ears, and black eyes: its hair is hard and shining on the body, mixed with red, brown, and black: its rump is of a bright orange colour, its belly is yellow: its legs are almost naked, slender, and black: it has four toes on the fore-feet, three on the hind, a short naked tail, and is of the size of a rabbit: it inhabits Brazil, Guinea, &c. It grunts like a pig, and is very voracious: it sits on its hind legs, and holds its food with its fore-paws when it eats, and hides what it cannot consume: it hops like a hare, and goes very fast: when pursued, it takes shelter in the hollow trees: when angry, it sets up the hair on its back, and strikes the ground with its hind feet: both its eye and its ear are very fine: it stops and listens to the sound of music: it is capable of being tamed, and is eaten by the inhabitants of South America: they annually produce two or three, but generally two: they seem to require a warm climate, in order to subsist and multiply: they remain in their holes during the night, unless the moon shines bright; but they run about during most of the day. M. de la Borde says it is the most common quadruped in Guiana, and multiplies as fast as the rabbit;
that

that they are easily tamed, and return to the house of their own accord.

Synonymes.---Aguti vel acuti. *Marcgrave Brasil.* 224. *Piso Brasil*, 102. Acuti ou agoutis. *Laet*, 484. *Rocheport Antilles*, i. 287. *Mus sylvestris Americanus cuniculi magnitudine, pilis et voce porcelli, aguti. Raii syn. quad.* 226. *Cavia aguti. M. cauda abbreviata, palmis tetradactylis, plantis tridactylis, abdomine flavescente. Lin. syst.* 80. *Cuniculus caudatus, auri- bus, pilis ex rufo et fusco mixtris rigidis vestitus. Bris- son quad.* 98. *L'agouti. Buffon*, viii. 375. *tab. l.* Small Indian coney. *Brown's Jamaica*, 484. Long-nosed rabbit. *Waser's voy. in Dampier*, iii. 401. *Cuniculus omnium vulgatissimus, aguti vulgo. Barrere France Æ- quin.* 153.

THE OLIVE CAVY.

THIS is a species of the cavy of an olive colour, less than the former, and more delicate eating. It inhabits Guiana, and the islands of St. Lucia and Grenada. It lives on fruits in the woods, but is easily made tame: it makes a cry, but very rarely, like the restless cavy: it abhors water.

Synonymes:---*Cuniculus minor caudatus, olivaceus, akouchy. Barrere France Æquin.* 153. *Des Marchais*, iii. 303. *L'akouchy. Buffon*, xv. 258. *Suppl. iii.* 211. *tab. xxxvi.*

THE JAVAN CAVY.

THE Javan cavy has a slender small head, prominent naked ears, rounded at the tops: its hair is very stiff, like bristles, especially on the back, and reddish on the upper part of the body: its breast and belly are white, its legs are long, its hind parts are large: it has four toes on the fore-feet, three on the hind; and is of the size of a hare. It inhabits Surinam, and the hotter parts of South America, where it is a common article of food. Its flesh is white, but dry. It

is not found in Sumatra as Catesby asserts, nor in Java, notwithstanding its name.

Synonymes.---Java hare. *Catesby Carolina, App. tab. xviii.* *Cavia Javenfis. Klein quad. 50.* *Cuniculus caudatus auritus, rufesco admixto. Brisson quad. 98.* *Mus leporinus. Lin. syst. 80.* *Cunicula Americanus. Seb. Mus. i. 67. tab. xlii. fig. 2.*

THE CAPE CAVY.

THIS species, well known at the Cape of Good Hope, where they are found in great abundance among the rocky mountains, like several of the others, burrows under ground, has a slow creeping pace, and a sharp voice, which is often repeated. It is distinguished by a thick head, and full cheeks, and oval ears, half hid in its fur: its head is the colour of a hare, the top of the back dusky, mixed with grey; its sides and belly are of a whitish grey: its toes are like those of the rest, and its tail is scarcely visible: it is of the size of a rabbit, but the shape of the body thick and clumsy; its flesh is esteemed very good meat.

Synonymes.---*Cavia capensis. Pallas Miscel. Zool. 30. tab. ii. Spicil. 16. tab. ii.* *Africaansch basterd-mormeldier. Vosmaer Monogr. Buffon Supplem. iii. 177. tab. xxix.*

THE MUSK CAVY.

THE upper part of the body of the musk cavy is of a black or tan colour: its belly is white: it is almost as big as a rabbit, and inhabits Martinico and the rest of the Antilles: it burrows like the rabbit, and smells so strong of musk, that its retreat may be traced by the perfume. This is rather an obscure species, and has not been hitherto accurately examined and described by any naturalist; so that it remains for those who have skill and opportunity to elucidate its history.

Synonymes

Synonymes.---Les rats musqués, piloris. *Rocheport Antilles*, i. 208. *Du Tertre hist. Antilles* ii. 302. *Buffon*, x. 2.

LEPUS, the HARE and RABBIT, of the Order of GLIRES.

THE characteristics of this genus are, two cutting teeth in each jaw, a short tail, or none; five toes before, and four behind. This genus contains twelve species besides several subordinate varieties; and they may be divided into two classes, those with, and those without, tails. They are as follow :

THE COMMON HARE.

THE hare is a well known animal. Its long ears are tipped with black, its eyes are very large and prominent, its chin is white, and it has long white whiskers: the hair or fur on its face, back, and sides, is white at the bottom, black in the middle, and tipped with tawny red: its throat and breast are red, its belly white; its tail is black above, and white beneath; its feet are covered with hair even at the bottom. A large hare weighs eight pounds and a half. It is said, in the Isle of Man some have been known to weigh twelve. Perhaps the hares in that island are larger nearly in the same proportion as the native breed of horses are less than others. The length of a common hare, from the nose to the tail, is two feet. It inhabits all parts of Europe, most parts of Asia, Japan, Ceylon, Egypt, and Barbary. It is a watchful timid animal, always lean, and runs swifter up hill than on even ground; hence, when started, it endeavours to run up hill. It frequently escapes the hounds by various artful doublings. It keeps all day in its seat, and feeds by night: it returns to its form by the same road that it left it; it does not pair. Their rutting season is February or March, when the male pursues the female by the sagacity of

its nose : they breed often in the year, go with young only thirty or thirty-one days, and bring three or four at a time : they admit the male during the time of their gestation, and have frequently superfetations. The male and female are liable to be mistaken the one for the other. The mother suckles her young about twenty days. Their fur is of great use in the manufacture of hats. They are very subject to fleas ; yet the Dalecarlians make a cloth of the fur, which, it is said, preserves the wearer from their attacks.

Hares feed on vegetables, and are very fond of the bark of young trees, except that of the alder and lime, which, it is said, they never touch : they are great lovers of birch, parsley, and pinks. Their flesh was a forbidden food among the ancient Britons ; the Romans, on the contrary, held it in great esteem :

Inter quadrupedes gloria prima lepus,

was the opinion of Martial ; and Horace, who was likewise a *bon vivant*, says, that every man of taste must prefer the wing :

Fecundi leporis sapiens settabitur armos.

Even at present the flesh of the female is preferred to that of the male ; and that of those bred on dry hilly ground to that of those that reside in marshy or wet places.

The hare and the rabbit afford to man the double advantage arising from their number and utility. Hares sleep much, but always with their eyes open. They have neither eye-lids nor eye-lashes : their eyes seem to be bad, but they have an acute sense of hearing, and enormous ears in proportion to the size of their bodies. These long ears they move with great facility, and employ them as a rudder to direct their course, which is so rapid, that they outstrip all other animals. The period of their natural life is said to be about seven years ; but, it is said, the males live longer than the females : they pass their days in solitude and silence, frequently

in fear and trembling; as a falling leaf is sufficient to alarm them: their voice is never heard but when they are seized or wounded: it is a sharp loud cry, and has some resemblance to the human voice. They are easily tamed, but never acquire that degree of attachment which is necessary to make them domestic; they always take the first opportunity of regaining their liberty: they have been trained to beat a drum, to perform gestures in cadence, &c. they want not instinct sufficient for their own preservation, nor sagacity for escaping their enemies. The sportsman has frequent opportunities of observation, and can recount many instances of their surprising sagacity, though they have not all equal experience and cunning. They turn more or less white with age. They are thought to be larger and stronger, in proportion to the coldness of the climate. A perpetual enmity is carried on against them, not only by men and dogs, but also by cats, foxes, wolves, and birds of prey, such as owls, buzzards, vultures, and eagles; so that it is almost a miracle that any of them escape destruction.

There have been several instances of what may be called monsters in this species, horned hares, having excrescences growing out of their heads, the likest of any thing to the horns of the roebuck. Such instances have occurred in Saxony; and Dr. Pallas adds another found near Astracan. In Cook's voyages mention is made of straw-coloured animals like dogs, which run like hares, in New Holland.

Synonymes. --- *Lepus. Plinii lib. viii. c. 55. Gesner quad. 605. Raii syn. quad. 204. Hase, Klein quad. 51. Lepus timidus. L. cauda abbreviata auriculis apice nigris? Lin. syst. 77. Hase, Faun. suec. No. 25. Lepus caudatus ex cinereo rufus. Brisson quad. 94. Le lievre. Buffon, vi. 246. tab. xxxviii. Br. Zool. i. No 20. Arnæb. Forskal. iv. Lev. Mus. in which are several curious varieties of coloured hares.*

THE VARYING HARE.

THE varying hare has a soft down upon it, which is grey in summer, with a slight mixture of black and tawny: its ears are shorter, and its legs more slender than those of the common hare; its tail is entirely white, even in summer; its feet are most closely and warmly covered with fur. In winter, the whole animal changes to a snowy whiteness, except the tips and edges of the ears, which remain black; as do also the soles of the feet, on which, in Siberia, the fur is doubly thick. It is less than the common species. It inhabits the highest Scottish Alps, Norway, Lapland, Russia, Siberia, Kamschatka, the banks of the Wolga, and Hudson's Bay. In Scotland, it keeps on the tops of the highest hills, and never descends into the vales, nor mixes with the common hares. It does not run fast, but takes shelter in the clefts of rocks; it is easily tamed, is full of frolic, and fond of honey, and caraway comfits; it eats its own dung before a storm; it changes its colour in September, and resumes its grey coat in April. In the extreme cold of Greenland only, it is always white. Both this and the preceding species are common in Siberia, and on the banks of the Wolga. The one never changes colour, the other, a native of the same place, constantly assumes the whiteness of the snow during the winter. This it does, not only in the open air and in a state of liberty; but, as has been proved by experiment, even when kept tame and preserved in apartments kept warm with stoves, in which it experienced the same changes of colour, as if it had remained on the snowy plains.

They assemble, and are seen in troops of five or six hundred migrating in spring, and returning in autumn. Compelled by the want of subsistence, they quit in winter the lofty hills, and seek the plains and wooded parts, where vegetables abound. Towards spring, they return to their mountain quarters. Mr. Muller says

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he once saw two black hares in Siberia, of a wonderful fine gloss, and of as full a black as jet. Another of the same kind was taken near Casan in the winter of 1768. These specimens were much larger than the common kind. In the southern and western parts of Russia, there is a mixed breed of hares, between this and the common species. It sustains, during winter only, a partial loss of colour. The sides, and more exposed parts of the ears and legs, in that season, become white; the other parts retain their colour. This variety is unknown beyond the Urallian Chain. It is called by the Russians *russack*: they take them in great numbers in snares, and export their skins to England, and other places, for the manufacture of hats. The Russians and Tartars, like the ancient Britons, hold the flesh of hares in detestation, esteeming it impure; that of the variable hare, in its white state, is excessively insipid.

Synonymes.---*Lepus hieme albus. Forster. hist. nat. Volgæ. Phil. Transf. lvii. 343. Alpine hare. Br. Zool. i. No. 20. Lepus variabilis. Pallas. nov. sp. i.*

THE AMERICAN HARE.

THESE have their ears tipped with grey, the upper part of the tail black, the lower white; the neck and body mixed with ash, rust colour, and black: their legs are of a pale ferruginous colour, their belly white; their fore-legs are shorter, and their hind ones longer, in proportion, than those of the common hare: they measure eighteen inches in length, and weigh from three to four pounds and a half: they inhabit all parts of North America. In New Jersey, and the colonies to the south of that province, they retain their colour during the whole year: but to the northward, on the approach of winter, they change their short summer fur, for one very long, silky and silvery, even to the roots, the edges of the ears only preserving their colour. At that time it is in the highest season for the table, and is

of

of vast use to those who winter in Hudson's Bay, where they are taken in great abundance in springes made of brass wire, placed in hedges, constructed on purpose, with holes before the snares for the hares or rabbits to pass through.

They breed once or twice a year, and have from five to seven at a time: they do not migrate, like the preceding, but always haunt the same places: they do not burrow, but lodge under fallen timber, and in hollow trees: they breed in the grass, but, in the spring, shelter their young in hollow trees, to which they also run when pursued. The hunters force them out of those retreats, by means of a hooked stick, or by making a fire, and driving them out by the smoke. It is called hedge-coney, *Lawson*, 122. *Catesby*, App. xxviii.

THE R A B B I T.

THE ears of the rabbit are almost naked: the colour of its fur, in a wild state, is brown; its tail black above, and white beneath: in a tame state, it varies to black, pied, and quite white: of these last, the eyes are of a fine red. It inhabits, in a wild state, the temperate and the warm parts of Europe, and even the hottest parts of Asia and of Africa. It is not originally British, but succeeds here admirably well. It will not live in Sweden, and the northern countries, except it be kept in houses. Strabo tells us, that they were imported into Italy from Spain. They are not natives of the western hemisphere, but have been carried thither, and increase greatly in South America. They are exceedingly prolific; they breed seven times in a year, and produce eight young at a time. If we suppose this to happen regularly, one pair may produce in four years the amazing number of one million two hundred and seventy-four thousand eight hundred and forty. They are still more prolific than the common hare. These two species, though similar, never intermix, Rabbits pair, and are said to be faithful to their mates.

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They live to the age of eight or nine years. A French gentleman, who amused himself long with rearing rabbits, and observing their manners, remarked, that the offspring paid great deference to their first father. Upon a call, which they were accustomed to obey, he always put himself at their head, and arrived first. He then stood at the mouth of their hole till they had all got in. In warrens, they keep in their holes during the middle of the day, and come out in the morning and evening to feed. The males are apt to destroy the young; but their holes protect them from those enemies that destroy such vast numbers of young hares. Their skins are a great article of commerce; vast numbers of them are exported to China: their fur, like that of the other hares, is of great use in the hat manufacture.

The Angora rabbit, like the goat and cat of the same place, is remarkable for the elegance of its hair, which is long, waved, and of a silky fineness.

The hooded rabbit is another variety still more singular. It has a double skin over its back, into which it can withdraw its head; and another under its throat, into which it can withdraw its fore-feet: it has small holes in the loose skin on its back, to admit light to its eyes when its head is covered: its body is ash-coloured; its head and ears brown. It is preserved in the Museum, inscribed "A Russian rabbit;" though Mr. Pennant says it is unknown in that empire.

Synonymes.---Cuniculus. *Plinii, lib. viii. c. 55.* *Gesner quad. 362.* *Agricola An. Subt. 482.* Rabbit, or coney. *Raii syn. quad. 205.* Lepusculus, cuniculus terram fodiens, kaninchen. *Klein quad. 52.* Lepus cuniculus. *L. cauda abbreviata, auriculis nudatis. Lin. syst. 77.* Kanin. *Faun. suec. No. 26. Br. Zool. i. No. 22.* Lepus caudatus, obscure cinereus. *Briffon quad. 95.* Le lapin. *Buffon, vi. 303. tab. 1. li.*

T H E B A I K A L H A R E .

THE tail of the Baikal hare is longer than that of the rabbit; in the male, the ears are longer in proportion than those of the varying hare; its fur is of the same colour with that of the common hare. It is red about the neck and feet: its tail is black above, and white beneath: its size is between that of the common and that of the varying hare. The name here given it marks its country. It extends from the lake Baikal as far as Thibet. The Tanguts call it rangwo, and consecrate it to the spots of the moon. It agrees with the common rabbit in the colour of its flesh, but does not burrow. When pursued, it runs for shelter strait to the hole of the rocks, without any circuitous doublings, like those of the common hare; so that it agrees in nature neither with the hare nor the rabbit. The Mongols call it tolai. Its fur is bad, and is of no use in commerce.

Synonymes.---*Cuniculus insigniter caudatus, coloris leporini. Nov. Comp. Petrop. v. 357. tab. xi. Lepus cauda in supina parte nigra in prona alba. Brisson quad. 97. Le tolai. Buffon, xv. 138.*

T H E C A P E H A R E .

THE long ears of the Cape hare are dilated in the middle. On the outside they are naked, and of a rose colour; the inside and edges are covered with short grey hair: its crown and back are dusky, mixed with tawny; its cheeks and sides ash-coloured; its breast, belly, and legs, rust-coloured: its tail, which it carries upwards, is of a pale ferruginous colour: it is of the size of a rabbit, and inhabits the country for three days march north of the Cape of Good Hope. It is there called the mountain hare; for it lives only in the rocky mountains, and does not burrow. It is difficult to shoot it, as, on the sight of any one, it instantly runs
into

into the fissures of the rocks. The same species probably extends as high as Senegal.

Allied to this, seems the vischachas, mentioned by Acoſta and Feuillée in their accounts of Peru. They compare them to hares or rabbits, and ſay, that they inhabit the colder parts of the country; that their hair is very ſoft, and of a mouſe colour; that the tail is pretty long, and turned up; that the ears and whiſkers are like thoſe of the common rabbit. In the time of the Incas, their hair was ſpun, and wove into cloth, which was ſo fine, as to be uſed only by the nobility. It is called *Lepus Capenſis*. *L. cauda longitudine capitis, pedibus rubris*. *Lin. ſyſt.* 78.

THE VISCACCIA.

THIS hath the appearance of a rabbit, excepting the tail; in that part and colour it is like a fox; the tail is long, and turned up, and covered with coarſe hair; the reſt of the hair ſoft; ſize ſuperior to that of a rabbit.

Inhabits Peru and Chili; lives under ground, and forms two burrows one above the other; in the one it keeps its proviſions, in the other ſleeps; goes out only in the night; its fleſh is white and tender. The ancient Peruvians made ſtuſſs of the hair, which were ſo fine as to be worn only by the nobility. In Chili it goes into the hat-manufactory; its tail is its weapon of defence. It is called *Lepus viſcaccia*. *Molina Chili*, 289. *Acoſta* in *Purchas's Pilgrims*, iii. 966. *Feuillée Peru*, 1725. p. 32. *Garcilaffo de la Vega*, 331.

THE CUY.

THIS hath a conoid body; ears ſmall, pointed, and covered with hair; noſe long; tail ſo ſhort as ſcarcely to be ſeen; is domeſticated, and varies in colour to white, brown, and ſpotted with divers colours; fur very fine; ſize of a field mouſe.

Inhabits Chili; breeds every month, and brings from six to eight young; is delicate eating. It is termed *Lepus pufillus*. *Molina Chili*. 288.

THE BRAZILIAN HARE.

THE Brazilian hare, like the common kind, has very large ears, and a white ring round its neck. Its face is of a reddish colour, its chin is white, its eyes are black, and its colour like that of the common hare, only a little darker; its belly is whitish; it has no tail, and some want the ring round the neck. They live in the woods, and are very prolific; and are reckoned very good meat: they do not burrow. They are found both in Brazil and in Mexico, where they are called citli.

Synonymes.---Tapeti. *Marcgrave Brasil*. 223. *Piso Brasil*. 102. *Cuniculus Brasiliensis tapeti dictus*. *Raii syn. quad.* 205. *Lepus Brasiliensis*. L. cauda nulla. *Lin. syst.* 78. *Lepus ecaudatus*. *Briffon quad.* 97. Le tapeti. *Buffon*, xvi. 162. Collar'd rabbit. *Waser's voy. in Dampier*, iii. 401.

THE ALPINE HARE.

THE Alpine hare has short brown rounded ears, a long head, and very long whiskers, with two very long hairs above each eye. Its fur is ferruginous, tipped with white, and intermixed with several long dusky hairs; but, at the first look, the whole animal seems of a bright bay. It is only about nine inches long. They are first seen on the Altaic Chain, and extend to lake Baikal in Tartary, and from thence to Kamtschatka and the Fox Isles. They inhabit always the middle region of the snowy mountains, in the roughest places, wooded, and abounding with herbs and moisture. They sometimes burrow; but are more frequently found in crevices between the rocks, in pairs, or more, according to conveniency. In cloudy weather they assemble
and



J. Pate del. et sculp.

The Calling Hare. 2 The Alpine Hare. 3. The Varying Hare. 4. Hooded Rabbit

and lie on the rocks, and emit a sound, so like that of sparrow, as to deceive the hearer. On the report of a gun, they run into their holes; but soon come out again, supposing it to be thunder, to which they are so much used in their lofty habitations. By wonderful instinct, they make a provision against the rigorous season in their inclement seats. Towards autumn a company of them collect vast heaps of choice herbs and grasses, nicely dried, which they place either beneath the overhanging rocks, or in the chasms, or round the trunk of some tree: the way to these heaps is marked by a worn path: the heaps are formed like conoid ricks of hay, and are of various sizes, according to the number of the society employed in forming them: they are sometimes of a man's height, and many feet in diameter, but usually about three-feet. Thus, they wisely provide their winter's stock, otherwise they must perish, being prevented by the depth of snow from quitting their retreats in quest of food.

They select the best of vegetables, and crop them when in the fullest vigour: these they make into the best and greenest hay, by the judicious manner in which they dry them: these ricks too are the origin of fertility amidst the rocks; for their remains, mixed with the dung of the animals, rotting, in the otherwise barren chasms, creates a soil productive of vegetables. These ricks are also of great service to those men who devote themselves to the laborious employment of sable hunting. Being obliged to go far from home, their horses would often perish for want, if not supported by the provisions of these industrious little animals. The people of Jakutz are said to feed both their horses and cattle with the reliques of the winter stock of these hares. Such supply may be serviceable to some in the spring, when their own stock is exhausted; but, should they depend solely on these feeble mountaineers, they would deserve to lose both horses and cattle every hard winter.

These

These hares are neglected as food by man; but they are the prey of fables, and of the Siberian weasel, which are joint inhabitants of the same mountains. They are likewise greatly infested by a sort of gadfly, which, in August and September, lodges its eggs in their skin, and often proves fatal to these feeble and defenceless, though industrious, creatures. It is called *Lepus Alpinus*. *Pallas*, nov. sp. fasc. i. 52. tab. ii. *Itin.* ii. 701. tab. A. *Zimmerman*.

THE OGOTONA HARE.

THE Ogotona hare has oblong oval ears, a little rounded; shorter whiskers than the former species, fur long and smooth, light grey in the middle, white at the ends, intermixed with a few dusky hairs, with a yellowish spot on the nose, and a space about the rump of the same colour: its limbs also are yellowish on the outsides, and its belly white. It is only about six inches long. The male weighs from six ounces and a half to seven and a quarter; the female, from four to four and three quarters. It inhabits the same countries as the Alpine hare, and lives in the open vallies, and on gravelly or rocky naked mountains, under heaps of stones; but in a sandy soil they burrow, leaving two or three entrances. Their holes run obliquely; in these they make their nests of short grass: they wander out chiefly in the night: their voice is excessive shrill, in a note like that of a sparrow, twice or thrice repeated, but very easily to be distinguished from that of the Alpine hare: they are fond of the bark of the service tree, and of the dwarf elm. Before the approach of severe cold, they collect great quantities of herbs, and fill their holes with them. Directed by the same instinct as the former species, they form, in autumn, their ricks of hay, of a hemispherical form, about a foot high and wide. In the spring, these elegant heaps disappear. They copulate in the spring. About the latter end of June, their young are observed to be full grown.

grown. They are the prey of hawks, magpies, and owls; but the cat manul makes the greatest havock among them. The ermine and fitchet are equally their enemies. It is called *Lepus Ogotona*. *Pallas* nov. sp. fasc. i. 59. tab. iii.

THE CALLING HARE.

THIS species, called by the Tartars *ittsitkan*, or the barking mouse, has a longer head in proportion to its size, which is very diminutive, than is usual with hares: the head is thickly covered with fur, even to the tip of the nose: it has large whiskers; its ears are large and rounded; its legs are very short, and its soles are furred beneath: its whole coat is very long, soft, and smooth, with a thick long fine down beneath, of a brownish lead colour: the hair is of the same colour, of a light grey towards the ends, and tipped with black: the lower parts of the body are hoary; the sides and ends of the fur are yellowish: its length is about six inches; its weight from three ounces and a quarter to four and a half: in winter they are scarcely two and a half. They inhabit the south-east parts of Russia; but are found no where, in the east, beyond the river Oby: they delight in sunny vallies, and hills covered with herbs, especially those near the edges of woods, to which they run on any alarm: they live so concealed a life, as very rarely to be seen; but are often taken in winter in snares laid for the ermines: they choose, for their burrows, a dry spot, amidst bushes, covered with a firm sod, preferring the western sides of the hills: their places would scarcely be known, but for their excrements; and even those they drop, by a wise instinct, under some bush, lest their dwellings should be discovered by their enemies among the animal creation. It is their voice alone that betrays their abode: their cry is like the piping of a quail, but deeper; and so loud, as to be heard at the distance of half a German mile; it is repeated, by just intervals, thrice, four

times, and often six: this cry is emitted at night, and in the morning; but seldom in the day, except in rainy or cloudy weather: it is common to both sexes; but the female is silent for some time after parturition, which happens about the beginning of May: she brings forth six at a time, blind and naked; she suckles them often, and covers them carefully with the materials of her nest. These most harmless and inoffensive creatures never go far from their holes: they feed and make their little excursions by night; drink often, sleep little, and are easily made tame: they will scarcely bite when handled; yet the males have been observed, when in confinement, to attack each other, and to express their anger by a grunting noise. It is called *Lepus pusillus*. *Pallas*, Nov. sp. i. 31. tab. i. Nov. Com. *Petrop.* xiii. 531. tab. xiv. *Zimmerman*.

CASTOR, the BEAVER, of the Order of GLIRES.

THE distinguishing characters of this genus of quadrupeds are, two cutting teeth in each jaw, those in the upper truncated, and hollowed in a transverse angular direction; they have five toes on each foot; the tail compressed, and covered with scales. There are only three species of this genus of animals.

THE FIBER, OR CASTOR BEAVER.

THIS wonderful animal has strong cutting teeth, well adapted for the purposes for which nature designed them; short ears hid in its fur, a blunt nose, hair of a deep chestnut brown, a tail broad, almost oval, compressed or flattened horizontally, and covered with scales. Its fore-feet are small, the hind ones are large: its length from nose to tail is about three feet: its tail is eleven inches long, and three broad. It inhabits Europe, from Lapland to Languedoc: they are found in great plenty in the north: a few are yet found in the Rhone,

Rhone, the Gardon, the Danube, the Rhine, and the Vistula. They abound in the Asiatic part of the Russian empire; and are found in companies on the rivers that flow into the Oby. They are met with dispersed, or in the state of terriers, as those are called, in the wooded parts of Independent Tartary, and in the mountains which border on Siberia. None of them are to be seen in Kamschatka, owing to the interruption of the woods, beyond the river Kowyma; nor yet in the new discovered islands west of that country: only in the isle of Kadjak, the nearest to America, some skins have been procured by the Russians, which probably were got by the natives from America, in whose northern parts they are found in prodigious abundance.

They are the most industrious of all animals. Nothing equals the art with which they construct their dwellings: they choose a level piece of ground, with a small rivulet running through it: this they form into a pond, by making a dam across; first by driving in the ground stakes five or six feet long, placed in rows, wadding each row with pliant twigs, and filling the interstices with clay or mortar, ramming it down close. The side next the water is sloped, the other is perpendicular. The bottom of the dam-dike is from ten to twelve feet thick; but the thickness gradually diminishes, owing to the slope on the one side. At the top, it is about two or three feet thick. The length of these dams is sometimes not less than an hundred feet.

Their houses are made in the water, collected by the dam, and are placed near the edge or shore: they are built on piles, and are either round or oval; but their tops are vaulted; so that their inside resembles an oven, the top a dome. The walls are two feet thick, made of earth, stones, and sticks, most artificially laid together, and as neatly plaistered as with a trowel. In each house there are two openings, one to the water, the other towards the land: the height of these houses above the water is eight feet: they frequently make

two or three stories in each dwelling, for the convenience of change, in case of floods. Each house contains from two to thirty beavers; and the number of houses in each pond, is from ten to twenty-five. Each beaver forms its bed of moss; and each family forms its magazine of winter provision, which consists of bark and boughs of trees. This they lodge under water, and fetch into their apartments, as their wants require. Lawson in his history says, they are fondest of the sassafras, ash, and sweet gum. Their summer food is leaves, fruits, and sometimes crabs and craw-fish: but they are not fond of fish, and will not eat flesh.

To effect these works, a community of two or three hundred assembles; each bears a share in the labour: some, by gnawing with their teeth, fell trees of great size, to form beams or piles; these are gnawed all round, in as regular a manner as a cutter cuts in felling a tree, bringing the bottom of the wood to a point: others roll the pieces along to the water: some dive, and, with their feet, scrape holes to place them in; while others exert their efforts to rear them in their proper places. Another party is employed in collecting twigs to wattle the piles with; a third in collecting earth, stones, and clay; a fourth is busied in beating and tempering the mortar: others in carrying it on their broad tails to proper places, and, with the same instrument, they ram it between the piles, or plaister the inside of their houses. A certain number of smart strokes with the tail, is a signal given by the overseer, for repairing to such and such places, either for mending any defects, or on the approach of an enemy; and the whole society attend to it with the utmost care. Their time of building is early in the summer; for in the winter they never stir but to their magazines of provisions; and, during that season, they are very fat. They breed only once a-year, and bring forth, in the latter end of winter, two or three young at a birth.

Besides



G. Edwards del.
1. The Castor, or Beaver. 2. The Alpine Marmot. 3. The Bobak Marmot.
4. The earless Marmot

J. Masson sculp.

Besides these associated beavers, there is another sort, called terriers, which either want industry or sagacity to form houses like the others. They burrow in the banks of rivers, making the mouth of their holes beneath the freezing depth of the water, and work up for a great number of feet. These also form a winter stock of provisions.

Beavers vary in their colours: the finest are black; but the general colour is a chesnut brown, more or less dark: some have been found, but very rarely, entirely white; others spotted: their skins are a prodigious article of trade, being the foundation of the hat manufactory. There were sold, in a single sale of the Hudson's Bay Company in 1763, no fewer than fifty-four thousand six hundred and seventy skins. They are distinguished by different names. Coat beaver is what has been worn by the Indians; parchment beaver, has its name from its resemblance to parchment; but stage beaver is the worst, and is that which the Indians kill out of season in their stages or journies.

The valuable drug castoreum is taken from the inguinal glands of these animals. The Russian castoreum sells for two guineas a pound; the American for eight shillings and sixpence only; yet vast numbers of beavers skins are imported to Russia. Their flesh is reckoned good eating, being preserved, after the bones are taken out, by drying it in the smoke. The ancients had a notion that the castoreum was lodged in the testicles, and that the animal, when hard pursued, would bite them off, and leave them to its pursuers, as if conscious of what they wanted to destroy him for:

Imitatus castora, qui se

Eunuchum ipse facit, cupiens evadere damno

Testiculorum.

JUVENAL, XII. 34.

Just as the beaver, that wise thinking brute,
Who, wishing to escape the hard pursuit,
Bites off the parts, the cause of all the strife,
And leaves them as a ransom for his life.

Dryden.

In hunting the beavers, the savages sometimes shoot them, always getting on the contrary side of the wind; for they are very shy, quick in hearing, and of a keen scent. This is generally done when the beavers are at work, or on shore feeding on poplar bark. If they hear any noise when at work, they immediately jump into the water, and continue there some time; and, when they rise, it is at a distance from the place where they went in. They sometimes are taken with traps: these are nothing but poplar sticks laid in a path near the water; which, when the beaver begins to feed upon, they cause a large log of wood to fall upon their necks, which is put in motion by their moving of the sticks, and consequently requires an ingenious contrivance. The savages generally prefer this way of taking them, because it does not damage their skins. In the winter time they break the ice in two places at a distance from the house, the one behind the other. Then they take away the broken ice with a kind of racket, the better to see where to place their stakes. They fasten their nets to these, which have large meshes, and sometimes are eighteen or twenty yards in length. When these are fixed, they proceed to demolish the house, and turn a dog therein; which terrifying the beaver, he immediately leaves it, and takes to the water; after which, he is soon entangled by the net.

Synonymes.--- *Καστωρ*. *Arist. hist. An. lib. viii. c. 5.*
Oppian. Halieut. i. 398. Fiber. *Plinii lib. viii. c. 30.*
Agricola An. Subt. 482. *Belon Aquat. 25.* Castor.
Gesner quad. 309. *Rondel. 236.* *Schoneveld Ich. 34.*
 Beaver. *Raii syn. quad. 209.* *Bobr. Rzaczynski Po-*
lon. 215. *Biber. Klein quad. 91.* *Kramer Austr. 315.*
 Castor castanei coloris, caudæ horizontaliter plana.
Briffon quad. 90. Castor Fiber. C. cauda ovata plana.
Lyn. syst. 78. *Bafwer, Biur. Faun. suec. No. 27.*
 Le Castor, ou le bievre. *Buffon, viii. 282. tab. xxxvi.*
 Beaver. *Br. Zool. i. Pl. 9.*

THE MUSK BEAVER.

THIS species is of a smaller size; but, in the form of its body, it exactly resembles the castor beaver. It is only one foot in length; and its tail measures nine inches. It has a thick blunt nose; shortears, almost hid in the fur, like those of the former species; and large eyes. The toes on each foot are separated; those behind are fringed on each side with strong hairs, closely set together. Its tail is compressed sideways, and is very thin at the edges, and covered with small scales, intermixed with a few hairs. The colour of its head and body is a reddish brown: its breast and belly are of an ash colour, tinged with red: its fur is very fine. It inhabits North America; breeds three or four times in a year; and brings from three to six young at a time. During summer, the male and female live together: at the approach of winter, they unite into families, and retire into small round edifices, covered with a dome, formed with herbs, and reeds cemented with clay. At the bottom of their habitation are several pipes, through which they pass in search of food; for they do not form magazines like the castor beavers. During winter their houses are covered many feet deep with snow and ice; but they creep out, and feed on the roots that lie beneath. They quit their old habitations annually, and build new ones. Their fur is fine, and much esteemed. During summer the whole animal has a most exquisite musky smell, which it loses in the winter.

Perhaps the scent is derived from the *calamus aromaticus*, a favourite food of this animal. It is said they are very good to eat.

It has been alleged, that the beaver is among quadrupeds what the bee is among the insect tribes; and that, as the bat forms the link that connects beasts and birds, so the beaver resembling a land animal in his fore-part, and fish in his hind, he is the link that joins
beasts

beasts and fishes: but, perhaps, the flying macauco and the seal, as well as some others, may, with equal justice, claim those honours. We shall not take it upon us to settle the dispute.

Musfascus. *Smith's Virginia*, 27. Musquash. *Josselyn's voy. New England*, 86. Musk Rat. *Lawson Carolina*, 120. Castor Zibethicus. C. cauda longa compressio-lanceolata, pedibus fissis. *Lin. syst.* Castor cauda verticaliter plana, digitis omnibus a se invicem separatis. *Briffon quad.* 93. L'Ondatra. *De Buffon*, x. i. tab. i. Rat Musqué. *Charlevoix Nouv. France*, v. 157. *Lescarbot N. Fr.* 350.

THE GUILLINO BEAVER.

THIS species hath a square head; short and round ears; small eyes; colour grey; dark on the back, whitish on the belly. It has two sorts of hair, like the common beaver: one short and fine, and susceptible of any dye; the other long and hard: the toes of the fore feet bordered with a membrane; the hind feet webbed: the back very broad: the tail long and hairy, and length from the nose to the tail three feet; height two feet.

It inhabits the deepest rivers and lakes of Chili: has the *foramen ovale* half closed: can live long under water: feeds on fishes and crabs: is fierce and bold, and will seize its prey in sight of mankind: is killed by the hunters when it comes to discharge its excrements, which it does always in the same place: most beautiful stuffs are made of the fur, resembling velvet; is also of great use in the manufacture of hats. M. Molina calls it Huidobrius, from the family name of his patron, the Marquis of Casa Reale.

HYSTRIX,

HYSTRIX, the PORCUPINE, of the Order of GLIRES.

THIS genus is distinguished by the following characters ; they have two cutting teeth, obliquely divided both in the upper and under jaw, besides eight grinders ; the body is covered with long, hard, and sharp, quills ; and it hath a divided upper lip. There are six species, as follow :

THE CRESTED PORCUPINE.

THIS species derives its name from a long crest of stiff bristles on the top of its head, reclining backwards. The quills on the hind part of the body are nine inches in length, very sharp at the ends, and varied with black, brown, and white. Between the quills there are a few hairs. Its head, belly, and legs, are covered with strong bristles, terminated with strong hair of a dusky colour. It has long whiskers, and ears like those of the human body ; four toes before, and five behind. Its length is about two feet : its tail, which also is covered with quills, measures four inches only. It inhabits India, the sand hills to the south-west of the Caspian sea, Southern Tartary, Persia and Palestine, and all parts of Africa. It is found wild in Italy ; but at the same time it is thought not to have been originally a native of Europe. It is bought in the markets of Rome for the table. The Italian porcupines have shorter quills, and a less crest, than those of Asia and Africa. It is harmless ; lives on fruits, roots, and vegetables ; sleeps by day, and feeds by night. The story of its darting its quills when irritated, is fabulous : when attacked, it retires and runs its nose into a corner ; erects its spines, and opposes them to an assailant : it makes a kind of snorting noise. Some of these animals produce a bezoar. These be-

zoars were once very highly valued, and have been fold for five hundred crowns a-piece.

ῥσδξ, *Aristot. hist. An. lib. i. c. 6.* *Oppian Cyneq. iii. 391.* *Hystrix. Plinii lib. viii. c. 35.* *Gesner quad. 563.* *Raii. syn. quad. 206.* *Acanthion cristatus. Klein quad. 66.* *Hystrix orientalis cristata. Seb. Mus. i. 79. tab. 1.* *Hystrix cristata. H. palmis tetradactylis, plantis pentadactylis, capite cristato, cauda abbreviata. Lin. syst. 76.* *Hasselquist. itin. 290.* *Hystrix capite cristato. Brisson quad. 85.* *Le Porc-epic. De Buffon, xii. 402. tab. li. lii. Faunul. Sineus.*

THE MALACCA PORCUPINE.

THESE have large pendulous ears, but no crest : quills like the preceding, with the interstices filled with long hairs, resembling bristles : eyes large and bright ; hair on the legs, and belly covered short reddish prickly hairs ; toes, five in number, which might have determined Linnæus to place this animal among the hedge-hogs. It inhabits the peninsula of Malacca.---*Erinaceus Malacensis. Gm. Lin. 116. Seb. Mus. i. p. 81. tab. 41. fig. 1.*

THE LONG-TAILED PORCUPINE.

THE long-tailed porcupine has also long whiskers ; large bright eyes ; and short naked ears. His body is short and thick, and covered with long stiff hairs, as sharp as needles, of different colours, as the rays of light fall on them. His feet are divided into five toes ; that which serves as a thumb turns backwards. The tail is as long as the body, very slender at the end, which consists of a thick tuft. The bristles are thick in the middle, appear as if jointed, and rise one out of the other like grains of rice. They are transparent, and of a silvery appearance. It inhabits the isles of the Indian Archipelago, and lives in the forests.

Porcus aculeatus sylvestris, seu Hystrix orientalis singularis. Seb. Mus. i. 84. tab. lii. Acanthion cauda

THE CRESTED PORCUPINE OF AFRICA.



prælonga, acutis pilis horrida, in exitu quasi panniculata. *Klein quad.* 67. *Hystrix cauda longissima, aculeis undique obsita, in extremo panniculata. Briffen quad.* 89. *Hystrix macroura. H. pedibus pentadactylis, cauda longissima: aculeis clavatis. Lin. syst.* 77.

THE BRAZILIAN PORCUPINE.

THE Brazilian porcupine has a short blunt nose, long white whiskers, and a bed of small spines beneath the nose: the top of the head, its back, its sides, and the base of its tail, are also covered with spines: the longest of these on the lower part of the back and tail are about three inches long, very sharp, and white, barred near the points with black: they adhere close to the skin, which is quite naked between them; and are shorter and weaker as they approach the belly: on the breast, belly, and lower parts of the legs, they are converted into dark brown bristles: its feet are divided into four toes each, with very long claws, and a great protuberance on the place of the thumb: its tail is eighteen inches long, slender and taper towards the end; for the last ten inches it is almost naked, having only a few hairs upon it; but, for that space, it has a strong prehensile quality.

It inhabits Mexico and Brazil; it lives in the woods, and feeds, not only on fruits, but also on poultry; it sleeps by day, and preys by night, and generally makes a noise with its nostrils, as if out of breath; it grunts also like a sow. It climbs trees, but very slowly; in descending, for fear of falling, it twists its tail round the branches; it spends no more arrows in darting its quills than the rest; it grows very fat, and its flesh is said to be very white and good. They may be tamed. Piso says there is a greater and a lesser kind of this species.

Synonymes.---Flaquatzin. *Hernandez, Mex.* 330. Cuandu. *Brafilienfibus, Lufitanis.* Ourico cachiero. *Marcgrave Brasil.* 233. *Pijo Brasil.* 99. 325. Iron pig. *Nieuboff,* 17. *Hystrix Americanus. Raii syn. quad.* 208. *Hystrix prehensilis, H. pedibus tetradac-*

tylis, cauda elongata prehensili feminuda, *Lin. syst.* 76. *H. cauda longissima*, tenui medietate extrema aculeorum experte, 87. *H. Americanus major*, 88. *Hystrix longius caudatus*, brevioribus aculeis. *Barrere France Æquin.* 153. *Hystrix minor leucophæus*, Gouandou. *ibid.* Chat epineux. *Des Marchais*, iii. 303.

THE MEXICAN PORCUPINE.

THE Mexican porcupine is of a dusky colour, with long bristles intermixed with its down: its spines are three inches long, slender, and varied with white and yellow; but they are scarcely apparent, except on the tail, which is thicker and shorter than that of the preceding species; from the middle to the end it is free from spines. It grows to the bulk of a middle-sized dog. It inhabits the mountains of Mexico, lives on summer fruits, and may easily be made tame. The Indians pulverize the quills, and say they are very efficacious as a remedy for the gravel; and that applied whole to the forehead, they will relieve the most violent head-ach. They adhere till filled with blood, and then drop off.

Synonymes.---*Hoitzlacuatzin*, seu *Tlacuatzin spinosus*, *Hystrix novæ Hispaniæ. Hernandez Mex.* 322. *Hystrix novæ Hispaniæ. H. aculeis apparentibus, cauda brevi et crasso. Brisson quad.* 86. *Le Coendu. de Buffon*, xii. 421. *tab. liv.*

THE CANADIAN PORCUPINE.

THE porcupine met with in Canada, and the other parts of North America, as high as Hudson's Bay, has short ears hid in its fur. Its head, body, legs, and the upper part of its tail, are covered with soft, long, dark brown, hair: on the upper part of the head, back, body, and tail, there are numbers of sharp strong quills. The longest, measuring about three inches, are on the back, the least towards the head and sides; but they

are all hid in the hair. There are some stiff straggling hairs intermixed, three inches longer than the rest, and tipped with a dirty white: the under side of its tail is white. It has four toes on the fore-feet, five behind, each armed with long claws, hollowed on their under side. The form of its body is exactly that of a beaver; but it is not half the size. One brought from Newfoundland was about the size of a hare, but more compactly made. Its tail was about six inches long. They vary in colour. One in the Leverean museum is entirely white.

They make their nests under the roots of great trees, and will also climb among the boughs. The Indians kill them by striking them over the nose. They are very plentiful near Hudson's Bay, and many of the trading Indians depend on them for food, esteeming them both wholesome and pleasant: they feed on wild fruits and the bark of trees, especially the juniper: they eat snow in winter, and drink water in summer; but avoid going into it: when they cannot shun their pursuer, they will sidle towards him, in order to touch him with their quills, which seem but weak weapons of defence; for, on stroking the hair, they will come out of the skin sticking to the hand. The Indians apply them to various purposes; for piercing their noses and ears, to make holes for their ear-rings, and other finery: they also trim their deer-skin habits with fringes made of the quills, or cover with them their bark boxes.

Synonymes.---Porcupine from *Hudson's Bay*, *Edw.* 52. *Ellis's voy.* 42. *Clerk's voy.* i. 177. 191. *Cavia Hudsonis.* *Klein quad.* 51. *Hystrix dorsata.* *H. palmis tetradaetylis,* *plantis pentadaetylis,* *cauda mediocri,* *dorso solo spinoso.* *Lin. syst.* 76. *Hystrix aculeis sub pilis occultis,* *cauda brevi et crassa.* *Briffon quad.* 87. *L'Urson.* *Buffon,* xii. 426. *tab.* lv.

ARCTOMYS, the MARMOT, of the Order of GLIRES.

THIS genus of small quadrupeds contains nine species, distinguished by the following marks: two wedge-like cutting teeth in each jaw; four toes before, and five behind; short ears, or none; the tail covered with hair, and of a middling length; in some very short.

THE ALPINE MARMOT.

THE Alpine marmot has short round ears hid in the fur, and large cheeks. The colour of its head, and the upper part of its body, is a brownish ash, mixed with tawny. Its legs, and the lower part of the body, are reddish; its tail is somewhat bushy; its body is thick; its tail is about six inches.

This curious animal inhabits the loftiest summits of the Alps and Pyrenæan mountains, and feeds on insects, roots, and vegetables. While feeding, they place a centinel, who gives a whistle when he sees any sign of danger, on which they instantly retire into their holes: they form their holes under ground, with three chambers of the shape of the letter Y, with two entrances, and line them well with moss and hay: they retire into these subterraneous habitations about Michaelmas, and, stopping up the entrances with earth, they continue in a torpid state till April. If taken out, they remain insensible, unless brought before a fire, which revives them: they lodge in society, from five to a dozen in a chamber: they frequently walk on their hind feet: they sit up on end to eat their food, and lift it to their mouth with their two fore-paws: they bring three or four young at a time, and are very playful: when angry, or before a storm, they make a most strange noise; a whistle so loud and so acute, as to pierce the ear: they grow very fat about the back, and are sometimes eaten:
but,

but, in general, they are taken only to be shewn, especially by the Savoyards: they grow very soon tame, and will then eat any thing: they are very fond of milk, making at the same time a murmuring noise, expressive of their satisfaction: they are apt to gnaw any clothes or linen they can find: like cats, they have an antipathy to dogs: though not so large as hares, they are stouter, and have a peculiar suppleness and dexterity: in their torpid state, they sometimes weigh twenty pounds, and continue plump for three months; but afterwards decay, and are very much emaciated at the end of winter: those fed in houses, and kept warm, never become torpid; but are equally lively and active in winter as in summer.

Synonymes.---Mus Alpinus. *Plinii lib. viii. c. 37. Agricola An. Subter. 484. Gesner quad. 743. Raii syn. quad. 221. Glis marmota. Klein quad. 56. Hist. Mur. Alps. 230. Marmelthier. Kramer Austr. 317. Mus marmota. M. cauda abbreviata subpilosa, auriculis-rotundatis, buccis gibbis. Lin. syst. 81. Glis pilis e fusco et flavicante mixtis vestitus. Glis flavicans, capite rufescente. Brisson quad. 116, 117. La marmotte. Buffon, viii. 219. tab. xxviii.*

THE QUEBEC MARMOT.

THE Quebec marmot is rather larger than a rabbit; it has a black blunt nose, short rounded ears, cheeks puffed up, of a grey colour; and a dusky face: the hair on its back is grey at bottom, black in the middle, with whitish tops: its belly and legs are of an orange colour; its toes are black, naked, and quite divided: it has four toes, and the rudiments of another, on the fore-feet, five behind: its tails is short, and of a dusky colour. It inhabits Hudson's Bay and Canada, and may be tamed. It has lately been described by Dr. Pallas, under the name of *mus empetra*.

THE MARYLAND MARMOT.

THE Maryland marmot is about the size of a rabbit: its ears are short and rounded, its eyes black and prominent; its nose is sharper than that of the last; its nose and cheeks are of a deep ash-colour; its back of a deep brown; its sides and belly paler; its tail is half the length of its body, covered with pretty long dusky hair; its toes are divided, and armed with sharp claws; it has four before, and five behind; its feet and legs are black. It inhabits Virginia and Pennsylvania. During winter, it sleeps under the hollow roots of trees; it lives on wild fruits, and other vegetables; its flesh is reckoned very good eating; it tastes like that of a pig; when surpris'd, it retreats into holes. It is found in the Bahama isles also; but it is probable it does not sleep during the winter in that climate.

Synonymes.---Bahama cony. *Catesby Carolina*, ii. 79. Monax, *Catesby Carolina App.* xxviii. Monax, or marmotte of *America. Edw.* 104. Glis marmota, Americanus. *Klein'quad.* 56. *Buffon*, Suppl. iii. 175. Glis fuscus. Glis fuscus, rostro e cinereo cærulescente. *Briffon quad.* 115. Mus monax. M. cauda mediocri pilosa, corpore cinereo, auriculis subrotundis, palmis tetradactylis, plantis pentadactylis. *Lin. syst.* 81.

THE HOARY MARMOT.

THE hoary marmot, about the same size as the former, derives its name from its appearance. It inhabits the northern parts of North America. The tip of its nose is black; its ears are short and oval; its cheeks are whitish; its colour is dusky and tawny; its hair is coarse and long, ash-coloured at the root, black in the middle, and whitish at the tip; whence it has that hoary look: its legs are black, its claws dusky, four before, five behind; its tail is black, mixed with rust colour.

THE BOBAK MARMOT.

THE bobak, or robak, as it is called by some, has small oval thick ears, covered with greyish white down, with long hair on their edges, small eyes, and small whiskers. It is of a dusky brown about the eyes and nose; the upper part of the body is greyish, intermixed with long black or dusky hairs, tipped with grey; its throat is rust-coloured, as also the rest of the body, and the inside of the limbs. It has four toes on the forefeet, with a short thumb furnished with a short claw; five toes behind: its tail is short and slender, but somewhat bushy, about four inches long, to the point of its hair five; the animal itself, from the nose to the tail, measures sixteen. It inhabits the high but milder and sunny sides of mountainous countries, and seeks dry situations, and such as are full of springs, woods, or sand. They are found in Poland and the south of Russia: they swarm in the Ukraine, about the Boristhenes, especially between the Sula and Supoy; and again between the Boristhenes and the Don, and along the range of hills which extend to the Volga; they are found about the Yaik and other neighbouring rivers. Inhabit the southern desert in Great Tartary, and the Altaic mountains east of the Irtis; cease to appear in Siberia, on account of its northern situation; but are found again beyond lake Baikal, and about the river Argun and lake Dalay; in the sunny mountains about the Lena; and very common in Kamschatka, but rarely reach as high as lat. 55.

They burrow extremely deep, and obliquely, to the depth of two, three, or four, yards: they form numbers of galleries with one common entrance from the surface; each gallery ends in the nest of the inhabitant. Sometimes the burrows consist of only one passage: they are found in great abundance about the sepulchral tumuli, as they find they can penetrate with great facility in the soft dry earth; but they are very common

in the rocky strata; and, in the mineral part of the Urallian chain, often direct the miners to the veins of copper, by the fragments which appear at the mouth of their holes, flung out in the course of their labours. In very hard and rocky places, from twenty to forty of these animals join together to facilitate the work, and live in society, each with its nest at the end of its respective gallery; but the fewest galleries are found in the softest ground, and very frequently only a single one. In each nest they collect, especially towards autumn, the finest of hay, and in such plenty, that sufficient is found in one nest for a night's food for a horse.

During the middle and sunny part of the day they sport about the entrance of their holes, but seldom go far from them; on the sight of man they retire with a slow pace, and sit upright near the mouth, and give a frequent whistle, listening at the approach. In places where they live in large families, they always place a centinel to give notice of any danger during the time the rest are feeding.

They are very fond of oleraceous plants: in a state of confinement eat cabbage and bread very greedily, and drink milk with great eagerness; but refuse water, and seem never affected with thirst: they are mild and good-natured; never quarrel or fight about their food in a wild state, and when confined, and placed with others, caught in distant parts, and strangers to them, grow instantly familiar with them: then they very soon become tame, even when taken in full age; but the young immediately become familiar.

The number produced at a birth is not certainly known, probably at times eight; the females being furnished with that number of teats: they breed early, for in June the young are observed to be of half the size of the old.

They lie torpid during winter, except those which are kept tame in the stove-warmed rooms of the country; and even then, finding a defect of that warmth

which the snug nest of their subterraneous retreat would afford, in cold nights creep for shelter into the very beds of the inhabitants. In that state they will not absolutely refuse food, but eat very little, and that with a seeming disgust; nature allotting for them, in the wild state, a long sleep and cessation from food, the result of plenitude previous to its commencement. They sometimes escape from confinement, find a retreat, and get their winter's sleep, and return to their master in the spring; but lose much of their gentle manners.

They grow very fat; the fat is used for softening of leather; the skins are used by the Koreki, people of Jakutks, and the Russians, for clothing. The Calmucs take them in small nets with large meshes, placed before their holes. The inhabitants of Ukraine catch them in May or June, by pouring water into the holes, which forces them into the nets. In South Russia they are destroyed by means of a log of wood with a weight at top; the end directed into a wooden box placed at the mouth of the hole, which falls as soon as the animal comes out, and oppresses it by the weight. Their flesh tastes like that of a hare, but is rank. The Calmucs are very fond of the fat ones, and even esteem them medicinally; on the contrary, the Mahometan Tartars not only abstain from their flesh, but even give them protection; so that near the hords they are extremely numerous: these Tartars esteem a warren of bobaks near them to be very fortunate, and think it a sin to kill one of them, a swallow, or a dove; but at the same time abominate the following animal.

In Chinese Tartary they are the propagators of rhubarb, which grows among their burrows; the manure which they leave about the roots contributes to its increase, and the loose soil they fling up, proves a bed for the ripe seed; which, if scattered among the long grass, perishes without ever being able to reach the ground.

Synonymes.-- Bobak swiftch. *Rzacinski Polon.* 233. Bobak. *Beauplan hist. Ukrain, Churchill's coll.* i. 600. *Forster hist. Volgæ, Phil. Transf.* lvii. 343. *Buffon*, xiii. 136. *tab.* xviii. *Sogur. Rubruquis's Travels in Purchas.* iii. 6. *Arctomys. Pallas nov. jp. fasc.* i. 9. *tab.* v.

THE MAULINE MARMOT.

THIS species hath pointed ears; elongated nose; whiskers disposed in four rows; the tail longer than that of the common kind; five toes on each foot; an anomalous distinction; hair like the common, but in size twice as large. It was first discovered in the province of Maule in Chili, in 1764, and inhabits the woods. It makes a stout defence against the dogs, which conquer it not without difficulty. *Mus Maulinus. Molina Chili*, 284.

THE EARLESS MARMOT,

THIS species is marked by its want of ears, a white line over each eye, yellow teeth, long black whiskers, and an ash-coloured face: the hind-part of its head, and its whole back, are of a pale yellowish brown, often distinctly spotted with white, sometimes undulated with grey; the under side of the body and legs are of a yellowish white; its tail is covered with long hair, brown above, bordered with black, each hair tipped with white; its under side is of a bright rust: the three middle toes of the fore-feet are long, armed with long sharp claws; the exterior and interior toes are short, the last lies remote from the others, with a short blunt claw.

The length of the animal is about one foot; of its tail, to the end of the hairs, four inches and a half. It inhabits Bohemia, Hungary, and from the banks of the Wolga to India and Persia, Siberia, Great Tartary, Kamschatka, and even the continent of America itself. It burrows and forms its magazine of corn, nuts, &c. for

for its winter food. Like the squirrel, it sits up while it eats: some inhabit the field of Siberia, others penetrate into the granaries: the first form holes under the ground with a double entrance, where they sleep during winter; those which inhabit granaries keep in motion even during the cold season. About the Lena, they couple at the beginning of May; but about Astracan much earlier: they bring from five to eight young ones, which they bring up in their burrows; only one inhabits each burrow; the males are always, except in the coupling season, separate from the females: they whistle like the former species, are very irascible, and bite hard: they often quarrel with and tear each other; yet they sit in multitudes near their holes: they are very fond of salt, and are taken in great numbers on board the barges laden with that commodity on the rivers: they are both herbivorous and carnivorous: they feed on plants, and destroy the young of birds and mice. The ladies of Bohemia were wont to make cloaks of their skins; they are now used only for linings, and appear very beautiful for that purpose.

Synonymes.---Mus noricus aut citellus. *Agricola An. Subter.* 485. *Gesner quad.* 737. *Raii syn. quad.* 220. *Ziesel. Schwenkfelt. Theriotroph.* 86. *Mus citellus. M. cauda abbreviata, corpore cinereo, auriculis nullis. Lin. syst.* 80. *Tsitsjan. Le Bruyn voy. Musc.* ii. 402. *Cuniculus caudatus, auriculis nullis, cinereus. Brisson quad.* 101. *Le ziesel. Buffon, xv.* 139. *Le souflik ---* 144. 195. *Supplem.* iii. 191. *tab. xxxi.* *Mus marmotta. Forster hist. nat. Volgæ. Ph. Transf.* lvii. 343. *Mus citellus. Pallas nov. sp. fasc. i.* 119. *tab. vi. vii. B. Nov. com. Petrop. xiv.* 549. *tab. vii.* *Earle's marmot. Syn. quad.* 276. *Casan M. ---* 272.

THE GUNDI, OR ARABIAN MARMOT.

THE gundi hath truncated ears, the apertures large; short tail; upper fore-teeth truncated; lower, slender and pointed; four toes on every foot, each furnished

with claws; walks on the whole hind-feet as far as the heel; colour, testaceous red. It is about the size of a small rabbit. It inhabits Barbary towards Mount Atlas, near Massufin. It is described by the late Mr. Rothman, a Swede. Gundi is its Arabic name.

THE TAILLESS MARMOT.

THIS hath short ears; head and body of a cinereous brown; the ends of the hairs white; two cutting teeth above, four below; and no tail. It inhabits Hudson's Bay, and the neighbouring country.

SCIURUS, the SQUIRREL, of the Order of GLIRES.

THIS genus contains no fewer than twenty-six different species, with several subordinate varieties. Its distinguishing marks are two cutting teeth in each jaw; four toes before, five behind; and a long tail clothed with long hair.

THE COMMON SQUIRREL.

THE ears of the common squirrel are terminated with long tufts of hair: it has large, lively, black, eyes: its head, body, legs, and tail, are of a bright reddish brown; its breast and belly are white; the hair on each side of its tail lies flat. In Sweden and Lapland, it changes its colour to grey in the winter. In many parts of England there is a beautiful variety of this species, with milk-white tails.

This species of the squirrel inhabits Europe, the northern and temperate parts of Asia, and a variety of it is found as far south as the isle of Ceylon. It is a neat lively active animal, lives always in the woods. In the spring, the female is seen pursued from tree to tree by the males, feigning an escape from their embraces: they make their nests of moss and dried leaves, in the
fork

fork of two branches, with two entrances to each, and stop up that on the side from which the wind blows: the females bring three or four young at a time: they lay in a hoard of winter provisions; such as nuts, acorns, &c. In summer, they feed on buds and young shoots, and are particularly fond of those of fir, and of the young cones: they sit up to eat, and use their fore-feet as hands: they cover themselves with their tail: they are remarkably agile, and leap to a surprising distance. When they are disposed to cross a river, a piece of bark serves each for a boat, and its own tail for a sail.

A large kind of grey squirrel is found about the upper parts of the river Obi, in the district of Kuznetsk, and is called Teleutskaya belka, or the squirrel of the Telutian Tartars: it is as large again as the common grey squirrels of those parts, and is preferred to them, on account of the silvery gloss of the skin. Few are sent into Russia, the greatest part being sent into China, and sell for six or seven pounds sterling per thousand.

A white variety is found common in Siberia, and a beautiful black variety about Lake Baikal.

The white-legged squirrel in the British Museum, said to have been brought from the island Ceylon, forms another variety. Its upper parts and its toes are of a reddish brown; its face and nose, the under side of its neck, its belly, fore-legs, and the inside of its ears and thighs, are white; its ears are slightly tufted with black; its tail is long, and covered with dusky hairs, but much shorter than those of the European kind.

Synonymes.---*Sciurus*. *Gesner quad.* 845. *Raii syn. quad.* 214. *Więwiorka. Rzaczynski Polon.* 225. *Eichhorn. Klein quad.* 53. *Sciurus vulgaris*. *Sc. auriculis apice barbatis, palmis tetradactylis, plantis pentadactylis. Lin. syst.* 86. *Ikorn, graskin. Faun. suec.* No. 37. *Sciurus rufus quandoque griseo admixto. Brisson quad.* 104. *L'Ecureuil. Buffon, vii.* 258. *tab. xxxii. Br. Zool. i.* 93.

THE CEYLON, AND THE ABYSSINIAN,
SQUIRREL.

WE have joined these two in the same section, as Mr. Pennant seems to suspect that the latter may be only a variety of the former; and indeed it must be obvious, that, when naturalists describe species from single subjects, there is some danger of their multiplying the species from slight variations observable in different individuals belonging to the same species.

The Ceylon squirrel has its ears tufted with black, a flesh-coloured nose, cheeks, legs, and belly, of a pale yellow, with a yellow spot between its ears; its forehead, sides, back, and haunches, are black; its cheeks are marked with a forked stroke of black; its tail is twice as long as the body, of a light grey, and very bushy: the part of it next the body is quite surrounded with hair; on the rest of it the hairs are separated and lie flat. It is thrice the size of the European squirrel.

The Abyssinian squirrel, described by Thevenot, is of the same size with that found in Ceylon; but he says that its belly and fore-feet were grey, and that its soles were flesh-coloured; that it was very sportive and good-natured like the common squirrel; that it would eat any thing except flesh, and would crack the hardest almonds.

Synonymes.---*Sciurus Zeylanicus*, pilis in dorso nigricantibus, *Rukkaia* dictus a sono. *Raii syn. quad.* 215. *Sciurus macrourus*, long-tailed squirrel. *Ind. Zool. tab.* i.

THE MALABAR SQUIRREL.

THIS species hath short tufted ears; five toes to each foot; instead of a thumb to the hind foot, is a short excrescence, with a flat nail, all the other nails strong and crooked; tail very full of hair, and as long as the body; hair long, of a reddish colour, reflecting gold; a beard of the same begins under each ear, and
turns

turns towards the body; all the hind part of the body and tail black; it is about the size of a cat. It inhabits the mountains of Cardomone, which form part of the Gaunts; it is very fond of the milk of the cocoa nut, which it will pierce and suck out on the tree. Its cry is sharp and piercing. *Sciurus maximus. Gmelin. Lin. i. 149. Grand ecreuil. Sonnerat voy. ii. 139.*

THE GINGI SQUIRREL.

THIS species is of a dirty-grey colour, brightest on the belly; eyes encompassed with a white circle; on each side of the belly is a white line which extends along the shoulders and thighs; tail black; rather larger than the European kind. It inhabits Gingi. *Sonnerat voy. ii. 140.*

THE AYE-AYE SQUIRREL.

THIS species hath large broad ears, smooth, shining, and with several long hairs scattered over them; the fur soft and fine, of a tawny white, intermixed with some black hairs; the tail is very bushy, covered with long hairs, black at their ends, and white at their bottoms. It has five toes on each foot, the two joints of the middle-finger of the fore feet very slender; the thumb of the hind-foot furnished with a flat nail. In length it is eighteen inches, tail of the same length. It burrows under ground; goes out only in the night; the eyes are fixed; it is very slothful, and of gentle manners; very fearful, much inclined to sleep, and rests with its head between its legs. It inhabits Madagascar, and is a very rare animal. It takes its name from its cry, which is the note of astonishment of the natives of that island. *Sonnerat, ii. 142. tab. lxxxviii.*

THE JAVAN, BOMBAY, AND RUDDY, SQUIRREL.

AS these three are all from the East Indies, they may be classed together. That of Java, discovered and
briefly

briefly described by Sparman, is black on the upper part of the body, and brown on the lower; the end of its tail is black, and its thumb has a round nail. Tho' it inhabits Java, that of Ceylon and this are probably only varieties of the same species.

The Bombay squirrel has tufted ears too, but its upper parts are of a dull purple, its lower yellow, and the end of its tail orange. From nose to tail it measures near sixteen inches; its tail seventeen.

The ruddy squirrel inhabits India; it is larger than the common squirrel; its ears are slightly tufted; its colour above is yellow, mixed with dusky; below of a blood red, inclining to tawny: its tail is slender, of the same colour, marked lengthways with a black stripe: it has four toes on the fore-feet, with a remarkable protuberance instead of a thumb; and five toes on the hind-feet. *Sciurus erythræus. Pallas, Nov. sp. fasc. i. 377. Miller's plates, tab. xlvi.*

THE GREY SQUIRREL.

THE grey squirrel is about the size of a half-grown rabbit, and has plain ears; its hair is of dull grey colour, mixed with black, and often tinged with dirty yellow; its belly, and the insides of its legs, are white; its tail is long, bushy, grey, and striped with black. It inhabits the woods of North America, Peru, and Chili. In North America they are very numerous, and do incredible damage to the plantations of maize, as they run up the stalks, and eat the young ears. Vast flocks of them descend from the mountains, and join those that inhabit the lower parts. They are proscribed by the provinces; and a reward of threepence per head offered for every one that is killed. Such a number of them was destroyed in one year, that Pennsylvania alone paid in rewards eight thousand pounds. They make their nests in hollow trees, with moss, straw, wool, &c. They feed on the maize in its season, on pine-cones, acorns, and mast of all kinds: they form holes

Holes under ground, and there deposit a large stock of winter provision. They are particularly busy at the approach of bad weather; but their stores are frequently plundered by the hogs. During the cold weather, they keep in their nests for several days together; and, when the ground is covered with deep snow, they often perish for want of food. They seldom leap from tree to tree, but only run up and down their trunks. They are not easily shot, as they change their place with great nimbleness when they see a gun levelled. They have most of the actions of the common squirrel: they are easily tamed; and their flesh is esteemed very delicate. The furs, which are imported under the name of *petit gris*, are valuable, and used as linings to cloaks.

Synonymes.---Grey Squirrel. *Josselyn's voy. Catesby Carolina*, ii. 74. *Smith's voy.* 27. *Kalm's voy.* 95, 310. Fox Squirrel. *Lawson's Carolina*, 124. *Sciurus cinereus Virginianus major.* *Raii. syn. quad.* 215. *Sciurus cinereus.* *Lin. syst.* 86. *Sciurus cinereus. Auriculis ex albo flavicantibus.* *Briffon quad.* 107. *Le Petit-Gris. De Buffon*, x. 116. *tab.* xxv.

THE BLACK SQUIRREL.

THIS species has plain ears, and is sometimes wholly black, but often marked with white on the nose, the neck, or the end of the tail. The tail is shorter than that of the former; but the body is equal. It inhabits the north of Asia, North America, and Mexico. It is equally numerous and destructive as the former species, which it resembles also in the manner of making its nest, and laying up a stock of winter provision; so that we should have been ready to reckon it only a variety, did not Mr. Catesby expressly say, that it breeds and associates in separate troops.

There is a variety of this species in Virginia, called by the planters there the cat squirrel. It is of the size of the grey squirrel, has plain ears, coarse fur, mixed

with dirty white and black ; but varies to white. Its throat, and the inside of its legs and thighs, are black. Its tail is much shorter than those of squirrels usually are, and is of a dull yellow colour, mixed with black.

Synonymes.---Quachtechalotl-thlitic. *Hernandez Mex.* 582. *Hernandez Nov. Hisp.* 8. Black Squirrel. *Catesby Car.* ii. 73. L'Ecureuil noir. *Briffon quad.* 105. *Sciurus niger.* *Lin. syst.* 86.

THE MADAGASCAR SQUIRREL.

THIS species hath plain ears : colour of the face, back, sides, tail, and outside of the limbs, of a dark glossy black : ears, end of the nose, cheeks, and all the under side of the limbs, yellowish white. The length of this species from the tip of the nose to the origin of the tail, is about eighteen inches : the tail is longer than the body, slender, and ends in a point. It inhabits Madagascar ; and is described by M. de la Cèpede, in his supplement to M. de Buffon, vii. 256. tab. lxxiii.

THE HUDSON'S BAY, THE VARIED, AND THE FAIR, SQUIRREL.

THESE, with some others, are all Americans, and differ chiefly in colour and size.

The Hudson's Bay squirrel is smaller than the European, has plain ears, and is marked along the back with a ferruginous line from head to tail. Its sides are paler : its belly is of a pale ash colour, mottled with black : its tail is neither so long nor so bushy as that of the common kind ; but it is of a ferruginous colour, barred with black.

The Carolina squirrel is a variety of the same species. Its head, sides, and back, are grey, white, and rust colour intermixed : its belly is white, and is divided from the sides by a ferruginous line : the lower parts of the legs are red : the tail is brown, mixed with black, and edged with white. These are also less than the European

pean squirrels; they vary in colour, but in most the grey predominates.

The varied squirrel has plain ears: the upper part of its body is varied with black, white and brown: its belly is tawny. It is twice the size of the common squirrel. It inhabits Mexico, lives under ground, lays in a stock of winter food: it lives on maize, but is never to be tamed.

The fair squirrel is of a very small size. Its body and tail are of a flaxen colour. It has plain round ears, and a rounded tail, and inhabits the woods near Amadabad, the capital of Guzarat, where they are to be seen in great abundance, leaping from tree to tree. Linnæus says it is an inhabitant of South America.

Synonymes.---Quauh-tecollot-quapachtli. *Hernandez Nov. Hisp.* 8. Le Coquallin. *De Buffon*, xiii. 109. tab. xiii. *Sciurus flavus*. Sc. auriculis subrotundis, pedibus pentadactylis, corpore luteo. *Lin. syst.* 86. *Amœn. Acad.* i. 561.

THE BRAZILIAN AND THE MEXICAN SQUIRREL.

THESE are also both natives of America. The former, a small creature eight inches long, is covered with soft dusky hairs, tipped with yellow. Its tail, which is ten inches long, is annulated with black and yellow. Its throat is cinereous. The inside of its legs, and its belly, are yellow. Its belly is divided lengthways with a white line, which begins on the breast, is interrupted for a small space in the middle, and then continued to the tail. It inhabits Brazil and Guiana.

Synonymes.---*Sciurus Brasiliensis?* *Marcgrave Bras. fil.* 330. *Sciurus coloris ex flavo et fusco mixti tæniis in lateribus albis.* *Briffon quad.* 107. *Sciurus æstuans*. Sc. griseus, subtus flavescens. *Lin. syst.* 88.

The Mexican squirrel is of a mouse colour. The male is marked on the back with seven white lines,

which extend along the tail ; the female with only five. The *scrotum* of the male is pendulous like a goat's.

Synonymes.---Tlalmototli. *Hernandez Nov. Hisp.* 9. *Sciurus rarissimus* ex *Nov. Hispania. Seb. Mus.* i. 76. *tab. xlvii. fig. 2, 3. Brisson quad.* 108.

THE PALM SQUIRREL.

THE palm squirrel has plain ears, an obscure pale yellow stripe on the middle of the back, another on each side, and a third on each side of the belly. The two last in some are very faint : the rest of the hair on the back, sides, and head, is black and red, very closely mixed ; on the thighs and legs redder : the belly is of a pale yellow. The hair on the tail is coarse, and does not lie flat : it is of a dirty yellow, barred with black.

Possibly they may vary with respect to the number of stripes. They live much in cocoa-trees, and are very fond of palm wine. Some authors say, that this species does not erect its tail like the other squirrels, but expands it side-ways.

Synonymes.---*Mustela Africana. Clus. Exot.* 112. *Raii syn. quad.* 216. *Sciurus palmarum. Sc. subgriseus striis tribus flavicantibus, caudaque albo nigroque lineata. Lin. syst.* 86. *Sc. palmarum. Sc. coloris ex rufo et nigro mixti, tæniis in dorso flavicantibus. Brisson quad.* 109. *Le Palmiste. De Buffon, x.* 126. *tab. xxvi.*

THE WHITE-STRIPED BARBARY SQUIRREL.

THE Barbary squirrel has full black eyes, with white orbits. Its head, body, feet, and tail, are cinereous, inclining to red, lighter on the legs. Its sides are marked lengthways, with two white stripes. Its belly is white : its tail bushy, marked regularly with shades of black. It is of the size of the common squirrel. Both this and the former species inhabit Barbary, and live in trees, especially the palm.

Syno-

Synonymes.---Barbary. *Sciurus getulus. Cavi opusc.* 77. *Gesner quad.* 847. *Sc. getulus. Sc. fuscus striis quatuor albis longitudinalibus. Lin. syst.* 87. *Klein quad.* 84. *Briffon quad.* 109. Barbarian squirrel. *Edw.* 198. Le Barbarefque. *De Buffon, x.* 126. *tab. xxvii.* 291.

There is another variety, common in Java and Princes Island, which also derives its name from the tree which is its favourite residence (though it is also common in tamarind trees), the plantane squirrel. It resembles the common squirrel, but is lighter coloured, and has a yellow line extending along its sides from leg to leg. It is a very shy creature, and retreats at the sight of mankind.

We come now to a second division of this genus, marked by a membrane extended from the fore to the hind leg of each species.

THE SAILING SQUIRREL.

NAMES are necessary for distinction; but may sometimes mislead. The sailing squirrel has nothing to do on the water. He inhabits Java, and others of the Indian islands, leaps from tree to tree, as if he flew, and will catch hold of the boughs with his tail. They vary in size; some are of the size of a common squirrel; others as large as hares. The usual length, from the nose to the tail, is eighteen inches; the tail fifteen. The colour of the head, body, and tail, is a bright bay; in some parts inclining to orange: the breast and belly are of a yellowish white. Its head is small and rounded; its upper lip cloven; its ears small and blunt. It has two small warts at the cutmost corner of each eye, with hairs growing out of them. Its neck is short. It has four toes on the fore-feet; and, instead of a thumb, a slender bone, two inches and a half long, lodged under the lateral membrane, and serving to stretch it out; from thence to the hind-legs, extends the membrane, which is a continuation of the skin of the sides and belly, and extends along the

the fore-legs, and stretches out near the joint in a winged form. This species has five toes on the hind feet; and, on all the toes, sharp, compressed, bent claws. Its tail is covered with long hairs, disposed horizontally. Nieuhoff describes this creature under the name of the flying cat.

Synonymes.---Sciurus Sagitta. Sc. hypochondriis prolixis volitans, cauda plano-pinnata lanceolata. *Lin. syst.* 88. Sciurus petaurista. *Pallas Miscel. Zool.* 54. tab. vi. Sciurus maximus volans, seu felis volans. Sc. castanei coloris, in parte corporis superiore, in inferiore vero eximiè flavescens; cute ab anticis cruribus ad postica membranæ in modum extensa volans. *Briffon quad.* 112. Le Taguan ou grand Ecureuil volant. *De Buffon, Suppl.* iii. 150. tab. xxi. *Mus. Roy. Society.*

THE SEVERN RIVER, AND THE FLYING, SQUIRREL.

THE former of these is found about the Severn River in the southern part of Hudson's Bay. In the philosophical transactions, it is called the greater flying squirrel. Its back and sides are of a deep ash colour at bottom, ferruginous on the surface. The under side of the body is of a yellowish white. Its hair is every where long and full. The instrument of flying is disposed from leg to leg; but does not border the fore-legs.

The flying squirrel is much less than the common squirrel. Its colour above is a brownish ash; beneath, white, tinged with yellow. It has round naked ears; full black eyes; a lateral membrane from the fore to the hind legs; but the fore legs are for the most part clear of the membrane. The hair on its tail is long, disposed horizontally, longest in the middle, and ending in a point. It inhabits North America and New Spain; and, in some measure, resembles the owl, as it lives in hollow trees, sleeps during the day, and is very lively in the night. Numbers of them are found in one
tree.



The flying and the striped Squirrels.

Engr. sculp.

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tree. They leap from bough to bough, sometimes to the distance of ten yards. This action is improperly called flying; for the animal can move in no other direction than forward, and even sinks considerably during its leap. Sensible of this, it mounts in proportion to the distance it wishes to reach. When numbers of them leap at a time, they seem like leaves blown off by the wind. Their food is the same with the other American squirrels. They are easily tamed; and bring three or four at a time.

Synonymes.---Assapanick. *Smith's Virginia*, 27. *Jesselyn's voy.* 86. *De Laet*, 88. *Sciurus Americanus volans.* *Raii syn. quad.* 215. *Lawson's Carolina*, 124. *Catesby's Carolina*, ii. 76, 77. *Edw.* 191. *Kelm*, i. 321. *tab. i.* *Du Pratz.* ii. 69. *Sciurus volans.* *Sc. hypochondriis prolixis volitans, cauda rotundata.* *Lin. syst.* 88. *Sciurus volans.* *Briffon quad.* 110. iii. No. 12.

THE NORFOLK-ISLE SQUIRREL.

THIS hath very short ears, almost hid in the fur: colour very much resembling that of the American grey squirrel: a black line extends from the head along the middle of the back to the tail: the flying membrane is black, edged with white: two thirds of the tail are of an elegant ash-colour; the rest black: size of the American grey squirrel. It inhabits Norfolk-isle.

In the isle of Pulo Condore, is a flying squirrel striped with brown and white: possibly a new species. *Stockdale's Botany Bay*, 151. *White*, 288.

THE HOODED, AND THE EUROPEAN FLYING, SQUIRREL.

THE hooded squirrel, according to Seba, who is the only author that has described it, inhabits Virginia. Its lateral membrane begins at the chin and ears, and extends from the fore to the hind leg. It is reddish above, cinereous, tinged with yellow beneath. Its ears are large and oval.

Synonymes.---*Sciurus Virginianus volans. Seb. Mus. i. tab. xlv. Brisson quad. iii. Mus volans. Lin. syst. 85.*

The European flying squirrel inhabits Finland and Lapland, and the Russian dominions, to the north-east parts of Siberia, and is common in all the mountainous tracts of that cold region. It lives usually on birch tree buds and fructifications, and on the cones of the pines and cedars. It leads a solitary life, and wanders about even in winter. It lives in hollow trees, and makes its nest of moss. When at rest, it flings its tail over its back; but in leaping, it extends it. The Germans call it the king of the squirrels. Its ears are naked, indented on the exterior side: its eyes are full: its eye-lids are bordered with black: its membranes extend to the very base of its fore-feet, and form a large wing on the exterior side: its tail is full of hair, bushy and round at the end. The colour of the upper part of the body is a fine grey, like that of a gull's back. The lower parts are of a pure white. Its body measures only four inches and a quarter; its tail five.

Synonymes.---*Mus Ponticus vel Scythicus. Gesner quad. 743. Sciurus Petaurista volans. Klein quad. 54. Flying squirrel. Ph. Transf. abr. ix. 76. tab. v. Sciurus volans. Faun. suec. No. 38. Pallas, nov. sp. fasc. i. 355. Sc. volans Sc. hypochondriis prolixis volitans, cauda rotundata. Lin. syst. 88. Sciurus Sibiricus volans. Brisson 110. No. 13. Le Poulatouche. De Buffon, x. 95. tab. xxii. Quadrupes volatilis Russiæ. Com. acad. Petrop. v. 218.*

MYOXUS, the DORMOUSE, of the Order of GLIRES.

ITS distinguishing characters are, two cutting teeth in each jaw; the upper ones cuneated, the under compressed; the whiskers are long; the ears naked; the tail is hairy and round, growing thicker towards the

the

the extremity; the fore and hind legs are of equal length; the fore-feet have four toes, and the hinder ones five. There are seven species, viz.

THE STRIPED DORMOUSE.

THE striped dormouse has plain ears, and full eyes: the ridge of its back is marked with a black stripe, and each side with one of a pale yellow, bounded above and below with a line of black. Its head, body, and tail, are of a reddish brown; the tail darkest: its breast and belly are white: its nose and feet are of a pale red. It inhabits the north of Asia; but is found in great abundance in the forests of North America. It never runs up trees, except when pursued, and unable otherwise to escape. It burrows, and forms its habitation with two entrances, that it may have access by one, if the other should be stopped up. Their retreats are formed with great skill, in form of a gallery, with branches on each side, each of which terminates in an enlarged chamber, as a magazine to store their winter provision in: in one they lodge acorns; in another maize; in a third hickory-nuts; and in the last, their favourite food, the chinquapin chesnut. During harvest, they are very busy in procuring provisions. They have pouches in their jaws like the hamster. They give great preference to certain food; for if, after filling their mouths with rye, they meet with wheat, they sling away the first, that they may indulge in the last. They are very wild, bite fiercely, and are scarcely ever to be tamed. Their skins are of little use; but are sometimes brought over to line cloaks.

Synonymes.---Mouse squirrel. *Joffelin's voy.* 86. Ground squirrel. *Lawson Carolina*, 124. *Catesby Carolina*, ii. 71. *Edw.* 181. *Kalm*, i. 322. *tab. i.* *Sciurus Listeri.* *Raii syn. quad.* 216. *Sciurus minor virgatus.* *Nov. Cov. Petrop.* v. 344. Boern doekie. *Le Brun, voy. Moscov.* ii. 342. *Sciurus striatus.* *Sc. flavus striis quinque fuscis longitudinalibus.* *Lin. syst.* 87. *Klein*

quad. 53. *Pallas nov. sp. fasc.* i. 378. *Sciurus Carolinensis.* *Briffon quad.* Le Suisse. *De Buffon*, x. 126. *tab.* xxviii. *Charlevoix Nouv. France*, v. 198.

THE FAT DORMOUSE.

THE fat dormouse, with thin naked ears, is near six inches long; its tail four and a half; its body is thicker than that of the squirrel, and is covered with soft ash-coloured hair; its belly is whitish; and its tail is full of long hair. It inhabits France and the south of Europe, and the south-west parts of Asiatic Russia. It lives on trees; leaps from bough to bough; feeds on fruits and acorns; lodges in hollow trees; and remains in a torpid state during winter, at which time it is very fat:

*Tota mihi dormitur hyems, et pinguior illo
Tempore sum, quo me nil nisi somnus alit.*

MARTIAL, Lib. xiii. Ep. 59.

They were esteemed a great delicacy by the Romans who had their *gliraria*, places constructed to feed them in.

Synonymes.---*Glis.* *Gesner quad.* 550. *Raii syn. quad.* 229. *Glis vulgaris.* *Klein quad.* 56. *Glis supra obscurè cinereus, infra ex albo cinerescente.* *Briffon quad.* 113. *Sciurus Glis. Sc. canus subtus albidus.* *Lin. syst.* 87. *Le Loir.* *Buffon*, viii. 158. *tab.* xxiv. *Mus Glis.* *Pallas nov. sp. fasc.* i. 88.

THE GARDEN DORMOUSE.

THIS species has its eyes surrounded with a large spot of black, reaching to the base of the ears: it has also another black spot behind its ears: its head and body are of a tawny colour; its throat, and the whole under side of its body, is white, tinged with yellow; its tail is long, with short hair at the base, but bushy at the end. It is about five inches long, its tail four.
It

It inhabits France and the south of Europe. It is found in magpiés nests, and hollow trees about the Wolga; but neither this nor the former species extends beyond the Uralian mountains. It infests gardens, and is very destructive to fruits of all kinds. It is particularly fond of peaches; lodges in the holes of walls; brings five or six young ones at a time; and, like the former, remains torpid during the winter. It has a strong smell like a rat.

Synonymes.---Mus avellanarum major. *Gesner quad.* 735. Greater dormouse, or sleeper. *Raii syn. quad.* 219. Glis supra obscurè cinereus, infra ex albo cinerescens, macula ad oculus nigra. *Briffon quad.* 114. Mus quercinus. M. cauda elongata pilosa, macula nigra sub oculos. *Lin. syst.* 84. Le Lerot. *Buffon viii.* 181. *tab. xxv.* Mus nitedula. *Pallas nov. sp. fasc. i.* 88.

THE DEGUS, OR CHILIAN DORMOUSE.

THIS species is of a dull white colour, and with a blackish line across the shoulders, reaching to the elbows; the tail ending in a tuft; ears rounded; and larger than the common rat. It inhabits Chili; and lives under ground, near the hedges and bushes; and forms its retreat into various galleries communicating with each other. It feeds on roots and fruits, and lays up a large provision of them for winter food; but it is not torpid during that season like our dormouse. *Sciurus Degus. Molina Chili, 284.*

THE COMMON DORMOUSE.

THE common dormouse is of the size of a mouse, but is somewhat plumper: it has round naked ears, and full black eyes: its body is of a tawny red; its throat white; its tail is two inches and a half long; and is pretty hairy, especially towards the end. It inhabits Europe; lives in thick hedges; and makes its nest in the hollow of a tree, or in the bottom of a

thick bush, of grass, moss, or dead leaves. It seldom appears far from its retreat; forms magazines of nuts; and eats sitting up like a squirrel. The female brings three or four young at a time. At the approach of winter, it retires, rolls itself up, and lies torpid. Sometimes it revives in a warm day, takes a little food, and relapses into its former state :

Thus to its mossy couch the dormouse springs ;
And sleep protects it with his eider wings.

Synonymes.-- *Mus avellanarum minor*, the dormouse, or sleeper. *Raii syn. quad.* 220. *Rothe Wald Maufs. Kramer Austria*, 317. *Glis supra rufus, infra albicans. Brisson quad.* *Mus avellanarius. M. cauda elongata pilosa, corpore rufo, gula albicante, pollicibus posticis muticis. Lin. syst.* 83. *Faun. suec.* No. 35. *Pallas nov. sp. fasc. i.* 89. *Le Muscardin. Buffon*, viii. 193. *tab. xxvi.* Dormouse. *Edw.* 266. *Br. Zool.* i. 95.

THE EARLESS DORMOUSE.

THE earless dormouse is so called, not because it is absolutely without ears, but because its ears are so very minute as to scarcely appear. Its head is flat; its nose obtuse; its eyes full and black; its upper lip is bifid; and its whiskers are long; its upper parts, and its fore-legs, are of a pale ferruginous colour, except that from the shoulder to the hind parts, it has a white line along each side, and another above each eye: its belly and feet are of a dirty white; its tail is black in the middle, and hoary on the sides; its toes are long and distinct, with very long claws: there is a large knob on the forefeet: the hind legs are black behind, and naked.

It is a creature of the size of a common squirrel; but much broader and flatter: it inhabits the mountains, about 800 miles above the Cape of Good Hope. It never climbs trees, it burrows, feeds on bulbous roots, and is particularly fond of potatoes: it often walks on its hind-feet, and often lies flat on its belly, is very
tame,

tame, and never offers to bite : it frequently flirts up with its tail : it makes a warm nest, and forms a round hole in it, in which it lodges : it sometimes keeps close in this retreat for three entire days together.

THE GILT-TAILED DORMOUSE.

THE gilt-tail hath short broad ears, great whiskers, the face marked lengthways with a gold-colour line extending from the nose to the space between the ears : the rest of the head and whole body and beginning of the tail are a purplish chestnut colour, the remaining half of the tail is black ; the rest of a beautiful gold colour : the tail is thick about the base. Length from nose to tail is five inches ; of the tail six. It inhabits Surinam ; lives on fruits, and climbs up the trees. It is le Lerot à queue dorée of the *Allamand Supplem.* iv. 164. *tab.* lxvii.

GUERLINGUETS.

M. de la Cèpede gives us the description of two species of animals, which he calls *Guerlinguets*. He denies that they are true squirrels : the ears are naked, and the tail grows taper, yet is covered with long hair, but by no means disposed like that on the tail of the squirrel ; they may therefore not improperly come into this genus. The larger is between seven and eight inches long, exclusive of the tail ; the tail is of equal length ; the hair on the body is very short, and at its extremity a bright bay : the tail is rayed with brown and tawny. The less is little more than four inches long ; the tail little more than three ; the body, legs, and tail, are clouded with olive and ash-colour ; the face, lower part of the belly, and sides of the legs, are tawny.

The DIPUS, or JERBOA, of the ORDER
of GLIRES.

OF this genus there are only five species, with some varieties. Its distinctive characters are, two cutting teeth in each jaw; two very short fore-legs; two very long hind-legs, resembling those of cloven-footed water-fowl, and a very long tail tufted at the end:

THE ÆGYPTIAN JERBOA.

THIS curious animal hath thin, erect, and broad, ears; full and dark eyes; long whiskers; fore legs an inch long, five toes on each; the inner, or thumb, scarcely apparent; but that, as well as the rest, furnished with a sharp claw; hind legs two inches and a quarter long, thin, covered with short hair, and exactly resembling those of a bird; three toes on each, covered above and below with hair, the middle toe the longest, on each a pretty long sharp claw; length, from nose to tail, seven inches one quarter; tail ten inches, terminated with a thick black tuft of hair, the tip white, the rest of the tail covered with very short coarse hair; the upper part of the body thin, or compressed sideways; the part about the rump and loins large; the head, back, sides, and thighs, covered with long hair, ash-coloured at the bottom, pale tawny at the ends; breast and belly whitish; across the upper part of the thighs is an obscure dusky band; the hair long and soft.

It inhabits Egypt, Barbary, Palestine, the deserts between Bassora and Aleppo, the sandy tracts between the Don and Volga, the hills south of the Irtish, from fort Janiyschera to the Seven Palaces, where the Altaic mountains begin: as singular in its motions as in its form; always stands on its hind feet; the fore feet performing the office of hands; runs fast, and, when pursued, jumps five or six feet from the ground; burrows like rabbits; keeps close in the day; sleeps rolled



1. The Egyptian Jerboa. 2. The Syrian Jerboa. 3. The Dormouse.
 4. The tamarisk Rat. 5. The lineated Mouse. 6. The economic Mouse.

led up; lively during night; when taken, emits a plaintive feeble note; feeds on vegetables; has great strength in its fore feet. Two, which were brought to London, burrowed almost through the brick wall of the room they were in; came out of their hole at night for food, and when caught, were much fatter and sleeker than when confined to their box.

This is the daman Israel, or the lamb of the Israelites of the Arabs, and is supposed to be the saphan, the coney of Holy Writ; our rabbit being unknown in the Holy Land. Dr. Shaw met with this species on mount Libanus, and distinguishes it from the next species. It is also the mouse of Isaiah, achbar in the original signifying a male jerboa.

This, and the following species, which is found to extend to the colder regions, on any approach of cold grow torpid, and remain so till they are revived by a change of weather. Pallas calls this class the species lethargicæ.

Synonymes.---*Mus διπρος*. *Theophr. opusc.* 295. *Ælian hist. an. lib.* xv. c. 26. *Mus bipes*. *Plinii lib.* x. c. 65. *Texeira's Travels*, 21. *Gerbua*. *Edw.* 219. *Plafsted's journal*, 59. *Mus jaculus*. *M. cauda elongata floccosa*, *palmis subpentadactylis*, *femoribus longissimis*, *brachiis brevissimis*. *Lin. syst.* 85. *Hasselquist itin.* 198. *Le jerbo*. *Buffon*, xiii. 141. *Mus sagitta*. *Pallas, nov. sp. fasc.* i. 306. *tab.* xxi.

THE SIBERIAN JERBOA.

OF the Siberian jerboa there are three varieties, the greater, the middle, and the pigmy.

The greater Siberian jerboa has a truncated nose, edged with white. Its lower teeth are slender, and twice as long as the upper; its ears are large and pointed, tipped with white, and naked within; its hair is very soft, tawny on the back, and lower of a dark grey; its legs, and the under side of its body, are white: the half of the tail next the body is covered with short whitish hairs;

hairs; the other half with long black hairs, and terminated with a white feather tuft, an inch long: on the hind legs, an inch above the feet, are two long toes; armed with nails; the back part of each leg is naked: the length of the body is eight inches and a half, of the tail ten. It is found from the Caspian Sea to the river Irtish; and it is of the size of a rat: it is of the colour of the former, except that the rump, on each side, is crossed with a white line.

The middle variety has its nose more lengthened, and its ears shorter and broader; its tail is thicker, and not so elegantly tufted; its hind legs are shorter, and its coat is longer and thicker. It is found beyond lake Baikal, also in Barbary and Syria, and even as far as India.

The pigmy differs from the greater, in wanting the white circle round the nose, in having a less tuft to the tail, and the end just tipped with white: it agrees entirely in form, but is far inferior in size to even the middle variety. It inhabits the same countries with the greater.

These three species agree in manners: they all burrow in hard ground, clay, or indurated mud: they dig their holes very speedily with their fore-feet and teeth, and fling the earth back with their hind-feet, so as to form a heap at the entrance. Their burrows are continued many yards in length, winding obliquely, but dip not above a foot and a half below the surface. They have but one entrance, but usually work in another direction an outlet within a very little of the surface, through which they can instantly make their escape, in case of necessity. It keeps within its hole all day, and wanders only in the night. It is singular, that an animal of a very chilly nature should keep within its hole the whole day, and wander about only in the night. They sleep rolled up, with their head between their thighs; and when kept in a stove, and taken suddenly out, they seem quite stupified, and for a time scarcely find the use of their limbs. Perhaps

this arises from an excess of heat; for, when an attempt is made to take them out of their burrows, they are quickly alarmed on the noise of digging, and attempt their escape. At sun-set they come out of their holes, clear them of the filth, and keep abroad till the sun has drawn up the dews from the earth. On the approach of danger, they immediately take to flight, with leaps a fathom in height, and so swiftly, that a man well mounted can hardly overtake them. They spring so nimbly, that it is impossible to see their feet touch the ground: they do not go strait forwards, but turn here and there, till they gain a burrow, whether it is their own, or that of another. In leaping, they carry their tails stretched out; in standing, going, or walking, they carry them in form of an S, the lower part touching the ground, so that it seems a director in their motions. When surprized, they will sometimes go on all-fours, but soon recover their attitude of standing on their hind-legs like a bird; even when undisturbed, they use the former attitude, then rise erect, listen, and hop about like a crow. In digging or eating they drop on their fore-legs; but in the last action will often sit up and eat like a squirrel. They are easily made tame, and seek always a warm corner; they foretel cold or bad weather by wrapping themselves close up in hay; and those which are at liberty stop up the mouths of their burrows.

In a wild state they are particularly fond of the roots of tulips, and live much on oleraceous plants: the small stature of the pigmy kind is attributed to their feeding on saline plants. Those of the middle size, which live beyond the lake Baikal, live on the bulbs of the *lilium pomponium*, and they gnaw the twigs of the *robinia carugana*. When confined, they will not refuse raw meat, and the entrails of fowls. They are the prey of all smaller rapacious beasts. The Arabs, who are forbidden all other kinds of mice, esteem these the greatest delicacies; as those people often are disap-
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pointed in digging after them, they have this proverb, "To buy a hole instead of a jerboa."

The Mongols have a notion that they suck the sheep; certain it is, they are during night very frequent among the flocks, which they disturb by their leaps. The Mongols call this animal alagh-daagha. Alagh signifies variegated, daagha, a foal. The Calmucs call it jalma; the great sort they stile morin jalma, or the horse jerboa; the small sort, choin jalma, or the sheep.

They breed often in the summer; in the southern parts, in the beginning of May: beyond Baikal, not till June: they bring perhaps eight at a time, as they have so many teats: they sleep the whole winter without nutriment. About Astracan, they will sometimes appear in a warm day in February; but return to their holes on the return of cold. Animals of this genus were certainly the two-footed mice, and the Egyptian mice, of the ancients, which were said to walk on their hind legs, and use the fore instead of hands. These, with the plant silphium, were used to denote the country of Cyrene, where both were found, as appears from the figures on a gold coin preserved by Mr. Haym.

Synonymes, --- *Cuniculus pumilio saliens cauda longissima. Nov. com. Petrop. v. 351. tab. ix. fig. 1. Cuniculus pumilio saliens, cauda anomala longissima. Brisson quad. 103. Dipus jaculus. Gm. Lin. 157. Flying hare. Strahlenberg's hist. Russ. 370. Mus jaculus. Pallas nov. sp. fasc. i. 275. tab. xx.*

THE ARROW, OR AFRICAN JERBOA.

THIS species hath ears shorter and broader than the preceding; nose longer and less obtuse; four toes before, three behind; coat thicker and longer; a white band from the base of the tail to the junction of the thighs with the body; length, from the tip of the nose to the rump, little more than five inches, of the tail six. It inhabits Barbary, and all the north of Africa, Egypt, Arabia, and Syria, and lives in the sandy deserts.

Syno-

Synonymes.---*Dipus sagitta. Gm. Lin. 158. Pallas nov. sp. 87, 206. tab. xxi. Edw. tab. 219.*

THE CAPE JERBOA.

THE Cape jerboa has a short head, broad between the ears; its mouth is placed far below the upper jaw, the lower is very short; it has two great teeth in each: its ears are thin and transparent, and one-third shorter than those of the common rabbit: it has also great whiskers, and large eyes: its fore-legs are short, it has five toes on each, with a great protuberance next to the inner toe: the claws of the fore-toes are crooked, and two-thirds longer than the toes themselves: it has four toes behind, with short claws: its colour is tawny above, cinereous below, mixed with long hairs pointed with black: two-thirds of the tail is tawny, the rest black: the length of the body fourteen, of the tail fifteen, of the ears near three, inches. It inhabits the great mountains, far north of the Cape of Good Hope, and is called by the Dutch, the jumping hare. It is very strong, and will leap twenty or thirty feet at a time: it emits a grunting sound; sits upright when it eats, with its legs extended horizontally, and its back bent: it uses its fore-feet to bring its food to its mouth, and burrows with them most expeditiously. In sleeping, it sits with its knees separate, and puts its head between its hind legs, and, with its fore legs, holds its ears over its eyes.

Synonymes.---*Grand gerbo. Allamand de Buffon, xv. 118. Journal Historique, 59. Dipus cafer. Gm. Lin. 159. Miller's plates, tab. xxxi.*

THE TORRID JERBOA.

THE torrid jerboa has naked oval ears, long whiskers; four toes on the fore-feet, the hind-feet are as long as the body, thick and strong, but thinly haired. It has five toes on each foot; scarcely any neck: the

tail is also the length of the body, with very little hair upon it: the colour of the upper part of the body is yellow, of the lower white. It is of the size of a common mouse, and inhabits the Torrid Zone.

Synonymes.---Mus longipes. M. cauda elongata vestita; palmis tetradactylis, plantis pentadactylis, femoribus longissimis *Lin. syst.* 84. Mus cauda longa vestita, pedibus posticis longitudine corporis flavis. *Mus. Ad. Fr.* 9.

MUS, the RAT, of the Order of Glires.

THIS genus contains upwards of fifty species, divided into different classes. It has two cutting teeth in each jaw, four toes before, five behind, a very slender taper tail, naked, or very slightly haired. The first class may be distinguished by the name of Jerboid rats, on account of the length of their hind-legs: the second by the name of murine, as comprehending all the common species of rats and mice.

THE CANADIAN RAT.

THIS animal hath the upper jaw projecting far beyond the lower; the upper cutting teeth deeply divided by a longitudinal furrow; ears small, and hid in the fur, and placed far back; the three middle hind toes very long, those on each side very short; colour of the fur on the upper part of the head and body, light; towards the bottom of the fur iron grey; belly whitish; length from nose to the tip of the tail scarcely two inches; tail very slender, three inches and a half long.

This animal inhabits the woods of Canada. Its hind legs have more of the jerboas than any of the rest of this genus, and are very long; it goes upright on these, like the jerboa; and its pace is leaping, like that animal: it is exceeding nimble, and is with difficulty caught, except it can be forced into the open grounds. It is torpid during winter, wraps itself up like the dormouse,

mouse, and coils up its long tail, previously rolling itself into a round ball of clay, which it forms for its winter retreat.

THE LABRADOR RAT.

THIS species has a blunt nose: its mouth is placed far beneath; its upper lip is bifid; its ears are large, naked, and rounded; its fore legs are short, furnished with four toes, and a tubercle instead of a thumb; its hind legs are long and naked, like some of the jerboas, with a short thumb, and toes long, slender, and distinct, of which the exterior is the shortest. Dr. Pallas has described this species under the title of *mus longipes*.

The whole length of the animal is eight inches; of its tail, four and three quarters: its colour is deep brown above, white beneath; these are separated, the whole length on each side, by a yellow line. It inhabits Hudson's Bay, and the Labrador coast. It is also in the sandy desert of Naryn, or Ryn Pesky, between the Volga and the Yaik, near the Caspian Sea, in lat. 46 1-half. In this tract scarcely any thing grows except the torlok, or pterococcus aphyllus, and a few other poor plants on which it feeds. Two were then taken sporting in the mid-day sun; they were both males, and attempted to escape to different holes. The burrows had three entrances running obliquely, and were about a yard deep, lined or plaistered with mud. In the bottom was neither nest nor provision of grass. The Asiatic animal differed in colour from the American, being above of a light grey mixed with tawny, and white below; these colours divided lengthways by a stripe of dusky red: the tail covered with longer and loose hair at the end than in the other parts; the soles of the feet clad with hair. Linnæus describes this species under the title of *mus longipes*, *Syst. nat.* 84. Dr. Pallas, with great reason, supposes it to be the same with the jird of Dr. Shaw, which he describes

with the jerboa. It agrees in colours with the above, in its long tail being better clothed than that of a rat, and in its burrowing under ground. This is frequent in Barbary, and is reckoned good food.

To this species we may subjoin what has been usually called the Circassian marmot, with ears like those of mice; red sparkling eyes; sharp teeth; body long, and of an equal thickness; chestnut-coloured hair, long, especially on the back; has sharp claws; tail long and bushy; fore-feet shorter than the hind-feet; size of the hamster. Inhabits the neighbourhood of the river Terek, which flows out of Circassia and falls into the Caspian Sea; runs fast up hill, very slowly down; burrows, and lives under ground.

THE TAMARISK RAT.

THE tamarisk rat has an oblong head, great whiskers, and a blunt nose. His nostrils are covered with a flap; his teeth are yellow; his eyes are large and brown; his ears are large, naked, and oval: there is a white space round the nose and eyes, and beyond the ears: the sides of his head and neck are hoary; his neck is short; his back and sides are of a yellowish grey, tipped with brown; his breast and belly are white; his tail is ash-coloured, annulated with brown; his hind-legs are long; the fore-feet have a tubercle like a wart, instead of a thumb; his length is above six inches, his tail not quite so long. This species inhabits the salt marshes about the river Ural, and burrows beneath the knotty roots of the tamarisk bushes. Each burrow has two entrances, and is very deep: they feed only at night: their food consists of maritime succulent plants.---*Mus tamaricinus. Pallas, nov. sp. i. 322. tab. xix. Itin. ii. 702.*

We come now to the class of murine rats.

THE BLACK RAT.

THIS species is of a deep iron-grey colour, nearly black. Its belly is cinereous; its legs dusky, almost naked: it has a claw in the place of a fifth toe on the fore feet: its body measures seven inches; its tail near eight: It inhabits most parts of Europe. Its numbers are much lessened, and in many places indeed extirpated, by the brown species. They are very destructive to corn, furniture, young poultry, rabbits, and pigeons. They will even gnaw the extremities of infants when asleep. They breed often in a year, and bring six or seven young at a time. They make their nest in a hole, often near a chimney, with wool, bits of cloth, or with straw. They will destroy and devour one another; but their greatest enemy is the weasel. They were carried into South America about the year 1544, by the Europeans, and are now become the pest of all that continent. The word *rattus*, or *rat*, is modern. The Romans probably comprehended all kinds under the word *mus*. The Welsh call it the French mouse, which intimates that it has been imported thence into our island. None of them are found in Siberia or Kamtschatka. They swarm at Otaheite, and others of the Society Islands, and are met with in New Zealand and New Holland. In Otaheite they are so bold as to attack the inhabitants when asleep, who hold them in the utmost detestation, and will not even kill them, lest they should be polluted by the touch. They will not even eat the bread-fruit these animals should happen to run over.

Synonymes.---*Mus domesticus major*, quem vulgò *rattum* vocant. *Gesner quad.* 731. *Raii syn. quad.* 217. *Mus rattus*, *Mus cistrinarius*. *Klein quad.* 57. *Ratze. Kramer Austr.* 316. *Mus cauda longissima* obscure cinerea. *Briffon quad.* 118. *Mus rattus*. *M. cauda elongata subnuda, palmis tetradactylis cum unguiculo pollicari, plantis pentadactylis.* *Lin. syst.* *Ratta. Faun. suec.*

suéc. No. 33. *Br. Zool.* i. No. 27. *Le rat.* *Buffon*, vii. 278. *tab.* xxxvi. *Pallas nov. sp. fasc.* i. 93.

THE COYPU RAT.

THIS hath round ears; the nose elongated, and covered with whiskers; legs short; tail thick, and of a moderate length, well covered with hairs; two very sharp cutting teeth in each jaw; on the fore feet are five toes, all separated; on the hind feet five, palmated. It has the appearance of the otter in hair and size.

This animal lives equally well in the water as on the land; and frequents also houses; it is easily tamed, and very content in the domestic state, attaching itself to those who treat it kindly. It has a piercing cry on being abused: the female brings forth five or six young, which always follow her.

Synonymes.---*Le coypu.* *Molina Chili.* 268. *Mus Coypus.* *Gm. Lin.* 125.

THE BROWN RAT.

THE brown rat is larger and stronger than the black. Its head, back, and sides, are of a light brown colour, mixed with a tawny and ash-colour; its breast and belly of a dirty white; its feet are naked and of a dirty flesh-colour; its fore-feet are furnished with four toes, and a claw instead of a fifth. The length of its body is nine inches, and of its tail the same: it weighs about eleven ounces. It inhabits most parts of Europe; but was a stranger to that continent till the present century. It came into Britain about sixty years ago. It has not been known in the neighbourhood of Paris above half that time. It is probable they were imported from the East Indies, where they burrow, and underminé the foundations of houses so as to make them fall. They swarm in Peterburgh, and have reached Prussia. They sometimes migrate in vast armies, and do infinite mischief. They burrow like the water-rat, on the
sides

sides of ponds and ditches, swim well, and dive readily. They live on grain and fruits, and will destroy poultry and game. They breed prodigiously fast, and bring from fourteen to eighteen young at a time. They are very bold and fierce. When closely pursued, they will turn and fasten on the hand or stick that offers to strike them. In spite of poison, traps, and cats, they increase to such a degree as sometimes to do a great deal of damage. In old country-houses where grain is kept, and where the vicinity of barns and magazines facilitates their retreats, they often increase so prodigiously, that the possessors are obliged to remove and desert their habitations, unless the rats happen to destroy each other; an event which frequently takes place, for these creatures when pinched for food devour each other. When a famine happens by reason of too many being crowded into one place, the strong kill the weak, open their heads, and first eat the brain, and then the rest of the body. Next day the war is renewed, and continues in the same manner till most of them are destroyed; which is the reason why these animals, after being extremely troublesome for some time, disappear all of a sudden, and do not return for a long time. Rats are extremely lascivious; they squeak during their amours, and cry when they fight. They soon teach their young to eat; and, when they begin to issue from the hole, their mother watches, defends, and even fights with the cats, in order to save them. A large rat is more mischievous than a young cat, and nearly as strong: the rat uses her foreteeth; and the cat makes most use of her claws; so that the latter requires both to be vigorous, and accustomed to fight, in order to destroy her adversary. The weasel, though smaller, is a much more dangerous and formidable enemy to the rat, because he can follow it into its retreat. Their strength being nearly equal, the combat often continues for a long time, but the method of using their arms is very different. The rat wounds only by reiterated strokes

with his fore-teeth, which are better formed for gnawing than biting; and being situated at the extremity of the lever or jaw, they have not much force. But the weasel bites cruelly with the whole jaw; and, instead of letting go its hold, sucks the blood from the wounded part, so that the rat is always killed.

Synonymes.---Mus cauda longissima, supra dilutè fulvus, infra albicans. Le rat de Bois. *Briffon quad.* 120. Le Surmulot. *Buffon*, viii. 206. *tab.* xxvii. Norway rat. *Br. Zool.* i. No. 26. Mus decumanus. *Pallas nov. sp. fasc.* i. 91.

THE PERCHAL, OR INDIAN RAT.

IT hath ears rounded on the top; nose long and turning up; body longer than the common rats; hair on the upper parts deep brown; hind legs larger than the fore; tail naked and scaly; length from nose to tail above a foot; tail between eight and nine inches. Common in India, and infests the houses in Pondicherry, as our rats do those of Europe; are very numerous; the inhabitants use them for food. Le rat Perchal, *Buffon, Supplem.* vii. 276. *tab.* lxix.

THE AMERICAN RAT.

THIS species is larger than the black, but less than the brown, rat. Its upper jaw is much longer than the lower; its head is long; its nose narrow and pointed; its ears large and naked; its whiskers are fine, but long; its tail is naked, and like that of the black rat, but not so long; its colour is a deep brown, inclining on the belly to ash. It inhabits North America. The Mus Caraco of Dr. Pallas is nearly allied to this species. It burrows in the banks of rivers, and is supposed to extend from the lake Baikal to China, where it is very noxious.

THE SCHERMAN, OR STRASBOURG RAT.

THIS is a species with a short head and thick nose; small eyes; ears so very small as to be scarcely visible; colour of the hair dusky, mixed with grey and tawny; edges of the mouth bordered with white: body six inches long: tail above two. It is very common about Strasbourg, in the gardens and places near the water. They make great havoc among the plants and the cultivated grounds; swim and dive very well, and are often taken by the fishermen in their weels: they burrow under ground, and are frequently caught in the traps used by the people who are employed in taking the Hamster rat. Le Sherman. *Buffon, Supplem.* vii. 278. *tab.* lxx.

THE WATER RAT.

THIS voracious species hath a thick blunt nose; ears hid in the fur; eyes small; teeth yellow; on each foot five toes; the inner toe of the fore foot very small; the first joint very flexible; the head and body covered with long hairs, black mixed with a few ferruginous hairs; the belly is of iron-grey; the tail covered with short black hairs; the tip whitish; weight nine ounces: length, from nose to tail, seven inches; the tail only five: the shape of the head and body is more compact than the former species. It has some resemblance to the beaver, which induced Linnæus, in the first edition of his *Fauna Suecica*, to style it *Castor cauda lineari tereti*. It inhabits Europe, the north of Asia, and North America; burrows in the banks of rivers, ponds, and wet ditches; feeds on small fish, and the fry of greater; also on frogs, insects, and roots. It is itself the prey of the pike; it swims and dives admirably, though it is not web-footed, as Mr. Ray supposed, and Linnæus copied after him; it brings six young at a time. This animal and the otter are eaten in France on maigre days.

Synonymes.---Le rat d'eau. *Belon, equat.* 30. *tab.* xxxi. *Mus aquatilis. Agricola An. Subter.* 488. *Gesner quad.* 732. *Raii syn. quad.* 217. *Klein quad.* 57. *Wasser-maus. Kramer Austr.* 316. *Mus amphibious. M. cauda elongata pilosa, plantis palmatis. Lin. syst.* 82. *Faun. suec.* No. 32. *Pallas nov. sp. fasc. i.* 20. *M. cauda longa pilis supra ex nigro et flavescente mixtis, infra cinereis vestitus. Briffon quad.* 124. *Le rat d'eau. Buffon, vii.* 348. *tab. xliii.* *Water rat. Br. Zool. i.* No. 27.

THE MOUSE

IS an animal that needs no description: when found white, it is very beautiful, the full bright eye appearing to great advantage amidst the snowy fur. It follows mankind, and inhabits all parts of the world, except the Arctic.

Synonymes.---*Mus domesticus communis seu minor. Gesner quad.* 714. *Raii. syn. quad.* 218. *Mus minor, musculus vulgaris. Klein quad. Maufs. Kramer Austr.* 316. *Mus musculus. M. cauda elongata, palmis tetradactylis, plantis pentadactylis. Lin. syst.* 83. *Pallas nov. sp. fasc. i.* 95. *Mus. Faun suec.* No. 34. *Mus cauda longissima, obscure cinereus, ventre subalbescente. Briffon quad.* 119. *La Souris. Buffon, vii.* *tab.* 309. *lix. Br. Zool. i.* No. 30.

THE FIELD MOUSE.

THE field mouse has black eyes; its head, back, and sides, are of a yellowish brown, mixed with some dusky hairs; its breast is of an ochre-colour; belly white; length, from the tip of the nose to the tail, four inches and a half; the tail four inches, slightly covered with hair.

It inhabits Europe, and is found only in fields and gardens; it feeds on nuts, acorns, and corn; and forms great magazines of winter provision; hogs, tempted

by the smell, do much damage in the fields by rooting up the hoards. It makes a nest for its young very near the surface, and often in a thick tuft of grass; and brings from seven to ten at a time. It is called, in some parts of England, bean mouse, from the havoc it makes among the beans when just sown. It is common in Russia, and about the Urallian chain, but not beyond.

There is an American variety of it, some white, others black; with the ears large, naked, and open; from the head to the tail, along the middle of the back, is a broad dark stripe, ferruginous and dusky: the cheeks, space beneath the ears, and sides, quite to the tail, orange-coloured; the under side, from nose to tail, of a snowy whiteness; the feet are white; the hind legs longer than those of the European kind; the tail dusky above, and whitish beneath.

Synonymes.---*Mus agrestis minor.* *Gesner quad.* 733. *Mus domesticus medius.* *Raii syn. quad.* 218. *Mauss mit weissen bauch.* *Kramer Austr.* 317. *Mus cauda longa supra e fusco flavescens, infra ex albo cinerescens.* *Briffon quad.* 123. *Mus sylvaticus.* *M. cauda longa, palmis tetradactylis, plantis pentadactylis, corpore griseo pilis nigris abdomine albo.* *Lin. syst.* 84. *Pallas nov. sp. fasc. i.* 94. *Faun suec.* No. 36. *Le mulot.* *Buffon, vii.* 325. *tab. xli.* Long-tailed field-mouse. *Br. Zool. i.* No. 28.

THE HARVEST MOUSE.

THE eyes of this are less prominent than those of the former species. It has prominent ears; and is of a full ferruginous colour above; white beneath; with a straight line along the sides, dividing the colours. It is two inches and a half long; its tail measures two inches. The whole animal weighs only one-sixth of an ounce.

In Hampshire, they appear in great numbers during the harvest, but never enter the houses. They are often carried into the ricks of corn in the sheaves; and

and are often killed by hundreds at the breaking up of the ricks. During winter they shelter themselves under ground, and burrow very deep, where they form a warm bed of dead grass. They form their nest also above ground among standing corn; and bring about eight young at a time. The less long-tailed field-mouse. *Br. Zool. ii. App. 498.*

THE ORIENTAL MOUSE.

THE oriental is about half the size of the common mouse. It is of a grey colour, and has rounded ears: its back and sides are elegantly marked with twelve rows of small pearl-coloured spots, extending from the head to the rump: its tail is as long as its body. It inhabits India. In the same country, and in Guinea, there is another small species which smells of musk. The Portuguese living in India call it cheroso, and say its bite is venomous.

Synonymes.---*Mus orientalis. Seb. Mus. ii. 22. tab. xxi. fig. 2. M. cauda mediocri subnuda, palmis tetradactylis, plantis pentadactylis, corporis striis punctatis. Lin. syst. 84. M. cauda longa, striis corporis longitudinalibus & punctis albis. Mus. Ad. Fred. 10. Mus cauda longa, rufus, lineis in dorso albicantibus, margaritarum æmulis. Brisson quad. 124.*

THE BARBARY MOUSE.

THE Barbary mouse is also less than the common one; of a brown colour; marked on the back with ten slender streaks: it has three toes, with claws on the fore-feet, and the rudiments of a thumb: its tail is of the same length with the body. It inhabits Barbary.

Synonymes.---*Mus Barbarus. M. cauda mediocri corpore fusco, striis decem pallidis, palmis trydactylis, plantis pentadactylis. Lin. syst. tom. i. pars ii. addenda.*

MEXICAN AND VIRGINIAN MOUSE.

THE Mexican mouse is of a whitish colour, mixed with red. Its head is whitish: each side of its belly is marked with a great reddish spot. It inhabits Mexico.

---Mus Mexicanus maculatus. *Seb. Mus.* 74. *tab.* xlv. *fig.* 5.

The Virginian mouse has pointed ears, a black pointed nose, and long whiskers: its fur is very short; its limbs are very slender; its tail very thick at the base, and all beset with long hair; tapers gradually to a point, and is very long and slender: the colour of this animal is universally white: the thickness at the base of its tail is its specific difference. It is found in Virginia.---Mus agrestis Americanus albus. *Seb. Mus.* i. 76. *tab.* xlvii. *fig.* 4.

THE WANDERING MOUSE.

THIS species has an oblong head, a blunt nose, with a red tip, and yellow cutting teeth: its eyes are placed midway between the nose and ears; its ears are large, oval, and naked, but dusky and downy at the tips; its limbs are slender; its tail is longer than the body, and very slender also; its colour above pale ash, mixed and waved with black, with a black line along the back: the ends of its limbs are whitish; its body and tail are each about three inches long. It inhabits the whole Tartarian desert. At certain times, they wander about in great flocks, migrating from place to place during the night: they are observed in birch woods as high as 57 deg. north: they are of a very chilly nature, soon become torpid, and sleep rolled up in a cold night, even in the month of June: they live in holes and fissures of rocks. The Tartars call it the gregarious mouse.---Mus vagus. *Pallas nov. sp. fasc.* i. 327. *tab.* xxii. *fig.* 2.

THE BIRCH MOUSE.

THIS hath a sharp nose, with the end red; ears smaller than those of the former, brown, and bristly at the end; limbs very slender; toes long, slender, and very separable; tail very long and slender, much exceeding the length of the body, brown above, and white below: colour of the head and body a cinereous rust, with a few dusky hairs interspersed; the breast and belly pale ash-colour; along the top of the back is a dusky line. It is less than the former.

It inhabits the birch woods about the plains of Ischim and Baraba, and between the Oby and Jenesei; lives in the hollows of decayed trees; is very tender, and soon grows torpid in cold weather; runs up trees, and fastens to the boughs with its tail, and, by assistance of its slender fingers, adheres to any smooth surface. It emits a weak note.---*Mus betulinus. Pallas nov. sp. fasc. i. 322. tab. xxii. fig. 1.*

THE RUSTIC MOUSE.

THE rustic mouse hath a sharp nose; oblong head; small ears lined with fur; the colour of the body and head ferruginous, with a dusky line along the back; the belly and limbs whitish; above each hind-foot is a dusky circle. It is a little less than the field mouse. The tail is only half the length of the body.

It inhabits the temperate tracts of Russia and Siberia, as far as the Irtysh; in the former, it is found chiefly about villages and corn-fields; in the latter, in woods. In Russia it is often migratory, and often very noxious to the grain; it is called there *shitnik*, or the corn mouse, for it abounds in the sheafs and ricks. At times they wander in vast multitudes, and destroy the whole expectations of the farmer. In the years 1763 and 1764, they made great ravages in the rich country about Casan and Arsk; and came in such numbers

as to fill the very houses, and became through hunger so bold as to steal even the bread from the table before the very faces of the guests. At the approach of winter they all disappeared.

They make their retreats a little below the surface, which in those places appear elevated; each has a long gallery with a chamber at the end, in which they place their winter food, which consists of various sorts of seeds.

Synonymes.---Mus agrarius. *Pallas nov. sp. fasc. i. 341. tab. xxiv. A. Itin. i. 454.* Mus rubeus. *Schwenkfeldt Anim. Siles. 114.*

THE SORICINE MOUSE.

THIS hath an elegant slender head; ears rounded and covered with hair; tail long and slender; hair on the head and upper part of the body cinereous, mixed with yellow; belly white; length two inches. It inhabits the neighbourhood of Strasburg, and was discovered by Professor Herman.---Mus forcinus. *Schreber, tab. clxxxiii. Gm. Lin. 130.*

THE LINEATED MOUSE.

THIS species hath a black forehead and hind part of the head; from whence extend along the back to the tail four black lines; colour of the rest of the animal a cinereous brown; tail of a light colour, and very small; not superior in size to the following. It inhabits the forest of Sitsicamma on the Slangen river, at a vast distance to the eastward of the Cape of Good Hope. *Mus pumilio. Gmel. Lin. syst. 130. Sparman's voy. ii. 349. tab. vii.*

THE LITTLE MOUSE.

THIS hath a sharpish nose, and is of a dusky colour, with a whiteness at the corner of the mouth; ears small, half hid in the fur; body more slender than that

of the common mouse; tail also shorter, and more slender. The colour a deep tawny above, and white below; the feet grey. This is the least of the genus, little more than two inches long from nose to tail, weight not half a drachm. It inhabits the temperate parts of Russia and Siberia, in corn-fields and barns; it is also plentiful in the birch woods. More males are said to be found among them than females; and they seem to wander without any certain places for their nests.---Mus minutus. *Pallas nov. sp. fasc. i. 345. tab. xxiv. B. Itin. i. 454.*

We come now to another class, viz. with tails much shorter than the preceding.

THE ROCK MOUSE.

THE rock mouse hath an oblong head, nose rather pointed, ears rising above the fur, oval and downy, at the edges brown; whiskers short, limbs strong, tail not half so long as the body, with a few hairs scattered over it: the colour above is brown, slightly mixed with grey; the sides incline more to the last colour; belly of a light cinereous; snout dusky, surrounded with a very slender ring of white. It is in length four inches, the tail one and a half.

It inhabits the country beyond lake Baikal, and the Mongolian desert; it makes its burrows in a wonderful manner, considering the weakness of its feet, between the crannies of the rocks which had been forced open by the violence of frost, or the insinuation of roots of plants: it chooses its habitation amidst the rudest rocks, and lives chiefly on the seeds of astragali. The burrows consist, first, of a large winding oblique passage, through which the animal flings out the earth: secondly, of one or more holes pointing downwards, which likewise wind among the rocks; and at their bottom is the nest, formed of soft herbs.---Mus saxatilis. *Pallas nov. sp. fasc. i. 255. tab. xxiii. B.*

THE INDIAN VIVERRA.

THIS animal hath short pointed ears, sharp nose, two cutting teeth in each jaw, and fourteen grinders in each; five toes to each foot, claws strong and crooked; colour grey, tinged on the lower part of the head and neck with red; belly white, back and sides marked with four black lines, commencing near the hind part of the head, and ending at the rump; on each thigh is a bifurcated black stroke, the forks pointing backwards. It is in length two feet, the tail nine inches. It inhabits India. No farther account is given by M. Sonnerat of this and the following obscure species. They are placed in this genus, because they have no canine teeth, and only two incisives in each jaw.

Synonymes.---*Viverra fasciata*. *Gmelin. Lin. i. 92.*
Chat sauvage, &c. Sonnerat voy. ii. 143. tab. lxxix.

THE ZENIC.

THIS hath short ears, very long sharp nose, two cutting teeth, sixteen grinding teeth, four toes on each foot, claws on the fore feet very long, and almost strait; colour of a reddish grey, striped transversely with ten black lines falling from the back almost to the belly. It is about the size of a water rat, tail not so long as the body, of a gilded red on three parts of its length, the rest black. It inhabits the land of the Hottentots.

Synonymes.---*Le zenik des Hottentots. Sonnerat voy. ii. 145. tab. xcii. Viverra zenik. Gmelin. Lin. i. 84.*

THE ECONOMIC MOUSE.

THIS hath small eyes, ears naked, and usually hid in the fur; limbs strong, teeth very tawny; colour black and yellow, intimately mixed, dusky on the back, from throat to tail hoary, beneath the hair a dark down, ends of the feet dusky. It is in length

four inches and a quarter, the tail about an inch; in form of the body it is like the meadow mouse, but is longer, and the belly bigger. The females are far superior to the males in size, as on the former rests the chief labour of providing the food. It inhabits in vast numbers all Siberia, especially the eastern parts, and Kamtschatka; and is even found within the Arctic circle. They are called by Dr. Pallas, *mures æconomi*, or economic mice, from their curious way of living: they inhabit damp soils, and shun the sandy; form burrows beneath the upper crust of the turfy ground, and have in them many chambers, and several entrances. Never more than two animals are found in these extensive nests, and those fondly attached to each other; sometimes only one inhabits these dwellings, except towards autumn, when the whole family make it their residence. In the first they form magazines for winter food, consisting of various sorts of plants, which they collect in summer with great pains; and in sunny days draw them out of their nests, in order to give them a more effectual drying. During summer they never touch their hoards, but live on berries, and other vegetable productions. Twenty, and even thirty, pounds of fresh roots, have been found in one hoard. Besides man, these mice find a cruel enemy in the wild boars, which ransack the magazines, and devour the little defenceless owners.

They in certain years make great migrations out of Kamtschatka; they collect in the spring, and go off in incredible multitudes. Like the lemming, they go on in a direct course, and nothing stops their progress, neither rivers nor arms of the sea; in their passage they often fall a prey to the ravenous fishes and birds; but on the land they are safe, as the Kamtschatkans pay a superstitious regard to them; and when they find them lying, weak or half dead with fatigue, on the banks, after passing a river, will give them all possible assistance. They set out on their migration westward.

From

From the river Pengin they go southward, and about the middle of July reach Ochotka and Judoma, a tract of amazing extent: they return again in October. The Kamtschatkans are greatly alarmed at their migrations, as they presage rainy seasons, and an unsuccessful chase; but on their return, expresses are sent to all parts with the good news.

Many fables are related of them, such as that they cover their provisions with poisonous herbs before their migrations, in order to destroy other rats which may attempt to plunder their magazines; and, if by chance they should be pillaged, they will strangle themselves through vexation, by squeezing their necks between the forks of shrubs; for this reason the natives never take away all their store, but leave part for their subsistence, or leave in its place some caviare, or any thing that will serve for their support. It is certain that the roots of some poisonous plants are often found in their nests half eaten; but this is no wonder, as it is well known that divers animals will feed on noxious vegetables which would prove the certain bane of others.

Synonymes.---Mus Œconomus. *Pallas nov. sp. fasc. i. 234. tab. xiv. A. Itin. iii. 692. Tegoulichitck. Deser. Kamtschatka, Engl. ed. 104.*

THE WOOLLY RAT.

THIS animal hath very small ears, short nose, tail of a middling length, and the whole body covered with long wool of exquisite fineness, grey, and long enough to be spun: the length of this species is six inches. These animals live in society under ground, and feed on the bulbous roots of the country. It breeds twice a year, and brings five or six at a time; it is a very gentle tame animal; very fond of being caressed, and will lie down without fear by mankind; it is often domesticated. The antient Peruvians manufactured many small articles from the wool, which they

they sold at a great price. Synonymes.---La chin-
chilla. *Molina Chili*, 283. *Mus laniger*, *Gm. Lin.* 134.

THE RED, THE GARLIC, AND THE SORICENE, MOUSE.

THE red mouse is about four inches long, its tail above one, and full of hair; its nose and face are very bristly; its back is of an uniform, pleasant, tawny red; its sides are light grey and yellow: the under side of the body is whitish; its feet are also white. It inhabits Siberia from the Oby eastward to Kamtschatka, in woods and mountains. It is also found within the Arctic circle. They wander out the whole winter, and are very lively even amidst the snows: they eat any thing that comes in their way. A variety is found about Casan, a little less than the Siberian kind, and the tail longer and more slender; the red on the back is not so much diffused as in the other: the same kind has also been discovered in the botanical garden at Gottengen.

The garlic mouse is frequent in magazines of bulbous roots formed by the peasants of Siberia, especially in those of angular garlic. It has great open naked ears; its tail is clothed with hair: the colour of its back is cinereous, mixed with long hairs, tipped with a dusky grey; its sides are of a light ash; its breast, belly, and feet, are white; its body is four inches, its tail one and a half.

The soricene mouse, found in the neighbourhood of Strasbourg, is of a yellowish grey on the upper parts of the body, with a white belly: its nose is a little extended; it has four toes before, five behind, round ears, a tail of a middling length, and covered with hair. We come now to a fourth class, viz. Rats with short tails.

THE LEMMUS.

THE lemmus, or leming, has two very long cutting teeth in each jaw, a pointed head, and long whiskers: its

its eyes are small and black; its mouth is small; its upper lip divided; its ears are small and blunt, reclining backwards; its fore-legs are very short, with four slender toes on each, covered with hair, and in place of a thumb, it has a short claw, like a cock's spur; it has five toes behind; its skin is very thin; its head and body are black and tawny, disposed in irregular blotches; its belly is white, tinged with yellow; its length is about five inches; its tail one and a half. Those of Russia Lapland are much less than those of the Norwegian or Swedish: they appear in numberless troops, at very uncertain periods, in Norway and Lapland, and are at once the pest and wonder of the country: they march like the army of locusts, so emphatically described by the prophet Joel, destroy every root of grass before them, and spread universal desolation: they infect the very ground, and cattle are said to perish which taste the grass they have touched: they march by myriads in regular lines: nothing stops their progress, neither morass nor lake, water nor fire; the greatest rock is but a slight obstacle, they wind round it, and then go on straight. If they meet a peasant, they jump as high as his knees in defence of their progress: they are so fierce, that they will lay hold of a stick, and suffer themselves to be swung about before they quit their hold; if struck, they turn and bite, and make a noise like a dog.

They feed on grass, on the rein-deer liver-wort, and the calkins of the dwarf birch. The first they get under the snow, beneath which they wander during winter. Where they make their lodgements, they have a spiracle to the surface for the sake of air. In these retreats they are eagerly pursued by the Arctic foxes. They make also very shallow burrows under the turf; but do not form any magazines for winter provision: by this improvidence, it seems, they are compelled to migrate, urged by hunger to quit their usual residence. They breed often in the year, and bring five or six
young

young at a time : sometimes they bring forth on their march, during a migration : some they carry in their mouths, and others on their backs : they are not poisonous, as is vulgarly supposed. The Laplanders often eat them, and compare their flesh to that of squirrels.

They are the prey of foxes, lynxes, and ermines, who follow them in great numbers : they perish at length, either from want of food, or from their destroying each other, or in some great water, or in the sea. In former times the priests exorcised them in a long set form of prayer. They migrate once or twice in twenty years, like a vast colony of emigrants from a country overstocked ; a discharge of animals from the great northern hive, that once poured out its myriads of human creatures upon southern Europe. Where the head-quarters of these quadrupeds are, is not certainly known : it was once seriously believed, that they were generated in the clouds, and that they fell in showers upon the earth ; but wherever they come from, none return : their course is predestinate, and they pursue their fate.

Synonymes.---Lemmar vel lemmus. *Olaus magnus de gent. Septentr.* 358. Leem vel Lemmer. *Gesner quad.* 731. Mus Norvegicus vulgò leming. *Worm Mus.* 321, 325. *Scheffer Lapland,* 136. *Pontop. Norway,* ii. 30. *Strom. Sondmor.* 154. *Raii syn. quad.* 227. Sable-mice. *Phil. Tran. abridg.* ii. 875. Cuniculus caudatus, auritus, ex flavo, rufo et nigro variegatus. *Briffon quad.* 100. Mus lemmus. M cauda abbreviata, pedibus pentadactylis corpore fulvo nigro vario. *Lin. syst.* 80. *Pallas nov. sp. fasc.* i. 186. *tab.* xii. A. & B. Fialmus. sabell mus *Lappis.* Lummick. *Faun. Suec.* No. 29. Le leming. *Buffon* xiii. 314.

THE RINGED AND THE HUDSON'S BAY RAT.

THE ringed rat has a blunt nose, ears hid in its fur, legs strong and short, soles covered with hair, claws very



1. The Lemmus. 2. The Hamster. 3. The Songer. 4. The blind Mole-rat.
5. The perfuming Shrew. 6. The Elephant Shrew.

very strong, and hooked at the end, and very fine hair all over the body, of a ferruginous colour, mixed with yellow; sometimes pale grey, clouded, or waved with a dusky rust colour. From the ears, down each side of the head, there is a dusky space; and behind that, a stripe of white, so that the neck appears to be encircled with a collar, behind which there is another dusky one: the body is three inches long, the tail one: at its end there is a tuft of hard bristles. It inhabits the northern parts about the Oby, burrows with many passages beneath the turfy soil, and lines its nest with rein-deer and snow liver-wort. They are said to migrate at the same seasons with the lemmus.---Mus torquatus. *Pallas nov. sp. fasc. i. 205.*

The Hudson's Bay rat has slender brown whiskers; very fine long soft hair; ash, tinged with tawny, on the back, with a dusky stripe running along its middle; and along each side a pale tawny line. Its belly is of a pale ash colour; its limbs are very short, its forefeet very strong: the two middle claws of the male are very strong, thick, and compressed at the end: its tail is very short, terminated by some stiff bristles: the body is about five inches long: it inhabits Labrador. ---Mus Hudsonius. *Pallas nov. sp. fasc. i. 208.*

THE HARE-TAILED RAT.

THIS species has a long head, and a blunt nose; lips rough and swelling out, and ears short, round, and flat: its tail is the shortest of any of the genus, scarcely appearing out of the hair; its fur is very soft and full, ash mixed with dusky, with a dark line along its back; its body is between three and four inches long. It inhabits the country about the Yaik, the Irtish, and the Jenefey. They love a firm dry soil, burrow, and make two entrances, the one oblique, the other perpendicular.

The males fight for the females, and devour each other: they are very falacious: when in heat, they

emit a musky smell: they bring six at a time: like the marmots, they are slow in their motions, and sleep rolled up like them: they are very fond of dwarf iris, but feed on all sorts of seeds: they also migrate in great troops; and the Tartars call them the rambling mouse.---Mus lagurus. *Pallas nov. sp. fasc. i. 210. tab. xiii. A. Itin. ii. App. 704.*

THE SOCIAL MOUSE.

THE social mouse has a thick head, a blunt nose, naked oval ears, short strong limbs, and a slender tail. The upper part of the body is of a light grey, palest on the sides; the shoulders and belly are white; the body is above three inches; the tail one and a half. It inhabits the Caspian desert, and the country of Hyrcania. They live in low sandy grassy places, in great societies: their burrows are about a span deep, with eight or more passages: they are always found, either in pairs, or with a family: they rarely appear in autumn; but swarm in the spring: they are said to migrate, or change their places, in autumn, or to conceal themselves among the bushes; and in winter to shelter themselves in hay-ricks; they breed later than the other kinds, feed much on tulip roots, and are the prey of weasels, crows, and vipers.---Mus socialis. *Pallas nov. sp. fasc. i. 218. tab. xiii. B. Itin. ii. App. 705.*

THE BAIKAL, OR SIBERIAN MOUSE.

THIS species hath large thin ears appearing above the fur, whiskers black, hair rough and hard, colour above a pale grey, the back darkened with dusky hairs, which gradually decline into the lighter colour; the body below of a dirty white; the legs stronger, the tail thicker, than the social species; the body about the size of that kind.

It inhabits Siberia, but not in the country beyond the Oby; it is most plentiful about the Baikal lake

and Trans-Baikal region, especially those places which abound most with the *lilium pomponium* and *allium tenuissimum*, and Siberia and Hircania: they collect the roots of these and of the *trifolium lupinastrum*, for winter food: they form their lodge beneath the turf, and have many minute entrances; the earth that they fling out is carefully heaped above their lodge, in form of a hillock, to divert the rain. In this retreat the male, female, and the progeny of one year, reside. This species is never observed to migrate.---*Mus gregalis*. *Pallas, nov. sp.* 238. *Gm. Lin. syst.* 133.

THE MEADOW MOUSE.

THIS hath a large head, a blunt nose, ears short, and hid in the fur; eyes prominent, tail short; colour of the head and upper part of the body ferruginous, mixed with black; the belly deep ash-colour, and the feet dusky. Its length from nose to tail is six inches, the tail one and a half, thinly covered with hair, and terminated by a small tuft. It inhabits Europe, Siberia, and Hircania; it is also, in great abundance, in Newfoundland, where it does much mischief in the gardens; in England it seldom infests gardens; but makes its nest in moist meadows. It brings eight young at a time, and has a strong affection for them. It resides under ground, and lives on nuts, acorns, and corn.

Synonymes.---*Mus agrestis capite grandi brachiu-
rus*. *Raii syn. quad.* 218. *Mus terrestris*. *M. cauda
mediocri subpilosa, palmis subtetradactylis, plantis pen-
tadactylis, auriculis, vellere brevioribus*. *Lin. syst.* 82.
Molle. Faun. suec. No. 31. *Mus cauda brevi, pilis e
nigricante & sordide luteo mixtis in dorso, & saturate
cinereis in ventre vestitis*. *Briffon quad.* 125. *Le cam-
pagnol*. *Buffon, vii.* 369. *tab. xlvii.* The short-tailed
field-mouse. *Br. Zool.* i. No. 31. *Erdzeiß*. *Kramer
Aust.* 316. *Mus arvalis*. *Pallas nov. sp. fasc. i.* 78.

THE GREGARIOUS MOUSE.

THIS species hath a small mouth, and blunt nose; ears naked, and appearing above the fur; hair on the upper part of the body black at the roots and tips, ferruginous in the middle; throat, belly, and feet, whitish; tail thrice as short as the body, covered with thin white hairs, the end black and ash colour; it is a little larger than the common mouse. It inhabits Germany and Sweden; eats sitting up, burrows, and lives under ground.---*Mus gregarius*. *M. cauda corpore triplo brevior subpilosa, corpore griseo subtus pedibusque albis.* *Lin. syst.* 84.

The fifth class of rats now follows, which are distinguished by short tails, and a pouch in each jaw.

THE HAMSTER.

THIS species of the rat has large rounded ears, and full black eyes; it is of a reddish brown, having red cheeks, with a white spot beneath, and another behind each, and a fourth near the hind legs; its breast, the upper part of its fore-legs, and its belly, are black; its tail is short and almost naked; it has four toes and a fifth claw on the fore feet, five behind; it is about nine inches long, its tail three: the males are always bigger than the females. Some males weigh from twelve to sixteen ounces, the females seldom exceed six: they vary sometimes in colour. A family of them is frequently found about Casan entirely black: they inhabit Austria, Silesia, Poland, the Ukraine, and the Tartarian deserts, and as far to the east as the river Jenesei: they are fond of a sandy soil abounding in liquorice, and feed on its seeds: they are very destructive to grain, eating great quantities, and carrying off still more to hoard it: on such occasions, they fill their cheek pouches, which will contain the fourth of an English pint, so full, that they seem ready to burst;

burst; the Germans therefore say of a very greedy fellow, *Er frisse vuie ein hamster*. They live under ground, and form their burrows obliquely; at the end of the passage, the male sinks one perpendicular hole, the female several; at the end of these are formed various vaults, either as lodging for themselves and their young, or as storehouses for their food; each young one has its different apartment, each sort of grain its different vault. Their lodgings are lined with straw or grass: their vaults are different depths, according to the age of the animal. A young hamster digs scarcely one foot deep; an old one four or five. The diameter of the habitation of a family, with all its communications, is from eight to ten feet. The male and female have always separate apartments; for, excepting their short season of courtship, they have no intercourse: the whole race is so malevolent, that they constantly reject all society with one another: they will fight, kill, and devour, their own species, as well as other smaller animals; so may be said to be carnivorous as well as granivorous. If it happens that two males meet in search of a female, a battle ensues; the female makes a short attachment to the conqueror, after which the connexion ceases. She brings forth two or three times a year, from sixteen to eighteen at a birth: their growth is very quick: at the age of three weeks, the old one forces them out, and obliges them to shift for themselves. She shews little affection for them at any time; even when they are young, in case of danger, she attempts to burrow deeper to save herself, but entirely neglects her brood; on the contrary, if attacked in the time of courtship, she defends the male with the utmost fury.

They lie torpid from the first cold to the end of winter, and during that time are seemingly quite insensible, and have the appearance of being dead: their limbs are stiff, and their bodies cold as ice; not even spirits of wine, or oil of vitriol, poured into them, can produce

duce the least mark of sensibility. It is only in places beyond the reach of the air that they become torpid; for the severest cold on the surface does not affect them.

The hamster, in its annual revival, begins first to lose the stiffness of its limbs, then breathes deeply, and by long intervals; on moving its limbs, it opens its mouth, and makes a rattle in its throat: it is not till after some days that it opens its eyes and attempts to stand, but even then, it makes efforts like a person very much in liquor: at length, when it has attained its usual attitude, it rests for a long time in tranquillity, seemingly to recollect itself, and recover from its fatigue.

They begin to lay in provisions in August, and will carry grains of corn, corn in the ear, and pease and beans in the pods, which they clean in their holes, and carry the husks carefully out: as soon as they have finished their work, they stop up the mouth of their passage carefully. As they lie torpid during the whole severe season, these hoards are designed for their support on their first retreat, and in the spring and beginning of the summer, before they can supply themselves in the fields. In winter the peasants go what they call a hamster-nesting; and, when they discover their retreat, dig down till they find the hoard, and are commonly well paid; for, besides the skins of the animals, which are valuable furs, they frequently find two bushels of good grain in the magazine.

These animals are very fierce, they will jump at a horse if he happens to tread near them, and will hang by his nose in such a manner that it is difficult to disengage them: they make a noise like the barking of a dog: in some seasons they are so numerous as to occasion a dearth of corn, and on that account are proscribed. In Gotha, in one year, eighty thousand and upwards of their skins were presented at the Hotel de Ville: but polecats are their greatest enemies, for they pursue them into their holes and destroy numbers. It is remarkable,

markable, that their hair sticks so close to the skin as not to be plucked off but with the utmost difficulty.

Synonymes. --- Hamster, cricetus. *Agricola An. Subter.* 486. *Gesner quad.* 738. *Raii syn. quad.* 221. *Meyer An. i. tab.* lxxxi. lxxxii. Skrzeczek, chomic. *Rzacziński Polon.* 232. Porcellus frumentarius. *Schwenkfelde Theriotroph.* 118. Krietsch, hamster. *Kramer Austr.* 317. *Pallas nov. sp. fasc. i.* 83. *Zimmerman.* 343. 511. Mus cricetus. M. cauda mediocri, auriculis rotundatis, corpore subtus nigro, lateribus rufescentibus maculis tribus albis. *Lin. syst.* 82. Glis ex cinereo rufus in dorso, in ventre niger, maculis tribus ad latera albis. *Briffon quad.* 117. Le hamster. *Buffon,* xiii. 117. *tab.* xiv. xvi. *Suppl. iii.* 183. German marmot. *Syn. quad.* No. 200.

THE VORMELA, YAIK, AND MUS PHAEUS.

THE vormela is less than the hamster, its whole body is marked with yellow and tawny spots, its tail is cinereous, and white tipped with black. Pennant thinks it is the same with the Sarmatian weasel.

The Yaik has a thick snout, a blunt nose, and very fleshy lips; its upper lip is divided; its upper fore-teeth are small, yellow, convex, and truncated; the lower slender and pointed; its eyes are large, its naked ears stand up high above its fur, its tail is short and cylindrical, its face is white, its body, four inches long, is of a cinereous yellow, mixed with brown above, below of a hoary whiteness. It inhabits the deserts about the Yaik, quits its burrow, and runs about during the night. It is said by the Cossacks to migrate in great numbers out of the deserts, and to be followed by multitudes of foxes, presaging a good hunting season; but Doctor Pallas doubts whether this species, or any of the pouched kinds, go far from their homes, as those receptacles for provision are calculated only for short excursions.

Synonymes,

Synonymes.---Mus accedula. *Pallas nov. sp. fasc. i. 257. tab. xviii.* Mus migratorius. *Pallas Itin. ii. App. 703.*

The mus phaeus has its forehead much elevated, the edges of its eye-lids are black, its ears are naked and oval, standing far out of the fur; it is of a hoary ash colour, with dusky hairs above; its sides whitish; the under side of the body, and the extremities of its limbs, are of a snowy whiteness; it is about three inches and a half long, and inhabits the deserts of Astracan, about Zarizyn; and is taken in traps frequently in winter, in places near to stables and outhouses. It is also common among the Hyrcanian mountains, and about the Persian villages, where it commits great ravages among the rice. It does not grow torpid during winter, as is proved by the stomachs of such which are taken in that season, being found full of food.---Mus phaeus. *Pallas nov. sp. fasc. i. 261. tab. xv.*

THE SAND RAT, SONGAR, AND BARABA.

THE sand rat has a sharp nose, very large pouches, great oval brown ears, white nails, and a short hoary body; its sides, belly, limbs, and tail, are of a pure white; it is four inches long, its tail about one: it inhabits and burrows in the sandy plains near the river Irtysh. The males inhabit a very deep burrow, with a single entrance, at the bottom of which is the nest, made of the elymus arenarius, and other plants; other burrows, perhaps of the females, had three entrances; in another, discovered in May, were five young in three nests; two were preserved alive, were untameable, very fierce, and would fling themselves on their back, and defend themselves by biting; they went out only in the night, and hid themselves during day in their fodder.---Mus arenarius. *Pallas nov. sp. fasc. i. 266. tab. xvi. A. Itin. ii. App. 704.*

The

The songar is of a grey colour, has a thick head and a blunt nose; its ears are oval, very thin, and lightly covered with a hoary down; its tail is short, blunt, thick, and hairy: a black line runs along its back; its sides are spotted with white, its belly and legs are white: they are found in the same country with the sand rat. Dr. Pallas kept some of them a great while: they grew familiar, would feed from his hand, lap milk, and, when placed on a table, shewed no desire of running away: they were slower in all their motions than the other species, washed their faces with their paws, and sat up to eat; wandered about during the day, and slept all night rolled up: they seldom made any cry, and, when they did, it was like that of a bat.---Mus songarus. *Pallas nov. sp. fasc. i. 269. tab. xvi. B. Itin. ii. App. 703.*

The Baraba rat, about three inches and a quarter long, has a sharp nose, large broad naked ears of a dusky colour, edged with white: it is of a cinereous yellow above, below of a dirty white: a black line extends from the neck to near the tail; the tail, near one inch long, is white, marked with a dusky line: they inhabit the sandy plain of Baraba, towards the Oby; and about the lake Dalai, in the Chinese empire.

Synonymes.---Mus furunculus. *Pallas nov. sp. fasc. i. 273. Mus Barabensis. Itin. ii. App. 704.*

The last division of mice lead a subterraneous life, and have thence been named mole rats.

THE BLIND MOLE RAT.

THIS rat has a great head, broader than the body, and not the least aperture for eyes; yet beneath the skin are found what may be called the rudiments of those organs, though not larger than the seed of a poppy: it has no external ears; the end of its nose is covered with a thick skin; its nostrils are remote, and placed below; its mouth gapes, and the teeth are exposed; those above are short, the lower ones are very

long, and their ends are quite uneven; its body is cylindrical, its limbs short, it has five toes on each foot, with short claws; its hair is short, thick, and soft; dusky at the bottom, grey above, white about the mouth and nose: it is between seven and eight inches long: a male one will weigh above eight ounces. It inhabits only the southern parts of Russia, from Poland to the Volga, but is not found any where to the east of that river; but is very common from the Syfran to the Sarpa; it is frequent along the Don, even to its origin, and about the town of Ræsk, excepting the sandy parts, for it delights in moist and turfy soils. It lives in great numbers in the same places with the earless marmots. It burrows beneath the turf to a very considerable extent, with several lateral passages made in quest of roots, on which it feeds: at the intervals of some yards, there are openings to the surface to discharge the earth, which forms in those places hillocks of two yards in circumference, and of a great height. It works its way with its great teeth, and casts the earth under its belly with the fore feet, and again behind it with its hind feet; it works with great agility, and, on any apprehension of an enemy, it forms instantly a perpendicular burrow. The bite of this animal is very severe. It cannot see its assailant, but lifts up its head in a menacing attitude. When irritated, it snorts, and gnashes its teeth, but emits no cry. It often quits its hole, especially in the morning, and during the amorous season basks with the female in the sun: it does not appear that it lies torpid during winter, nor whether it lays in provision for that season: it is particularly fond of the bulbous chærophyllum.

The Russians call it *slenez*, or the blind; the Cossacks, for the same reason, style it *sfochor nomon*. In Ukraine, the vulgar believe that the touch of a hand, which has suffocated this animal, has the same virtue in curing the king's-evil as was once believed to be inherent in the abdicated family of Great Britain.

Synonymes.---Mus typhlus. *Pallas nov. sp. fasc. i. Lemni. Rzaczinsk. Austr. Polon. 325. Buffon, xv. 142. Slepez. Gmelin. Itin. i. 131. tab. xxii. Spalax microphthalmus. Gueldenst. Nov. com. Petrop. xiv. 411. tab. viii. ix. Mus oculis minutissimus, auriculis caudaque nullis. Lepechen ibid. 509. tab. xv. Podolian marmot. Syn. quad. No. 204.*

THE DAUURIAN RAT.

THIS creature has a thick flat head, a short snout, and a blunt nose. Its upper fore-teeth are naked, a moveable lip covers the lower; it has no external ears, its eyes are very small, yet visible; its body is short and depressed, its limbs are very strong, especially the fore-legs; its tail is short, its hair soft and loose, of a greyish colour: they measure from six to nine inches, inhabit the Arctic mountains, and beyond lake Baikal; burrow a little below the surface; have a voice weak and plaintive. The Russians call it the earth bear.

Synonymes.---Mus aspalax. *Pallas nov. sp. fasc. i. 165. tab. x. Itin. iii. 692. Mus myospalax. Laxman.*

THE AFRICAN, THE CAPE, AND THE TALPINE, RAT.

THE African rat has a large head, a black nose, flat and corrugated; its eyes are minute, and much hid in the fur; it has no ears; its tail, about two inches long, is compressed and covered above and below with short hair, and edged with bristles, disposed horizontally. It is of a cinereous brown, palest on the lower parts, and about thirteen inches long. It inhabits the sandy country near the Cape of Good Hope; it burrows, and makes the ground so hollow as to be very inconvenient for travellers; for it breaks every six or seven minutes under the horses feet, and lets them in up to the shoulders. It grows to the size of a rabbit, and is, by some, esteemed a good dish,

The Cape rat is about seven inches long, and is very destructive to the gardens about the Cape. Its tail is very short beset with bristles: though the rest of its nose is white, yet the end of it is naked and black: its head, cheeks, back, and sides, are of a rusty brown; but it has a white space round its eyes and ears.

Synonymes.---Mus capensis. *Pallas nov. sp. fasc. i. 172. tab. vii.* Long-toothed marmot. *Brown's Zool. tab. xlvi.* La taup du Cape. *Journal hist. fig. 64.*

The talpine rat, about four inches long, has a large short head, and a thick truncated snout. Its upper teeth are long and flat, extending out of its mouth; its eyes are small, hid in its fur; its ears are bounded by a small rim; its tail scarcely appears without the fur; its upper parts are dusky; its chin, belly, and limbs, are whitish. It inhabits the open grounds of the temperate parts of Russia and Siberia; it loves a black turfy soil, and is frequent in meadows near villages: its manners resemble those of the mole: they do not become torpid in the winter, but make their nest deep in the ground, and keep themselves warm by lining it with soft grass: they are very easily taken, but soon grow sick in confinement; unless a quantity of earth is put into the place where they are kept: they are in heat in the end of March or beginning of April, the females have then a strong musky smell; they bring three or four at a time: they vary in colour, some are found quite black.---Mus talpinus. *Pallas nov. sp. fasc. i. 176. tab. xi. B. Nov. Com. Pe-trop. xiv. 568. tab. xxi. fig. 3.*

SOREX, the SHREW, of the Order of FERÆ.

THE shrew is an animal of the mammalia class. It has two cutting teeth in each jaw pointing forward, a long slender nose, very small ears and eyes, five toes on each foot, the head resembles that of the mole; in other circumstances of general figure they resemble

resemble the murine tribe of quadrupeds. They burrow in the ground, and feed principally on worms and insects. There are seventeen species known of them.

THE MUSKY SHREW.

THIS little animal is seven inches long, and of a dusky colour, has no external ears, very small eyes, and a tail of eight inches, compressed sideways; its belly is of a whitish ash colour. It inhabits the river Volga, and lakes adjacent, from Novogorod to Saratof; but is never found in Russia, and its existence in Lapland is doubted. It never goes upon dry land, but wanders from lake to lake, only in fortuitous floods; is often seen swimming or walking under the water, or comes up for air to the surface, or in clear weather will be sporting on the surface: it loves stagnating waters with high banks, in which it makes burrows twenty feet long; it feeds on leeches, and the larvæ of water insects; a few fragments of roots have also been found in the stomach. It is not torpid during winter, being often in that season taken in nets. It is very slow in its pace, makes holes in the cliffs, with the entrance far beneath the lowest fall of the water; it works upwards, but never to the surface, only high enough to lie beyond the highest flow of the river: it feeds on fish, and is devoured in its turn by the pikes and siluri, and gives those fish so strong a flavour of musk, as to render them not eatable; it has the same scent as the siluri, especially about the tail; out of which is expressed a sort of musk, very much resembling the genuine kind. The skins are put into chests among clothes, to drive away moths, and to preserve the wearers from pestilence and fevers. At Orenburg, the skins and tails sell for fifteen or twenty copecs per hundred: they are so common near Nizney Novogorod, that the peasants bring five hundred apiece to market, where they are sold for one ruble per hundred. The German name, *biesem-ratze*; Russian, *wychozhol*.
Syno-

Synonymes. --- *Mus aquaticus*. *Clusii exot.* 373. *Worm. Mus.* 334. Muscovy or musk rat. *Raii. syn. quad.* 217. *Nov. Com. Petrop.* iv. 383. *Castor moschatus*. *C. cauda longa compresso-lanceolata, pedibus palmatis.* *Lin. syst.* 79. *Dæsmann, Faun. Suec.* No. 28. *Buffon*, x. 1. *Castor cauda verticaliter plana, digitis omnibus membranis inter se connexis.* *Briffon quad.* 92. Long-nosed beaver. *Syn. quad.* No. 192.

THE PERFUMING SHREW.

THIS species is near eight inches long. Its upper jaw extends far beyond the lower; its upper fore teeth are short, the lower long and slender; it has long white whiskers, small eyes, ears transparent, broad, and round; and a fine coat of short close hair, of a pale cerulian on the upper parts, lighter beneath, with white feet: it inhabits Java, and others of the East-India islands: it eats rice, but has so strong a scent of musk as to perfume every thing it runs over. Mr. Pennant says, that, by merely passing over it, it will render the wine in a well-corked bottle not drinkable. Cats will not touch them.

Synonymes. --- *Mus pilorides?* *Pallas nov. sp. fasc.* i. 91. *Mus albus Ceylonicus?* *Briffon*, 122.

THE MEXICAN, BRASILIAN, AND MURINE, SHREW.

THE Mexican shrew is about nine inches long, having short hair with tawny colour: it is without sight, of a thick, fat, and fleshy, body: its legs are so short, that its body almost touches the ground; it burrows and makes such a number of cavities, that travellers can scarcely tread with safety. Whenever it gets out of its hole, it knows not how to return to it again, but begins to dig another. It feeds on roots, kidney-beans, and other seeds, and is eatable. *Buffon* thinks it a mole, but from its ears Mr. Pennant classes it here.

Syno-

Synonymes.---Tucan. *Hernandez Nov. Hist.* 7. Tucan. *Buffon*, xv. 159.

The Brasilian shrew, is five inches long, of a dusky colour, and is marked along the back with three broad black strokes: its scrotum is pendulous, and its tail measures two inches; it does not fear the cat, neither does that animal hunt after it.

Synonymes.---Mus araneus figura muris. *Marcgrave Brasil.* 229. La musaraigne de Brasil. *Buffon*, xv. 160.

The murine shrew, so called as being of the size of a common mouse, of an ash colour, and inhabits Java: it has a long nose, hollow beneath, with very long hair about its nostril, ears rounded, and rather naked; the tail a little shorter than the body, and not so hairy.

Synonymes.---S. murinus. S. cauda mediocri, corpore fusco, pedibus caudaque cinereis. *Lin. syst.* 74.

THE FETID SHREW.

THE fetid shrew is the *Sorex araneus* of Linnæus. Its eyes are small, and almost hid in its fur; its head, and the upper part of its body, are of a brownish red; its belly of a dirty white; it is only two inches and a half long, its tail one and a half; it inhabits Europe, Siberia, and even the Arctic flats, and Kamtschatka; it is also found about the Caspian sea; lives in old walls, heaps of stones, or holes in the earth, feeds on corn, insects, or any filth, and has a disagreeable smell; cats will kill, but not eat, it; it brings four or five young at a time. There seems to be an annual mortality of these animals in August, numbers of them being then found dead in the paths.

Synonymes.---Μουγαλη. *Ælian hist. An. lib. vi. c. 22.* Μουγαλη. *Dioscorid. lib. ii. c. 42.* Mus araneus. *Agricola An. Subter.* 485. *Gesner quad.* 747. Mus araneus, mus cæcus. *Gesner icon.* 116. Mus araneus, shrew, shrew-mouse, or hardy shrew. *Raii syn. quad.* 233. Mus araneus rostro productiore *Spitt. Mus. Klein quad.* 57. *Kramer Austr.* 317. *Sorex araneus. S. cauda mediocri,*

cri, corpore subtus albedo. *Lin. syst.* 74. Nabbmus. *Faun. suec.* No. 24. Mus araneus supra ex fusco rufus, infra albicans. *Briffon quad.* 126. La musfaraigne. *Buffon*, viii. 57. *tab. x.* Shrew-mouse. *Br. Zool.* i. 112.

THE WATER SHREW.

THIS has, like the rest, a long slender nose, very minute ears, and, within each a tuft of white hairs, very small eyes hid in the fur: the colour of the upper part of its body is black; its throat, breast, and belly, are of a light ash colour; the feet are white; it has a triangular dusky spot beneath the tail; it is three inches and three quarters long, its tail two.

It inhabits Europe and Siberia, as far at least as the river Jenesei, and was long since known in England, but lost till May 1768, when it was discovered in the fens near Revesby Abby, in Lincolnshire: it burrows in the banks near the water, and is said to swim under water; is called by the fen-men the blind-mouse, chirrup like the grasshopper, and its note often mistaken for one.

Synonymes.---Mus araneus dorso nigro, ventreque albo. *Merret Pinax*, 167. Sorex fodiens. *Pallas.* La musfaraigne d'eau. *Buffon*, viii. 64. *tab. ix.* Water shrew-mouse. *Br. Zool. illustr. tab.* cii.

THE ELEPHANT, MARINE, SURINAM, AND PERSIAN, SHREW.

THE elephant shrew has a very long, slender, and little, nose; the whole animal is of a deep brown colour. It inhabits the neighbourhood of the Cape of Good Hope, where it is called the elephant, from its proboscis-like snout. This animal has been very ill represented by Petiver in his *Gazoph.* Dec. iii. *tab. xxiii.* fig. 9. under the title of Mus araneus max. Capensis.

The marine shrew hath an elongated snout, channelled below; ears rounded, and naked; fur of a dusky colour,

colour; whiskers grey: tail a little shorter than the body: size of the common mouse. It inhabits Java. *Sorex marinus. Gm. Lin. 114.*

The Surinam shrew hath the upper part of the body of a bay colour; the lower pale ash, mixed with yellow: tail one-half shorter than the body. It inhabits Surinam.

The Persian shrew is hoary above, cinereous beneath: tail (*subdisticha*) short, and whitish: length of the body three inches and seven lines: tail one inch one line. It inhabits the north of Persia, and burrows and lives below ground.---Synonyme. *Sorex pusillus. Erxleben. 122. Gm. Lin. 114.*

THE MINUTE AND PIGMY SHREW.

The minute shrew hath a head near as big as the body; a very slender nose; broad short naked ears; whiskers reaching to the eyes; the eyes small, and capable of being drawn in; the hair very fine and shining; grey above, and white beneath: no tail. It inhabits Siberia, about the Oby, and near the Kama; lives in a nest made of lichens, in some moist place beneath the roots of trees: it feeds mostly on seeds, digs, runs swiftly, and has the voice of a bat.---Synonymes. *Sorex minutus. S. rostro longissimo. Lin. syst. 73.*

The pigmy shrew hath a very long slender nose; in shape and colour like the fœtid, but paler; the tail is very slender near the roots, then it suddenly grows remarkably thick and round, and again grows gradually less to the end.

Linnæus imagines that the minute shrew is the least of quadrupeds; but Dr. Pallas, who communicated this species, thinks this has a better claim to that title, as its weight is only equal to, or very little above, half a drachm. This species is very common between and about the rivers Jenesei and Oby.---Synonyme. *Sorex exilis. Gm. Lin. 115.*

THE WHITE-TOOTHED, SQUARE-TAILED,
CARINATED, AND UNICOLOR, SHREW.

The white-toothed shrew is of a dusky cinereous colour; the belly white; cutting teeth white; and tail slender and hairy.

The square-tailed shrew is of a dusky cinereous colour; the belly paler; the cutting teeth brownish; and the tail inclines to square form. This species has no bad smell.

The carinated shrew is of a dusky cinereous whitish colour on the belly, with brownish fore-teeth: a white-spot beyond each eye: tail slender and taper, carinated or ridged below.

The unicolor shrew is of an uniform dusky cinereous colour, with the base of the tail narrow or compressed. These four last species inhabit the neighbourhood of Strasbourg, and were discovered by Professor Herman.

TALPA, the MOLE, of the Order of FERÆ.

THIS genus of quadrupeds is also of the class of mammalia. It has six unequal cutting teeth in the upper jaw, and eight in the lower; and two canine teeth in each jaw. It has a long nose; no ears; the upper jaw much longer than the lower; the fore feet very broad, with scarcely any apparent legs before; the hind feet small. Of this genus of animals there are six species, as follow:

THE EUROPEAN MOLE.

The European mole has a long snout, six cutting teeth in the upper jaw, eight in the lower, and two canine in each; no external ears, only an orifice; very minute eyes, hid in the fur; the fore part of the body is thick and muscular; the hind part taper. The fore feet are placed obliquely, are broad, and have the appearance

pearance of hands; with five fingers each, terminated by strong claws: the hind feet are very small, but have five toes each: their tail is very short, and their skin so tough, as scarcely to be cut through: the hair is close, short, and softer than the finest velvet; usually black, sometimes spotted with white, sometimes quite white: it is about five inches and three quarters in length; its tail one. It inhabits Europe, and the temperate parts of Russia and Siberia as far as the river Lena; but the Siberian is much larger than the European mole. It lives under ground; burrows with vast rapidity with its fore feet, and flings back the earth with its hind feet: has the sense of smelling in an exquisite degree, which directs it to its food, consisting of worms, insects, and roots. It does vast damage in gardens, and is most active before rain, worms being then in motion: it breeds in the spring, and brings four or five young at a time: it raises no hillocks in dry weather: it utters a scream when taken. Palma christi and white hellebore, made into a paste and laid in their holes, is said to destroy them. There is a variety found in North America called the *yellow* mole, resembling the European, but larger, with soft silky glossy hair, of a yellowish brown colour; brightest about the head, darkest about the rump; with a brown belly: its feet and tail are white.---Synonymes. *Talpa. Agricola An. Subter.* 490. *Gesner quad.* 931. *Klein quad.* 60. *Talpa*, the mole, mold-warp, or want. *Raii syn. quad.* 236. *Kret. Rzaczinski Polon.* 236. *Scheer, scheer-maus, maul-wuf. Kramer Austr.* 314. *Talpa Europæus. T. caudata, pedibus pentadactylis. Lin. syst.* 73. *Mullvad, surk. Faun. Suec. No.* 23. *Br. Zool. i.* 108. *Talpa caudata, nigricans pedibus anticis et posticis pentadactylis. Brisson quad.* 203. *La taupe. Buffon, viii.* 81. *tab. xii.*

THE CAPE MOLE, THE RADIATED AND
LONG-TAILED MOLE.

THE Cape mole, called by Mr. Pennant the Siberian, (though he says it inhabits the Cape of Good Hope, and not Siberia,) has a short blunt nose: from each corner of its mouth a broad whitish bar, pointing upwards along the sides of its head: the upper part of its body is varied with hair of a glossy green, and copper colour: the under parts are brown; on each of the fore feet there are three toes with vast claws: on each of the hind feet there are five small toes with weak claws. It has no tail, but a round rump.---Synonymes. *Talpa Sibiricus varicolor*, *Aspalax dictus*. *Seb. Mus.* i. 51. *tab. xxxii. fig. 4, 5.* *Klein quad.* 60. *Talpa Asiatica*. *T. ecaudata*, *palmis tridactylis*. *Lin. syst.* 73. *Talpa ecaudata, ex viridi aurea, pedibus anticis tridactylis, posticus tetradactylis.* *Briffon quad.* 206. *La taupe dorée.* *Buffon*, xv. 145. *Variable mole.* *Brown's Zool.* 118. *tab. 44.*

The radiated mole has small but broad fore legs, with five long white claws on each; a long nose, having its sides beset with radiated tendrils; very short, dusky, fine, compact, hair; scaly hind legs, with five toes on each foot. It measures three inches and three quarters: its tail one and three-tenths. It inhabits North America: forms subterraneous passages in uncultivated fields, raising walks for itself about two inches high, and a palm broad: it feeds on roots, and has great strength in its legs.---Synonymes. *Sorex cristatus*. *S. naribus carunculatis, cauda brevior.* *Lin. syst.* 73.

The long-tailed mole has a radiated nose too, and inhabits North America also: the claws on the fore feet are like those of the common mole: those on the hind feet are very long and slender: its hair is soft, long, and of a rusty brown: the body is four inches and a half long, and its tail two.



3



2



Meyer del. *J. Pass. sculp.*
1. The Cape or Siberian Mole. 2. The common Hedgehog. 3. The same lying on its back.
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THE BROWN AND THE RED MOLE.

THE brown mole has a slender nose; no canine teeth; hair brown at the ends, of a deep grey at bottom, and very soft and glossy: its tail and feet white: its length five inches and a half: its tail is very slender, and not one inch long. It also inhabits North America, and is called there the brown mole: it was sent from New York by Mr. A. Blackburne. The black and shining purple Virginian mole, described by Seba as the same with the common kind, was not among those that gentleman favoured us with. Linnæus places this, and our radiated mole, in his class of forex, or shrew, on account of the difference of the teeth; but, as these animals possess the stronger characters of the mole, such as form of nose and body, shape of feet, and even the manners, Mr. Pennant thinks them better adapted to this genus than to the preceding.---Synonymes. *Sorex aquaticus*. *S. plantis palmatis palmis caudaque brevioris albis*. *Lin. syst.* 74.

The red mole is of a cinereous red colour: three toes on the fore feet, and four on the hind: form of the body and tail like the European kind. According to Seba, it inhabits America; but he does not inform us whether it is North or South.---Synonyme. *Talpa rubra Americana*. *Seb. Mus.* i. 51. *tab.* xxxii. *fig.* 2.

Moles in the fields may be destroyed by taking a head or two of garlic, onion, or leek, and putting it into their holes; on which they will run out as if frightened, and you may kill them with a spear or dog. Or pounded hellebore, white or black, with wheat-flour, the white of an egg, milk, and sweet-wine, or metheglin, may be made into a paste, and pellets as big as a small nut may be put into their holes: the moles will eat this with pleasure, and will be killed by it. In places where you would not dig nor break much, the fuming their holes with brimstone, garlic, or other unfavourable things, drives them away; and, if you put a
dead

dead mole into the common haunt, it will make them absolutely forsake it. Or, take a mole spear or staff, and, where you see them cast, go lightly; but not on the side betwixt them and the wind, lest they perceive you; and, at the first or second putting up of the earth, strike them with your mole-staff downright, and mark which way the earth falls most: if she casts towards the left hand, strike somewhat on the right-hand; and so on the contrary, to the casting up of the plain ground, strike down, and there let it remain; then take out the tongue in the staff, and, with the spattle, or flat edge, dig round about your grain to the end thereof, to see if you have killed her; and, if you have missed her, leave open the hole and step aside a little, and perhaps she will come to stop the hole again, for they love but very little air; and then strike her again; but, if you miss her, pour into the hole two gallons of water, and that will make her come out for fear of drowning. Mind them going out of a morning to feed, or coming home when fed, and you may take a great many.

ERINACEUS, the HEDGE-HOG, of the Order of FERÆ.

THE characteristics of this genus of quadrupeds are as follow: They have two fore teeth in the upper jaw, at a considerable distance from one another, and two in the under jaw less distant; and they have two recumbent dog-teeth, one on each side: they have five toes on each foot, and a body covered with strong short spines. The hedge-hog has a very uncommon method of defending himself from the attacks of other animals: being possessed of little strength or agility, he does not attempt to fly from or assail his enemies; but erects his bristles, and rolls himself up like a ball, exposing no part of his body that is not furnished with sharp weapons of defence; he will not unfold himself, unless thrown into water: the more he is frightened or harassed,

harassed, the closer he shuts himself up; and frequently discharges his urine, which has a very fetid and loathsome smell. While in this state, most dogs, instead of biting him, stand off and bark, not daring to seize him; or, if they attempt it once, their mouths are so prickled with his spines, that they cannot be prevailed upon to attempt it a second time. Both the male and female are covered with bristles from the head to the tail. These bristles, or spines, are of great use in defending them from the attacks of other animals; but must be very inconvenient when they incline to copulate. This operation they cannot perform in the manner of other quadrupeds; but do it face to face, either standing on end, or the female lying on her back. The females come in season in the spring, and bring forth their young in the beginning of summer. They commonly bring forth three or four, and sometimes five, at a time; and the young ones are of a whitish colour, only the points of the bristles appearing above the skin. It is impossible to tame them: the mother and her young have frequently been confined together, and furnished with plenty of provisions; but, instead of nourishing them, she uniformly devoured them one after another. Males and females have likewise been kept in one apartment, where they lived, but never copulated. Hedge-hogs feed upon fallen fruits, some roots, and insects: they are very fond of flesh-meat, whether raw or roasted. They frequent woods, and live under the trunks of old trees, in the chinks of rocks, or under large stones. Naturalists allege, that they go into gardens, mount the trees, and come down with pears, apples, or plums, stuck upon their bristles. But this is a mistake: although kept in a garden, they never attempt to climb trees, or stick even fallen fruit upon their bristles, but lay hold of their food with their mouth. They rarely come out of their holes in the day, but go about in quest of food during the night. They eat but little, and can live very long without taking any nourishment.

They do not lay up any store of provisions in harvest ; such an instinct would be useless, as they sleep all the winter. They lie under the undeserved reproach of sucking cattle, and hurting their udders ; but the smallness of their mouth renders that impossible. There are four species, as follow :

THE COMMON HEDGE-HOG.

THE common hedge-hog has a long nose : his nostrils are bordered on each side with a loose flap ; his ears are short, rounded, broad, and naked ; his eyes are small ; his legs short, naked, and dusky ; his inner toe is the strongest ; his claws are weak : the upper part of his face, sides, and rump, are covered with a strong coarse hair of a yellowish ash colour ; the back with strong sharp spines of a whitish colour, having a bar of black through their middle : his length is ten inches, and the length of his tail one inch : he inhabits Europe and Madagascar, is common in many parts of Russia, but is scarcely if ever found in Siberia. He is in motion during the night, but keeps retired during the day ; feeds on roots, fruits, and insects ; resides in small thickets and hedges ; lies well wrapped up in moss, grass, or leaves ; and, during winter, he rolls himself up and sleeps out that dreary season. ---Synonymes. *Erinaceus. Agricola An. Subter.* 481. *Echinus terrestris. Gesner quad.* 368. *Echinus sc. Erinaceus terrestris. Urchin, or hedge-hog. Raii. syn. quad.* 231. *Jez. Rzaczinski Polon. Acanthion vulgaris nostras. Klein quad.* 66. *Igel. Kramer Austr.* 314. *Erinaceus Europeus. E. auriculis rotundatis naribus cristatis. Lin. syst.* 75. *Igelkott. Faun suec. No. 22. Br. Zool. i.* 106. *Erinaceus auriculis erectis. Brisson quad.* 128. *Seb. Mus. i. 78. tab. xlix. L'Heriffon. Buffon, viii.* 28. *tab. vi. Hærbe, vel Ganfud. Forskal. iii.*

THE SIBERIAN HEDGE-HOG.

THIS species, which is common from the Don to the Oby, is generally much inferior in size to the common kind; but beyond the lake Baikal some are found much larger. They grow very fat, sleep all the winter in a hole a few inches deep, live on insects, even the most caustic, and will eat above a hundred cantharides without any injury: they roll themselves up, and have all the manners of the common kind.---In the following particulars they differ from the former species: their ears are large, open and oval, with soft whitish hairs within; the tail is shorter; the spines are slender and brown, white at their roots and points; and the limbs and belly are covered with a most elegant soft white fur.---Synonymes. *Erinaceus auritus*. *Pallas & Gmelin*, in *Nov. com. Petrop.* xiv. 519. 573. *tab.* xvi. and xxi. *fig.* 4.

THE ASIATIC, AND GUIANA, HEDGE-HOG.

THE former species, the *tendra* of Buffon, about the size of a mole, has the upper part of the body covered with short white spines, marked with brown in the middle, the lower parts with whitish, fine, but hard, hair: the tail, which is very short, is also covered with spines.

There is a larger variety of this species, which Buffon calls *tanrec*; each of these varieties have five toes on each foot; they inhabit India and Madagascar. Some are said to grow to the size of rabbits: they are also said to grunt like hogs, grow very fat, to multiply greatly, to frequent shallow pieces of water, to burrow on land, and to lie torpid during six months, during which time their old hairs fall off, and they rise in a new suit: their flesh is eaten by the Indians, but is very flabby and insipid.---Synonymes. *Le petit tandrek*. *Sonnerat voy.* ii. 146. *tab.* xcvi. *Le tendrac*. *et le tanrec*. *Buffon*, xii. 438.

The Guiana or American hedge-hog has no external ears; a short thick head; spines ash colour, tinged with yellow; its lower parts are covered with soft whitish hair; it has a short tail, long and crooked claws, and is about eight inches long.

Synonymes.---American hedge hog. *Bancroft Guiana*, 144. *Erinaceus inauris*. *E. auriculis nullis*. *Lin. syst.* 75. *Briffon quad.* 131. *Erinaceus Americanus albus*. *Seb. Mus.* i. 78. *tab. fig.* 3.

BRADYPUS, the SLOTH, of the Order of BRUTA.

THE distinguishing marks of this genus are these: they have no fore-teeth in either jaw; the dog-teeth are blunt, solitary, and longer than the grinders, of which there are five on each side. The body is covered with hair; the fore-legs are much longer than the hind; and they have long claws on their toes. There are three species, viz.

THE THREE-TOED SLOTH.

THIS singular animal has a naked face, a blunt black nose, a little lengthened; very small external ears; eyes small, black, and heavy, with a dusky line from the corner of each; its face and throat are of a dirty white; the hair on its body is long and very uneven, of a greyish brown, with a black line along the middle of its back; the rest of its back, shoulders, and limbs, are spotted irregularly with black; its tail is a mere stump; its legs are thick, long, and aukward; it grows to the bulk of a middle-sized fox, and inhabits most parts of the eastern side of South America. It is the most sluggish and the most slow of all animals, and seems to move with the utmost pain. Three quarters of a mile in a day is a great journey. It ascends trees, in which it generally lives, with great difficulty; its food is fruits or leaves. When on the ground, if it cannot

cannot find fruit there, it looks out for a tree well-loaded; and, with great pains, climbs up. It then flings off the fruit, and, to save itself the trouble of descending, forms itself into a ball and drops from the branches: there it continues till it has devoured all; nor ever stirs till compelled by hunger. Its motion is attended with a most moving and plaintive cry, which at once produces both pity and disgust: its mouth is never without foam; its look is so piteous as to move compassion; it is also accompanied with tears, which dissuade every body from injuring so wretched a being. How unlike the sportive squirrel, and many other lively inhabitants of the woods! Its abstinence from food is almost incredible. One that had fastened itself by its feet to a pole, and was so suspended cross two beams, remained forty days without meat, drink, or sleep. The strength in its feet is so great, that there is no possibility of freeing any thing from its claws. A dog was let loose at the above-mentioned animal when it was taken from the pole. After some time the sloth laid hold of the dog with his feet, and held him four days, till he perished.

Synonymes.---Arctopithecus. *Gesner quad.* 869. *I-con. quad.* 96. Ignavus, five per *αἰνιφρασιον* Agilis. *Clus. exot.* 110. 372. Ai, five ignavus. *Marcgrave Brasil.* 221. Sloth. *Raii syn. quad.* 245. *Edw.* 310. Ignavus Americanus, risum fletu miscens. *Klein quad.* 43. Tardigradus pedibus anticis & posticis tridactylis. *Briffon quad.* 21. Ai, five tardigradus gracilis Americanus. *Seb. Mus.* xxxiii. fig. 2. *Schreber*, ii. 7. tab. lxiv. Ouakarè, Pareffeux. *Barrere France Æquin.* 154. Bradipus tridactylus. B. pedibus tridactylis cauda brevi. *Lin. syst.* 50. L'ai. *Buffon*, xiii. 44. tab. v. vi. *Br. Mus.*

THE TWO-TOED SLOTH.

THIS species of the sloth has a round head, a short projecting nose, ears like those of the human, lying close

close to the head; two long and strong claws on the fore feet, three on the hind; hair long and rough, in some parts curled and woolly; in some, of a pale red above, ash brown below; in others of a yellowish white below; ash brown above. It inhabits South America and Ceylon. The last is strenuously denied by M. de Buffon, who has fixed the residence of this animal to America only; but, besides the authority of Seba, who expressly says his specimen was brought from Ceylon, a gentleman long resident in India, and much distinguished in the literary world, asserts that he has seen this animal brought from the Paliacat mountains that lie in sight of Madras; which proves that it is common to both continents. There is also reason to think that it is met with in Guinea, or at least some species of this genus; for Barbot and Bosman describe an animal by the name of potto, to which they give the attributes of the former, and describe as being grey when young, red, and covered with a sort of hair as thick set as flocks of wool. Both these writers were sensible men, and, though not naturalists, were too observant of the animals of Guinea to mistake one whose characters are so strongly marked as those of the sloth.

Synonymes.---*Tardigradus Ceilonicus* fæmina. *Seb. Mus. i. tab. xxxiv.* *Bradypus didactylus.* *Br. manus didactylis cauda nulla.* *Lin. syst. 51.* *Schreber, ii. 10. tab. lxxv.* *Tardigradus pedibus anticis didactylis, posticis tridactylis.* *Briffon quad. 22.* *L'una. Buffon, xiii. 34. tab. i.*

THE URSIFORM SLOTH.

THIS hath a long and strong nose, truncated at the end; the forehead rises suddenly above it; that and the nose whitish, and almost naked; eyes very small, above is a black line; ears short, and lost in the hair; the hair on the top of the head points forward, that in the neck is parted in the middle; on the head and neck, back and sides, it is extremely long, shaggy,
and



W. Kneller sculp.

1. The Ursiform Sloth. 2. The three toed Sloth.

and black; in most parts twelve inches long, and on the upper part of the body shines in the sun with a most brilliant purple gloss; on the breast and belly short; across the first is a line of white; the tail is only five inches long, and is quite hid in the hair; the limbs are very strong and bear-like; on each foot are five toes; on those of the fore feet the claws are three inches long, pointing forward, slightly incurvated, and admirably adapted for digging or burrowing; the claws of the hind feet are very short; the bottoms of the feet are black and naked. This animal wants the *incisores*, or cutting teeth, above and below. In each jaw are two canine teeth, remote from the grinders; the roof of the mouth is marked with transverse fulci; the tongue is smooth, and not so long as the mouth; the nostrils are transverse, and appear like a narrow slit; the lips are very loose, and capable of being protruded to a great length, and drawn in again; they serve the use of a hand, and by their means it conveys apples or any sort of food into its mouth. It inhabits Bengal, and lives in certain sand hills not remote from Patna. Synonyme.---*Bradypus ursiformis*. *Naturalists Miscellany*. tab. 58.

In the description of this curious and extraordinary quadruped, the Comte de Buffon remarks, that, in proportion as nature is vivacious, active, and exalted, in the monkey kind, she is slow, restrained, and fettered, in the sloths. From a defect in their conformation, the misery of these animals is not more conspicuous than their slowness: they have no cutting teeth; the eyes are obscured with hair; the chops are heavy and thick; the hair is flat, and resembles withered herbs; the thighs are ill jointed to the haunches; the legs are too short, ill turned, and terminated still worse; their feet have no soles, and no toes which move separately, but only two or three claws disproportionally long, and bended downward, which move together, and are more hurtful to their walking than advantageous in assisting them

them to climb. Slowness, habitual pain, and stupidity, are the results of this strange conformation. The sloths have no weapons either offensive or defensive: they are furnished with no means of safety, for they can neither fly nor dig the earth: confined to a small space, or to the tree under which they are brought forth, they are prisoners in the midst of space, and cannot move the length of one fathom in an hour: they drag themselves up a tree with much labour and pain: their cry and interrupted accents they dare only utter during the night. All these circumstances announce the misery of the sloths, and recal to our minds those defective monsters, those imperfect sketches of Nature, which, being hardly endowed with the faculty of existence, could not subsist for any length of time, and have accordingly been struck out of the list of beings. If the regions inhabited by the sloths were not desert, but had been long occupied by men and the larger animals, these species would never have descended to our times: they seem to constitute the last term of existence in the order of animals endowed with flesh and blood. One other defect added to the number would have totally prevented their existence. To regard those bungled sketches as beings equally perfect with others, to call in the aid of final causes to account for such disproportioned productions, and to make Nature as brilliant in these as in her most beautiful animals, is to view her through a narrow tube, and to substitute our own fancies for her intentions.

Why should not some animals, says the Comte de Buffon, be created for misery, since, in the human species, the greatest number of individuals are devoted to pain from the moment of their existence? Evil, it is true, proceeds more from ourselves than from Nature. For a single person who is unhappy because he was born feeble or deformed, there are millions rendered miserable by the oppression of their superiors. The animals, in general, are more happy, because the species
have

have nothing to fear from individuals: to them there is but one source of evil; to man there are two. Moral evil, of which he himself is the fountain, has accumulated into an immense ocean, which covers and afflicts the whole surface of the earth. Physical evil, on the contrary, is restrained within very narrow bounds: it seldom appears alone, for it is always accompanied with an equal, if not a superior, good. Can happiness be denied to animals, when they enjoy freedom, have the faculty of procuring subsistence with ease, and possess more health, and organs capable of affording greater pleasure than those of the human species? Now, the generality of animals are most liberally endowed with all these sources of enjoyment. The degraded species of sloths are perhaps the only creatures to whom Nature has been unkind, and who exhibit to us the picture of innate misery.

Let us take a closer view of the condition of these creatures. By the want of teeth they can neither seize prey, nor feed upon flesh or herbage. Reduced to the necessity of living upon leaves and wild fruits, they consume much time in trailing their bodies to the foot of a tree, and still more in climbing the branches; and, during this slow and melancholy exercise, which sometimes lasts several days, they are obliged to suffer the most pressing hunger. When arrived upon a tree, they never descend: they cling to the branches, and devour successively the leaves of every twig: they pass several weeks in this situation, without receiving any drink. When they have rendered the tree entirely naked, they still remain; because they cannot descend. In fine, when the pressure of hunger becomes superior to the dread of danger or death, being unable to descend, they allow themselves to tumble down like an inanimated mass; for their stiff and inactive limbs have not time to extend themselves in order to break the fall.

When on the ground, they are at the mercy of all their enemies. As their flesh is not absolutely bad,
both

both men and rapacious animals go in quest of them. It appears that they do not multiply fast, or at least, if they produce frequently, it must be in small numbers at a time; for they have only two paps. Every circumstance, therefore, concurs to destroy them; and it is extremely difficult for the species to support itself. But, though slow, awkward, and almost incapable of motion, they are obstinate, strong, and tenacious of life: they can live very long without victuals of any kind: they are covered with thick, dry, hair; and, being incapable of exercise, they lose little by perspiration; and, though their food be meager, they fatten by repose: though they have no horns nor hoofs, nor cutting teeth in the under jaw, yet they belong to the ruminating tribes, and have several stomachs. Hence the quality of their food may be compensated by the quantity they take at a time. What is still more singular, instead of very long intestines, like other ruminating animals, they are very short and small, like those of the carnivorous kind. This contrast exhibits the ambiguity of Nature. The sloths are unquestionably ruminating animals: they have four stomachs; and yet they want every other character, both internal and external, which generally belongs to animals of this class. There is still another singularity in the conformation of the sloths: instead of three distinct apertures for the discharge of urine and excrements, and for the purposes of generation, these animals have but one, which terminates in a common canal, as in birds.

Moreover, if the misery resulting from a defect of sentiment be not the worst of all, the pain endured by the sloths, though very apparent, seems not to be real; for their sensations appear to be blunt: their calamitous air, their dull aspect, and their reception of blows without emotion, announce their extreme insensibility. This bluntness of sensation is farther demonstrated, by their not dying instantly when their hearts and bowels are entirely cut out. Piso, who made this cruel experiment,



Knorr del^t

J. Ensl. sc.

1. The Great Ant-Cater. 2. The Three-banded Armadillo
3. The short-tailed Manis, or scaly Lizzard.

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riment, tells us, that the heart, after being separated from the body, beat in a lively manner for half an hour; and that the animal continued to contract its legs slowly, as commonly happens during sleep. From these facts, this quadruped seems to approach not only the turtle, but the other reptiles which have no distinct centre of sensation. All these beings may be said to be miserable, but not unhappy: Nature, even in her most neglected productions, always appears more in the character of a parent than of a stepmother.

DASYPUS, the TATOU, or ARMADILLO,
of the Order of BRUTA.

THE distinguishing characteristics of this genus of quadrupeds are, that it has neither fore-teeth nor dog-teeth; it is covered with a hard bony shell, intersected with distinct moveable zones or belts: this shell covers the head, the neck, the back, the flanks, and extends even to the extremity of the tail; the only parts to which it does not extend, are the throat, the breast, and the belly, which are covered with a whitish skin of a coarse grain, resembling that of a hen after the feathers are pulled off. The shell does not consist of one entire piece, like that of the tortoise: but is divided into separate belts, connected to each other by membranes which enable the animal to move it, and even to roll itself up like a hedge-hog. The number of these belts does not depend on the age of the animal, as some have imagined; but is uniformly the same at all times, and serves to distinguish the different species. All the species of this animal were originally natives of America; they were entirely unknown to the ancients; and modern travellers mention them as peculiar to Mexico, Brasil, and the southern parts of America; though some indeed have confounded them with two species of manis or shell-lizard, which are found in the East Indies: others report that they are

natives of Africa, because some of them have been transported from Brasil to the coast of Guinea, where a few have since been propagated: but they were never heard of in Europe, Asia, or Africa, till after the discovery of America.---They are all endowed with the faculty of extending and contracting their bodies, and of rolling themselves up like a ball, but not in so complete a sphere as the hedge-hog. They are very inoffensive animals, excepting when they get into gardens, where they devour the melons, potatoes, and other roots. They walk quickly; but can hardly be said to run or leap, so that they seldom escape the pursuit either of men or dogs. But nature has not left them altogether defenceless. They dig deep holes in the earth; and seldom go very far from their subterraneous habitations: upon any alarm they immediately go into their holes; but, when at too great a distance, they require but a few moments to make one. The hunters can hardly catch them by the tail before they sink their body in the ground; where they stick so close, that the tail frequently comes away and leaves the body in the earth; which obliges the hunters, when they want to take them alive and unmutilated, to dilate the sides of the hole. When they are taken, and find that there is no resource, they instantly roll themselves up, and will not extend their bodies unless they are held near a fire. When in deep holes, there is no other method of making them come out, but by forcing in smoke or water. They keep in their holes through the day, and seldom go abroad in quest of subsistence but in the night. The hunters usually chase them with small dogs, which easily come up with them. When the dogs are near, the creatures instantly roll themselves up, and in this condition the hunters carry them off. However, if they be near a precipice, they often escape both the dogs and hunters: they roll themselves up, and tumble down like a ball, without breaking their shell, or receiving any injury. The *dasytus* is a very fruitful animal:

animal: the female generally brings four young ones every month; which is the reason why the species are so numerous, notwithstanding they are so much sought after on account of the sweetness of their flesh. The Indians likewise make baskets, boxes, &c. of the shells which cover their heads. Linnæus enumerates six species of dasypus, each of which is distinguished by the number of bands or zones which form its coat of mail.

THE THREE-BANDED ARMADILLO.

THIS species hath short, but broad, rounded, ears: the crust on its head, back, and rump, is divided into elegant pentangular segments raised in the middle: the middle of its body has three bands, whence its name: it has five toes on each foot, and a short tail. It inhabits South America, and the manners of all the species are much the same: they burrow under ground; the smaller species in moist places, the larger in dry; and at a distance from the sea: they keep in their holes by day, but ramble out at night. When overtaken by an enemy, it rolls itself into the form of a ball, and becomes invulnerable. When surpris'd, it runs for its hole, and thinks itself secure if it can hide its head and part of its body: they are hunted with dogs, who give notice of their haunts by barking: but caution is necessary in taking them out, as snakes often lurk in their burrows: they feed on potatoes, melons, and roots, drink much, grow very fat, and are reckoned delicious eating when young; but, when old, they have a musky disagreeable taste: they are very numerous, as they breed every month, and bring four at a time: they are very inoffensive.

Synonymes.---Tatu apara. *Marcgrave Brasil.* 232. *Raii syn. quad.* 234. Armadillo seu tatu genus alterum. *Clus. exot.* 109. *Klein quad.* 48. Tatu seu armadillo orientalis. *Seb. Mus. i. tab.* xxxviii. *fig.* 2, 3. Dasypus tricinctus. D. cingulis tribus, pedibus pentadactylis. *Lin. syst.* 53. Cataphractus scutis duobus
3 Z 2 cingulis

cingulis tribus. *Briffon quad.* 24. L'apar, ou le tatou a trois bandes. *Buffon* x. 206, *Schreber*, ii. 28. *tab.* lxxii. A. lxxvi. *fig.* 1, 2.

THE SIX-BANDED ARMADILLO

HAS its crust formed of angular pieces, with some scattered hairs between. Its tail, which is not the length of the body, is very thick at the base, and tapers to a point. It has five toes on each foot, and inhabits Brasil and Guinea.

Synonyme.---Tatou. *Belon obs.* 211. *Portraits*, 106. Tatu & tatu paba *Brasil: Armadillo Hispanis, Lusitanis* Encuberto. *Marcgrave Brasil.* 131. *Cataphractus scutis duobus, cingulis sex.* *Briffon quad.* 25. *Dasyopus sex cinctus. D. cingulis senis, pedibus pentadactylis.* *Lin. syst.* 54. L'encoubert, ou le tatou à six bandes. *Buffon*, x. 209. *tab.* xlii. *Suppl.* iii. 285. *tab.* lvii. *Schreber*, ii. 31. *tab.* lxi.

THE EIGHT-BANDED ARMADILLO

HAS upright ears, two inches long; small black eyes; four toes on the fore feet, five on the hind. It is ten inches long; its tail is nine. It inhabits Brasil, and is reckoned more delicious eating than the others.

Synonymes.---Ayotochtli? *Hernandez Mex.* 314. Tatuete. *Brasilensibus, Verdadeiro Lusitanis.* *Marcgrave Brasil.* 231. *Clus. exot.* 330. *Cataphractus scutis duobus cingulis octo.* *Briffon quad.* 26. *Erinaceus loricatus cingulis septenis palmis tetradactylis, plantis pentadactylis.* *Aman. Acad.* i. 560. *Dasyopus septem cinctus.* *Lin. syst.* 54. Le tatuete, ou tatou à huit bandes. *Buffon* x. 212. *Schreber* ii. 34, 36. *tab.* lxxii. lxxvi. *fig.* 3, 4.

THE NINE-BANDED ARMADILLO.

THIS species is distinguished by long ears, long hair on the breast and belly, four toes on the fore feet, five on the hind; is three feet long, and the tail, which tapers,

tapers, is a little longer than its body. Its crust or shell is marked with six-sided figures; its bands with wedge-like marks across. One, brought some years ago to England from the Musquito shore, was fed with raw beef and milk, but refused grain and fruit; though this genus wants, as has already been observed, both cutting and canine teeth.

Synonymes.---Armadillo. *Worm. Mus.* 335. Tatu porcinus, schildverkel. *Klein quad.* 48. Pig-headed armadillo. *Grew's rarities*, 18. *Raii syn. quad.* 233. Tatu five armadillo Americanus. *Seb. Mus. tab.* xxix. *fig. 1.* *Dasyus novem cinctus.* D. cingulis novem, palmis tetradactylis, plantis pentadactylis. *Lin. syst.* 54. *Phil. Transf.* liv. 57. *tab. vii.* Cataphractus scutis duobus, cingulis novem. *Briffon quad.* 27. Le cachichame, ou Tatou à neuf bandes. *Buffon*, x. 215. *tab. xxxviii. Supplem.* iii. 287. *tab. lviii.* *Schreber*, i. 37. *tab. lxxiv. lxxvi. fig. 7, 10.* American armadillo. *Phil. Transf.* liv. 57. *tab. vii.*

THE TWELVE-BANDED ARMADILLO.

THIS hath broad upright ears; the crust on its shoulder consists of oblong pieces; that of the rump of six-sided pieces; it has five toes on each foot; those of the fore feet have very large claws. Its tail is shorter than the body.---Synonymes. Tatu five armadillo Africanus. *Seb. Mus.* i. *tab. xxx. fig. 3, 4.* Le kabassou, ou tatou a douze bandes. *Buffon*, x. 218. *tab. xl.* Cataphractus scutis duobus, cingulis duodecim. *Briffon quad.* 27. *Schreber*, ii. 40. *tab. lxxv. lxxvi. fig. 11, 12.*

THE EIGHTEEN-BANDED ARMADILLO.

THIS species hath a very slender weasel-looking head, and small erect ears; the crust on its shoulder and rump consists of square pieces; it has five toes on each foot; is about fifteen inches long; *its tail only five and a half.*---Synonymes. Weefle-headed armadillo. *Grew's rarities*, 19. Tatu mustelinus, *Raii syn. quad.* 235.

Dasyus

Dasyus uncinatus. D. tegmine tripartito, pedibus pentadactylis. *Lin. syst.* 53. *Cataphractus scuto unico*, cingulis octodecim. *Briffon quad.* 23. Le cirquinçon, ou tatou à dixhuit bandes. *Buffon*, x. 220. *tab.* xlii. *Schreber*, ii. 42.

The MANIS, or SCALY LIZARD, of the Order of BRUTA.

THIS genus of quadrupeds is distinguished by the following characters: they have no fore teeth either in the upper or under jaw; the tongue is long and cylindrical; the snout is long and narrow; and the body is entirely covered with strong hard scales; there are only three species, as follow:

THE LONG-TAILED MANIS

HAS a slender nose; both its nose and head are smooth; its body, legs, and tail, are guarded by long sharp-pointed striated scales; its throat and belly are covered with hair; its legs are short, with four claws on each foot, one of which is very small; its tail tapers, but ends blunt. Guinea is supposed to be their native country: they approach so near the genus of lizards, as to be accounted the link in the chain of beings which connects the proper quadrupeds with the reptile class: they grow to a great length. One, preserved in the museum of the Royal Society of London, measured from the nose to the tail only fourteen inches; but the tail itself a yard and half a quarter.

Synonymes.---*Lacertus peregrinus squamosus*. *Clus. exot.* 374. *Raii syn. quad.* 274. Scaly lizard. *Grew's rarities.* 46. *Manis tetradactyla*. M. pedibus tetradactylis. *Lin. syst.* 53. *Schreber*, ii. 23. *tab.* lxx. *Pholidotus pedibus anticis et posticis tetradactylis*, squamis mucronatis, cauda longissima. *Briffon quad.* 19. Le phatagin. *Buffon*, x. 180. *tab.* xxxiv.

THE SHORT-TAILED MANIS.

THIS hath blunt scales, with bristles between them; five toes on each foot; a tail longer than the body; and ears not unlike those of the human body; the colour of the whole animal is a pale yellow. It inhabits the islands of India, and that of Formosa. The Indians call it *pangoelling*; and the Chinese, *chin chion seick*. It feeds on lizards and insects; turns up the ground with its nose; walks with its claws bent under its feet; grows very fat, is esteemed very delicate eating, and makes no noise, only a snorting. It is also found in Bengal, where it is called in the Sanskrit language, *vajracite*, or the thunderbolt reptile, from the excessive hardness of its scales; in its stomach is found a number of small stones, probably taken in to help digestion. In the second volume of the Asiatic Researches, p. 376, published under the direction of the able and learned Sir William Jones, is a very good account of this animal. It is perhaps a native of Guinea; the *quogelo* of the Negroes; which, Des Marchais says, grows to the length of eight feet, of which the tail is four; it lives in woods and marshy places, and feeds on ants, which it takes by laying its long tongue across their paths, that member being covered with a sticky saliva, so that the insects that attempt to pass over it cannot extricate themselves: it walks very slowly, and would be the prey of every ravenous beast, had it not the power of rolling itself up, and opposing to its adversary a formidable row of erected scales. In vain does the leopard attack it with its vast claws, for at last it is obliged to leave it in safety. The negroes kill these animals for the sake of the flesh, which they reckon excellent.

Synonymes.---*Lacertus squamosus*. *Bontius Java*, 60. *Pet. Gaz. tab. xx. fig. 11*. *Armadillus squamatus major*. *Ceilanicus* seu *diabolus*. *Tajovanicus* dictus. *Seb. Mus. i. tab. liii. liv.* *Klein quad. 47.* *Schreber, ii. 22. tab. lxix.* *Pholidotus pedibus anticis et posticis pentadactylis,*

pentadactylis, squamis subrotundis. *Briffon quad.* 18.
 Manis pentadactyla. *Lin. syst.* 52. Le pangolin. *Buffon*, x. 180. *tab.* xxxiv.

THE BROAD-TAILED MANIS.

THIS hath five toes on the fore feet, and four on the hind; scales of the shape of a mussel; belly quite smooth; the exterior scales end in a sharp point somewhat incurvated; tail very broad, decreasing to a point; whole length of the animal a German ell and five-eighths; the tail half an ell and a span broad, in the broadest part. This species was found in the wall of a merchant's house at Tranquebar; when pursued it would roll itself up so that nothing but the back and tail could be seen; it was with great difficulty killed, although it was often struck with rice-stampers, or poles armed with iron; a blow on the belly deprived it of life. The scales of this genus are so hard as to strike fire.---A new manis *Phil. Transf. vol.* lx. *p.* 36. *tab.* 11.

MYRMECOPHAGA, the ANT-EATER, of the Order of BRUTA.

THE distinguishing characteristics of this genus are as follow: there are no teeth in the mouth, the tongue is long and cylindrical; the head terminates in a long snout or muzzle; and the body is covered with pretty long hair. There are six species, viz.

THE GREAT ANT-EATER

HAS a long slender nose; small black eyes; short round ears; a slender tongue, two feet and a half long, which lies double in the mouth; slender legs; four toes on the fore-feet, and five on the hind; the two middle claws on the fore-feet very large, strong, and hooked. The hair on the upper part of the body is half a foot long, black mixed with grey. Across its shoulders there is a black line bounded above with white.

white. The fore-legs are whitish, with a black spot above the feet. The hair of the tail is coarse, black, and about a foot long. This animal is about three feet ten inches long; its tail two and a half: it weighs above a hundred pounds: it inhabits Brazil and Guiana; runs slowly; swims over the great rivers, at which time it flings its tail over its back: lives on ants; overturns their nests, or digs them up with its feet, then thrusts its long tongue into their retreats, and withdraws it into its mouth loaded with prey: it is afraid of rain, and protects itself from it by covering its body with its long tail. It does not attain its full growth under four years. Each species of this genus brings but one young one at a time. Notwithstanding its want of teeth, it is fierce and dangerous, especially when it has young. Nothing that it has once got between its fore-feet can disengage itself; the very panthers of America are often unequal to the combat. So great is its obstinacy and stupidity, that it will not extricate itself even from a dead adversary. It sleeps in the day, and preys by night. Its flesh has a strong disagreeable taste; but it is eaten by the Indians.

The following history of this animal is given in Dillon's Travels through Spain, p. 76, in his account of the Royal Cabinet of Natural History at Madrid. "The Great Ant-bear from Buenos Ayres, the *Myrmecophaga Jubata* of Linnæus, called by the Spaniards *Osa Palmera*, was alive at Madrid in 1776, and is now stuffed and preserved in this cabinet. The people who brought it from Buenos Ayres say, it differs from what they call the ant-eater, which only feeds on emmets, and other insects; whereas this would eat flesh, when cut in small pieces, to the amount of four or five pounds. From the snout to the extremity of the tail, this animal is two yards in length, and his height is about two feet: the head very narrow; the nose long and slender. The tongue is so singular, that it looks more like a worm, and extends above sixteen inches.

His body is covered with long hair, of a dark brown, with white stripes on the shoulders; and when he sleeps he covers his body with his tail."

The specimen of the Great Ant-eater in the Leve-rian Museum, is superior in size to any we have before heard of.

| | Feet. | Inches. |
|------------------------------------|-------|---------|
| Its whole length is | - | 7 4 |
| Tail | - | 2 9 |
| From tip of the nose to the ears | - | 1 0 |
| Length of the hairs of the mane | - | 1 0 |
| ————— of the tail | - | 1 2 |
| Height to the top of the shoulders | - | 2 0 |

Both of the above are extremely rare, and in an uncommon fine state of preservation.

Synonymes.--Tamandua-guacu. *Marcgrave Brasil.* 225. Tamandua-guacu sine major. *Piso Brasil.* 320. Pismire-eater, *Nieuboff*, 19. Tamandua major cauda panniculata. *Barrere France Æquin.* 162. Mange-fourmis. *Des Marchais*, iii. 307. Great ant-bear. *Raii syn. quad.* 241. Myrmecophaga rostro longissimo, pedibus anticis tetradactylis, posticis pentadactylis, cauda longissimis pilis vestita. *Briffon quad.* 15. Myrmecophaga jubata. M. palmis tetradactylis, plantis pentadactylis. *Lin. syst.* 52. *Klein quad.* 45. tab. v. Le Temanor. *Buffon*, x. 141. tab. xxix. *Suppl.* iii. 278. tab. lv. *Schreber*, ii. 14. tab. lxxvii.

THE MIDDLE-SIZED ANT-EATER.

THIS quadruped hath a long slender nose bending a little down; small black mouth and eyes; and small upright ears. The bottoms of its fore-feet are round, with four claws on each; the hind feet have five: its hair is hard and shining, of a pale yellow; dusky on the hind-legs and the middle of the back. A black line on each side, from the neck, crosses the shoulders, passes along, and both meet at the lower end of the back. The tail, covered with longer hair than

than the back, tapers, and is bald at the end. This animal measures one foot seven, its tail ten inches. It inhabits the same country with the last, and resembles it in its manners. When it drinks, part spurts out of the nostrils. It climbs trees, and lays hold of the branches with its tail.

Synonymes.---Tamandua-i. *Marcgrave Brasil.* 225. *Raii syn. quad.* 242. *Tamandua minor. Piso Brasil.* 320. *Barrere France Æquin.* 162. *Tamandua-guacu. Nieuboff,* 19. *Myrmecophaga rostro longissimo, pedibus anticis tetradactylis, posticis pentadactylis, cauda ferè nuda. Brisson quad.* 16. *Myrmecophaga tetradactyla. Lin. syst.* 52. *Zooph. Gronov. No.* 2. *Le Tamandua. Buffon, x.* 144. *Schreber, ii.* 16. *tab.* lxxviii.

THE STRIPED ANT-EATER

HAS a taper nose: its upper mandible extends far beyond the lower: its eyes are exceedingly small; ears round and short; its tail is equally covered with long hairs: it has five toes on each foot: its body and tail are tawny; the first marked downwards with broad stripes of black; the last annulated: its legs and nose are striped in the same manner: its belly is of a dirty white. Length thirteen inches; tail seven and a half. Synonymes.---*Le Tamandua. Buffon, Supplem.* iii. 281. *tab.* lvi.

THE LEAST ANT-EATER

HAS a conic nose, bending a little down; small ears, hid in its fur; two hooked claws on the fore-feet, four on the hind: its upper parts are covered with long soft silky hair, or rather wool, of a yellowish brown colour. It is seven inches and a half long: its tail, which is thick at the base, and tapers to a point, measures eight and a half, and is naked on the under side for the last four: it inhabits Guiana, and climbs trees in quest of a species of ants which build their nests

among the branches. It has the same prehensile power with its tail as the former.

There is a species found at the Cape of Good Hope, and in Ceylon; it has four toes on the fore feet, and pendulous ears, which distinguishes it from other kinds. Kolben describes their manners particularly, and says they have long heads and tongues, and are toothless; that they sometimes weigh a hundred pounds; that, if they fasten their claws in the ground, the strongest man cannot pull them away; that they thrust out their clammy tongue into the ants nest, and draw it into their mouth covered with insects. That the African species agrees with the American in every external particular, is confirmed; but that the last is furnished with grinding teeth, like the armadillo, in the lower end of the jaws, is a discovery proved from the remarks of Doctor Camper, a celebrated zoologist in Holland. Mr. Strachan, in his account of Ceylon, gives the same account of the manners of what the natives call the *talgoi*, or ant-bear. It is not therefore to be doubted, but that these animals are common to the old and new continents.

Synonymes.---*Tamandua minor flavescens*; *Ouatiriouaou*. *Barrere France Æquin.* 163. *Tamandua sive Coati Americana alba*. *Seb. Mus.* i. *tab.* xxxvii. *Myrmecophaga rostro brevi, pedibus anticis didactylis, posticis tetradactylis*. *Briffon quad.* 17. *Myrmecophaga didactyla*. *M. palmis didactylis, plantis tetradactylis, cauda villosa*. *Lin. syst.* 51. *Zooph. Gronov. No.* 1. *Little ant-eater*. *Edw.* 220. *Le Fourmillier*, *Euffen*, x. 144. *tab.* xxx. *Schreber*, ii. 17. *tab.* lxvi.

THE CAPE ANT-EATER.

THIS hath a long nose, truncated at the end like that of a hog, and the nostrils resembling those of that animal; ears six inches long, thin as parchment, and covered with very fine hair; tongue very long and slender; the hairs on the head and upper part of the
body

body and tail very short, and so closely adhering to the skin as if they were glued to it; their colour a dirty grey, those on the sides and belly long and of a reddish hue, those on the legs still longer, black, and strait; the tail thick near the base, and tapering to a point; on the fore feet are four toes, on the hind five, all armed with strong claws; those behind equal even the length of the toes; all are blunted at the end, and calculated for burrowing; the length is three feet five to the origin of the tail, the tail one foot nine: this species inhabits the neighbourhood of the Cape of Good Hope: it lives under ground, feeds on ants like the other species; but when it has found an ants nest it looks carefully around to see whether it can feed in safety, then puts out its long tongue to catch its prey. It is an object of chase among the Hottentots, and is reckoned good food.---Synonyme. Fourmillier d'Afrique. *Allemand Suppl. vol. 26. tab. xi.*

THE PORCUPINE ANT-EATER.

THIS in length is about a foot; coated on the upper parts with spines resembling those of a porcupine, being whitetipped with black; the two colours separated by a ring of tawny or dull orange; the spines on the back and sides are somewhat recumbent, over the tail perpendicularly erect; snout long, naked, black, and tubular, opening very small; tongue lumbriciform; forehead, cheeks, and whole under parts of the body, coated with dark brown stiff hair; legs very short, toes short, broad, rounded; claws on the fore feet, five, very strong, somewhat obtuse; on the hind feet four, of which the two first are much longer, and sharper, than the others; thumb unarmed; tail very short. It inhabits New South Wales, preys on ants, and is found about ant-hills. It is a most extraordinary quadruped, connecting in some measure the two very distant genera of porcupine and ant-eater. This singular
 1 animal

animal is described by Dr. Shaw, in the Naturalist's Miscellany!

TRICHECUS, the WALRUS, of the Order of B R U T A.

THIS genus of aquatic animals has no fore teeth; when full grown it has two great tusks in the upper jaw, which point downwards; it has grinders on each side in both jaws, which are composed of furrowed bones. The body is oblong; the lips are doubled; and the hind legs are stretched backwards, and, as it were, bound together, forming a kind of tail fit for swimming. There are only two species, as follow:

THE ARCTIC WALRUS.

THIS is also called the morse, sea-horse, and sea-cow; it has a round head, a small mouth, very thick lips, covered above and below with pellucid bristles as thick as a straw; small fiery eyes, two small orifices instead of ears, and a short neck; its body is thick in the middle, tapering towards the tail; its skin is thick, wrinkled, with short brownish hair thinly dispersed; it has short legs, five toes on each foot, connected by a web and a small nail on each: the hind feet are very broad; each leg is loosely articulated; the hind legs are generally extended on a line with the body: the tail is very short, and the penis long. The animal is about eighteen feet long, and ten or twelve round the thickest part: their teeth have been sometimes found of the weight of twenty pounds each.

They inhabit the coast of Spitzbergen, Nova Zembla, Hudson's Bay, the Gulph of St. Laurence, and the Icy Sea; but are not seen in the islands between Kamtschatka and America. They are gregarious, and are seen in some places in herds of a hundred together. They are very shy, and avoid places much haunted by man. They are however very fierce, and, if wounded

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1. The Arctic Walrus. - 2. The round-tailed Manati.

in the water, they attempt to sink the boat, either by rising under it, or by striking their great teeth into its sides. They roar very loud; and will follow the boat till it gets out of sight. Numbers of them are often seen sleeping on islands of ice: if awakened, they fling themselves with great impetuosity into the sea. They do not go upon the land till the coast is clear of ice. At particular times they land in amazing numbers. The moment the first gets on shore, so as to lie dry, it will not stir till another comes and forces it forward, by beating it with its great teeth; this is served in the same manner by the next, and so on in succession till the whole have landed.

The method of killing them on the Magdalene isles, in the Gulph of St. Laurence, is thus:---The hunters watch their landing; and, as soon as they find a sufficient number for what they call a *cut*, go on shore, each armed with a spear sharp on one side like a knife, with which they cut their throats: great care must be taken not to stand in the way of those which attempt to get again to sea, which they do with great agility by tumbling headlong; for they would crush any body to death by their vast weight. They are killed for the sake of their oil, one walrus producing about half a tun. The knowledge of this chase is of great antiquity; Oether, the Norwegian, about the year 890, made a report of it to King Alfred, having, as he says, made the voyage beyond Norway, for "the more commoditie of fishing of horse-whales, which have in their teeth bones of great price and excellencie, whereof he brought some at his return unto the king." In fact, it was in the northern world, in early times, the substitute to ivory, being very white and very hard. Their skins, Oether says, were good to cut into cables. M. de Buffon says, he has seen braces for coaches made of it, which were both strong and elastic.

They bring one, or at most two, young at a time; feed on sea-herbs and fish, also on shells, which they dig

dig out of the sand with their teeth; they are said to make use of their teeth to ascend rocks or pieces of ice, fastening them to the cracks, and drawing their bodies up by that means. Besides mankind, they seem to have no other enemy than the white bear, with whom they have terrible combats; but generally come off victorious, by means of their great teeth.

In Captain Cook's Voyages we have the following affecting account of their parental attachment to their young. "On the approach of the boats towards the ice, they took their young ones under their fins, and attempted to escape with them into the sea. Some, whose cubs were killed or wounded, and left floating upon the surface of the water, rose again, and carried them down, sometimes just as our men were on the point of taking them into the boat; and could be traced bearing them to a considerable distance through the water, which was stained with their blood. They were afterwards observed bringing them, at intervals, above the surface, as if for air, and again plunging under it, with a horrid bellowing. The female, in particular, whose young one had been killed, and taken into the boat, became so furious, that she even struck her two tusks through the bottom of the cutter."

Synonymes.---Rosmarus. *Gesner Pisc.* 211. *Klein quad.* 92. Walrus, mors, rosmarus. *Worm. Mus.* 289. *Raii syn. quad.* 191. Sea-horse, or morse, *Mortén's Spitzberg*, 107, 182. *Egede Greenland*, 82. Seacow. *Crantz Greenl.* i. 125. *Schreber*, ii. 88. Odo-benus. La vache marine. *Briffon quad.* 30. *Trichecus rosmarus*. T. dentibus laniariis superioribus ex-fertis. *Lin. syst.* 49. Le morse. *Buffon*, xiii. 358. *tab.* liv.

THE INDIAN WALRUS.

THE Indian walrus is distinguished by the tusks which extend out of the mouth from the upper jaw being placed near each other. It inhabits the seas
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lying between the Cape of Good Hope and the Phillipine islands. This animal, so far as can be known, resembles the morse vry much: the head is, however, more lengthened and narrower; the nostrils are large, and placed higher; like the former species, there are no tusks in the under jaw, but those in the upper jaw, as has been already observed, are placed near each other, bent outwards, and resemble cutting teeth, only that they are near six inches long; there are four grinders on each side in the upper jaw, and three in the lower; these last are distant from the tusks, and are broader than those of the morse: the female has two teats on the breast: the chin has a bristly beard; the ears are short; the feet broad; and the legs so short, that the belly trails on the ground. When full grown, the animal is six ells in length; the male being rather larger than the female, which has breasts like a woman. It feeds on a green sea moss or weed, which grows near the shore. The figure, manners, and history, of this animal, are very imperfectly known; but it is said its flesh is good food, and eats like beef.

Synonymes.---Le Dugon. *Buffon*, xiii. 374. *tab.* lvi. *Schreber*, ii. 93.

PHOCA, the SEAL, of the Order of FERÆ.

THIS genus hath six parallel fore-teeth in the upper jaw, the outermost being larger; and four blunt, parallel, distinct, equal, fore-teeth in the under-jaw. There are two canine teeth in each jaw, and five pal-mated toes on each foot: its body is thick at the shoulders, and tapers towards the tail. This genus contains eighteen species.

THE COMMON SEAL

HAS large black eyes; large whiskers; oblong nostrils; and a flat head and nose: its tongue is forked at the end. It has six cutting teeth in the upper jaw, four in the lower; no external ears; a short tail. Its

body is covered with thick short hair; and its toes are furnished with strong sharp claws. Its usual length is from five to six feet.

It inhabits most quarters of the globe, but in greatest multitudes towards the north and the south; they swarm near the Arctic circle, and the lower parts of South America, in both oceans; near the southern end of Terra del Fuego; and even among the floating ice as low as south lat. 60. 21. They are also found in the Caspian sea, in the lake Aral, and lakes Baikal and Oron, which are fresh waters. They are less than those which frequent salt waters; but so fat that they seem almost shapeless. In lake Baikal some are covered with silvery hairs; others are yellowish, and have a large dark-coloured mark on the hind part of the back, covering almost a third of the body.

They are found in the Caspian sea, in most amazing multitudes; they vary infinitely in their colours: some are wholly white; others wholly black; others of a yellowish white; others mouse-coloured; and others again spotted like a leopard: they creep out of the sea on the shores, and are killed as fast as they come; and are followed by a vast succession of others, who undergo the same fate. It is singular that the seals of the Caspian are very tenacious of life; it is well known that the smallest blow on the nose kills those of Europe. At approach of winter they go up the Jaik, and are killed in great numbers on the ice: they are sought for their skins and the oil: numbers are destroyed by the wolves and jackals; for which reason the seal-hunters watch most carefully the haunts of the seals in order to drive away their enemies. The seasons for hunting the seals are spring and autumn.

Seals bring two young at a time, which for some short space are white and woolly; they bring forth in autumn, and suckle their young in caverns, or in rocks, till they are six or seven weeks old, when they take to the sea: they cannot continue long under water, and

are therefore very frequently obliged to rise to take breath, and often float on the waves. In summer, they sleep on rocks, or on sand-banks: if surprized, they precipitate into the sea; or, if at any distance, they scramble along, and fling up the sand and gravel with great force with their hind feet, making a piteous moaning: if overtaken, they will make a vigorous defence with their feet and teeth: a slight blow on the nose kills them, otherwise they will bear numbers of wounds. It does not appear that the Caspian seal-hunters are acquainted with the method.

They swim with vast strength and swiftness; frolic greatly in their element, and will sport without fear about ships and boats, which may have given rise to the fable of Sea-nymphs and Syrens. Their docility is very great, and their nature gentle: there is an instance of one which was so far tamed as to answer to the call of its keeper, crawl out of its tub at command, stretch at full length, and return into the water when directed; and extend its neck to kiss its master as often and as long as required. They never go any great distance from land: feed on all sorts of fish: are themselves good food, and often eaten by voyagers: they are killed for the sake of the oil made from their fat; a young seal will yield eight gallons: their skins are very useful in making waistcoats, covers for trunks, and other conveniences: those of the lake Baikal are sold to the Chinese, who dye, and sell them to the Mongals to face their fur-coats: they are the wealth of the Greenlanders, supplying them with every necessary of life.

Synonymes.---φωκην. *Arist. hist. An. lib. vi. c. 12.*
Oppian Halieut. v. 376. Vitulus oceani. *Rondeletii,*
 453, 458. Le veau marin, ou loup de mer. *Belon*
Poissons, 25. Phoca. *Gesner Pisc. 830.* *Worm. Mus.*
 289. *Klein. quad. 93.* *Briffon quad. 162.* Seal, seole,
 or sea-calf; phoca, sive vitulus marinus. *Raii syn.*
quad. 189. *Phil. Trans. abridg. vol. xlvii. 120. tab. vi.*
 4 B 2 fig.

fig. 3. Kaffigiak. *Crantz hist. Greenl.* i. 123. *Phoca vitulina*. Ph. capite lævi inauriculato. *Lin. syst.* 56. Sial. *Faun suec.* No. 4. Le phoque. *Buffon*, xiii. 333. *tab.* xlv. *Schreber*, cxxxiv. Seal. *Br. Zool.* i. 71. *Br. Zool. illustr.* xlvi.

THE PIED SEAL.

IN this species the nose is taper and elongated; the fore feet furnished with five toes, inclosed in a membrane, but very distinct; the claws long and strait: the hind feet very broad; five distinct toes, with the claws just extending to the margin of the membrane, which expands into the form of a crescent. One of these was taken near the city of Chester, in May 1766. On the first capture its skin was naked, like that of a porpoise; and only the head, and a small spot beneath each leg, was hairy. Before it died the hair began to grow on other parts: the fore part of the head was black, hind part of the head and throat white; beneath each fore leg was a spot of the same colour; the hind feet of a dirty white; the rest of the animal of an intense black. They vary in the disposition of the colours; that described by M. de Buffon had only the belly white. These species, according to that writer, frequent the coast of the Adriatic: the length of that described by M. de Buffon was seven feet and a half; that taken at Chester was very much less, and probably a young one. Synonymes.---*Br. Zool.* i. p. 122. Le phoque à ventre blanc. *Buffon, Supplem.* vi. 310. *tab.* xlv.

THE MEDITERRANEAN SEAL.

THIS hath a small head; neck longer than that of the common seal; orifices of the ears not larger than a pea: hair short and rude: colour dusky, spotted with ash-colour: above the navel a tawny spot; the toes on the fore feet furnished with nails: the hind feet pinniform, and without nails. When the animal is placed
on

on its back, the skin of the neck folds like a monk's hood. Its length is eight feet seven inches : the greatest circumference above five feet. It inhabits the Mediterranean Sea, but as yet not discovered in the ocean. The common or oceanic species is probably an inhabitant of the same sea, for the species described by Aristotle is of that kind ; he minutely describes the feet, and attributes to the hind as well as the fore feet five toes, every one furnished with nails : that species therefore is the Phoca of the antients.

Synonymes.---*Vitulus Maris Mediterranei. Rondel.*
Phoca Monachus, capite inauriculato, dentibus incis ;
utriusque maxillæ quatuor, palmis indivisis plantis ex-
unguiculatis. Herman.

THE LONG-NECKED SEAL.

THIS species hath a slender body : the length from the nose to the fore legs is as great as from the fore legs to the tail : there are no claws on the fore feet, which resemble fins. A good specimen of this was preserved in the museum of the Royal Society. Doctor Parsons has given a figure of it in the 48th vol. of *Philos. Transf. tab. vi.* but we are left uninformed as to the country it inhabits.

THE FALKLAND-ISLAND SEAL.

THIS species is in length about four feet : hair short, cinereous tipped with dirty white. Nose short, beset with strong black bristles : short, narrow, pointed auricles. The upper cutting teeth fulcated tranversely ; the lower in an opposite direction : on each side of the canine teeth, a smaller or secondary one : the grinders are conoid, with a small process on one side near the base. It has no claws on the fore feet ; but beneath the skin are evident marks of the bones of five toes ; the skin extends far beyond their ends. On the toes of the hind legs are four long and strait claws ; but
the

the skin stretches far beyond, which gives them a very pinniform look.

This species probably inhabits the seas about Juan Fernandez; for Don Ulloa informs us of one kind, which is not above a yard long. The small seals also inhabit from the Falkland islands round Cape Horn, even as far as New Zealand; and are seen farther from shore than any other kind. They are very sportive, dipping up and down like porpoises, and go on in a progressive course like those fish. When they sleep, one fin generally appears above the water. They perhaps extend as far as the Society Islands, at least the natives have a name for the seal, which they call Humi.

·THE TORTOISE-HEADED SEAL.

THIS hath a head like that of a tortoise: neck slenderer than the head or body: feet like those of the common seal. We are indebted to Doctor Parsons for the account of this species, who says it is found on the shores of many parts of Europe.

THE RUBBON SEAL

HAS very short fine glossy bristly hair, of an uniform colour, almost black; marked along the sides, and towards the head and tail, with a stripe of a pale yellow colour, exactly resembling a rubbon laid on it by art; words cannot sufficiently convey the idea; it was communicated by Doctor Pallas, who received it from one of the remotest Kuril islands. Its size is unknown, for Doctor Pallas received only the middle part, which had been cut out of a very large skin, so so that no particular description can be given of it. Other obscure species in those seas, are, 1. A middle-sized seal, elegantly speckled in all parts: 2. One with brown spots, scarcer than the rest: 3. A black species, with a peculiar conformation of the hind legs.

THE LEPORINE SEAL.

THE fur of this species is as soft as that of a hare, upright and interwoven; of a dirty white colour: whiskers long and thick, so that the animal appears bearded: the head is long; the upper lip thick: four cutting teeth above; the same below: nails on the fore and hind feet. Its usual length is six feet and a half; its greatest circumference five feet two. It inhabits the White Sea during summer; ascends and descends the rivers in quest of prey; is found also off Ireland, and from Spitsbergen to the Tchutkinofs. Synonyme.---Phoca Leporina. *Lepechin. act. acad. Petrop. pers* i. 264. *tab. viii. ix.*

THE GREAT SEAL.

THIS resembles very much the common, but grows to the length of twelve feet: one described in the *Phil. Transf.* was seven feet and a half long, yet so young as scarcely to have any teeth; the common seal is at full growth when it has attained the length of six. It inhabits the coast of Scotland, and the south of Greenland. The skin is thick, and is used by the Greenlanders to cut out thongs for their seal fishery. Perhaps it is the same with the great Kamtschatkan seal, called by the Russians, *Lachtach*, weighing 800lb. whose cubs are black. One of that size was killed in the north of Scotland. Synonymes.---Sea-calf. *Phil. Transf.* ix. 74. *tab. v.* Le grand phoque. *Buffon*, xiii. 345. *Utluk?* *Crantz Greenl.* i. 125. *Schreber Cab.* i. 43.

THE ROUGH SEAL.

THIS hath rough bristly hair, intermixed like that of a hog; and of a pale brown colour. It inhabits Greenland: the natives make garments of its skin, turning the hairy side inmost. Perhaps what our Newfoundland seal-hunters call Square Phipper; whose coat,

coat, they say, is like that of a water-dog, and weighs 500lb. Synonyme.---Neitsek. *Crantz Greenl.* i. 124. *Schreber*, clxxxvi.

THE PORCINE SEAL.

THE porcine seal agrees in general form with the urfine, but the nose is longer, and resembles a hog's snout; it has also the vestiges of ears: the feet have five distinct toes, covered with a common membrane. It inhabits the coast of Chili, but is a rare species. Synonyme.---*Phoca porcina*. *Molina Chili*. 260.

THE EARED SEAL,

WITH a conoid head; nose rather pointed; ears an inch long, very narrow and pointed; whiskers very long and white; fore feet pinniform; there are neither toes nor tails apparent, but are terminated membranously: in the hind feet the toes are apparent, and each furnished with its nail; the membrane extends beyond, and then divides into five narrow divisions, correspondent to each toe; the tail a little more than an inch long: the whole body is covered with long hair of a whitish or cream-colour: the length from nose to tail is rather more than two feet. It inhabits the streights of Magellan.

THE HOODED SEAL.

THIS hath a strong folded skin on the forehead, which it can fling over its eyes and nose, to defend them against stones and sand in stormy weather: its hair is white, with a thick coat of black wool under, which makes it appear of a fine grey. It inhabits only the south of Greenland, and Newfoundland: in the the last it is called the hooded seal: the hunters say they cannot kill it till they remove the integument on the head. Synonymes.---Clap-myfs. *Eagede Greenl.* 84. *Neitserfoak*. *Crantz Greenl.* i. 124.

THE HARP SEAL,

WITH a pointed head and thick body, of a whitish grey colour, marked on the sides with two black crescents, the horns pointing upward towards each other; but it does not attain this mark till the fifth year; till that period it changes its colour annually, and is distinguished by the Greenlanders by different names each year. It inhabits Greenland and Newfoundland, Iceland, the White Sea, and Frozen Ocean, and passes through the Asiatic strait, as low as Kamtschatka; it is the most valuable kind, the skin being the thickest and best, and its produce of oil the greatest; it grows to the length of nine feet. Our fishers call this the harp or heart seal, and style the marks on its sides the saddle. There is a blackish variety, which they say is a young harp, called *bedlemer*.

Synonyme.---Black-sided seal. *Egede Greenl. plate iii.* Attarsoak. *Crantz Greenl. i. 124.* *Schreber, Cab. i. 39.* *Phoca oceanica.* Krylatca. *Russ. Lepechin act. acad. Petrop. pars i. 259. tab. vi. vii.*

THE LITTLE SEAL.

THIS species hath the four middle cutting teeth of the upper jaw bifurcated, the two middle of the lower jaw slightly trifurcated; a rudiment of an ear; the webs of the feet extending far beyond the toes and nails: the hair soft, smooth, and longer than in the common seal; its colour is dusky on the head and back, beneath brownish; its length two feet four inches. Our seal-hunters affirm, that they often observe, on the coast of Newfoundland, a small species, not exceeding two feet or two feet and a half in length. Capt. Abraham Dixon says, that he saw off the coast of North America, in his voyages of 1785 to 1788, multitudes of small seals, not exceeding a foot in length; they were perpetually dipping and rising again, but were so active that he never could procure a specimen.

Synonyme.---Le petit phoque. *Buffon*, iii. 341. *tab.* liii. *Schreber*, cxxxv.

THE URSINE SEAL, OR SEA BEAR.

THE ursine seal, commonly called the sea bear, leads, during the three summer months, a most indolent life: they arrive at the islands vastly fat, but during the above time they are scarcely ever in motion: they confine themselves for whole weeks to one spot, sleep a great part of the time; eat nothing; and, except the employment the females have in suckling their young, they are totally inactive: they live in families, each male has from eight to fifty females, whom he guards with the jealousy of an eastern monarch; and, though they lie by thousands on the shores, each family keeps itself separate from the rest; and sometimes, with the young and unmarried ones, amount to a hundred and twenty. The old animals, which are destitute of females, or deserted by them, live apart, and are excessively splanetic, peevish, and quarrelsome: they are very fierce, and so attached to their old haunts, that would die sooner than quit them: they are monstrously fat, and have a most hircine smell. If another approaches their station, they are roused from their indolence, and instantly snap at it, and a battle ensues; in the course of the conflict they perhaps intrude on the seat of another; this gives new cause of offence, so in the end the discord becomes universal, and is spread along the whole shore.

The other males are also very irascible; the causes of their disputes are generally these: the first and most terrible is, when an attempt is made by another to seduce one of their mistresses, or a young female of the family. This insult produces a combat, and the conqueror is immediately followed by the whole seraglio, who are sure to desert the unhappy wretch who is vanquished. The second reason of a quarrel is, when one invades the seat of another. The third arises from their

their interfering in the disputes of others. These battles are very violent. The wounds they give and receive are very deep, and resemble the cuts of a sabre. At the end of a fight they fling themselves into the sea, to wash away the blood.

The males are very fond of their young, but very tyrannical towards the females; if any body attempts to take one of their cubs, the male stands on the defensive, while the female makes off with the young in her mouth; should she drop it, he instantly quits the enemy, falls on her, and beats her against the stones till he leaves her for dead. As soon as she recovers, she comes in the most suppliant manner to the male, crawls to his feet, and washes them with her tears; he in the mean time stalks about in the most insulting manner; but, in case the young one is carried off, he melts into the deepest affliction, and shews every sign of deep concern: the female brings but one at a time, never more than two.

They swim very swiftly, at the rate of seven miles an hour: they can continue a long time under water: they are very tenacious of life, and will live for a fortnight after receiving such wounds as would immediately destroy any other animal: the male is vastly superior in size to the female: the body of each is of a conic form, very thick before, and tapers to the tail: the length of a large male is eight feet, circumference five; near the tail twenty inches; weight eight hundred pounds: the nose projects like that of a pug dog, but the head rises suddenly; the nostrils are oval, divided by a septum; the lips are thick; the insides are red and ferrated; the whiskers long and white: the teeth, in all thirty-six, lock into each other when the mouth is closed: the tongue is bifid; the eyes large and prominent; the iris black; the pupil smaragdine: the eyes may be covered at pleasure with a fleshy membrane: the ears are small, sharp pointed, hairy without, smooth and polished within.

The length of the fore legs is twenty-four inches, like those of other quadrupeds, not immersed in the body like those of seals: the feet are formed with toes, as those of other animals, but are covered with a naked skin, having only the rudiments of nails on five latent toes: the hind legs are twenty-two inches long, fixed to the body like those of seals, but capable of being brought forward; so that the animal can use them to scratch its head: these feet are divided, each into five toes, connected with a great web, a foot broad; the tail is only two inches long.

The hair is long and rough, with a soft down of a bay colour beneath: the hair on the neck of the old males stands erect: the general colour of these animals is black, but the hair of the old ones is tipped with grey: the females are cinereous: the skins of the young ones cut out of their dams are very useful for clothing, and cost about three shillings and four pence each; the skin of an old one four shillings: the fat and flesh of the old males is very nauseous, but that of the females resembles lamb: the young ones, roasted, are as good as sucking pigs.

Synonymes.---*Ursus marinus*. *Steller. Nov. Com. Petrop.* ii. 331. *tab. xv.* Sea cat. *Hist. Kamtjchatka*, 123. *Muller's Exped.* 50. *Phoca urfina*. *Ph. capite auriculato. Lin. syst.* 55. *L'Ours marin. Brisson quad.* 166. *Schreber*, cxxxii.

THE BOTTLE-NOSED SEAL.

THE snout of the male projects five or six inches below the lower jaw: the upper part consists of a loose wrinkled skin, which this animal, when angry, has the power of blowing up, so as to give the nose an arched appearance: the feet are short and dusky, with five toes on each furnished with nails: the hind feet have the appearance of great lacinated fins. It has large eyes, great whiskers, short dun hair on the body, that on the neck is a little longer: the skin is very thick.

An

An old male will measure twenty feet in length, and fifteen in circumference.

The female has a blunt nose, tuberos at the top; wide nostrils; a mouth breaking very little into the jaws; conic teeth, eyes oblique and small, fore legs twenty inches long, and toes with flat oblong nails; its hind parts are divided into two great forked fins, without any tail; the whole body is covered with short rust-coloured hair: the length from the nose to the end of the fins is four yards, its greatest circumference two and a half. They inhabit the seas about New Zealand, Juan Fernandez, Falkland Islands, from S. lat. 54. deg. 40 min. They are seen in great numbers, in June and July, the breeding-season, on the island of Juan Fernandez, which they resort to for the purpose of suckling their young on shore, and continue there till September: they bring two at a time: the female, during that season, is very fierce; one of Lord Anson's sailors was killed by the enraged dam of a whelp, which he had robbed her of: the male shews little attachment to its young, but the female is excessively fond of it; the former will suffer it to be killed before his face without shewing any resentment. Towards evening, both male and female swim a little way to sea, the last with the young on its back, which the male will push off, as if to teach it to swim.

They arrive on the breeding-islands very fat and full of blood; when they are in motion, they seem like a great skin full of oil, from the tremulous movement of the blubber, which has been found to be a foot thick. The Spaniards very properly call these, *urigne lobos de aceyte*, or oil-wolves, from their looking like a skin full of oil, from the motion of the vast quantity of fat or blubber, of which their bodies consist. One has been known to yield a butt of oil, and so full of blood, that what has run out of a single animal has filled two hogsheds. The flesh is eatable; Lord Anson's people ate it under the denomination of beef, to distinguish

distinguish it from that of seal, which they called lamb. The old animals have a tremendous appearance, yet are excessively timid, except at the breeding-season, when they seem to lose their apprehensions, and are less disturbed at the sight of man. At other times they hurry into the water, or, if awakened out of their sleep, by a loud noise, or blows, fall into vast confusion, tumble down, and tremble in every part, through fear.

These animal associate in families, like the former, but not in such great numbers; the males shew equal jealousy about their mistresses, and have bloody combats on their accounts; oft-times there is one of superior courage to the rest, and procures by dint of valour a greater number of females than the others. They are of a very lethargic nature, fond of wallowing in miry places, and will lie like swine on one another; they grunt like those animals, and will sometimes snort like horses in full vigour: they are very inactive on land; to prevent surprize, each herd places a centinel, who gives certain signals at appearance of danger: during the breeding-season, they abstain from food, and before that is elapsed become very lean; at other times they feed on fish and the smaller seals.

Synonymes.---Sea lion. *Dampier's voy.* i. 90. iv. 15. *Rogers's voy.* 136. *Anson's voy.* 122. *Phoca leonina.* Ph. capite antice cristato. *Lin. syst.* 55. Le lion marin. *Briffon quad.* 167. *Buffon,* xiii. 351. *Schreber,* cxxxiii. Le lame. *Phoca elephantina.* *Molina Cbili.* 261.

THE LEONINE SEAL, OR SEA LION,

HAS a short nose turning a little up, a great head, large eyes, long and thick whiskers, strong enough for pick-teeth: on the neck and shoulders of the male there is a great mane of coarse long waving hair, not unlike the shaggy appearance of a lion: the rest of the body is covered with a very short, smooth, and glossy,
coat



THE FUR SEAL.

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Andrew Colver.

coat of a deep brown colour : those of Kamtschatka are reddish, the females tawny ; the fore feet are like those of the ursine seal, without the least external appearance of toes ; the hind feet are very broad, furnished with very small nails ; the tail is very short ; the hind parts are vastly large, swelling out with the vast quantity of fat. The old males are from twelve to fourteen feet long, of great circumference about the shoulders ; they weigh from twelve to fifteen hundred pounds : the females are from six to eight feet in length, more slender made than the males, and quite smooth : they inhabit in vast numbers Pinguin and Seal islands, near Cape Desire, on the coast of Patagonia ; are found within the straits of Magellan, and on Falkland Isles ; they have not yet been discovered in any other part of the southern hemisphere, or in any other place nearer than the sea between Kamtschatka and America : the inhabitants of Chili call them *thapel lame*, or the seal with a mane : they live in families separate from the ursine and other seals ; these possess the beach nearest to the sea ; they have much of the lethargic nature of the former, and, like them, are polygamous ; they have from two to thirty females apiece ; they have a fierce look ; the old ones snort and roar like enraged bulls ; but, on the approach of mankind, fly with great precipitation ; the females make a noise like calves ; the young bleat like lambs : the old males lie apart, and possess some large stone, which no other dare approach ; if they do, a dreadful combat ensues, and the marks of their rage appear in the deep gashes on various parts of their bodies. The males frequently go into the water, take a large circuit, land, and caress their females with great affection ; put snout to snout as if they were kissing one another : the females, on seeing their male destroyed, will sometimes attempt to carry away a cub in their mouth, but oftener desert them through fear. The food of these animals is the smaller seals, pinguins, and fish ; but while they are ashore they

keep, in the breeding-time, a fast of three or four months; but, to keep their stomachs distended, will swallow a number of large stones, each as big as two fists.---Synonymes. *Bestia marina. Kurillis, Kamtschadalis et Russis, Kurillico nomine siwutscha dicta. Nov. Com. Petrop. ii. 360. Phora leonina. Molina Chili. 262. Sea lion. Cook's voy. ii. 203. Forster's voy. ii. 513. Pernetti's voy. 240. tab. xvi.*

THE URIGNE SEAL, OR SEA WOLF,

WITH the body very thick at the shoulders, gradually lessening to the hind legs; head like a dog, with the ears close cut; nose short and blunt; upper lip cunilined; six cutting teeth above, four below; the fore foot has four toes inclosed in a membranous sheath, so as to resemble fins; the hind feet are hid in a continuation of the skin of the back, and have five toes of unequal length, like those of the human hand; tail three inches long; the skin is covered with two sorts of hairs, one like that of an ox, the other more hard; the colours various; length from three to eight feet. These are the sea wolves which navigators speak of off the island of Lobos, near the river Plata: they appear in vast multitudes, meet the ships, and will even hang by their sides with their paws, and seem to stare at and admire the crew; then drop off and return to their haunts: they swim with incredible swiftness. The natives of Chili kill them for the skins, and for the oil.---Synonyme. *L'urigne. Phoca lupina. Molina Chili. 255.*

THE MANATI.

THIS genus has fin-like fore legs, the hind parts ending in a tail horizontally flat. It contains six species, as follows:

THE WHALE-TAILED MANATI.

THIS animal, in nature, so nearly approaches the cetaceous tribe, that, were it not in conformity to the systematic writers, we might have left it and some others to come along with the fishes in a subsequent volume. It scarcely deserves the name of a biped, much less that of a quadruped. What are called its fore feet are little more than pectoral fins; they serve only for swimming, and are never used for walking; for it never goes ashore like the walrus and seal. It brings forth in the water, and, like the whale, suckles its young in that element: like the whale it has no voice, and, like that animal, has a horizontal broad tail, without even the rudiments of hind feet. It inhabits the seas about Bering's and the other Aleutian islands, which intervene between Kamtschatka and America, but never appears off Kamtschatka, unless blown ashore by a tempest. It is probably the same species which is found above Mindanao, but is certainly that which inhabits near Rodriguez, vulgarly called Diego Reys, an island to the east of Mauritius, or the Isle of France, near which it is likewise found. It is likely that this species extends to New Holland, where Dampier says he has seen it.

They live perpetually in the water, and frequent the edges of the shores; and, in calm weather swim in great droves near the mouths of rivers, in the time of flood they come so near the land that a person may stroke them with his hand; if hurt, they swim out to sea, but presently return again: they live in families, one near another; each consists of a male, a female, a half-grown young one, and a very small one: the females oblige the young to swim before them, while the other old ones surround, and, as it were, guard them on all sides. The affection between the male and female is very great, for, if she is attacked, he will defend her to the utmost, and, if she is killed, will follow her

corpse to the very shore, and swim for some days near the place it has been landed at. They copulate in the spring, in the same manner as the human kind, especially in calm weather, towards the evening: the female swims gently about, the male pursues, till, tired with wantoning, she flings herself on her back, and admits his embraces. The leonine and ursine seals copulate in the same manner, only, after sporting in the sea for some time, they come on shore for that purpose. Steller think they go with young above a year; it is certain that they bring but one young at a time, which they suckle by two teats placed between the breasts.

They are vastly voracious and gluttonous, and feed not only on the fuci that grow in the sea, but such as are flung on the edges of the shore. When they are filled, they fall asleep on their backs. During their meals, they are so intent on their food, that any one may go among them and chuse which he likes best. Their back and their sides are generally above water, and, as their skin is filled with a species of louse peculiar to them, numbers of gulls are continually perching on their backs and picking out the insects. They continue in the Kamtschatkan and American seas the whole year, but in winter are very lean, so that we can count their ribs: they are taken by harpoons fastened to a strong cord, and after they are struck it requires the united force of thirty men to draw them on shore. Sometimes, when they are transfixed, they will lay hold of the rocks with their paws, and stick so fast as to leave the skin behind before they can be forced off. When a manati is struck, its companions swim to its assistance; some will attempt to overturn the boat, by getting under it; others will press down the rope, in order to break it; and others will strike at the harpoon with their tails, with a view of getting it out, which they often succeed in. They have not any voice, but make a noise by hard breathing, like the snorting of a horse.

They

They are of an enormous size; some are twenty-eight feet long, and weigh eight thousand pounds; but, if the mindanao species is the same with this, it decreases greatly in size as it advances southward, for the largest which Dampier saw there weighed only six hundred pounds: the head, in proportion to the bulk of the animal, is small, oblong, and almost square; the nostrils are filled with short bristles; the gape, or *ristus*, is small; the lips are double; near the junction of the two jaws the mouth is full of white tubular bristles, which serve the same use as the laminæ in whales, to prevent the food running out with the water; the lips are also full of bristles, which serve instead of teeth to cut the strong roots of the sea plants, which floating ashore are a sign of the vicinity of these animals. In the mouth are no teeth, only two flat white bones, one in each jaw; one above, another below, with undulated surfaces, which serve instead of grinders: the eyes are extremely small, not larger than those of a sheep; the iris black; it is destitute of ears, having only two orifices, so minute that a quill will scarcely enter them; the tongue is pointed and small; the neck is thick, and its junction with the head scarcely distinguishable, and the last always hangs down: the circumference of the body near the shoulders is twelve feet, about the belly twenty, near the tail only four feet eight; the head thirty-one inches; the neck near seven feet; and from these measurements may be collected the deformity of this animal. Near the shoulders are two feet, or rather fins, which are only two feet two inches long, and have neither toes nor nails, beneath are concave, and covered with hard bristles; the tail is thick, strong, and horizontal, ending in a stiff black fin, and like the substance of a whalebone, and much split in the fore part, and slightly forked; but both ends are of equal lengths, like that of a whale. The skin is very thick, black, and full of inequalities, like the bark of oak, and so hard as scarcely

to be cut with an ax, and has no hair on it; beneath the skin is a thick blubber, which tastes like oil of almonds: the flesh is coarser than beef, and will not soon putrefy: the young ones taste like veal: the skin is used for shoes, and for covering the sides of boats. The Russians call this animal *morskaia korowa*, or sea-cow; and *kapustnik*, or eater of herbs.

Synonymes.---Manati. *Rufforam.* *morskuia korowa.* *Steller in Nov. Com. Petrop.* ii. 294. *Schreber,* ii. 95. *Hist. Kamtschatka* 132. *Buffon, Supplem.* vi. 399. *Trichecus borealis.* *Gm. Lin.* i. 61. β.

THE ROUND-TAILED MANATI.

THE round-tailed manati has thick lips, eyes as minute as a pea, and two very small orifices for ears; its neck is short, and thicker than its head; it is thickest at the shoulders, and tapers gradually to the tail, which is quite round, lies horizontally, is thickest in the middle, growing thinner to the edges. The feet are placed at the shoulders, beneath the skin there are bones for five complete toes; near the base of each foot, in the female, is a small teat: the skin is very thick and hard, having some few hairs scattered over it. Dampier measured some of these animals in the West Indies ten or twelve feet long; their tails twenty inches long, fourteen broad. The length of the specimen preserved in the Leverian Museum is six feet and a half; the greatest circumference, three feet eight inches; that near the tail, two feet two. This was taken near the Marigot of Kantai, in the river Senegal; but they grow to the length of fourteen or fifteen feet; they are very fat, and both fat and lean resemble veal; but the fat adheres to the skin in form of blubber; the negroes take them by harpooning, and sell them at the rate of two long bars of iron apiece: the season is only in the months of December and January. Manati are found in most of the African rivers to the south of the Niger, and possibly to those

those on the eastern coast: the woman-fish, taken off the isles Bocicas, to the south of the river Cuama, is most probably of this species.

THE GUIANA MANATI

HATH a head hanging downward, the feet furnished with five toes, and the body almost to the tail of an uniform thickness; near its junction with that part it grows suddenly thin; the tail is flat, and in form of a spatula; thickest in the middle, and growing thinner towards the edges. It inhabits the rivers and sea of Guiana; it grows to the length of sixteen or eighteen feet; is covered with a dusky skin with a few hairs. Those measured by Dampier were ten or twelve feet long; their tail twenty inches in length, fourteen in breadth, four or five thick in the middle, two at the edges; the largest (according to the same voyager) weighed twelve hundred pounds: but they arrive at far greater magnitude. Clusius examined one which was sixteen feet and a half long, and Gomora speaks of them as sometimes of the length of twenty feet.

Synonymes.---*Buffon*, xiii. 425. *tab. lvii. Raii syn. quad.* 193. *Trichechus manatus. Lin. syst.* 49. *Schreber, tab.* lxxx.

THE ANTILLES MANATI.

CLUSIUS, in his *Exotics*, gives a print and description of a manati brought from the West Indies; but neither one nor the other enables us to define the species. He says that it had short nails and broad feet, and that the tail was broad and shapeless. Till we are better informed, we shall suppose it to be the same with the Guiana. *M. de Buffon* in his *Supplement*, vi. 396, makes it a distinct species, under the title of *le grand lamantia des Antilles*.

THE ORONOKO MANATI.

THIS is the species to which M. de Buffon has, in his Supplement, p. 400, given the name of *le petit lamantia de l'Amerique*, and says it is found in the Oronoko, Oyapoc, and the rivers of the Amazons: this pushes its way to the amazing distance we have mentioned. By the description Gumilla has given of the tail, it is circular, and probably must be referred to this species. We cannot conceive why M. de Buffon calls it *le petit*, for it grows to a vast size. Father Gumilla had one taken in a distant lake, near the Oronoko, which was so large that twenty-seven men could not draw it out of the water; on cutting it open, he found two young ones, which weighed twenty-five pounds apiece.

These animals abound in certain parts of the eastern coasts and rivers of South America, about the Bay of Honduras, some of the greater Antilles, the rivers of Oronoque, and the lakes formed by it; and lastly, in that of the Amazons, and the Guallaga, the Pastaça, and most of the others which fall into that vast river; they are found even a thousand leagues from its mouth, and seem to be stopped from making even an higher advance, only by the great cataract, the Pongo of Borja: they sometimes live in the sea, and often near the mouth of some river, into which they come once or twice in twenty-four hours, for the sake of brouzing on the marine plants which grow within their reach; they altogether delight more in brackish or sweet water than in the salt; and in shallow water near low land, and in places secure from surges, and where the tide runs gently. It is said, that at times they frolic and leap to great heights out of the water: their uses were very considerable to the privateers or buccaneers in the time of Dampier: their flesh and fat are white, very sweet and salubrious; and the tail of a young female was particularly esteemed. A suckling

was

was held to be most delicious, and eaten roasted, as were great pieces cut out of the belly of the old animals: the skin cut out of the belly (for that of the back was too thick) was in great request for the purpose of fastening to the sides of canoes, and forming a place for the insertion of the oars: the thicker part of the skin, cut fresh into lengths of two or three feet, serves for whips, and becomes, when dried, as tough as wood. In the head, it was pretended that there were certain stones, or bones, of great value, on account of their virtues in curing the gravel and cholic.

They are taken by an harpoon stuck in the end of a staff, which the Indians use with great dexterity: they go in a small canoe with the utmost silence, as the animal is very quick of hearing. The harpoon is loose, but fastened to a cord of some fathoms in length; for, as soon as the manati is struck, it swims away with the barb plunged in its body, attended by the canoe, till spent with pain and fatigue; in some places the smaller are taken in nets. If a female, which has a young one, is struck, she takes it under its fins or feet, if not too large, and shews, even in extremity, the greatest affection for its offspring, which makes an equal return, never forsaking the captured parent, but is always a sure prey to the harpooner. The Indians of the Maragnon, or the river of Amazons, take them by the means of intoxicating herbs, or by shooting them with those poisoned arrows, whose least touch is fatal, yet imparts no degree of venom to the thing struck, whose flesh is eaten with the utmost safety. At the time the waters of the Oronoque (which annually overflow the banks) begin to return into the bed of the river, the Indians made dams across the mouths of the shallow lakes formed by the floods, and in that manner take vast numbers of manati, or pexi-buey, or fish-cows, as the Spaniards call them, together with tortoises, and variety of fish.

We conclude this account with the extraordinary history of a tame manati, preserved by a certain prince of Hispaniola, at the time of the arrival of the Spaniards, in a lake adjoining to his residence. It was, on account of its gentle nature, called in the language of the country *matum*. It would appear as soon as it was called by any of its familiars, for it hated Spaniards, on account of an injury it had received from one of these adventurers. The fable of Arion was here realised. It would offer itself to the Indian favourites, and carry over the lake ten at a time, singing and playing on its back; one youth it was particularly enamoured with, which reminds us of the classical parallel in the dolphin of Hippos, so beautifully related by the younger Pliny. The fates of the two animals were very different; *matum* escaped to its native waters, by means of a violent flood; the *Hipponensian* fish fell a sacrifice to the poverty of the retired colonists. See both relations, the first in *Peter Martyr's Decades of the Indies*, Dec. iii. book 8; the other in lib. ix. epist. 33. of Pliny. The elder Pliny also relates the same story, lib. ix. c. viii.

THE SEA APE.

THIS is a very singular species of manati, seen by Mr. Steller on the coast of America. It was five feet long, with a head like a dog; it had erect and sharp ears, large eyes, a sort of beard on both lips; its body was round, thickest near the head, tapering to the tail, which was bifurcated, the upper lobe the longest; its body was covered with thick hair, grey on the back and red on the belly. Mr. Steller could discover neither feet nor paws. It was full of frolic, played a thousand monkey tricks; sometimes swimming on one side, sometimes on the other side of the ship, looking at it seemingly with great amazement. It would come so near the ship, that it might be touched with a pole; but, if any body stirred, it would immediately retire.

It often raised one third of its body above the water, and stood erect for a considerable time: then suddenly darted under the ship, and appeared in the same attitude on the other side; and would repeat this for thirty times together. It would frequently bring up a sea plant, not unlike the bottle-gourd, which it would toss about and catch again in its mouth, playing numberless tricks with it.

VESPERTILIO, the BAT, of the Order of PRIMATES.

THE distinguishing characters of this genus are as follow: all the teeth are erect, pointed, near each other; and the first four are equal. The fore-feet have long extended toes, connected by a thin broad membrane, extending to the hind legs, and expanded into a kind of wings, by which the creature is enabled to fly. There are two classes, one with, and the other without, tails. This curious animal seems to form the link by which Nature passes from the quadrupeds to the winged tribes, since it evidently participates both of the quality of brute and bird. There are twenty-five different species, beside two or three varieties, which are as follow: and first of those without tails.

THE TERNATE, ROUSETTE, OR ROUGETTE, BAT.

BATS of this species have large canine teeth, four cutting ones above, the same below; a sharp black nose; large naked ears; and a pointed tongue, terminated by sharp aculeated papillæ. The exterior toe is detached from the membrane; the claw strong and hooked. There are five toes on the hind-feet, with talons very crooked, strong, and compressed sideways. They have no tail; the membrane is divided behind quite to the rump. The head is of a dark ferruginous colour; the neck, shoulders, and under side, are of a

much lighter and brighter red. On the back the hair is shorter, dusky, and smooth: the membranes of the wings are dusky. They vary in colour: some are entirely of a reddish brown; others dusky. Some are one foot long, and four from tip to tip of the wings expanded; but there are others vastly larger. This species is not gregarious, though numbers of them at times meet accidentally on the same tree in quest of food; and, being frightened, may chance to fly the same way in a flock.

The Rougette differs from the Roufette only in that its whole body and head are cinereous, mixed with some black; and that on the neck there is a great bed of orange or red. The size is also much less; the extent of the wings being little more than two feet. They inhabit the same countries, agree in food, but differ in manners. They are found in Guinea, Madagascar, and all the other islands in the Indian Ocean, New Holland, the Friendly Islands, the New Hebrides, and New Caledonia. The Rougettes fly in flocks, and obscure the air with their numbers. They begin their flight from one neighbouring island to another immediately on sun-set, and return in clouds from the time it is light till sun-rise. They lodge during the day in hollow trees. Both kinds live on fruits, and are fond of the juice of the palm-tree, with which they will intoxicate themselves till they drop on the ground. They swarm like bees, hanging near one another from the trees in great clusters. In New Caledonia the natives use their hair in ropes, &c. They grow excessively fat at certain times of the year. The Indians eat them, and declare the flesh to be very good. The French in the Isle de Bourbon boil them in their bouillon, to give it a relish; but the negroes hold them in abhorrence. Their bodies are from the size of a pullet to that of a dove. While eating, they make a great noise: their smell is rank: they are fierce, bite, and make great resistance when taken.

taken. They bring but one young at a time. They copulate with ardour; and the sex of the male is very conspicuous. The penis is not concealed in a sheath, like that of quadrupeds, but hangs out of the body, like that of the monkey. The sex of the female is also very apparent. They have only two paps, placed on the breast, and they produce oftener than once a year. The ancients had some knowledge of these animals. Herodotus mentions winged wild-beasts like bats, that molested the Arabs, who gathered the cassia, to such a degree, that they were obliged to cover themselves all but the eyes with skins. From such relations, it is probable, the poets formed their fictions of Harpies.

Both the smaller and greater species are equally fond of human blood. Persons attacked by them are in danger of passing from a sound sleep into eternity. The bat is so dextrous a bleeder, as to insinuate its aculeated tongue into a vein without being perceived; it then sucks the blood till it is satiated, all the while fanning with its wings, and agitating the air, in those hot climates, in so pleasing a manner, as to cast the sufferer into a still sounder sleep. It is therefore very unsafe to sleep in the open air, or to leave open any entrance to such dangerous animals. Nor do they confine themselves to human blood: in certain parts of America, they even destroy the cattle.

There is a smaller variety, with a head like a greyhound; large teeth; and long broad naked ears. The whole body is covered with soft short hair of a straw colour. It is near nine inches long: the extent of its wings two feet two inches.

Synonymes.---*Vespertilio ingens. Clus. exot. 94. Canis volans ternatanus orientalis. Seb. Mus. i. 91. tab. lvii. Vespertilio Vampyrus. V. ecaudatus, naso simplici, membrana inter femora divisa. Lin. syst. 46. La Roufette & la Rougette. Buffon, x. 55. tab. xiv. xvii. Schreber, 185. tab. xlv. Pteropus rufus aut*

niger auriculis brevibus acutiusculis. *Briffon quad.* 153 and 154. *No. 2. Shaw Spec. Lin.* viii. Great bat. *Edw.* 180.

The history of this very curious species of bat has been lately greatly elucidated by M. de la Nux, who resided fifty years in Bourbon, where they so much abound. He says, the larger bats fly at noon-day; but not the smaller ones. The former fly not in troops during the day, but singly, when they mount very high, which greatly diminishes their apparent magnitude. They fly long without stopping, and can pass from the isle of Bourbon to the isle of France, a distance of at least thirty leagues, in a very short time. They never hover, like birds of prey. But, in the great elevation of perhaps two hundred fathoms above the surface of the earth, the motion of their wings, which is rapid when near the ground, appears to be very slow. Strictly speaking, the great ternate bats live not in society. When in quest of food, they unite into flocks or companies more or less numerous. These companies associate by accident upon the trees whose flowers or fruits are agreeable to their palates. They may be observed arriving successively, and laying hold of the trees by the claws of their hind feet, where they rest for a long time, if not disturbed. There are always some, however, which detach themselves from time to time, and join the company. But, when a bird of prey passes above the tree, when they hear the noise of thunder or of a musket, or when they spy any person in their neighbourhood, they all take wing at once. It is on such occasions that they are seen, during the day, flying in companies, which, though numerous, never obscure the air, because they cannot fly close enough to produce this effect: the expression is at least hyperbolical.

“ With regard to the smaller ternate bats, they never fly in the day: they live in society, to the number sometimes of more than four hundred, in the hollow
trunks

trunks of large corrupted trees, from which they depart not till the dusk of the evening, and return before day-break. It is firmly believed in Bourbon, that, whatever numbers these societies consist of, there is never more than one male found among them; and, when this colony was first established, many people, whose taste and stomach were not too nice, collected vast quantities of bat-grease for food. A tree of bats, as it is termed, was no inconsiderable treasure. It is easy to shut up the entrance of their retreats, to take them out alive one by one, or to suffocate them with smoke, and in either way to ascertain the number of males and females of which the society is composed. The noise of these bats, that is heard at a great distance, both in the night and the day, is that which is natural to the animals when in a passion, and when disputing about their food; for it must not be imagined that the large ternate bats eat during the night only. They have a fine eye, as well as an accute scent. They see very well in the day; and it is not surprising that they should distinguish, in the woods, ripe fruit and grain as well as flowers. The flesh of these animals is certainly not bad, if the reluctance excited by their figure could be overcome. When about five months old, they are fat, and as good of their kind as the Guinea hen, or young wild boar; but, when old, they are hard, though pretty fat during the fruit season, which continues all the summer and part of autumn. The males, especially when aged, acquire a strong disagreeable flavour. It is not correct to say, in general, that these animals are eaten by the Indians. It is well known that the Indian neither eats nor kills any animal. Perhaps they are eaten by the Moors and Malaysans. It is certain, that many Europeans eat them. Hence it is true, that bats are eaten in India, though not by the Indians. In Bourbon, both species are eaten.

“ When .

“ When M. de la Nux first arrived in the isle of Bourbon, these animals were very common in districts already settled, where they are now become rare. The reasons are obvious: 1. The forests were then at no great distance from the settlements; and they cannot subsist but in forests. 2. The great ternate bats are viviparous, and bring forth one young only each year. 3. For the sake of their flesh and their grease, they are hunted, during the whole summer, autumn, and part of winter, by the whites with muskets, and by the negroes with nets. Besides these causes of diminution in the species, they abandon the neighbourhood of our settlements, and retire into the interior parts of the island, where they are exposed to constant destruction by the chestnut-coloured negroes.

“ The season of their amours here is in the month of May, which is about the middle of our autumn, and the females bring forth a month after the vernal equinox. Hence the time of their gestation is from four and a half to five months. Of the precise time the young take in acquiring their full growth, we have no knowledge: but they appear to be perfect at the winter solstice, which is nearly eight months from their birth. Besides, no small bats are seen except in April and May, when the old are easily distinguished from their young, by the more vivid colour of the latter: the old ones become grey, though we know not at what period; and it is then that their flesh is hard, and has so strong and disagreeable a flavour, that the fat alone, with which they are well provided from the end of the spring to the beginning of winter, is eaten by the negroes.

“ It is certain, that these animals feed upon no kinds of flesh, but solely on bananas, peaches, and other fruits, which the forests produce abundantly in different seasons: they are likewise very fond of the juices of certain umbellated flowers, particularly those of the stinking tree, the nectarium of which is very short:
these



1. The Platypus, 2. The Tapotyrc.

J. Busch sculp.



these flowers abound in January and February, which is the middle of summer in Bourbon; and allure into the lower parts of the island vast numbers of bats; and, it is probable, for the purpose of sucking the nectaria of umbellated flowers of different species, that their tongue is furnished with so many sharp papillæ. The skin of the mango fruit is resinous, and is never touched by the bats. When confined in a cage, they have been made to eat bread, sugar-canes, &c. Man has nothing to apprehend from these bats, either personally, or for his poultry. It is impossible for them to seize even the smallest bird: they cannot, like a falcon, stoop down upon their prey. If they approach too near the ground, they fall down, and are incapable of resuming their flight till they climb upon any elevated object they first meet with, supposing it should be the body of a man. When on the ground, they trail their bodies slowly along, and make their stay in that situation as short as possible. As they are by no means adapted for running, how is it practicable for them to seize birds on the branches of trees? The slow and awkward manner in which they move towards the end of a branch, in order to catch the wind in their wings, shews that every attempt of this nature would be abortive. When about to fly, these animals cannot, like birds, dart at once into the air. To disengage their claws from the place to which they are attached, they are obliged to beat the air several times with their wings; and, however full their wings may be when they quit their station, their weight is apt to make them sink. In order to raise themselves, they traverse the concavity of a curve-line. But the place from which they depart is not always commodious for the free play of their wings; they may be restrained by the vicinity of branches; and, when thus situated, they proceed to the part of the branch from which they can take wing without any risk. It frequently happens, that, when a numerous flock rest upon trees

of

of twenty or thirty feet high, and are surpris'd by a peal of thunder, or the firing of a gun, several of them fall to the ground before they receive a sufficient quantity of air to support them. In this case, they instantly climb the first tree they meet with, in order to resume their flight as soon as possible. Let us suppose, says M. de la Nux, that a traveller, hunting animals of which he has no knowledge, whose figure and aspect strike him with terror, is suddenly surrounded with a number of large bats; that he is entangled by one or two of them climbing up his body; that, by roughly endeavouring to disengage himself, he irritates the animals, and is scratched or even bit by them; would not a scene of this kind give rise to the notion, that these bats were ferocious, rushing upon men, in order to wound or devour them, while the whole affair is only a fortuitous rencounter of animals of different species, who are equally afraid of each other? I say more: the forest is absolutely necessary to the existence of these bats, to which they are led by the instinct of self-preservation, and not by any savage or ferocious disposition. When to all these facts I add, that neither the greater or smaller ternate bats ever fix upon carrion, and that naturally they do not eat upon the ground, but require to be in a hanging posture when they feed, I think I have said enough to eradicate the prejudice which represents them as carnivorous, voracious, destructive, and cruel, animals. When I farther add, that their flight is as heavy and noisy, especially when near the ground, as that of the vampire ought to be light and silent, I shall have, by this last character, removed the one species to a considerable distance from the other. And because the great ternate bats are sometimes observed flying near the surface of the water, like the swallow, they have been represented as feeding upon fish. But this flesh is equally disagreeable to them as all other kinds; for, I repeat it, that they live entirely on vegetables. It

is solely for the purpose of bathing that they frequent the waters; and, if they fly nearer the surface of the water than the earth, it is owing to the fewer interruptions presented by the former to the motion of their wings. To this circumstance the natural cleanliness of these animals must be ascribed. I have seen and I have killed numbers, and never discovered the smallest degree of dirtiness upon any of them.

“ The great bat is by no means a beautiful animal. When seen nigh, its movements are all disagreeable. There is only one point of view, a single attitude, in which all its natural deformity disappears, and in which it may be observed with pleasure. When perched on a tree, it hangs with its head down, and its wings folded, and placed exactly on each side of the body. In this situation, the vibrating wings which constitute its deformity, as well as the hind paws, by the claws of which it is suspended, are concealed. We see only a roundish, plump, pendulous, body, covered with deep brown hair extremely clean and smooth, terminated by a head whose physiognomy is vivacious, and by no means disagreeable. This is their only attitude of repose, in which they remain a long time during the day. They are seen to best advantage at an elevation above the earth from forty to sixty feet, and at the distance of about one hundred and fifty feet. Now, figure to yourself a large tree, whose branches are garnished with one hundred and fifty or two hundred of such objects; having no other motion but what is communicated to them by the branches, and you will have an idea of a picture, which I have regarded as curious, and contemplated with pleasure. In the richest cabinets of natural history, the great Ternate bat is always shewn with its wings fully extended, which is its most ugly attitude. This position may answer one purpose. But some of them ought to be viewed at a side, or from above, in their natural state of repose.”

THE SPECTRE BAT

INHABITS South America; like the former it lives in the palm-trees, and grows very fat; it has a long nose, large teeth, long, broad, upright, ears, a conic erect membrane at the end of the nose, bending at the end and flexible: the hair on its body is cinereous, and partly long; the wings are full of ramified fibres; the membrane extends from hind-leg to hind-leg: from the rump extend three tendons, which terminate at the end of the membrane. It is seven inches and a half long, extent two feet two.

Synonymes.---Andira-guacu, vespertilio cornutus. *Piso Brasil.* 190. *Marcgrave Brasil.* 213. Canis volans maxima aurita fæm. ex Nov. Hispania. *Seb. Mus.* i. tab. lvii. Vespertilio spectrum. V. ecaudatus, naso infundibuliformi lanceolato. *Lin. syst.* 46. *Klein quad.* 62. Pteropus auriculis longis, patulis, naso membrana antrorsum inflexa aucto. *Briffon quad.* 154. Le vampire. *Buffon*, x. 55. *Schreber*, 192. tab. xlv.

THE JAVELIN BAT

HAS large pointed ears, an erect membrane at the end of the nose, in form of the head of an ancient javelin. It inhabits the warm parts of America, is of the size of the common bat, and its fur is cinereous.

Synonymes.---Vespertilio Americanus vulgaris. *Seb. Mus.* i. tab. lv. fig. 2. Vespertilio perspiciliatus. V. ecaudatus, naso foliato acuminato. *Lin. syst.* 47. V. murini coloris pedibus anticis tetradactylis, posticis pentadactylis. *Briffon quad.* 161. La chauve fouris fer de lance, *Buffon*, xiii. 226. tab. xxxiii. *Supplem.* vii. 292. tab. lxxiv. *Schreber*, 194. tab. xlvi. B.

THE LEAP BAT

HAS small rounded ears, a membrane on the nose, of the form of an ovated leaf, and a web between the hind legs. It is of the same size as the last; its fur is

of a mouse colour, tinged with red. It inhabits Jamaica, Surinam, and Senegal. In the first, it lives in woods and caves, which are found full of its dung, productive of saltpetre. It feeds on the prickly pear.

Synonymes.---*Vespertilio*, rostro appendice auriculæ forma donata. *Sloane Fam.* ii. 330. Small bat. *Edw.* 201. *fig.* 1. *La feuille Buffon*, xiii. 227. *Vespertilio forficinus.* *Pallas Miscel.* 48. *tab.* v. *Schreber*, 195. *tab.* xlvii.

THE CORDATED BAT

HAS very broad and long ears, a heart-shaped membrane at the end of its nose, and a web between the hind legs; the colour of its face is a very light red, that of the body still paler. It inhabits Ceylon, and the isle of Ternati, one of the Moluccas.

Synonymes.---*Glis volans Ternatanus.* *Seb. Mus.* i. *tab.* lvi. *fig.* 1. *Schreber*, 191. *tab.* xlvi. *Vespertilio spafina.* *V. ecaudatus naso foliato obcordato.* *Lin. syst.* 47.

SECOND CLASS, WITH TAILS.

THE PERUVIAN BAT.

THIS species has a head like a pug-dog, large straight pointed ears, two canine teeth, and two small cutting teeth between them, in each jaw: the tail is inclosed in the membrane that joins the hind legs, and supported by two ligaments also involved in the membrane: the colour of its fur is of an iron grey; its body is equal to that of a middle-sized rat; the extent of its wings two feet five inches.

There is a variety of this species with hanging lips like the chops of a mastiff; its nose and upper lip are divided; it has long, narrow, sharp-pointed, ears: a few joints of its short tail stick out without the membrane, which, at same time extends far beyond it, is angular, and ends in a point: the claws on the hind-feet are large, hooked, and compressed sideways: the mem-

branes of the wings are dusky, and very thin: the fur on the head and back is brown, on the belly cinereous; five inches long; extent of the wings twenty. It inhabits Peru and the Musquito shore.

Synonyme.---Chauve-fouris de la Vallée d'Ylo. *Feuillée obs. Peru*, 1714. p. 623. *Schreber*, 196. *tab.* lx. *Vespertilio leporinus. Gm. Lin.* 47.

THE BULL-DOG BAT,

WITH broad round ears, touching each other in front; has a thick nose and pendulous lips: the upper part of the body is of a deep ash colour, the lower paler; the tail is long; its five last joints are disengaged from the membrane; it is two inches long; its extent is nine and a half. It inhabits the West Indies.

Synonymes.---Autre chauve fouris, *Buffon*, x. 84, 87. *tab.* xix. *fig.* 1, 2. *Schreber*, 207. *tab.* xlix.

THE SENEGAL BAT

HAS a long head; its nose a little pointed; short and pointed ears; fur of a tawny brown, mixed with ash colour; belly paler; two joints of the tail free: it is four inches long; its extent twenty-one.

Synonymes.---Chauve-fouris etrangere. *Buffon*, x. 82. *tab.* xvii. *Schreber*, 206. *tab.* lviii. *Vespertilio nigrita. Gm. Lin.* 49.

THE POUCH BAT,

WITH the nose somewhat produced; the end thickest, and beset with fine whiskers; the chin divided by a sulcus; ears long, rounded at their ends; on each wing, near the second joint, is a small purse, or pouch; the tail is only part involved in the membrane, the end hanging out; colour of the body a cinereous brown, the belly paler: length an inch and a half: it inhabits Surinam.---Synonyme. La chauve-fouris à bourse, *Schreber*, 209. *tab.* lvii.

THE SLOUCH-EARED BAT.

THIS species hath large pendulous ears, pointed at the ends; nose obtuse at the end; tail long, included in the membrane, and ending with a hook; colour above a deep chefnut, lighter on the belly, and cinereous on the sides: length three inches and four lines; extent of wings fifteen inches. It inhabits Guiana.

Synonyme.---Autre chauve-fouris, *de la Guyanne*. Buffon, *Supplem.* vii. 214. *tab.* lxxv.

THE BEARDED BAT.

THIS hath the nostrils open for a great way up the nose; hair on the forehead and under the chin very long; ears long and narrow; upper part of the head and body of a reddish brown, the lower of a dirty white tinged with yellow; tail included in a membrane very full of nerves. It is a very small species.

Synonymes.---Autre chauve-fouris. Buffon, x. 92. *tab.* xx. *fig.* 3. Schreber, 204. *tab.* lvi.

THE NEW YORK BAT

HAS a head shaped like that of a mouse; top of the nose a little bifid; ears short, broad, and rounded; no cutting teeth, two canine in each jaw; tail very long, inclosed in the membrane, which is of a conic shape; head, body, and the whole upper side of the membrane which incloses the tail, covered with long very soft hair of a bright tawny colour, lightest on the head and beginning of the back, the belly paler: at the base of each wing a white spot; wings thin, naked, and dusky; bones of the hind legs very slender: length, from nose to tail, two inches and a half; tail one inch eight-tenths; extent of wings ten and a half. It inhabits North America. It is also found in New Zealand. Mr. Schreber describes it in p. 212.

THE STRIPED BAT.

THIS species hath a small short nose; ears short, broad, and pointing forward; body brown; wings striped with black, and sometimes with tawny and brown: length, from nose to the end of the tail, two inches; it varies in colour, the upper part of the body being sometimes of a clear reddish brown, the lower whitish. It inhabits Ceylon, called there, *kiriwoula*. We may add to this little species of bat, the mention of a minute kind seen and heard in myriads of numbers in the isle of Tanna, one of the New Hebrides, but which escaped every attempt of our voyagers to obtain a near examination.---Synonymes. Autre chauve-fouris, *Buffon*, x. 92. *tab. xx. fig. 3.* *Zooph Gronov.* No. 25. *Schreber*, 205. *tab. xlix.*

THE MOLUCCA BAT,

WITH a large head, thick nose, small ears, tubular nostrils, terminating outwards in form of a screw; upper lip divided, tongue covered with papillæ and minute spines; claw, or thumb, joined to the wing by a membrane; first ray of the wing terminated by a claw; end of the tail reaches beyond the membrane; colour of the head and back greyish ash, the belly dull white; length, from nose to rump, three inches three-quarters; extent of wings about fifteen. It inhabits the Molucca isles.---Synonyme. *Vespertilio cephalotes.* *Pallas Spicil. Zool. fasc. iii. 10. tab. i.* *Schreber*, 208. *tab. lxi.*

THE SLENDER-TAILED BAT.

THIS species hath tubular nostrils, long erect ears, colour dusky above, cinereous beneath. It inhabits Surinam.---Synonyme. *Vespertilio lepturus.* *Schreber*, *tab. lvii. Gm. Lin. 50.*

THE ROUGH-TAILED BAT.

THIS hath upright small ears, tail broad at the base, terminating in a point, thickly covered with hair; colour a reddish brown, and is a small species.

Synonyme.---Vespertilio lasiurus. *Schrebr, tab. lxii. Gm. Lin. 50.*

THE LASCOPTERUS BAT,

WITH a most prominent rounded forehead, short nose; colour a bright rust, upper part of the wings of a paler rust, ends and lower parts of the wings black. It is a large species.---Synonyme. Vespertilio lascopterus. *Schreber tab. lviii. B. Gm. Lin. 50.*

THE HORSE-SHOE BAT.

THIS species is distinguished by a membrane at the end of the nose in form of a horse-shoe; ears large, broad at their base, and sharp-pointed, inclining backward; it wants the little or internal ear; colour of the upper part of the body deep cinereous, of the lower, whitish. There is a greater and smaller variety, the greater is above three inches and a half long from the nose to the tip of the tail; its extent above fourteen. This and all the following have the tail inclosed in the membrane. It inhabits Burgundy, and has lately been discovered in Kent, by Mr. Latham of Dartford; it is found also about the Caspian sea. The long-eared bat has also been observed there, and at Petersburg.---Synonymes. La chauve-fouris fer à cheval. *Buffon, viii. 131, 132. tab. xvii. xx. Schreber, 210. tab. lxii. Br. Zool. i. 129.*

THE NOCTULE BAT,

WITH the nose slightly bilobated; ears small and rounded; on the chin a minute verruca; hair of a reddish ash-colour: length to the rump two inches eight-tenths, tail one seven-tenths; extent of wings
thirteen

thirteen inches. It inhabits Great Britain and France, and is very common in the open deserts of Russia, wherever they can find shelter in caverns; it flies high in search of food, not skimming near the ground. A gentleman informed Mr. Pennant, that he saw taken under the eaves of Queen's College, Cambridge, in one night, one hundred and eighty-five, the second night sixty-three, the third night two, and that each that was measured had fifteen inches extent of wings.

Synonymes.---La noctule. *Buffon*, viii. 128. *tab.* xviii. *Schreber*, 200. *tab.* lii. Great bat. *Br. Zool. illustr. tab.* ciii. *Br. Zool.* i. 128.

THE SEROTINE BAT.

THIS hath a longish nose, ears short, but broad at the base; hair on the upper part of the body brown, mixed with ferruginous; the belly of a paler colour: length from nose to rump, two inches and a half; no tail. It inhabits France, and is found in caverns of rocks upon the river Argun, beyond lake Baikal; but as yet not discovered in any other part of the vast Russian dominions.---Synonyme. La serotine. *Buffon*, viii. 129. *tab.* xviii. *Schreber*, 201. *tab.* liii.

THE GREAT SEROTINE BAT.

THIS hath a very long, strait, and strong, nose, sloping down at the end; ears long, erect, dilated towards the bottom, rounded at the end; colour of the upper parts of a reddish chesnut, sides a clear yellow, the rest of a dirty white: length five inches eight lines; extent of the wings two feet; and no tail. It inhabits Guiana, assembles in vast numbers in open places, particularly meadows, and flies in company with the goat-suckers, and, both together, in such numbers as to darken the air.---Synonyme. La grande serotine de la Guyanne. *Buffon Supplem.* vii. 289. *tab.* lxiii.

THE PIPISTRELLE BAT.

THIS animal hath a small nose; the upper lip swelling out a little on each side; the ears broad; the forehead covered with long hair; colour of the upper part of the body a yellowish brown, the lower part dusky, the lips yellow: this is one of the least of bats, not an inch and a quarter long to the rump; extent of the wings six inches and a half. It inhabits France, and is common in the rocky and mountainous parts of Russia and Siberia.---Synonyme. La pipistrelle. *Buffon*, viii. 129. *tab. xix. fig. 2.* *Schreber*, 202. *tab. liv.*

THE BARBASTELLE BAT.

IS distinguished by its sunken forehead; long and broad ears, the lower part of the inner sides touching each other, so as to conceal the face and head when looked at in front; the nose short, the end flattened; cheeks full; the upper part of the body of a dusky brown, the lower ash-coloured and brown: its length to the rump is about two inches, its extent ten and a half. It inhabits France.---Synonyme. La barbastelle. *Buffon*, viii. 130. *tab. xix. fig. 1.* *Schreber*, 203. *tab. lv.*

THE COMMON BAT.

THE common bat hath a tail; the lips and nose simple; the ears smaller than the head. It inhabits all Europe, and is the species principally found in Britain. This animal flies only during the night, living chiefly on moths: when it lights on the ground, it is unable to rise again till it has crawled to some height; it remains torpid during winter, revives in the beginning of the spring, and comes abroad in the dusk of the evening. This species is two inches and a half long, when full grown, and about nine inches in extent; the fur is of a mouse-colour, tinged with reddish; it generally skims near the ground, with an uneven jerking flight; and often seeking for gnats and other aquatic insects;

flies close by the surface of the water. It breeds in the summer season, and suckles its young at the breast.

Synonymes.---*Νοκτερις*. *Arist. hist. an. lib. i. c. 5.* Vespertilio. *Plinii lib. x. c. 61.* *Gesner quad. 766.* *Agricola Anim. Subter. 483.* Bat, flitter-mouse. *Raii syn. quad. 243.* Rear-mouse. *Charlton Ex. 80.* Vespertilio major, speck-maus, fleder-maus. *Klein quad. 61.* Vespertilio murinus. V. caudatus naso oreque simplici, auribus capite minoribus. *Lin. syst. 47.* Laderlap, fladermus. *Faun. suec. No. 2.* La grande chauve-fouris de notre pais. *Briffon quad. 158.* *Buffon, viii. 113. tab. xvi.* Short-eared bat. *Br. Zool. i. 130.* *Edw. 201.* *Schreber, 199. tab. li.*

THE LONG-EARED BAT.

THE ears of this species are above an inch long, thin, and almost pellucid: its body and tail both measure only one inch and three quarters: this, and all other bats except the ternati and the horse-shoe, have a lesser or internal ear, serving as a valve to close the greater when the animal is asleep. It inhabits Europe, and is also found in Great Britain.

Synonymes.---Souris chauve, rattepenade. *Belon oys. 147.* Vespertilio auritus. V. naso oreque simplici, auriculis duplicatis, capite majoribus. *Lin. syst. 47.* *Faun. suec. No. 3.* *Klein quad. 61.* La petite chauve-fouris de notre pais. *Briffon quad. 160.* *Shaw spec. Lin. vii.* L'oreillar. *Buffon. viii. 118. tab. xvii.* *Schreber, 197. tab. 1.* Long-eared bat, *Edw. 201.* *Br. Zool. i. 129.* *Br. Zool. illustr. tab. ciii.*

Bats are very voracious, if proper food is to be had; and, though moths and other insects be their natural and common food, yet if flesh, whether raw or roasted, fresh or corrupted, comes in their way, they devour it with greediness. In this country they appear abroad early in the spring, flying about only in the evenings; but are sometimes roused from their torpidity by a warm day or two during winter, and will then venture

out in quest of food, but recommence their state of hibernation whenever the cold returns: they retire at the end of the summer into caves, ruined houses, or the roofs and eaves of houses, where they remain suspended by the hind legs, and enveloped in their wings, generally in large numbers. Bats may be caught by means of the flower-cups of burdock, whitened and thrown up in the way of their flight: they are attracted by the whiteness, and the hooks of the bur, sticking to their membranous wings, make them fall to the ground. These animals are the prey of owls, and, when attacked, cry with a weak and plaintive voice. Ovid, in the following lines, takes notice both of the weakness of their voice and the origin of their Latin name:

Minimam pro corpore vocem
Emittunt; peraguntque leves stridore querelas.
Tectaque, non sylvas celebrant: lucemque perosæ
Nocte volant: seroque trahunt a vespere nomen.

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It often raised one-third of its body above the water, and stood erect for a considerable time: then suddenly darted under the ship, and appeared in the same attitude on the other side; and would repeat this for thirty times together. It would frequently bring up a sea-plant, not unlike the bottle gourd, which it would toss about and catch again in its mouth, playing numberless tricks with it. This animal is the *Trichechus manatus firen*; and from it, more probably than from either the Lamantin or Manati, the fables concerning firens and mermaids have taken their rise.

Synonymes. — *Trichechus manatus firen*, *Kerr* and *Turton*. Sea ape, *Pennant*.

APPENDIX.

IN order that the animals comprehended under the general denomination of QUADRUPEDS, might be inspected at one view, we shall now arrange them agreeable to the Classification of Sir Charles Linnaeus. That great naturalist has thought it more scientific to designate the animals called *quadrupeds*, by the term MAMMALIA; because they all suckle their young by means of lactiferous teats, as in the human species. He has therefore distributed them into the seven following Orders:

ORDER I. PRIMATES.

THE CHARACTERS of this order are: *Fore teeth* cutting, upper four parallel, (except in some species of bats which have two or none;) *tusks*, solitary, that is, one on each side, in each jaw; *teats* two, pectoral; *feet*, two are hands; *nails*, (usually) flattened, oval; *food*, fruits, except a few who use animal food. This order includes the four following genera: 1. Homo, man; including all the species on the earth, as described in our first volume. 2. Simia, the apes, baboons, and monkeys. 3. Lemur, the maucauco. 4. Vespertilio, the bats: now included in our second volume.

ORDER II. BRUTA.

THE CHARACTERS of this order are: *Fore-teeth*, none in either jaw; *feet* with strong hoof-like nails; *motion*, slow; *food*, (mostly) masticated vegetables. This order includes nine genera, viz. 1. Bradypus, the sloth. 2. Myrmecophaga, the ant-eater. 3. Platypus. 4. Manis. 5. Dasypus, the armadillo. 6. Rhinoceros. 7. Sukotyro. 8. Elephas, the elephant. 9. Trichechus, the walrus.

ORDER

ORDER III. FERÆ.

THE CHARACTERS of this order are: *Fore-teeth* conic, usually six in each jaw; *tusks* longer; *grinders* with conic projections; *feet* with claws; *claws* subulate; *food*, carcases, and preying on other animals. This order contains ten genera, viz. 1. Phoca, the seal. 2. Canis, the dog, wolf, fox, &c. 3. Felis, the lion, tiger, leopard, panther, lynx, cat, &c. 4. Viverra, the ichneumon, some of the weasels, civet cat, &c. 5. Mustela, the otter, weasels, polecats, stoat, &c. 6. Ursus, the bear, badger, wolverene, &c. 7. Didelphis, the opossum, kangaroo, &c. 8. Talpa, the mole. 9. Sorex, the shrew. 10. Erinaceus, the hedge-hog.

ORDER IV. GLIRES.

THE CHARACTERS of this order are: *Fore-teeth* cutting, two in each jaw; *tusks* none; *feet* with claws formed for running and bounding; *food*, bark, roots, vegetables, &c. which they gnaw. This order contains the ten following genera, viz. 1. Hylatrix, the porcupine. 2. Cavia, the cavy, guinea-pig, &c. 3. Castor, the beaver. 4. Mus, the whole tribe of rats and mice. 5. Arctomys, the marmot. 6. Sciurus, the squirrel. 7. Myoxus, the dormouse. 8. Dipus, the jerboa. 9. Lepus, the hares and rabbits. 10. Hyrax, the Cape and Syrian cavy.

ORDER V. PECORA.

THE CHARACTERS of this order are: *Fore-teeth*, upper none; lower cutting, many; *feet* hooped, cloven; *food*, herbs which they pluck; *chew* the cud; *stomachs* four, the *paunch* to macerate and ruminate the food, the *bonnet*, reticulate, to receive it, the *omasus*, or manplies of numerous folds to digest it, and *abomasus* or caille, fasciate, to give it acescency and prevent putrefaction. This order contains eight ge-

nera, viz. 1. Camelus, the camel and dromedary. 2. Moschus, the musk. 3. Cervus, the elk, stag, and deer. 4. Camelopardalis, the giraffe, or camelopard. 5. Antilopus, the antelope. 6. Capra, the goat. 7. Ovis, the sheep. 8. Bos, the ox, bull, and cow.

ORDER VI. BELLUÆ.

THE CHARACTERS of this order are: *Fore-teeth* obtuse; *feet* hoofed; *motion* heavy; *food* gathering vegetables. This order comprehends only four genera, viz. 1. Equus, the horse, afs, zebra, &c. 2. Hippopotamus, the river horse. 3. Tapir, the land hippopotamus. 4. Sus, the wild boar, domestic hog, &c.

ORDER VII. CETE.

THIS order, notwithstanding it is classed with the quadrupeds, contains the largest and most conspicuous of the finny tribes, viz. the Monodon, or narval; the Balæna, or whale; the Physeter, or cachalot; and the Delphinus, or dolphin, porpoise, &c. These Linnæus thought necessary to arrange with the mammalia, from their similarity of structure, though they are fish. The *heart* has two auricles, and two ventricles; *blood* warm; *lungs* respiring alternately; *eyelids* moveable; *ears* hollow, receiving sound through the medium of the air; *vertebræ* of the neck seven; *lumbar* bones, and *coccyx*; *teats* lactiferous, with which they suckle their young, like the quadrupeds. This last order, however, we have thought more consonant to nature, to place at the head of our Natural History of Fishes, where the reader will find them correctly figured, and methodically described. We shall now proceed to notice all such real quadrupeds as have passed unnoticed in the former part of this volume, either from having been before but little known, or as having been discovered by voyagers and travellers of the present day.

IN THE ORDER OF BRUTA.

PLATYPUS, the FLAT-MOUTH.

THIS new genus is brought into the classification by Dr. Turton in his translation of Linnæus. Generic character: Mouth shaped like the bill of a duck; feet palmate. There is but one species, called

The DUCK-BILLED PLATYPUS. Of all the mammalia, yet known, it seems the most extraordinary in its conformation; exhibiting the perfect resemblance of the beak of a duck engrafted on the head of a quadruped. So accurate is the similitude, that, at first view it naturally excites the idea of some deceptive preparation by artificial means: the very epidermis, proportion, serratures, manner of opening, and other particulars, of the beak of a shoveller, or other broad-billed species of duck, presenting themselves to the view: nor is it without the most minute and rigid examination that we can persuade ourselves of its being the real beak or snout of a quadruped. The body is depressed, and has some resemblance to that of an otter in miniature: it is covered with a very thick, soft, and beaver-like, fur; and is of a moderately dark brown above, and of a subferruginous white beneath. The head is flattish, and rather small than large: the mouth or snout, as before observed, so exactly resembles that of some broad-billed species of duck, that it might be mistaken for such: round the base is a flat circular membrane, somewhat deeper or wider below than above; viz. below near the fifth of an inch, and above about an eighth. The tail is flat, furry like the body, rather short, and obtuse, with an almost bifid termination: it is broader at the base, and gradually lessens to the tip, and is about three inches in length: its colour is similar to that of the body. The length of the whole animal from the tip of the beak to that of the tail is thirteen inches: of the beak an inch and a half. The legs are very short, terminating in a broad web, which
on

on the fore-feet extends to a considerable distance beyond the claws; but on the hind-feet reaches no farther than the roots of the claws. On the fore-feet are five claws, strait, strong, and sharp-pointed: the two exterior ones somewhat shorter than the three middle ones. On the hind-feet are six claws, longer and more inclining to a curved form than those of the fore-feet: the exterior toe and claw are considerably shorter than the four middle ones: the interior or sixth is seated much higher up than the rest, and resembles a strong sharp spur. All the legs are hairy above: the fore-feet are naked both above and below; but the hind-feet are hairy above, and naked below. The internal edges of the under mandible (which is narrower than the upper) are serrated or channelled with numerous striæ, as in a duck's bill. The nostrils are small and round, and are situated about a quarter of an inch from the tip of the bill, and are about the eighth of an inch distant from each other. There is no appearance of teeth: the palate is removed, but seems to have resembled that of a duck; the tongue also is wanting in the specimen. The ears, or auditory foramina, are placed about half an inch beyond the eyes: they appear like a pair of oval holes of the eighth of an inch in diameter; there being no external ear. On the upper part of the head, on each side, a little beyond the beak, are situated two smallish oval white spots; in the lower part of each of which are imbedded the eyes, or at least the parts allotted to the animal for some kind of vision; for from the thickness of the fur and the smallness of the organs they seem to have been but obscurely calculated for distinct vision, and are probably like those of moles, and some other animals of that tribe: or perhaps even subcutaneous; the whole apparent diameter of the cavity in which they were placed not exceeding the tenth of an inch. When we consider the general form of this animal, and particularly its bill and webbed feet, we shall readily perceive

ceive that it must be a resident in watery situations; that it has the habits of digging or burrowing in the banks of rivers, or under ground; and that its food consists of aquatic plants and animals. This is all that can at present be reasonably guessed at: future observations, made in its native regions, will, it is hoped, afford us more ample information, and will make us fully acquainted with the natural history of an animal which differs so widely from all other quadrupeds, and which verifies in a most striking manner the observation of Buffon; viz. that whatever was possible for nature to produce has actually been produced. On a subject so extraordinary as the present, says Dr. Shaw, from whom this account is taken, a degree of scepticism is not only pardonable, but laudable; and I ought perhaps to acknowledge that I almost doubt the testimony of my own eyes with respect to the structure of this animal's beak; yet must confess that I can perceive no appearance of any deceptive preparation; and the edges of the rictus, the insertion, &c. when tried by the test of maceration in water, so as to render every part completely moveable, seem perfectly natural; nor can the most accurate examination of expert anatomists discover any deception in this particular. The *platypus* is a native of *Australasia* or New Holland, and is at present in the possession of Mr. Dobson, so much distinguished by his exquisite manner of preparing specimens of vegetable anatomy.—Synonymes. *Platypus anatinus*, the duck-billed platypus, *Shaw's Naturalist's Miscellany*. *Turton*.

SUKOTYRO.

THIS is a new genus, also from Turton. Generic character, A horn on each side of the head near the eyes. There is but one species,

The INDIAN SUKOTYRO. Mane upright, short, narrow, reaching from the top of the head to the rump. Inhabits Java: thick, clumsy, feeds on herbs. Snout like
like

like a hog, truncate; ears long, rough; tail thick, bushy; eyes placed upright in the head; hoofs four; skin smooth, without plaits.—Synonyme. Sukotyro Indicus, *Turton*.

ELEPHAS, the ELEPHANT.

IT will be necessary here to correct some errors copied from Buffon and others in a former part of this volume, (see p. 249.) and we shall add a more detailed account of the method of catching elephants.

And first it may be proper to observe, that young elephants suck constantly with their mouths, and never with their trunks, as Buffon has asserted; a conclusion he made merely from conjecture, and the great and various uses to which the trunk is adapted and applied by every elephant.

The mode of connection between the male and a female is now ascertained beyond the possibility of doubt; as Mr. Buller, Lieut. Hawkins, and many others, saw a male copulate with a female, after they were secured, in the East-Indies, in a manner exactly similar to the conjunction of the horse with a mare. This fact entirely overturns what has been so often related concerning the supposed delicacy of this useful animal, and a variety of other hypotheses, which are equally void of foundation. The exact time an elephant goes with young, has not yet been ascertained, but it cannot be less than two years, as an elephant brought forth a young one twenty-one months and three days after she was taken. She was observed to be with young in April or May 1788, and she was only taken in January preceding; so that it is very likely she must have had connection with the male some months before she was secured, otherwise they could not discover that she was with young, as a foetus of less than six months cannot well be supposed to make any alteration in the size or shape of so large an animal. The young one, a male, was produced October

tober 16, 1789, and appeared in every respect to have arrived at its full time. He was thirty-five inches high at his birth, and grew four inches in nearly as many months. Elephants are always measured at the shoulder; for the arch or curve of the back, of young ones particularly, is considerably higher than any other part, and it is a sure sign of old age whenever this curve is found flattened or considerably depressed, after an elephant has once attained his full growth.

The following is the mode at present used for catching wild elephants in the East-Indies.

In the month of November, when the weather has become cool, and the swamps and marshes, formed by the rains in the five preceding months, are lessened, and some of them dried up, a number of people are employed to go in quest of elephants.

At this season the males come from the recesses of the forest into the borders and outskirts thereof, whence they make nocturnal excursions into the plains in search of food, and where they often destroy the labours of the husbandman, by devouring and trampling down the rice, sugar-canes, &c. that they meet with. A herd or drove of elephants, from what we can learn, has never been seen to leave the woods: some of the largest males often stray to a considerable distance; but the young ones always remain in the forest under the protection of the *palmai*, or leader of the herd, and of the larger elephants. The *goondahs*, or large males, come out singly, or in small parties, sometimes in the morning, but commonly in the evening; and they continue to feed all night upon the long grass, that grows amidst the swamps and marshes, and of which they are extremely fond. As often, however, as they have an opportunity, they commit depredations on the rice-fields, sugar-canes, and plantain-trees, that are near, which obliges the farmers to keep regular watch, under a small cover, erected on the tops of a few long bamboos, about fourteen feet from the ground: and

this precaution is necessary to protect them from the tigers, with which this province abounds. From this lofty station the alarm is soon communicated from one watchman to another, and to the neighbouring villages, by means of a rattle with which each is provided. With their shouts and cries, and noise of the rattles, the elephants are generally scared and retire. It sometimes, however, happens, that the males advance even to the villages, overturn the houses, and kill those who unfortunately come in their way, unless they have had time to light a number of fires; this element seems to be the most dreaded by wild elephants, and a few lighted wisps of straw or dried grass seldom fail to stop their progress. To secure one of the males, a very different method is employed from that which is taken to secure a herd: the former is taken by *koomkees* or female elephants trained for the purpose; whereas the latter is driven into a strong enclosure called a *kaddah*.

As the hunters know the places where the elephants come out to feed, they advance towards them in the evening with four *koomkees*, which is the number of which each hunting party consists: when the nights are dark, (and these are the most favourable for their purpose,) the male elephants are discovered by the noise they make in cleaning their food, by whisking and striking it against their fore legs; and by moonlight they can see them distinctly at some distance.

As soon as they have determined on the goondah they mean to secure, three of the *koomkees* are conducted silently and slowly by their mahotes (drivers) at a moderate distance from each other, near to the place where he is feeding; the *koomkees* advance very cautiously, feeding as they go along, and appear like wild elephants that have strayed from the jungle. When the male perceives them approaching, if he takes the alarm and is viciously inclined, he beats the ground with his trunk and makes a noise, shewing evident marks of his displeasure, and that he will not allow
them

them to approach nearer; and, if they persist, it will immediately attack and gore them with his tusks; for which reason they take care to retreat in good time. But should he be amorously disposed, which is generally the case, (as these animals are supposed to be driven from the herd at a particular period by their seniors, to prevent their having connection with the females of that herd,) he allows the females to approach, and sometimes even advances to meet them.

When, from these appearances, the mahotes judge that he will become their prize, they conduct two of the females, one on each side, close to him, and make them advance backwards, and press gently with their posteriors against his neck and shoulders: the third female then comes up and places herself directly across his tail; in this situation, so far from suspecting any design against his liberty, he begins to toy with the females and caresses them with his trunk. While thus engaged, the fourth female is brought near, with ropes and proper assistants, who immediately get under the belly of the third female, and put a slight cord round his hind legs; should he move, it is easily broken; in which case, if he takes no notice of this slight confinement, nor appears suspicious of what was going forward, the hunters then proceed to tie his legs with a strong cord, which is passed alternately, by means of a forked stick and a kind of hook, from one leg to the other, forming the figure of 8; and, as these ropes are short, for the convenience of being more readily put around his legs, six or eight are generally employed, and they are made fast by another cord, which is passed a few turns perpendicularly between his legs, where the folds of the bundahs intersect each other. A strong cable with a running noose, sixty cubits long, is next put round each hind leg immediately above the bundahs, and again above them, six or eight additional bundahs, according to the size of the elephant, are made fast, in the same manner as the others were: the putting on these ropes generally takes up about twenty

minutes, during which the utmost silence is observed, and the mahotes, who keep flat upon the necks of the females, are covered with dark-coloured clothes, which serve to keep them warm, and at the same time do not attract the notice of the elephant. While the people are busily employed in tying the legs of the goondah, he caresses sometimes one and sometimes another of the seducers, examining their beauties and toying with different parts, by which his desires are excited, and his attention diverted from the hunters, and in these amorous dalliances he is indulged by the females. But, if his passions should be so roused, before his legs are properly secured, as to induce him to attempt leaping on one of the females, the mahote, to insure his own safety and prevent him gratifying his desires any farther, makes the female run away, and at the same time by raising his voice and making a noise, he deters the goondah from pursuing: this however happens very seldom, for he is so secured by the pressure of a koom-kee on each side and one behind, that he can hardly turn himself, or see any of the people, who always keep snug under the belly of the third female, that stands across his tail, and which serves both to keep him steady and to prevent his kicking any of the people who are employed in securing him; but in general he is so much taken up with his decoyers, as to attend very little to any thing else. In case of accidents; however, should the goondah break loose, the people upon the first alarm can always mount on the backs of the tame elephants, by a rope that hangs ready for the purpose, and thus get out of his reach. When his hind legs are properly secured, they leave him to himself, and retire to a small distance: as soon as the koom-kees leave him, he attempts to follow, but finding his legs tied, he is roused to a proper sense of his situation, and retreats towards the jungle; the mahotes follow at a moderate distance from him, on the tame elephants, accompanied by a number of people that had been previously sent for, and who, as soon as the goondah passes

passes near a stout tree, make a few turns of the *phands*, or long cables, that are trailing behind him, around its trunk: his progress being thus stopt, he becomes furious, and exerts his utmost force to disengage himself; nor will he allow any of the koomkees to come near him, but is outrageous for some time, falling down and goring the earth with his tusks. If by these exertions the *phands* are once broken, which sometimes is effected, and he escapes into the thick jungle, the mahotes dare not advance for fear of the other wild elephants, and are therefore obliged to leave him to his fate; and in this hampered situation, it is said, he is even ungenerously attacked by the other wild elephants. As the cables are very strong and seldom give way, when he has exhausted himself by his exertions, the koomkees are again brought near and take their former positions, viz. one on each side and the other behind. After getting him nearer the tree, the people carry the ends of the long cables around his legs, then back and about the trunk of the tree, making, if they can, two or three turns, so as to prevent even the possibility of his escape. It would be almost impossible to secure an elephant in any other manner, as he would tear up any stake that could at the time be driven into the ground, and even the noise of doing it would frighten the elephant: for these reasons, nothing less than a strong tree is ever trusted to by the hunters. For still farther security, as well as to confine him from moving to either side, his fore legs are tied exactly in the same manner as the hind legs were, and the *phands* are made fast, one on each side, to trees or stakes driven deep into the earth. During the process of tying both the hind and fore legs, the fourth koomkee gives assistance where necessary, and the people employed cautiously avoid going within reach of his trunk; and, when he attempts to seize them, they retreat to the opposite side of the koomkees, and get on them, if necessary, by means of the rope above-mentioned, which hangs ready for them to lay hold of. Although by these means he is perfectly
secured

secured and cannot escape, yet as it would be both unsafe and inconvenient to allow him to remain in the verge of the jungle, a number of additional ropes are afterwards put on, as shall be mentioned, for the purpose of conducting him to a proper station. When the goondah has become more settled, and eats a little food, with which he is supplied as soon as he is taken, the komkees are again brought near, and a strong rope is then put twice round his body, close to his fore legs, like a girth, and tied behind his shoulder; then the long end is carried back close to his rump, and there fastened, after a couple of turns more have been made round his body. Another cord is next fastened to the pharah, and from thence carried under his tail like a crupper, and brought forward and fastened by a turn or two to each of the pharahs, or girths, by which the whole is connected, and each turn of these cords serves to keep the rest in their places. After this a strong rope is put round his buttocks, and made fast on each side to the girth and crupper, so as to confine the motion of his thighs and prevent his taking a full step. These smaller ropes being properly adjusted, a couple of large cables, &c. with running nooses, are put around his neck, and, after being drawn moderately tight, the nooses are secured from running closer, and then tied to the ropes on each side forming the girth and crupper already mentioned; and thus all these ropes are connected and kept in their proper places, without any risk of the nooses of the dools becoming tight, so as to endanger the life of the elephant in his exertions to free himself. The ends of these cables are made fast to two koomkees, one on each side of the goondah, by a couple of turns round the belly, close to the shoulder, like a girth, where a turn is made, and it is then carried across the chest and fastened to the girth on the opposite side. Every thing being now ready, and a passage cleared from the jungle, all the ropes are taken from his legs, and only the tooman remains round his buttocks to confine the motion

motion of his hind legs: the koomkees pull him forward by the dools, and the people from behind urge him on. Instead of advancing in the direction they wish, he attempts to retreat farther into the jungle; he exerts all his force, falls down and tears the earth with his tusks, screaming and groaning, and by his violent exertions often hurts and bruises himself very much; and instances happen of their surviving these violent exertions only a few hours, or at most a few days. In general, however, they soon become reconciled to their fate, will eat immediately after they are taken, and, if necessary, may be conducted from the verge of the jungle as soon as a passage is cleared. When the elephant is brought to his proper station and made fast, he is treated with a mixture of severity and gentleness, and in a few months (if docile) he becomes tractable, and appears perfectly reconciled to his fate. It appears somewhat extraordinary, that though the goondah uses his utmost force to disengage himself when taken, and would kill any person coming within his reach, yet he never or at least seldom attempts to hurt the females that have ensnared him, but on the contrary seems pleased, (as often as they are brought near, in order to adjust his harnessing, or move or slacken those ropes which gall him,) soothed and comforted by them, as it were, for the loss of his liberty. All the elephants, soon after they are taken, are led out occasionally for exercise by the koomkees, which attend for that purpose.

Having now related the manner in which the male elephants are secured; we shall next describe the methods employed for securing a herd of wild elephants. Female elephants are never taken singly, but always in the herd, which consists of young and old of both sexes. This noble, docile, and useful, animal, seems naturally of a social disposition, as a herd in general consists of from about forty to an hundred, and is conducted under the direction of one of the oldest and largest females, called the *palmai*, and one of the largest

est males. When a herd is discovered, about five hundred people are employed to surround it, who divide themselves into small parties, called *Chokeys*, consisting generally of one mahote and two coolies, at the distance of twenty or thirty yards from each other, and form an irregular circle in which the elephants are inclosed: each party lights a fire and clears a foot-path to the station that is next him, by which a regular communication is soon formed through the whole circumference from one to the other. By this path reinforcements can immediately be brought to any place where an alarm is given; and it is also necessary for the superintendants, who are always going round to see that the people are alert upon their posts. The first circle (the dawkec) being thus formed, the remaining part of the day and night is spent in keeping watch by turns, or in cooking for themselves and companions. Early next morning one man is detached from each station, to form another circle in that direction where they wish the elephants to advance. When it is finished, the people stationed nearest to the new circle put out their fires and file off to the right and left, to form the advanced party, thus leaving an opening for the herd to advance through; and by this movement, both the old and new circle are joined and form an oblong. The people from behind now begin shouting and making a noise with their rattles, tomtoms, &c. to cause the elephants to advance; and, as soon as they are got within the new circle, the people close up, take their proper stations, and pass the remaining part of the day and night as before. In the morning the same process is repeated; and in this manner the herd advances slowly in that direction where they find themselves least incommoded by the noise and clamour of the hunters, feeding, as they go along, upon branches of trees, leaves of bamboos, &c. which come in their way. If they suspected any snare, they could easily break through the circle; but this inoffensive animal, going merely in quest of food, and not seeing any of the people who surround

surround him, and who are concealed by the thick jungle, advances without suspicion, and appears only to avoid being pestered by their noise and din. As fire is the thing elephants seem most afraid of in their wild state, and will seldom venture near it, the hunters always have a number of fires lighted, and particularly at night, to prevent the elephants coming too near, as well as to cook their victuals and keep them warm. The sentinels supply these fires with fuel, especially green bamboos, which are generally at hand, and which, by the crackling and loud report they make, together with the noise of the watchmen, deter the elephants from coming near; so that the herd generally remains at a distance near the centre of the circle. Should they at any time advance, the alarm is given, and all the people immediately make a noise and use their rattles to make them keep at a greater distance. In this manner they are gradually brought to the *keddah*, or place where they are to be secured. As the natives are extremely slow in their operations, they seldom bring the herd above one circle in a day, except on an emergency, when they exert themselves and advance two circles. They have no tents or covering but the thick woods, which, during the day, keep off the rays of the sun; and at night they sleep by the fires they have lighted, upon mats spread on the ground, wrapt up in a piece of coarse cloth. The season is then so mild, that the people continue very healthy; and an accident seldom happens except to stragglers about the outskirts of the wood, who are sometimes, though very rarely, carried off by tigers. The *keddah*, or place where the herd is to be secured, is differently constructed in different places; here it consists of three enclosures, communicating with each other by means of narrow openings or gateways. The outer enclosure, or the one next to the place where the elephants are to enter, is the largest; the middle one is generally, though not always, the next in size; and the third, or farthestmost, is the smallest.

These propositions, however, are not always adhered to in the making of a keddah, nor indeed does there appear to us any reason for making three enclosures: but, as our intentions are merely to relate facts, we shall proceed to observe, that, when in the third or last enclosure, the elephants are then only deemed secure; here they are kept six or eight days, and are regularly though scantily fed from a scaffold on the outside, close to the entrance of an outlet called the *Roomee*, which is about sixty feet long and very narrow, and through which the elephants are to be taken out one by one. In many places this mode is not adopted; for, as soon as the herd has been surrounded by a strong palisade, koomkees are sent in with proper people, who tie them on the spot; in the same manner as was mentioned above of the goondahs, or male elephants, that are taken singly. These enclosures are all pretty strong; but the third is the strongest, nor are the elephants deemed secure, as already observed, till they have entered it. This enclosure has, like the other two, a pretty deep ditch on the inside; and, upon the bank of the earth, that is thrown up from the excavation, a row of strong palisades of middle-sized trees is planted, strengthened with cross bars, which are tied to them about the distance of fourteen inches from each other; and these are supported on the outside by strong posts like buttresses, having one end sunk in the earth and the other pressing against the cross bars to which they are fastened. When the herd is brought near to the first enclosure, or baigcote, which has two gateways towards the jungle, from which the elephants are to advance, (these, as well as the other gateways, are disguised with branches of trees and bamboos stuck in the ground so as to give them the appearance of a natural jungle,) the greatest difficulty is to get the herd to enter the first or outer enclosure; for, notwithstanding the precautions taken to disguise both the entries as well as the palisade which surrounds this enclosure,

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the palmai, or leader, now appears to suspect some snare, from the difficulty and hesitation with which in general she passes into it; but as soon as she enters, the whole herd implicitly follows. Immediately, when they have all passed the gateway, fires are lighted round the greatest part of the enclosure, and particularly at the entries, to prevent the elephants from returning. The hunters from without then make a terrible noise by shouting, beating of tomtoms, (a kind of drum,) firing blunt cartridges, to urge the herd on to the next enclosure. The elephants, finding themselves ensnared, scream and make a noise; but, seeing no opening except the entrance to the next enclosure, and which they at first generally avoid, they return to the place through which they lately passed, thinking perhaps to escape, but now find it strongly barricaded; and, as there is now a ditch at this place, the hunters to prevent their coming near forcing their way, keep a line of fire constantly burning all along where the ditch is interrupted, and supply it with fuel from the top of the palisade; and the people from without make a noise, shouting and hallooing, to drive them away. Whenever they turn, they find themselves opposed by burning fires, or bundles of reeds and dried grass, which are thrust through the opening of the palisades, except towards the entrance of the second enclosure, or *doobraze-cote*. After traversing the Baigcote for some time, and finding no chance of escaping but through the gateway into the next enclosure, the leader enters, and the rest follow: the gate is instantly shut by people who are stationed on a small scaffold immediately above it, and strongly barricaded, fires are lighted, and the same discordant din made and continued, till the herd has passed through another gateway into the last enclosure, or *rajecote*, the gate of which is secured in the same manner as the former was. The elephants, being now completely surrounded on all sides, and perceiving no outlet through which they

can escape, appear desperate, and in their fury advance frequently to the ditch in order to break down the palisade, inflating their trunks, screaming louder and shriller than any trumpet, sometimes grumbling like the hollow murmur of distant thunder; but, wherever they make an attack, they are opposed by lighted fires, and by the noise and triumphant shouts of the hunters. As they must remain some time in this enclosure, care is always taken to have part of the ditch filled with water, which is supplied by a small stream, either natural, or conducted through an artificial channel from some neighbouring reservoir. The elephants have recourse to this water to quench their thirst and cool themselves after their fatigues, by sucking the water into their trunks, and then squirting it over every part of their bodies. While they remain in this enclosure, they continue sulky, and seem to meditate their escape; but the hunters build huts, and form an encampment as it were around them close to the palisade; watchmen are placed, and every precaution used to prevent their breaking through. This they would soon effect, if left to themselves, notwithstanding the palisade is made of very strong stakes sunk into the earth on the outside of the ditch, and strengthened by cross bars and buttresses as already mentioned.

When the herd has continued a few days in the keddah, the door of the roomee is opened, into which some one of the elephants is enticed to enter, by having food thrown first before, and then gradually farther on into the passage, till the elephant has advanced far enough to admit of the gate's being shut. Above this wicker-gate, or door, two men are stationed on a small scaffold, who throw down the food. When the elephant has passed the door, they give the signal to a man who from without shuts it by pulling a string, and they secure it by throwing two bars that stood perpendicular on each side, the one across the other thus \times , forming the figure of St. Andrew's Cross; and, then

two similar bars are thrown across each other behind the door next to the keddah, so that the door is in the centre: for farther security, horizontal bars are pushed across the roomee, through the openings of the palisades, both before and behind those crosses, to prevent the possibility of the door's being broken. The roomee is so narrow, that a large elephant cannot turn in it; but, as soon as he hears the noise that is made in shutting the gate, he retreats backwards, and endeavours to force it; being now secured in the manner already noticed, his efforts are unavailing. Finding his retreat thus cut off, he advances and exerts his utmost force to break down the bars, which were previously put across a little farther on in the outlet, by running against them, screaming and roaring, and battering them, like a ram, by repeated blows of his head, retreating and advancing with the utmost fury. In his rage he rises and leaps upon the bars with his forefeet, and strives to break them down with his huge weight. In February 1788, a large female elephant fell down dead in the roomee, from the violent exertions she made. When the elephant is somewhat fatigued by these exertions, strong ropes with running nooses are placed in the outlet by the hunters; and, as soon as he puts a foot within the noose, it is immediately drawn tight and fastened to the palisades. When all his feet have been made pretty fast, two men place themselves behind some bars that run across the roomee to prevent his kicking them, and with great caution tie his hind legs together, by passing a cord alternately from the one to the other, like the figure 8, and then fastening these turns as above described. After this, the pharah, dools, &c. are put on in succession, in the same manner as on the goondah, only that here the people are in greater security. While these ropes are making fast, the other hunters are careful not to go too near, but keep on the outside of the palisade, and divert his attention as much as they can from those employed in fastening them,

them, by supplying him with grass, and sometimes with plantain-leaves and sugar-canes, of which he is remarkably fond, by presenting a stick, giving him hopes of catching it, or by gently striking or tickling his proboscis. He frequently, however, seizes the ropes with his trunk, and endeavours to break them, particularly those with which his feet are tied, and sometimes tries to bite them through with his grinders, (as he has no incisors or front teeth;) but the hunters then goad him with sharpened bamboos, or light spears, so as to make him quit his hold. Those who are employed in putting the ropes round his body, and over his head, stand above him, on a small kind of platform, consisting of a few bars run across through the openings of the palisades; and, as an elephant cannot see any thing that is above and rather behind his head, they are very little incommoded by him, although he appears to smell them, and endeavours to catch them with his trunk. When the whole apparatus is properly secured, the ends of the two cables (dools) which were fastened round his neck, are brought forward to the end of the roomee, where two female elephants are waiting; and to them these cables are made fast. When every thing is ready, the door at the end of the outlet is opened, the cross bars are removed, and the passage left clear. The ropes that tied his legs to the palisades are loosened, and, if he does not advance readily, they goad him with long poles sharpened at the ends or pointed with iron, and urge him on with their noise and din, and at the same time the females pull him gently forward: as soon as he has cleared the roomee, his conductors separate; so that, if he attempts to go to one side, he is prevented by the elephant that pulls in the opposite direction, and *vice versa*. The bundahs, which tie his hind-legs, though but loosely, yet prevent his going fast; and, thus situated, he is conducted like an enraged bull, that has a cord fastened to his horns on each side, so that he cannot turn either to the right or left to avenge himself. In like manner is this noble animal led

led to the next tree, as the goondahs before-mentioned were. Sometimes he becomes obstinate, and will not advance; in which case, while one of his conductors draws him forward, the other comes behind and pushes him on: should he lie down, she puts her snout under and raises him up, supporting him on her knee, and with her head pushing him forward with all her strength; the hunters likewise assist by goading him, and urging him forward by their noise and din; sometimes they are even obliged to put lighted torches near, in order to make him advance. In conducting small elephants from the roomee, only one cable and one koomkee are made use of. As soon as each elephant is secured, he is left in charge to the mahote, or keeper, who is appointed to attend and instruct him; and, under him, there are from two to five coolies, according to the size of the elephant, in order to assist and to supply food and water, till he becomes so tractable as to bring the former himself. These people erect a hut immediately before him, where the mahote, or one of the coolies, constantly attends, supplies him with food, and soothes and caresses him by a variety of little arts. Sometimes the mahote threatens and even goads him with a long stick pointed with iron, but more generally coaxes and flatters him, scratching his head and trunk with a long bamboo split at one end into many pieces, and driving away the flies from any sores occasioned by the hurts and bruises he got by his efforts to escape from the roomee. This animal's skin is soft, considering his size; is extremely sensible, and is easily cut or pierced, more so than the skin of most large quadrupeds. The mahote likewise keeps him cool, by squirting water all over him, and standing without the reach of his trunk: in a few days he advances cautiously to his side, and strokes and pats him with his hand, speaking to him all the while in a soothing tone of voice, and in a little time he begins to know his keeper and obey his commands. By degrees
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the mahote becomes familiar to him, and at length gets upon his back from one of the tame elephants, and, as the animal becomes more tractable, he advances gradually forward, towards his head, till at last he is permitted to seat himself on his neck, from which place he afterwards regulates and directs all his motions. While they are training in this manner, the tame elephants lead out the others in turn, for the sake of exercise, and likewise to ease their legs from the cords with which they are tied, and which are apt to gall them most terribly unless they are regularly slackened and shifted. In five or six weeks the elephant becomes obedient to his keeper, his fetters are taken off by degrees, and generally in about five or six months he suffers himself to be conducted by the mahote from one place to another: care, however, is always taken not to let him approach his former haunts, lest a recollection of the freedom he there enjoyed should induce him again to recover his liberty. This obedience to his conductor seems to proceed partly from a sense of generosity, as it is in some measure voluntary; for, whenever an elephant takes fright, or is determined to run away, all the exertions of the mahote cannot prevent him, even by beating or digging the pointed iron hook into his head, with which he directs him; on such an occasion the animal seems to disregard these feeble efforts, otherwise he would shake or pull him off with his trunk, and dash him in pieces. Accidents of this kind happen almost every year, especially to those mahotes who attend the large goondahs; but such accidents are in general owing entirely to their own carelessness and neglect. It is necessary to treat the males with much greater severity than the females, to keep them in awe; but it is too common a practice among the mahotes, either to be negligent in using proper measures to render their elephants docile, or to trust too much to their good nature before they are thoroughly acquainted with their dispositions. The iron hook,
with

with which they direct him, is pretty heavy, about sixteen inches long, with a straight spike advancing a little beyond the curve of the hook, so that altogether it is exactly like that which ferrymen or boatmen use fastened to a long pole.

The elephant, when tamed, is the most friendly and obedient of all animals. A tame elephant will do more labour than six horses, but then he requires a proportionable quantity of food. They are the principal beasts of burden in many parts of Africa and the East-Indies.

The elephant's teeth, or ivory, brought from Africa, are frequently picked up in the woods, so that it is uncertain whether they are shed teeth, or those of dead animals: those from Mosambique are ten feet long, from Malabar only three or four: the largest in Asia are those of Cochin-China, which even exceed the size of the elephants of Mosambique.

Of this genus there is but one species at present known. Gmelin says, the elephant is afraid of mice, lest they should creep into his throat while asleep.—Synonymes. *Elephas maximus*, *Gmelin's Linn.* *Elephas*, *Briss. Ray*, and *Seba.* *Elephantus*, *Gesn. Aldrov. Johnst. and Buffon.*

TRICHECHUS, the WALRUS.

THE MANATUS, or walrus without tusks. This, and the remaining species of walrus, not inserted p. 558-561. will be found p. 576, under the title MANATI.

IN THE ORDER OF FERÆ.

CANIS, the DOG, WOLF, FOX, HYÆNA, &c.

The SURINAM WOLF. Tall smooth, bent downwards; body greyish, white underneath. Ears erect, of the colour of the body; a wart above the eyes, on the cheeks, and under the throat; tongue fringed at the

sides; size of a cat.—Synonymes. *Canis thous*, *Gmelin's Linn.* Surinam wolf, *Penn.*

The *ABYSSINIAN HYÆNA*. The account of this is included in that of the other hyænas, p. 309-312.—*Canis Æthiopicus*, *Turton*.

The *KARAGAN FOX*. Tail strait, body grey, ears black; inhabits the deserts of the Calmucs and the Kirgisees.—*Canis Karagan*, *Gmel.* and *Turton*. *Karagan et steppenfuchse*, *Pallas*.

VIVERRA, the *ICHNEUMON* and some *WEASELS*.

THIS genus has been but lately distinguished from the *Mustela*, which contains the otters and the rest of the weasels, &c. Generic characters, Fore-teeth six, intermediate ones shorter: tusks one each side, longer; grinders more than three; tongue often aculeate backwards; claws not retractile. Their bodies are long, of equal thickness, legs short, usually with five toes, claws immoveable, ears small, snout pointed; between the anus and genitals an orifice leading to a duct secreting an unctuous fetid matter; active and swift, some walk on the heels, some climb, and some burrow; females produce many at a litter. The following species are lately added.

The *ZENIK*. For the description, see p. 507.—Synonymes. *Viverra zenik*, *Gmel.* and *Turton*. *Zenik des Hottentots*, *Sonn.* ii. 145. t. 92.

The *NARICA*. Brownish, tail of the same colour; nose elongated, moveable. Inhabits South America; digs so deep as to bury itself except the tail; feeds on worms, bread, fruit, and roots; takes the water, climbs trees. Hair dusky at the roots, brown in the middle, yellow at the tips; tail sometimes obscurely annulate; feet black, naked.—Synonymes. *Viverra narica*, *Gmel.* and *Turton*. *Urfus naso producto et mobili*, *Briss.* 190. *Coati brun*, *Buff.* viii. 48.

The *QUASJE*. Of a chestnut colour, yellowish beneath; snout lengthened; tail annulate. Inhabits Surinam; digs; feeds on worms, insects, and fruit; tame-
able,

able, fetid.—Synonymes. *Viverra quasje*, *Gmel.* and *Turton.* *Yzquepatl*, *Seba.* *Meles ex saturate spadiceo nigricans*, &c. *Briff.* 185.

The CONEPATL. Blackish, with two white lines along the back to the tail. Inhabits New Spain.—Synonymes. *Viverra conepatl*, *Gmel.* and *Turton.* *Conepatl, seu vulpecula puerilis*, *Hernand. Mex.* 232.

The CAPE WEASEL. Black; back grey, edged with white. Inhabits the Cape of Good Hope, and Guinea; feeds on wild honey; emits an intolerable vapour. Ears none; hair long, rough; two feet long, tail eight inches.—Synonymes. *Viverra Capensis*, *Gmelin's Linn.* *Stinkbinsen*, *Kolbe.* *Blaireau puant*, *La Caille.* *Fizzler*, *Pennant.* *Cape weasel*, *Turton*, 54.

The ANNULATED WEASEL. Tail long, annulate; face with a white spot each side the nose, and outer side of each eye. Size of the last; sides, rump, and upper part of the legs, cinereous, with scattered black spots; nose at the tip, cheeks, and throat, black; ears large, upright, thin, naked, black, behind each a black line to the shoulder; tail cinereous mixed with tawny near the base, annulate with black.—*Viverra annulata*, *Turton's Linn.* 55.

The SPOTTED WEASEL. Tail annulate, brown at the tip; body cinereous spotted with brown, with a black streak from the head to the tail. Inhabits the Cape of Good Hope; size of a common cat; fond of flesh, especially birds; has no civet odour. Head round; nose short; whiskers white; cheeks yellowish-white; a round black spot each side the nose; forehead with a dusky line down the middle.—Synonymes. *Viverra tigrina*, *Gmel.* and *Turton.* *Chat bizaam*, *Vofmaer.*

MUSTELA, the OTTERS and WEASELS.

IN many circumstances the otters and weasels resemble each other; body long, of the same thickness, feet short, hair shining, claws immoveable, burrow in

the ground, prowl and prey by night; but the otters live mostly in the water, swim on the surface and under, feed chiefly on fish; do not climb, or leap with the body curved and tail stretched out like the weasels; head larger and thicker, tongue strewed with soft prickles; otters have five grinders in each jaw on each side; weasels four or five above, five or six below.

The PARAGUAY OTTER. Mixed grey and black; feet palmate. Inhabits on the Rio de la Plata; size of a cat; fur velvety, flesh delicate.—Synonymes. *Mustela Paraguensis*, *Turton's Linn.*

The PALE WEASEL. Back and belly pale cinereous-yellow; face, crown, legs, and tail, black. Head flat; ears rounded; nose broad, blunt; cheeks and chin white; throat rich yellow; length eighteen inches, tail long as the body.—Synonymes. *Mustela melina*, yellow weasel, *Turton.*

The following are perhaps included in some of the foregoing descriptions, though under other names.

The ERMINED WEASEL, described by Pennant in his edition of 1793, and by Harrison, No. 78. Body white and spotted; tail annulated, ears rose-coloured.

The LOBSTER WEASEL, common in Norfolk and Suffolk, somewhat like a polecat, but the volume of its body larger; colour reddish brown or bright chocolate; throat white tinged with yellow; snout sharp, smell when hunted very fetid.

URSUS, the BEAR, BADGER, &c.

THE SAND BEAR. This has only *four* toes on each foot. It is less than the badger; almost destitute of hair; impatient of cold; and burrows in the ground. Body yellowish white; eyes small; legs short; claws white, sharp; tail long. First described and figured by Bewick from one kept in the Tower of London. He supposes it may be a variety of the badger, probably that given by Brisson from New York, "white above, yellowish white below."—Synonymes. *Ursus*
tetradactylus,

tetradactylus, *Turton*. U. supra alba, infra ex albo flavicans, *Briff. Quad.* 185. U. meles alba, *Gmelin's Linn.* 102. Sand bear, *Bewick's Quad.* 257.

DIDELPHIS, the OPOSSUM.

THE generic characters, as now correctly stated by Gmelin, are as follow: Fore-teeth minute, rounded; upper ten, intermediate two longer; lower eight, intermediate two broader, very short; tusks long; grinders crenate; tongue fringed with papillæ; a pouch (in many) abdominal, covering the teats. This tribe is chiefly found in America, living in holes in woody places, burrowing in the earth, and climbing trees by means of their prehensile tail; they move slowly, feed on birds, especially poultry, insects, worms, and vegetables; feet usually five toed divided, the great toe remote; penis mostly concealed, glans divided; females sometimes with abdominal pouches which can be opened or shut at pleasure, in which the young are hid in time of danger, and which is present sometimes in the males.

The BRASIL OPOSSUM. Tail bushy at the base; ears pendulous; teats four. Inhabits South America; length nine inches, tail fourteen. Whiskers six rows; margin of the orbits dusky; feet whitish; naked part of the tail whitish with brown spots.—Synonymes. *Didelphis philander*, Brasil opossum, *Turton*. *Philander Brasiliensis*, *Briff.*

The PORCULINE OPOSSUM. Tail longish, fore-feet five-toed, exterior claws small; hind-feet four-toed, two interior united. Inhabits New Holland; size of a half grown rat. Body rusty above, whitish beneath, corpulent; hind-legs much longer; interior claws double; ears rounded; hair coarse.—Synonymes. *Didelphis obesula*, porculine opossum, *Turton*.

The WOOLLY OPOSSUM. Tail slender, naked, hairy at the tip; heels of the hind-feet long, naked; thumbnail flat. See p. 149, where this species is described under

under the name of the *tarfier*, it having formerly been placed in the lemur genus.—Synonymes. *Didelphis macrotarsus*, *Gmelin's Linn.* *Tarfier*, *Buff.* *Woolly jerboa*, *Penn.* *Lemur podje*, *Turton.*

The SQUIRREL OPOSSUM. A lateral flying membrane; body grey above, snowy beneath; tail prehensile, very hairy, black towards the tip. Inhabits New Holland; torpid by day, active by night. Size of a squirrel; eyes black, full; ears round, thin; membrane edged with blackish; pouch large; thumb of the hind-feet rounded, unarmed; a black stripe down the head and back; two interior toes of the hind-feet joined.—Synonymes. *Didelphis sciurea*, the squirrel opossum, *Turton's Linn.*

The LONG-TAILED OPOSSUM. A lateral flying membrane; body dark-grey above, whitish beneath; tail long, slender, black. Inhabits New Holland; less than the last, but resembles it in manners and appearance.—Synonymes. *Didelphis macroura*, long-tailed opossum, *Turton's Linn.*

The PIGMY OPOSSUM. A lateral flying membrane; tail flat, pinnate, linear. Inhabits New Holland; size of a mouse. Body brown above, whitish beneath; whiskers long; tongue large, long, flattened; pouch femilunar at the opening.—Synonymes. *Didelphis pigmæa*, the pigmy opossum, *Turton's Linn.*

ERINACEUS, the HEDGEHOG.

THE MALACCA HEDGEHOG. This was placed by Linnæus among the porcupines; see p. 456 of this volume.—Synonymes. *Erinaceus Malaccensis*, *Gmel.* *Hystrix brachyura*, *Linn. ed. x.* *Malacca hedgehog*, *Turton.*

The MADAGASCAR HEDGEHOG. This is probably the variety noted in p. 537. It has no tail, snout very long, acute. Inhabits India and Madagascar; eight inches long; in habits exactly resembles the Asiatic species. Mouth and eyes small; ears rounded, longer

longer than that: spines black in the middle, covering the whole back and sides; hair yellowish; feet tawny.—Synonymes. *Erinaceus ecaudatus*, *Gmelin's Linn.* Madagascar hedgehog, *Turton.* Tanrec, le jeune tanrec, *Buffon*, xii. *Supp.* iii.

IN THE ORDER OF GLIRES.

MUS, the RAT, MOUSE, &c.

THE CARACO. Tail long, scaly, bluntish; body grey; hind-feet slightly palmate. Inhabits the waters of eastern Siberia and China, burrows on the banks, swims well, frequents houses; six inches long. Head long, narrow; eyes nearer the ears than the nose; toes of the hind-feet connected by a fold of skin; back brown mixed with grey, belly whitish ash; feet dirty-white; tail four inches and a half.—Synonymes. *Mus caraco*, *Gmel.* and *Turton.*

The BLUE MOUSE. Tail middle length, hairyish; fore-feet four, hind five-toed; body blue, whitish beneath. Inhabits Chili; in size and appearance resembles the field mouse; very timid, forms large burrows divided into many chambers, collects vast stores of bulbous roots, which the natives search carefully after.—Synonymes. *Mus cyanus*, *Gmel.* Blue mouse, *Turton.*

The LENA MOUSE. Tail short, covered with coarse hair; toes four before, five behind; body white. Inhabits the banks of the river Lena; three inches long.—Synonymes. *Mus lena*, *lena mouse*, *Turton.*

The MAULINUS, will be found among the Marmots, p. 466. to which *Gmelin* thinks it may possibly belong, though he has left it here. *Turton* has removed it.—Synonymes. *Mus maulinus*, *Gmel.* *Arctomys maulinus*, the Chilese marmot, *Turton.*

ARCTOMYS, the MARMOT.

THE CASAN MARMOT, which seems included by *Gmelin* under the earless marmot, is made a separate species

species by Turton. It has ears, though very short; tail hairy, short; body above yellowish-brown with many small white spots. Inhabits Casan and Austria, in holes on the declivities of mountains; burrows deep, winding, with several entrances and many apartments in which are stored pulse and corn; size of a large rat. Head and body lengthened; face, breast, and belly, pale yellow; tail yellowish-brown; toes four before with a short thumb, five behind, two outer short, three other long.—Synonymes. *Arctomys fuslica*, casan marmot, *Turton's Linn.* 89.

The **PODOLIAN MARMOT**. Ears short; body mouse-grey; feet five-toed; eyes minute, concealed. Inhabits Russia, Poland, Persia, and China; strong, mischievous, larger than the last, resembles in habits *A. marmota*; the prey of birds and vermin; gravid 3—4 weeks, brings 3—8 young. Varies in colour and size, sometimes spotted with white; tail sometimes orange, and the hair shed like a squirrel.—Synonymes. *Arctomys zemni*, Podolian marmot, *Turton*, 90.

SCIURUS, the SQUIRREL.

GENERIC characters accurately as follow: Foreteeth two, upper wedged, lower acute; grinders upper, each side five, lower four; clavicles perfect; tail shed each side; whiskers long. They are usually active, elegant, easily tamed, and climb dexterously, leaping from tree to tree; a few are subterraneous; they live mostly on seeds and fruit; some leap in running, some are furnished with a flying membrane. Body thickish; feet short; toes four before with the rudiments of a thumb, five behind; head broad; ears long oval; tail long, hairy, generally turned over the back.

The **VIRGINIAN SQUIRREL**. Body mixed dirty-white and black; fur coarse. Inhabits Virginia; size of *S. cinereus*. Throat, insides of the legs and thighs, black; tail short, dull yellow.—Synonymes. *Sciurus Virginianus*, *Turton*.

The.

The PERSIAN SQUIRREL. Ears plain; body dark, sides white, belly yellow; tail mixed black and ash, with a white ring. Inhabits the higher mountains of Persia; resembles *S. vulgaris*, but does not vary in colour; soles reddish.—Synonymes. *Sciurus Persicus*, *Gmelin*. Persian squirrel, *Turton*.

The GEORGIAN SQUIRREL. Ears plain, rounded; body above yellow mixed with brown, beneath dark tawny; tail same as the upper parts. Inhabits Georgia in Asia; larger than *S. vulgaris*. Mouth white; nose black at the tip; cheeks yellow; whiskers and orbits brown; ears flame-coloured, within whitish.—Synonymes. *Sciurus anomalus*, *Gmel*. Georgian squirrel, *Turton*.

The GROUND SQUIRREL, by Pennant called the *striped dormouse*; see p. 481.

The CARNATIC SQUIRREL. Body brick-dust colour; lateral stripes and orbits white; tail black. Inhabits the Indian Carnatic; larger than *S. vulgaris*.—Synonymes. *Sciurus dschinschicus*, *Gmel*. Carnatic squirrel, *Turton*.

The CHILESE SQUIRREL, otherwise the Chilian dormouse; see p. 483.

The GUIANA SQUIRREL. Body above pale yellowish-brown; sides and belly white; tail long, hairy, spotted. Inhabits Guiana; resembles *S. vulgaris*.—Synonymes. *Sciurus Guianensis*, *Bancroft*. *Sc. Bancrofti*, *Turton*.

The CAYENNE SQUIRREL. Body reddish, very small. Inhabits Cayenne; lives solitary on trees; feeds on seeds; naturally fierce, but may be tamed; brings two young, once a year; size of a rat.—Synonymes. *Sciurus Guianensis*, *De la Borde*. Cayenne squirrel, *Turton*.

The CAPE SQUIRREL, or *earless dormouse*; see p. 484.

The JUMPING SQUIRREL. Body above deep chestnut, beneath pale rusty; or above black, beneath hoary;

hoary; tail longer than the body, very hairy, round, blackish, rusty in the middle. Inhabits the islands of the Indian Ocean; a foot and a half long. Head rounded; whiskers and claws black; teats six pectoral and abdominal; pupils long, narrow, like those of the cat.—Synonymes. *Sciurus petauritta*, *Gmel.* Taquan, *Buff. Supp.*

The SOUTHERN FLYING SQUIRREL. Body above blackish-brown, beneath whitish; hind-thumbs rounded; tail long, bushy; ears large. Inhabits New South Wales; the largest and most elegant of its tribe. Membrane somewhat scolloped at the edges, paler; fur exquisitely soft; ears longish; over each eye a black stripe; claws, except of the hind-thumbs sharp, hooked; two toes next the hind-thumb united by the skin.—Synonymes. *Sciurus Australis*, Southern flying squirrel, *Turton's Linn.* 96.

MYOXUS, the DORMOUSE.

THESE all remain torpid during winter; walk or rather leap on their hind-legs, bounding 3 or 4 feet at a time, in which they are assisted by the long stiff tail; feed only on vegetables, burrow under ground; sleep by day, watch by night; carry food to the mouth by the fore-paws, and drink by dipping the fore-palms in water. Three species described under this head, the striped, the chilian, and the earless, p. 481, 3, 4, now appear to belong to the squirrels. The only species omitted is

The WOOD DORMOUSE. Body above tawny grey, beneath dirty white; a straight black line from ear to ear across the eyes. Inhabits Europe; differs from the rest only in colour, tail shorter, more bushy; no black spots near the ears.—Synonymes. *Myoxus dryas*, *Gmelin's Linn.* Wood dormouse, *Turton.*

HYRAX, the HYRAX.

THIS new genus includes only two species, formerly

merly known by the name of the Cape and the Syrian Cavy, for which see p. 431, 434. of this volume. We shall give the generic characters, that succeeding naturalists may be enabled properly to arrange any new species that may be discovered hereafter: Fore-teeth upper two, broad distant; lower four, contiguous, broad, flat, notched; grinders large, four on each side of each jaw; fore-feet four-toed, hind-feet three-toed; tail none, clavicle none.

IN THE ORDER OF PECORA.

CAMELUS, the CAMEL.

THE LONG-EARED CAMEL. Body woolly, smooth; snout turned upwards; tail and ears pendulous. Inhabits Peru and Chili; resembling in many things the sheep; tail longer; wool finer; body white, black, or brown; flesh good.—Synonymes. *Camelus arcuatus*, *Gmel.* Sheep of Peru, *Chiesá*. Peru camel, *Turton's Linn.* 106.

CERVUS, the DEER, ELK, &c.

THE RED DEER. No tail; horns three-forked. Inhabits the woody mountains of Hircania, Russia, and Siberia; becomes hoary in winter, and descends into the plains; larger than the roe. Body deep red; beneath and on the limbs paler; round the nose and on the sides of the lower lip black; tip of the lip and rump white; horns tuberculate at the base; ears within white, hairy.—Synonymes. *Cervus pygargus*, *Gmel.* and *Turton.*

The AMERICAN ELK, figured by Bewick from a living one brought out of the interior parts of America, seems to be a different animal from that generally described under the name of the elk or moose-deer, to which it has very little resemblance. It seems, indeed, to belong to a distinct species; and is probably the elk or original of Canada and the northern parts of

America. At the age of five years, the length of this creature was nine feet, from the end of the muzzle to the insertion of the tail; the head and neck being extended in a line with the body: its height at the shoulder was four feet six inches; length of the head, one foot six inches; breadth over the forehead, seven inches; length of the fore-legs, two feet five inches; length of the neck, two feet six; its ears, nine inches; and tail, three; its horns, which it had just shed, are not palmated, like those of the moose: they are large; and, when full grown, measure above six feet, from tip to tip. The antlers are round, and pointed at the ends; the lowermost antler forms a curve downward over each eye, to which it appears a defence. Its hair was long, of a dark dun colour on the back and sides; on the head and legs, dark-brown: its eyes full and lively; and below each eye there is a deep slit, about two inches in length, the use of which we are unable to discover. It was very lively and active; of great strength of body and limbs: its hoofs short, and like those of a calf; the division between them is less than in those of the rein-deer; and, when the animal is in motion, they do not make a rattling noise. It has no mane; but the hair under its neck is longer than that on any other part of the body. The owner of this very rare and beautiful animal, said, that it does not attain its full growth till twenty years old, and that it sheds its horns every third year.—Synonymes. American elk, *Bewick's Quad.* 112. Original, *Charlevoix Nouv. France*, iii. 126.

CAMELOPARDALIS, the GIRAFFE.

THIS animal constitutes a solitary genus; essentially distinguished from all the other genera of animals, though not diversified into distinct species or different varieties.

Its generic characters are, short upright horns, truncated at the top, and covered with skin and hair; the
hair



J. Pons sculp.

Edm. John

The Giraffe, or Camelopard.

London Published as the Act directs 17 Dec 1796.

hair increasing in length towards the extremity of the horn, and forming a sort of tuft around its top; the neck and shoulders longer in proportion to the rest of the body, than those of other animals; eight cutting teeth in the lower, but none in the upper, jaw; and six grinders or double teeth on each side, both above and below. The height of the camelopardalis, when standing erect, is commonly between fourteen and fifteen feet from the hoofs of the fore-legs to the top of the horns. His fore and hinder legs are nearly of the same length; which is commonly between five and six feet. His height behind, from the hinder feet to the rump, is between eight and nine feet. His neck and head are nearly equal in length to the rest of the body; and his whole length from the head to the rump generally about eleven, or between eleven and twelve feet. The mane does not extend beyond the shoulders; the hair of which it is composed is usually between three and four inches long. His tail resembles the bullock's; is bare till near the extremity, but terminates in a beautiful tuft of strong hair of considerable length. He is cloven-footed. The female has few teats.

These animals are either of a reddish colour, or of a mixture of dark brown and white, or of black and white. The hair of the tail is most frequently black. The body and thighs are, according to some accounts, spotted all over with spots of a lighter colour than the ground; according to others, chequered with light bars. The length of his neck and shoulders renders it difficult for the camelopard, though a ruminating animal, to crop grass on the ground. He feeds chiefly, therefore, on the leaves and tender shoots of trees. The mimosa and the wild apricot-tree supply the chief part of his nourishment. When he eats grass from the ground, he sometimes bends one of his knees as horses do; when plucking leaves and small branches from tall trees, he brings his fore-feet about a foot and a half nearer each other than his hinder feet. The camelopard is mild
and

and peaceful in his dispositions. Far from attacking mankind or other animals, he does not even express resentment or attempt resistance when attacked himself.

The flesh of the young camelopard is agreeable food enough; but has sometimes a strong flavour of a certain shrub of the mimosa tribe. The marrow is a favourite delicacy with the Hottentots; it is chiefly for that they hunt the animal. They kill it with poisoned arrows. Of its skin they make vessels for containing water and other liquors.

This singular animal, though not eminently swift, is not so easily overtaken in the chase as has been said. It does not limp in walking, but sometimes paces and sometimes gallops. Notwithstanding the irregularity and apparent unwieldiness of its form, it runs long before being sensibly affected with fatigue; and the ground over which it moves with ease, is often so sharp and rough as to lame horses that follow it. It appears to have been known to the Romans in early times. Pliny describes it with tolerable accuracy as a native of Ethiopia; and informs us that it was first exhibited in the circus at Rome by Julius Cæsar, in a show of wild beasts; with which, as we learn from others, he entertained the people, three years before his death. It is still found in the forests of Ethiopia; and is believed to inhabit the interior parts of Africa; but it is chiefly in the neighbourhood of the Cape of Good Hope that Europeans have had opportunities of getting acquainted with it, in modern times. The singularity of its form, the mildness and simplicity of its manners, and its being confined to a region of the globe, of which the topography, the natural and the civil history, are but very imperfectly known, have occasioned a good many misrepresentations and doubts concerning this animal. Buffon in his history of it, presents us with a variety of information communicated to him by correspondents. But he seems to offer
it

it with doubt and hesitation; and his friends, from whom he received those communications, appear to have been but imperfectly informed themselves, and even disagree in various particulars. Mr. Pennant, in his account of the camelopard, scarcely discovers his usual accuracy; nor is the description given by Linnæus remarkably distinct or authentic. Happily, three travellers who have of late visited the south of Africa, Dr. Sparrman, Lieutenant Paterfon, and M. Vaillant, eager students of natural history, have examined and described the form, the manners, and the general character, of this animal in a very satisfactory manner. The above history of it rests chiefly on their authority.

Synonymes.—Camelopardalis giraffe, *Gmelin*. *Cervus camelo-pardalis*, *Linn. Hasselq.* and *Pallas*. *Camelus Indicus*, *Johnst.* Giraffe, *Thev. Lobo*, and *Buffon*. Camelpard, *Gesner* and *Pennant*.

ANTILOPE, the ANTELOPE.

THE WHITE-FOOTED ANTELOPE, OR NYL GHAU. Since printing our account of this animal in p. 159, we have been favoured by a correspondent with some additional particulars respecting two of the male kind shewn in Norwich in 1798. They were almost uniformly of a slate colour; body and limbs nearly resembling a small mule. Head, neck, and face, like the deer; tail like a cow; hoofs cloven; horns black, smooth, and about four inches round at the roots, gently arched towards each other, and reclined backwards; eight or ten inches long. Countenance innocent and placid; after eating its hay, &c. laid down and chewed the cud at leisure like the deer. The female is so much like the female deer that it requires a critical eye to discern the difference.—Synonymes. Antilope picta, *Gmelin's Linn.* White-footed antelope, *Penn.* Nyl-ghau, *Hunter in Phil. Transf.* lxi. 170.

THE PERSIAN ANTELOPE. Horns lyrate; body above ashy-brown, beneath snowy; lateral stripe pale tawny.

tawny. Inhabits Persia; gregarious, resembles the roe. Horns thirteen inches long, smooth at the tip; head of the larynx prominent; knees tufted; flesh good.—Synonymes. Antelope subgutturosa, *Gmel.* Persian antelope, *Turton.*

The SENEGAL ANTELOPE. Horns lyrate, thick, annulate; tips smooth, sharp, bent back. Inhabits Senegal; seven feet long. Ears large, seven inches long, horns seventeen, rings fifteen, prominent; body pale reddish-brown; stripe down the neck black; rump dirty white; on each knee and above each fetlock a dusky spot; tail a foot long, covered with blackish hair.—Synonymes. Antilope koba, Senegal antelope, *Turton.*

The AFRICAN ANTELOPE. Horns straight, tapering, a little wrinkled at the base; head tawny; body greenish-yellow, beneath white-ash; tail very short. Inhabits Africa.—Synonymes. Antilope oreotragus, *Gmel.* and *Turton.*

CAPRA, the GOAT.

THE CAUCASIAN GOAT. Horns turned backwards and outwards, verging inwards at the tips, slightly triangular, knotty behind. Inhabits the bare rocky summits of mount Caucasus, near the rise of the Terek and Cuban rivers; size of a common goat, but broader and shorter. Horns dark grey, of the male darker; body above brownish grey with a dark spiral line, beneath whitish; extremities black; hair cinereous at the base, harsh, stiff, intermixed with grey wool.—Synonymes. Capra Caucasica, *Gmelin's Linn.* Caucasian goat, *Turton.*

OVIS, the SHEEP.

THE following varieties of the *ovis aries*, or common sheep, were not noticed in the early part of the volume. The *bucharica*, or Bucharian sheep, with large pendulous ears; cushions on the hips less than in
the

the fat-rumped sheep; inhabits the same places, tail long, flat. The *longicauda*, or long-tailed sheep, with a very long woolly tail. The *capensis*, or Cape sheep; ears large and pendulous; tail large broad. *Gmelin's Linn.*—The *morvant*; beard long on the fore part of the breast, coarse red and grey; mane on the neck reaching to the base of the back; body bright yellow; legs red; tail yellow and white, with long coarse hairs. *Turton's Linn.*

The CHILIAN SHEEP. Horns round, smooth, divergent. Inhabits the Cordeleras in South America, gentle, descends in winter into the vallies; size of a half-grown kid; resembles a goat, but the horns are turned round outwards; beard none; female no horns; colour dusky.—Synonymes. *Ovis pudu, Gmelin's Linn. Capra pudu, Molina's Chili.*

BOS, the Ox.

THE BOS ARNEE, has horns, long, erect, semi-lunar, wrinkled; tips smooth, round, approaching. Inhabits India, of vast size; eight feet high; black. *Turton.*

The AMERICAN OX. Horns round, distant pointing outwards; mane long, woolly; back gibbous. Inhabits reedy marshes of New Spain; it is very large, fierce, and dangerous. Horns short, black, distant at the base; gibbosity large, fleshy; neck thick; hind-parts slender, weak; tail a foot long, tufted; hair of the head and bunch long, woolly, waving, rusty-brown.—Synonymes. *Bos Americanus, Linn. and Gmel. Bison d'Amerique, Buff. Buffalo, Lawson and Catesby. American ox, Dobbs. American bull, Penn.*

The BOAS, or BEARDED OX. Horns short, chin and breast bearded. Inhabits north of the Cape; larger than an ox; grey.—Synonymes. *Bos barbatus, boas, Turton's Linn.*

IN THE ORDER OF *BELLUÆ*.

THE GUINEA HOG. This is the *sus porcus*, which name has been erroneously given in p. 228 to the Chinese variety of the domestic hog.—The back of the Guinea hog is bristly on the hind parts, and the tail reaches to the ground; there is a variety which inhabits Siam, with erect ears, and the tail not quite so long. This species is less than the common hog, with a naked tail and pointed ears; the body is red, and the hair longer on the head than on the buttocks.—Synonymes. *Sus porcus*, *Gmelin's Linn.* Guinea hog, *Brown and Penn.* Cochon de Guinée, cochon de Siam, β . *Buff.*

THE MERIAN OPOSSUM.

THIS curious animal is partly described in p. 380, of this volume. The figure we have hereunto annexed, is taken from the elegant drawings of Madam Merian, preserved in the British Museum; and from whom it takes its name of *Merian Opossum*. When these animals go abroad in search of food, the young family accompany them on foot, but when their hunger is satisfied, or if alarmed with sudden danger, they mount on their mother's back, winding their tails round her tail, as shewn in the engraving; in which posture she carries them home, either to a hole in the earth, or to the hollow of an old tree. This advantage they derive from having the faculty of a prehensile tail, like a tribe of monkeys described in our second volume. With this they hold, as it were, by a finger; and they have not only the advantage of holding themselves on the old one's back in times of danger, but the whole species have the property of hanging by the tail on the slender branches of trees, for the purpose of obtaining their prey, which consists of various insects, small birds, and fruit. The tail is considerably longer than the body, very slender, of a light cinereous colour, annulated with equidistant rings or belts of dusky brown or black. Synonymes.—*Didelphis dorfigera*, *Gmel.* Philandre de Surinam, *Buff.* Merian opossum, *Penn.*



Merian del.

J. Pass sculp.

The Guinea Hog, and Merian Opossum.

Published Jan^r 1805.



THE LARGE WOOD MOUSE OF AMERICA,

which carries her young on her back.

Barth. 1846

Barth. 1846



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